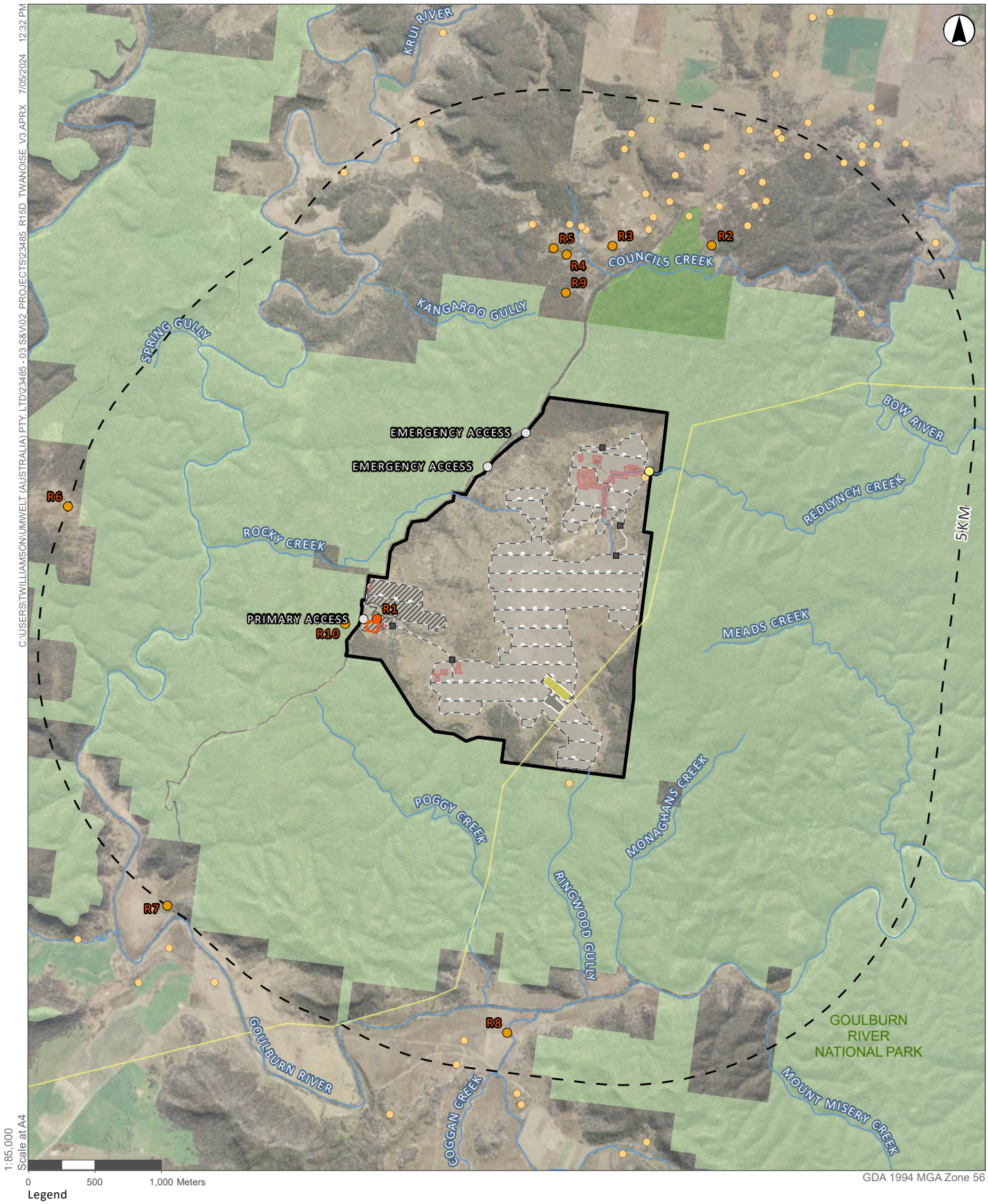


Legend

- Host Receiver
- Sensitive Receiver
- Dwelling (abandoned)
- Dwellings
- Access Points
- Gate
- Proposed Access Tracks
- Electricity Transmission Line
- Watercourse
- Roads and Tracks
- Project Area (5km buffer)
- Project Area
- Indicative TWA Facility
- TWA Facility Feasibility Area
- Exclusion Zones - Environmentally Sensitive Areas
- Battery Energy Storage System
- Inverter
- Substation
- NSW National Parks
- NSW State Forests
- Development Footprint - Amended Project

FIGURE 3.1

Sensitive Receivers

For the Goulburn River National Park (R10), given the vastness of the park and available bushwalking area, a receiver point 200 m from the Project Area was adopted for noise prediction purposes.
For the predictions, the receiver point was located proximity to the substation and BESS (the highest noise emitting source on site)

Image Source: ESRI Basemap (2022) **Data source:** NSW LPI (2022), NSW DSFI (2022); NPWS Estate (2022); Lightsource BP (2022)

4.0 Construction Noise and Vibration Assessment

4.1 Description of Works

The TWA Facility construction period is expected to take 12 weeks from site preparation to commissioning. Ground preparation works will be required but are a continuation of the previously anticipated solar farm preparation works, involving clearing and leveling a pad for temporary buildings, construction offices, carparks, laydown yards etc.

During this period, approximately 180 modular units will be delivered to site at an average rate of 10 per day on tip-tray trucks or 19 m semi-trailer vehicles. The workforce during this stage is expected to be approximately 20-30 people, who will be housed in accommodation offsite until the facility is commissioned. Construction activities specific to the TWA Facility require minimal large equipment, with only forklifts and telehandlers required. All utilities sit above the ground and there is no requirement for ground penetrating works or permanent foundations.

A high-level overview of the construction sequence of the TWA Facility is as follows:

- Establishment of temporary road access.
- Connection to temporary service plant.
- Site bulk earthworks.
- Installation of water and sewerage treatment plants.
- Installation of buildings and key components of the TWA Facility (e.g. accommodation modules, service and administration modules, and amenity facilities).
- Install first stage roads, hardstand, car parking, pathways, street lighting and landscaping.

Demobilisation is completed in a similar timeframe using the same equipment as the construction. All modules are designed to be re-used and there would be no buried services left behind or components (such as concrete pathways, footings, awnings) sent to landfill.

4.2 Construction Hours and Noise Management Levels

Construction activities for the TWA Facility are proposed to be undertaken during standard construction hours specified in the Interim Construction Noise Guideline (ICNG), in line with the EIS and Amended Project (1). The proposed construction hours are as follows:

- Monday to Friday: 7.00 am–6.00 pm.
- Saturday: 8.00 am–1.00 pm.
- Sunday and public holidays: No work.

The adopted construction noise management levels for standard construction hours are consistent with the EIS NVIA 2023 and shown within **Table 4.1**.

Table 4.1 Project Construction Noise Management Levels

Receiver	Noise Management Levels (NML), dB(A)			
	Standard hours of Construction [1]		Outside Standard hours of Construction [1]	
	Noise Affected $L_{Aeq(15\ min)}$	Highly Noise Affected $L_{Aeq(15\ min)}$	Noise Affected $L_{Aeq(15\ min)}$	
			Day	Evening & Night
All Residences	45	75	40	35

Note: [1] Recommended standard hours: Monday to Friday 7.00 am–6.00 pm; Saturday 8.00 am–1.00 pm.

4.3 Activities and Equipment

The typical construction activities (Scenarios 1 to 4) and associated equipment and respective sound power levels (SWLs) of equipment are outlined in **Table 4.2**. Typical sound power levels have been sourced from the Roads and Maritime Construction Noise Estimator Tool and Umwelt's noise source library.

Table 4.2 Indicative Construction Scenarios, Equipment and Sound Power Levels

Construction Activities / Scenarios	Activity description	Equipment	Sound Power Levels $L_{Aeq(15\ min)}$ dB(A)/ unit	Combined Sound Power Level $L_{Aeq(15\ min)}$ dB(A)
Sc.1	Site establishment, access, civil and bulk earth works	Asphalt paver	114	120
		Grader	113	
		Dozer	110	
		Front End Loader	110	
		Dump truck	110	
		Roller	109	
		Delivery trucks	108	
		Water truck	107	
		Excavator	106	
		Compactor	106	
		Bobcat	104	
		Generator	103	
		Mobile crane / telehandler	98	
		Light vehicle	90	
Sc.2	Installation of utilities, buildings and key components roads, hardstand, carparking and landscaping	Asphalt paver	114	119
		Pneumatic wrench	113	
		Powered hand tools	110	
		Concrete Truck	108	
		Truck	108	
		Mobile crane 130T	105	
		Compressor	103	
		Generator	103	

Construction Activities / Scenarios	Activity description	Equipment	Sound Power Levels $L_{Aeq(15\ min)}$ dB(A)/ unit	Combined Sound Power Level $L_{Aeq(15\ min)}$ dB(A)
		Mobile crane / telehandler	98	
		Light vehicle	90	
Sc.3	Commissioning	Power hand tools	110	113
		Electrical works/testing	110	
		Mobile crane	98	
		Light vehicle	90	
Sc.4	Demobilisation	Dump truck	110	114
		Roller	109	
		Truck	108	
		Forklift	100	
		Mobile crane / telehandler	98	
		Light vehicle	90	

Notes: [1] Includes a +5 dB penalty for impulsiveness characteristics.

4.4 Construction Noise Levels

Prediction of the construction noise levels was undertaken with the proprietary computer noise modelling software CadnaA (Version 2023), using the CONCAWE noise prediction algorithms. Default worst-case noise-enhancing meteorological conditions (D-class with 3 m/s windspeed or F-class with 2 m/s windspeed) in accordance with the NPfI, have been utilised for the assessment.

Construction noise levels have been predicted for the four (4) indicative construction scenarios described in **Table 4.2**. The predictions are conservative and assume all equipment associated with each scenario is operating simultaneously at the closest point to the receiver. In reality, a receiver would experience a range of construction noise levels, dependent upon the number of plant items operating at any one time and their location as the works progress along the roadway.

Results for each construction scenario (Sc.1 to Sc.4) for the identified receivers are presented in **Table 4.3**.

The predicted noise level contours for the worst-case scenario (Sc. 1) are presented graphically in **Figure 4.1.**

Table 4.3 Predicted Construction Noise Levels, dB(A)

Receiver ID	Noise Management Level, $L_{Aeq(15\ min)}$		Construction Scenario Noise Prediction, $L_{Aeq(15\ min)}$			
	Standard Hours	Outside Standard Hours (D/E/N) [4]	Sc.1	Sc.2	Sc.3	Sc.4
R01 (host receiver)[1]	-	-	68	67	61	62
R02	45	40/35/35	<20	<20	<20	<20
R03	45	40/35/35	<20	<20	<20	<20
R04	45	40/35/35	<20	<20	<20	<20
R05	45	40/35/35	<20	<20	<20	<20
R06	45	40/35/35	<20	<20	<20	<20

Receiver ID	Noise Management Level, $L_{Aeq(15\ min)}$		Construction Scenario Noise Prediction, $L_{Aeq(15\ min)}$			
	Standard Hours	Outside Standard Hours (D/E/N) [4]	Sc.1	Sc.2	Sc.3	Sc.4
R07	45	40/35/35	<20	<20	<20	<20
R08	45	40/35/35	<20	<20	<20	<20
R09	45	40/35/35	<20	<20	<20	<20
R10 [2]	60		52	51	45	46

Notes: [1] Residential receiver R01 is involved in the Project (host receiver) and the Noise Management Levels are not applicable.

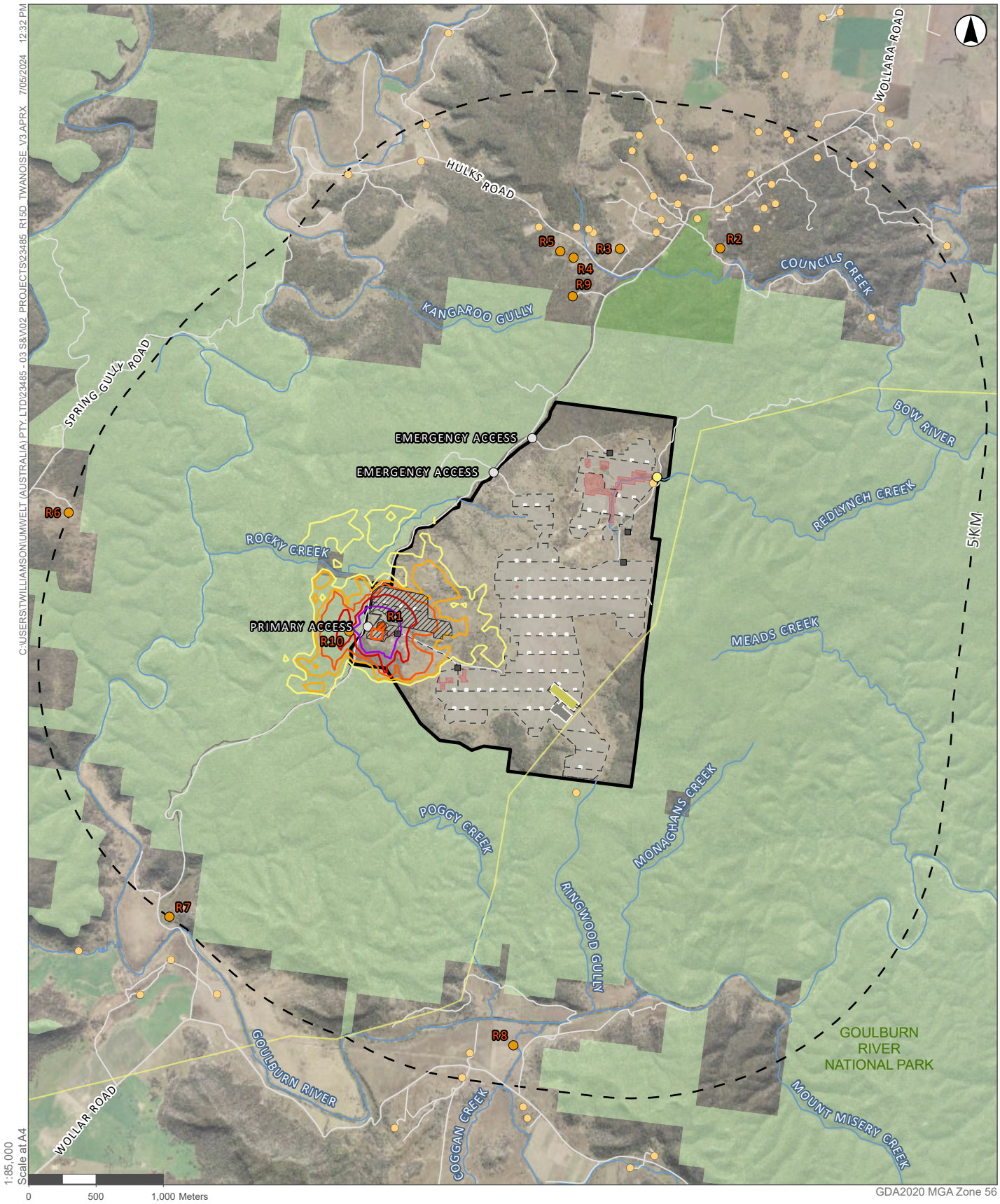
[2] This is a worst-case representative location for passive recreational users of the National Park.

[3] Predictions below 20 dB(A) have been presented as <20.

[4] Day period is 7.00 am–6.00 pm; Evening period is 6.00 pm–10.00 pm and night period is 10.00 pm–7.00 am.

The construction noise levels are predicted to comply with the noise management levels at all sensitive receivers not involved with the Project. Given the construction of the proposed TWA Facility would comply with the relevant criteria in the worst-case location, it is anticipated that the proposed TWA Facility could be constructed in any location within the TWA Facility Feasibility Area and would continue to comply with the relevant criteria. Further, due to the low predicted noise levels resulting from the construction of the TWA Facility as outlined in **Table 4.3**, cumulative construction noise exceedances due to concurrent solar farm construction activities is not predicted.

No further noise-related mitigation and/or management measures are proposed outside of those presented in the EIS NVIA 2023 and NVIA Addendum 1. Appendix B of the Amendment Report (2) summarises the mitigation and management commitments from the EIS and Amendment report(s).



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- Development Footprint - Amended Project

Predicted Noise Levels

- Noise Contour Level 35 dB(A)
- Noise Contour Level 40 dB(A)
- Noise Contour Level 45 dB(A)
- Noise Contour Level 50 dB(A)
- Noise Contour Level 55 dB(A)

FIGURE 4.1

Construction Scenario 1 – Predicted Noise Levels

For the Goulburn River National Park (R10), given the vastness of the park and available bushwalking area, a receiver point 200 m from the Project Area was adopted for noise prediction purposes. For the predictions, the receiver point was located proximity to the substation and BESS (the highest noise emitting source on site)

Image Source: ESRI Basemap (2022) **Data source:** NSW LPI (2022), NSW DSFI (2022); NPWS Estate (2022); Lightsource BP (2022)

4.5 Construction Vibration Levels

Given the proposed TWA Facility would be developed within the existing Development Footprint assessed within the EIS NVIA 2023 and NVIA Addendum 1, potential vibration impacts are consistent with Section 5.2 of the EIS NVIA 2023.

Construction vibration mitigation strategies were provided in Section 5.4 of the EIS NVIA 2023 and remain relevant to this amendment.

Co further vibration-related mitigation and/or management measures are proposed outside of those presented in the EIS NVIA 2023 and NVIA Addendum 1. Appendix B of the Amendment Report (2) summarises the mitigation and management commitments from the EIS and Amendment report(s).

5.0 Operational Assessment

Once constructed, the TWA Facility is proposed to operate 24 hours a day, 7 days a week for the duration of the construction period. A range of general activities would be undertaken to support the functions of the TWA Facility, such as general grounds maintenance, deliveries and waste removal, and worker movements.

Internal traffic movements will be minimised through a range of measures identified during detailed design including the use of shuttle buses to transport workers between construction compounds and the TWA Facility. The large proportion of internal traffic movements between the TWA Facility and construction compounds would typically occur at the start and end of the working day with peak AM traffic movements expected to occur around 7 am, while peak PM traffic movements would occur around 6 pm.

Operational noise sources within the TWA Facility are primarily related to mechanical and electrical plant for the facility, site servicing requirements, occupant noise while on site and noise associated with the workforce leaving and returning to the TWA Facility. Each of these sources is expected to be relatively minor, and whilst cumulative emissions may be higher, it is expected that operational noise will be significantly lower than construction of the TWA Facility. For example, the proposed generators (10 units) are expected to be the loudest mechanical and electrical plant item(s) and with all these running simultaneously, noise emission would still be approximately 20dB(A) lower than the loudest construction activity (Scenario 1).

Based on the construction noise predictions, it is therefore expected that operational noise will achieve the NPfI criteria for all periods (day, evening, and night) and noise impacts at non-involved sensitive receivers is unlikely.

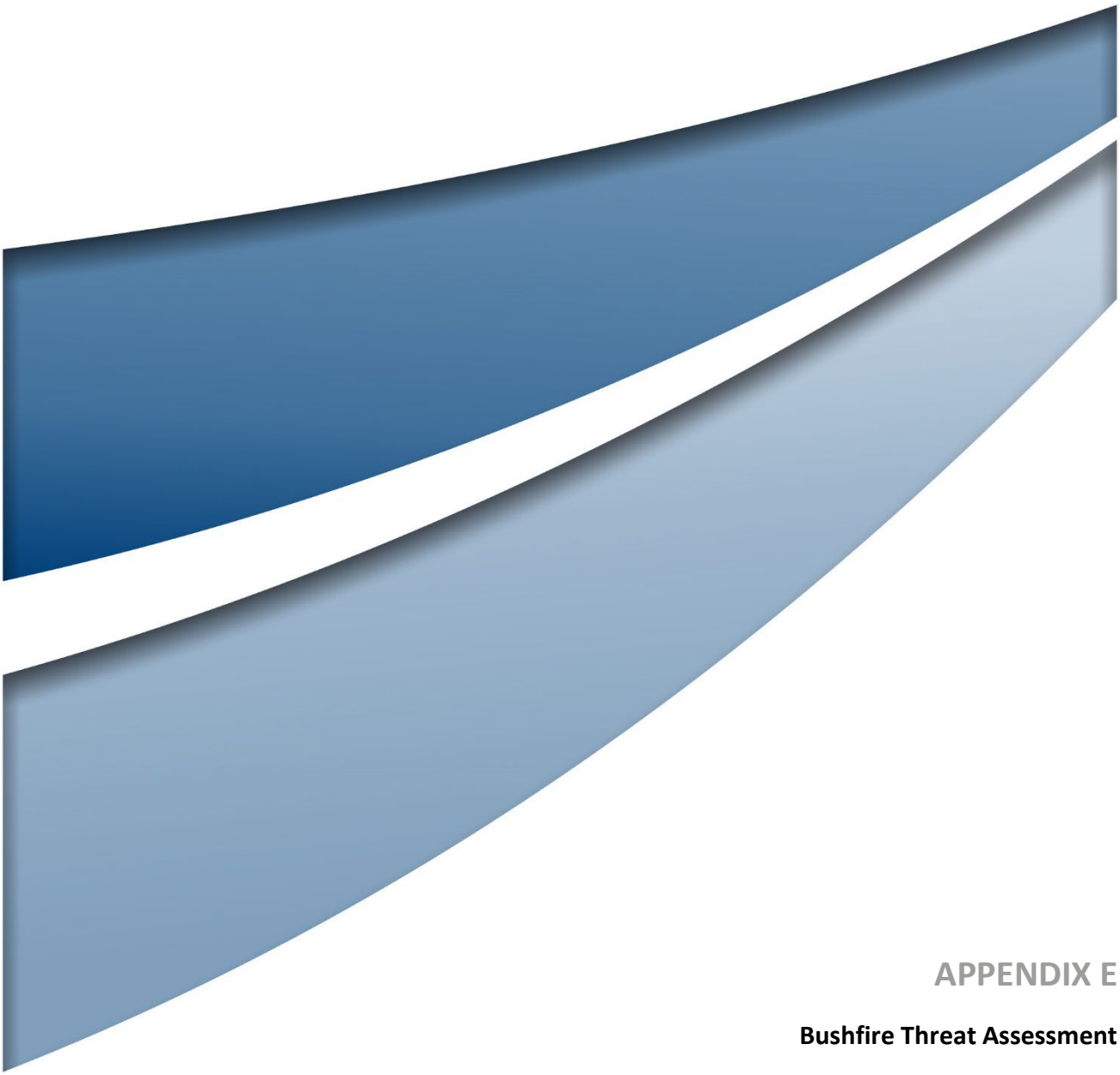
6.0 Conclusion

This NVIA Addendum 2 was prepared to address the inclusion of the TWA Facility for the proposed Goulburn River Solar Farm Project, in line with the previously prepared EIS NVIA 2023 and NVIA Addendum 1.

Potential construction noise and vibration impacts from the TWA Facility have been assessed in accordance with the ICNG. Construction noise levels were predicted to comply with the established NMLs. Potential operational noise impacts from the TWA Facility were also predicted to be negligible and expected to satisfy the NSW NPfI noise and vibration criteria. Noise and vibration mitigation measures and strategies for the TWA Facility are consistent with that provided in the EIS NVIA 2023 and NVIA Addendum 1 and are summarised in Appendix B of the Amendment Report (2).

Consistent with the EIS NVIA 2023 and NVIA Addendum 1, construction traffic noise levels are predicted to comply with the NSW Road Noise Policy (RNP, 2011) criteria and be less than the previously assessed traffic noise impacts (Umwelt 2023a and Umwelt 2023b).

As the construction and operation of the proposed TWA Facility would comply with the relevant criteria in the worst-case location within the TWA Facility Feasibility Area, it is concluded that the proposed TWA Facility could be reasonably sited in any location within the TWA Facility Feasibility Area.



APPENDIX E

Bushfire Threat Assessment

umwelt
Environmental & Social Consultants

lightsource bp

GOULBURN RIVER SOLAR FARM – TWA FACILITY AMENDMENT

Bushfire Threat Assessment

FINAL

May 2024

GOULBURN RIVER SOLAR FARM – TWA FACILITY AMENDMENT

Bushfire Threat Assessment

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Lightsource BP

Project Director: Jessica Henderson-Wilson
Project Manager: Thomas Buchan
Technical Manager: Penelope Williams
Report No. 23485/R16
Date: May 2024

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

Acknowledgement of Country

Umwelt 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
V01	Penelope Williams	9 May 2024	Jessica Henderson Wilson	10 May 2024
V02	Penelope Williams	23 May 2024	Jessica Henderson Wilson	23 May 2024
Final	Penelope Williams	24 May 2024	Jessica Henderson Wilson	24 May 2024

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1.0 Introduction

1.1 Background

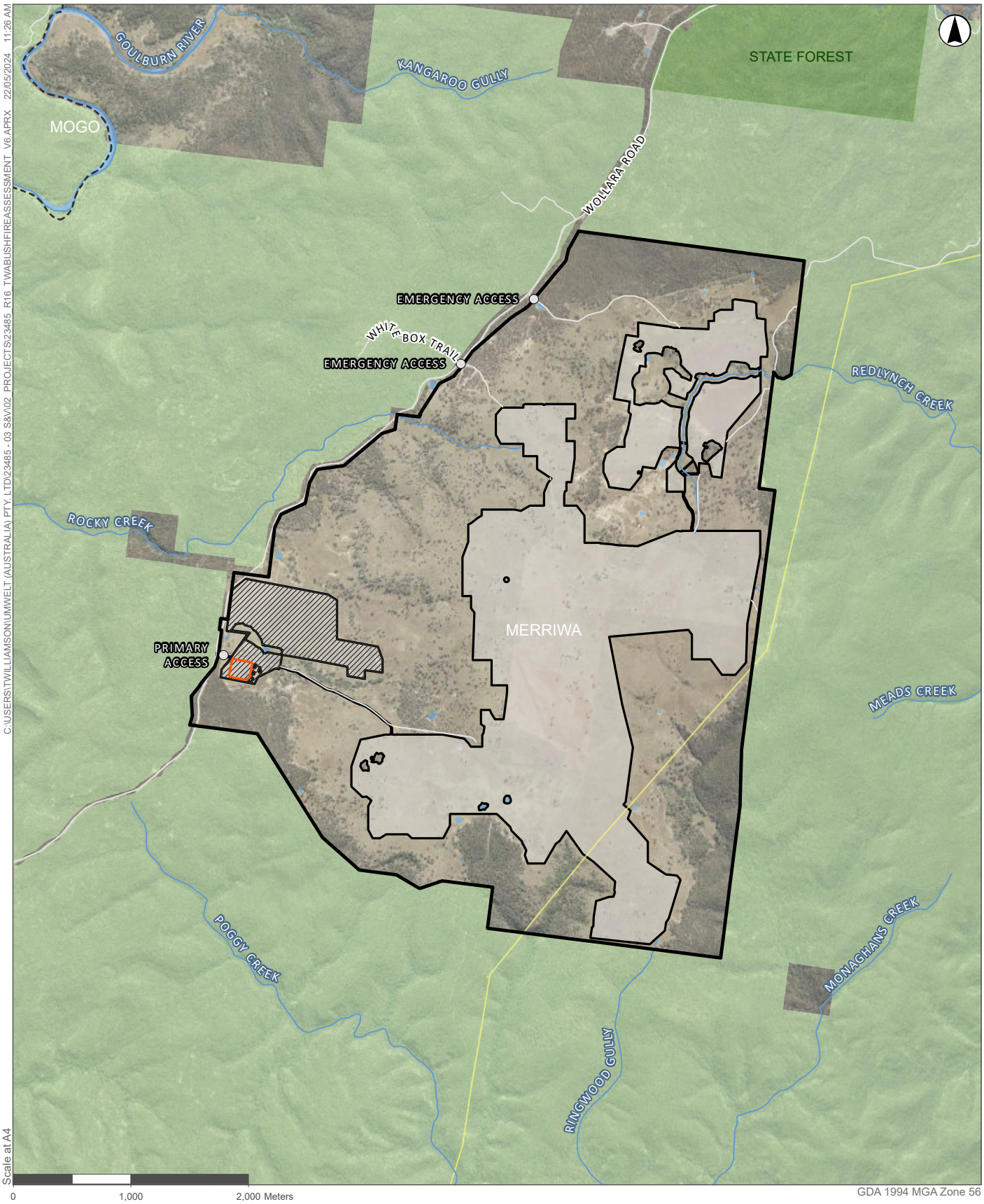
The Goulburn River Solar Farm Project (i.e. the Project) is a large-scale renewable energy project proposed by Lightsource Development Services Australia Pty Ltd (Lightsource bp) (i.e., the Proponent) located within the Upper Hunter Local Government Area (LGA) of NSW, approximately 28 kilometres (km) southwest of the township of Merriwa (refer to **Figure 1.1**). The Project is located on an agricultural property covering an area of approximately 2,000 hectares (ha), which is surrounded by the Goulburn River National Park.

The Project is currently under assessment and Lightsource bp are now proposing to amend the Project to include a Temporary Workers Accommodation Facility (TWA Facility) on site. The proposed on-site TWA Facility will accommodate a peak construction workforce of up to 400 workers. To provide for flexibility during detailed design a TWA Facility Feasibility Area (i.e., the Feasibility Area) is proposed within the western portion of the existing Development Footprint associated with the Project. This approach provides for the assessment of the entire Feasibility Area to allow the TWA Facility to be installed anywhere within the Feasibility Area, with a worst-case location also presented. It is noted that for this Bushfire Assessment the worst-case location is the area closest to the highest fuel load vegetation, as shown on **Figure 1.2**, as this presents the highest risk and requires the largest asset protection zones (APZs).

- The Feasibility Area and the broader Project Area are identified as bushfire prone land by the NSW Rural Fire Service (RFS) bushfire prone land mapping (NSW RFS, 2021). Land within the Project Area, including within the Feasibility Area, is mapped as Category 3 vegetation characterised by grassland and remnant vegetation. The surrounding Goulburn River National Park is mapped as Category 1 vegetation which is characterised by areas of extensive forest vegetation with high fuel loads, refer to **Figure 1.2.**

A bushfire threat assessment was included in Section 6.11.3 of the Project EIS (Umwelt, 2023) which considered the proposed solar farm area. The addition of a TWA Facility to the Project does not change the outcome of the bushfire assessment as presented in the EIS and previously identified management and mitigation measures will continue to apply to the operations phase of the proposed solar farm.

The introduction of the TWA Facility provides temporary residential accommodation which will be removed prior to the operations phase of the proposed solar farm. The addition of the TWA Facility on site during the construction phase of the Project requires additional consideration and assessment under RFS Planning for Bushfire Protection Guideline (PBP) (RFS, 2019). This assessment has been prepared in accordance with PBP to assess the potential hazards associated with bushfire and the potential risks associated with the temporary residential accommodation related use of the site during the construction phase of the Project. Appropriate mitigation measures are recommended to reduce the associated bushfire risk and to outline the requirements in response to bushfire.



Legend

- Access Points
- Electricity Transmission Line
- Watercourse
- Roads and Tracks
- Railway
- Local Goverment Boundary
- Indicative TWA Facility
- Project Area
- Development Footprint
- TWA Facility Feasibility Area
- NSW National Parks
- NSW State Forests
- Waterbodies

FIGURE 1.1

Project Locality

Image Source: ESRI Basemap (2024) **Data source:** NSW LPI (2024), NSW DSFI (2024); NPWS Estate (2024); Lightsource BP (2024)

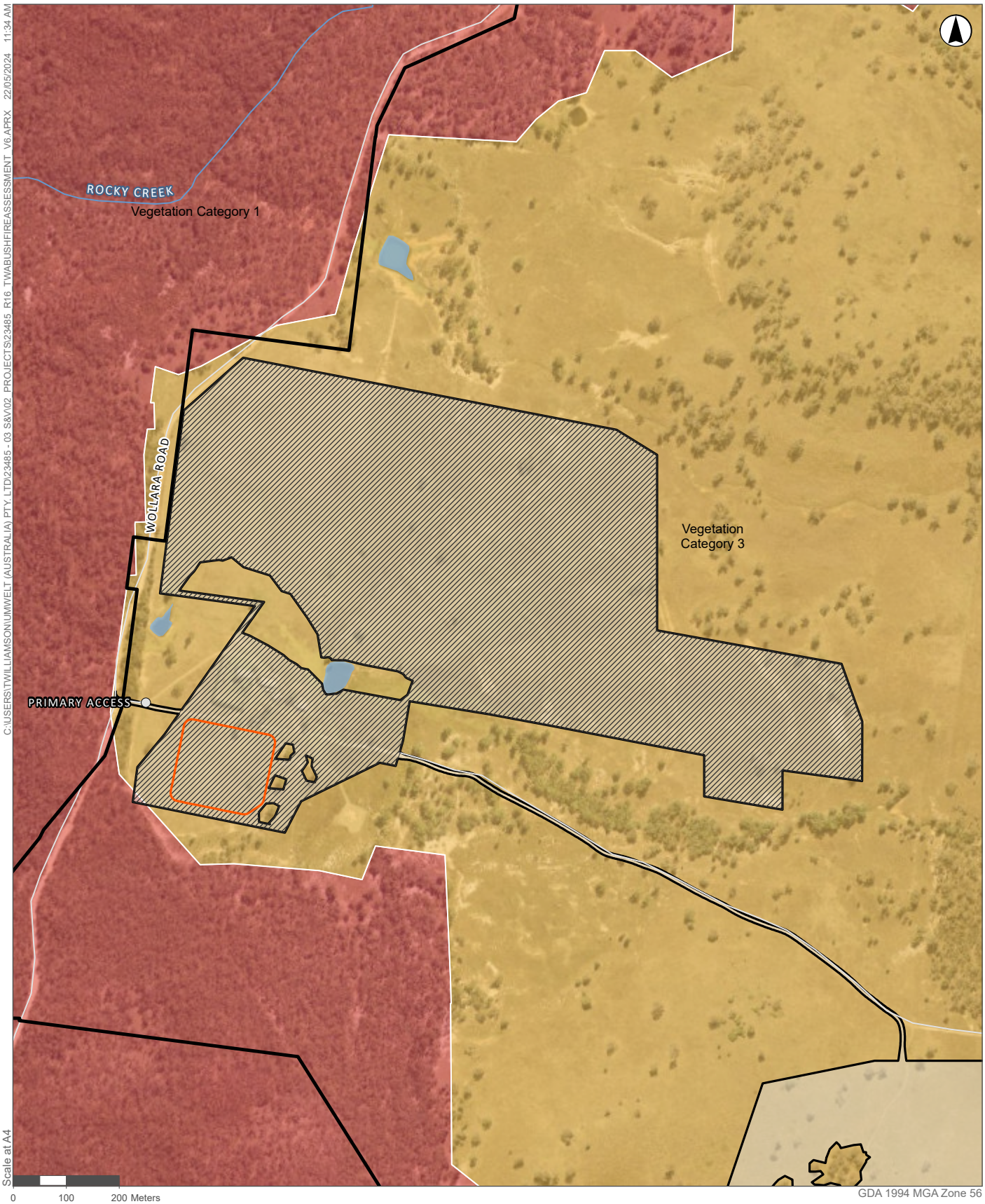


FIGURE 1.2

Bushfire Prone Land

Image Source: ESRI Basemap (2024) **Data source:** NSW LPI (2024), NSW DSFI (2024); NPWS Estate (2024); Lightsource BP (2024)

1.2 Project Overview

The conceptual layout of the TWA Facility is shown on **Figure 1.3**, and is proposed to include:

- Pre-fabricated rooms.
- Kitchen and dining facilities.
- Administration buildings comprised of offices and reception.
- First aid post.
- Linen and chemical storage rooms.
- Maintenance and cleaning buildings for housekeeping equipment and laundry facilities.
- Ablutions.
- Waste water treatment plant, inclusive of storage facility.
- Electricity generating units and fuel storage.
- Water storage/supply, doubling as water storage for emergency services (Fire).
- Car, bus and truck parking.
- Recreational facilities such as a gymnasium, a bar area and BBQ facilities.

The final position of the TWA Facility within the Feasibility Area will be subject to detailed design; however, the Feasibility Area is located within the Development Footprint previously assessed as part of the solar farm (Umwelt, 2023), in the vicinity of the main Project access point and construction compound, with direct access to the public road network.

The design of the TWA Facility is based on accommodating approximately 400 rooms to house the estimated peak construction workforce requirements, with a total area of approximately 3.1 hectares (ha). All buildings will have emergency lighting, smoke alarms, and firefighting capability in accordance with the Building Code of Australia. Appropriate firefighting equipment will be installed, including portable fire extinguishers, fixed fore hose reels, fire hydrant systems and water tanks. Emergency evacuation and emergency assembly points will also be established throughout the Project site as required. Implementation will be subject to detailed specialist consultant design.

The conceptual layout has been prepared to inform the detailed specialist assessments and will be confirmed through detailed design and once a Balance of Plant contractor has been selected to construct the Project.

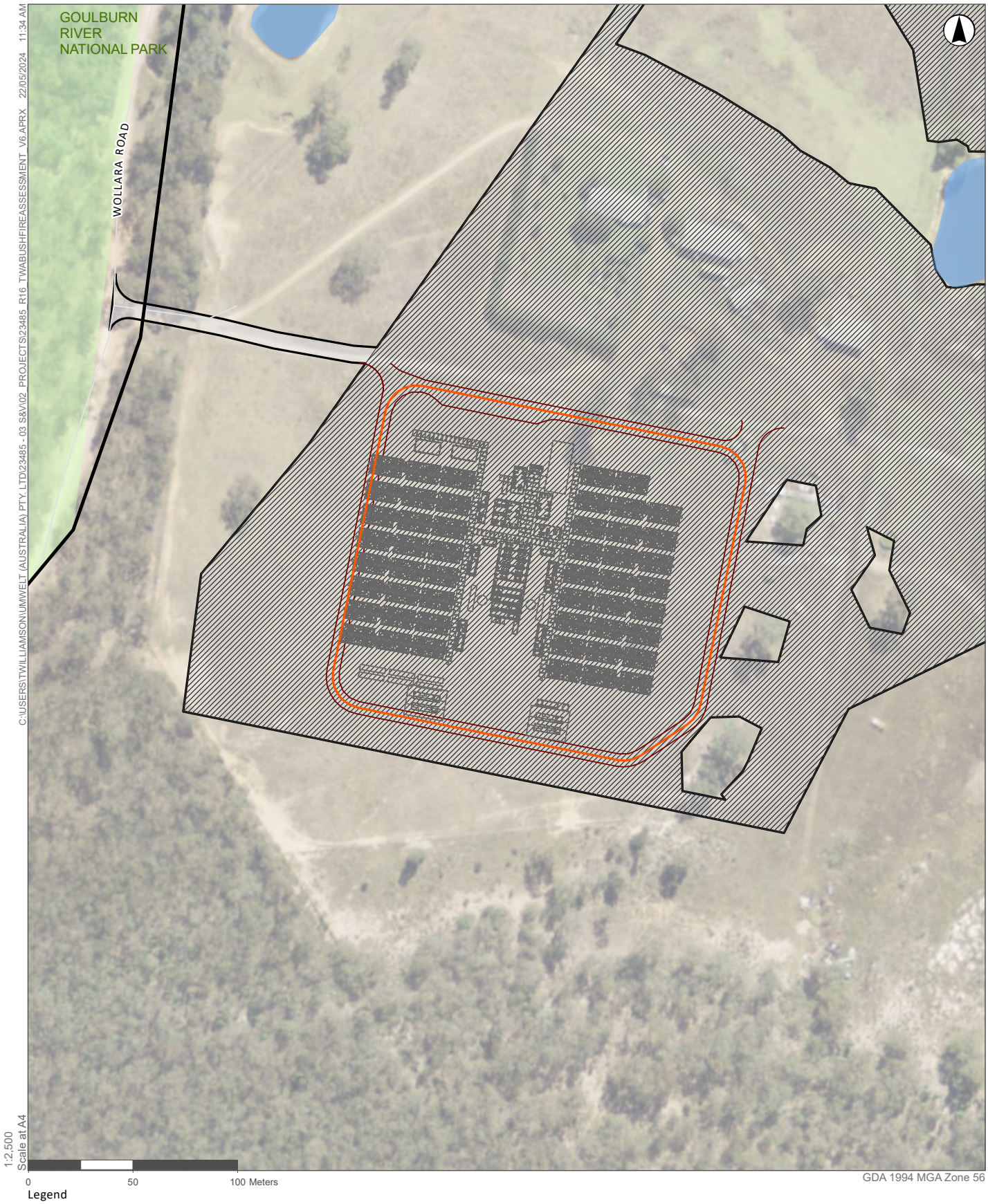


FIGURE 1.3

Conceptual TWA Facility Layout within the TWA Facility Feasibility Area

Image Source: ENSW Public Imagery (2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023); Lightsource BP (2024)

2.0 Planning Framework

2.1 Statutory Planning Context

The statutory provisions applying to the assessment and management of bushfire in NSW are outlined in **Table 2.1**.

Table 2.1 Relevant Statutory Requirements

Relevant legislation	Relevance to TWA Facility
Environmental Planning and Assessment Act 1979 **(EP&A Act)**	Part 4 of the EP&A Act establishes the framework for assessing development that is permissible with consent. Section 4.14 of the EP&A Act restricts the granting of development consent on bushfire prone land unless the proposed development conforms with the requirements of PBP. The requirements of PBP and how the proposed TWA Facility complies with those requirements are outlined in **Section 4.0**.
NSW Rural Fires Act 1997 **(Rural Fires Act)**	The Rural Fires Act facilitates the prevention, mitigation and suppression of bushfire and other fires in local government areas and parts of the State considered to be rural fire districts. The risks to the TWA Facility and to public safety as a result of the development, associated with its location in the vicinity of bushfire-prone land, have been assessed. Consideration of the potential impact associated with the other surrounding land uses has also been considered.

2.2 Planning for Bushfire Protection 2019

Chapter 8 of PBP, applies to 'other residential development' where bush fire provisions or requirements need to be applied, that align with the unique features of the development type. Chapter 8 states in order to comply with PBP the following conditions must be met:

- Satisfy the aim and objectives of PBP outlined in Chapter 1.
- Consider any issues listed for the specific purpose for the development set out in this chapter.
- Propose an appropriate combination of Bushfire Protection Measures.

Aims and objectives of PBP include:

- Afford buildings and their occupants protection from exposure to a bush fire.
- Provide for a defendable space to be located around buildings.
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings.
- Ensure that appropriate operational access and egress for emergency service personnel and occupants is available.
- Provide for ongoing management and maintenance of Bushfire Protection Measures.
- Ensure that utility services are adequate to meet the needs of firefighters.

The TWA Facility will result in an increase to the number of occupants within the locality and therefore needs to be assessed against the issues listed in Chapter 8.2.1 of PBP 2019 (Increased Residential Density). Section 8.2.1 of PBP states that *increased residential densities of existing lots that are bushfire prone may heighten the level of risk to occupants. The presence of additional dwellings can impact on the evacuation and sheltering of residents during a bushfire*.

The increased density requires consideration of the principles and criteria associated with subdivisions (Chapter 5 of PBP) in bushfire prone areas. This includes ensuring APZs are based on a radiant heat threshold of 29 kW/m^2 for any new dwellings, along with suitable provision for construction, access, water and landscaping.

2.3 Current Bushfire Management

The surrounding Goulburn River National Park is subject to bushfire management practices, implemented by NSW National Parks and Wildlife Services (NPWS) subject to the Goulburn River National Park and Munghorn Gap Nature Reserve Final Fire Management Plan (former NSW Department of Environment and Conservation, 2004). Areas within the National Park are subject to varying levels of fuel management based on threat to existing assets.

NPWS implements a system of land zoning based on fire management attributes. The Project Area and surrounding National Park to the north, east and south are identified as a Land Management Zone (LMZ). The adjoining land to the west is identified as a Strategic Fire Zone (SFZ). LMZ is applied to areas where life and property are not directly at risk. Within the SFZ, fuel management is undertaken to reduce wildfire intensity and speed.

Lightsource bp is proposing to prepare a Risk and Emergency Plan which will be developed in consultation with NPWS and include consideration of any land management practices that may overlap with the construction phase of the Project. Additionally, the Project Area (outside of the proposed Development Footprint) is proposed to form a Biodiversity Stewardship Area (BSA) which considers fire for conservation during the operations phase of the Project. Land management practices associated with the BSA will be ongoing throughout the life of the Project and may not advance significantly during the construction phase while the TWA Facility is operational. Any planned fire conservation associated with the BSA will not occur during the construction phase of the Project.

3.0 Consultation

3.1 Agency Consultation

Department of Planning, Housing and Infrastructure

During consultation with the Department of Planning, Housing and Infrastructure (DPHI), it was requested that the Bushfire Assessment addressed the scenario where occupants may be required to shelter on site during a bushfire. This has been addressed in **Section 4.2.1**.

Fire and Rescue NSW

Fire and Rescue NSW (FRNSW) advised via email that the proposed Amendment (2) does not represent any special problems of firefighting and had no further comment beyond what is applicable in current legislation, codes and standards.

NSW RFS

Consultation with NSW RFS was undertaken to confirm the assessment requirements and expectations. NSW RFS noted the requirements in accordance with PBP and the preparation and implementation of an Emergency Management Plan including measures for bushfire as key considerations. These comments have been addressed throughout this report.

3.2 Community Consultation

During consultation with the community in relation to the broader Project, concern was raised in relation to bushfire safety, impact on the capacity of the existing emergency services and potential access issues. Additional strain on emergency services or a reduction in their ability to access and suppress fires may have direct safety implications for both the Project's workforce and the surrounding community.

In relation to the TWA Facility, the community is concerned the TWA Facility will further reduce access for firefighters to adequately respond to fires, additionally fires potentially being started by either the TWA Facility's operations or its residents.

These concerns have been addressed through the proposed application of appropriate bushfire protection measures, as outlined in **Section 4.2**.

4.0 Bushfire Assessment

4.1 Existing Environment

4.1.1 Bushfire Season and Weather

The bushfire season generally commences from October and concludes in March each year, however in some years the season has started as early as September and extended into April. Weather conditions primarily associated with the bushfire season consist of strong north-westerly fronts generated from the interior, which may be extremely dry and hot (RFS, 2018). Dry thunderstorm activity is also associated with the bushfire season and poses a significant bushfire risk between December and February. On average the Project locality experiences a warm and dry climate. Temperatures in the region are highest in January, with a mean maximum temperature of 31.4^{o}C, and lowest in July, with a mean minimum temperature of 16.2 ^{o}C. Prevailing winds are generally east/southeast, wind speed is generally lowest in the autumn and winter months and strongest in spring and summer months.

Data from the closest active Bureau of Meteorology daily rainfall gauge (Barrigan St Wollar, Gauge 062032; ~16km southwest) indicates the recorded annual average rainfall is 590 millimetres (mm). The mean and median rainfalls are highest during spring/summer, with the highest monthly mean reaching 61.5 mm in January, and are lowest in May at 26.5 mm. The highest daily rainfall values indicate storm events are most likely to occur during February, when peak daily totals have exceeded 180 mm.

4.1.2 Fire History

The region surrounding the TWA Feasibility Area has a current average annual accumulated Fire Danger Index Rating classification of 100 (CSIRO, 2023). The average annual accumulated rating is developed from the daily Forest Fires Danger Index which combines a measure of vegetation dryness with air temperature, wind speed and humidity. These daily values over a year are combined to determine the annual accumulated rating and influence the calculation of the Bushfire Attack Level (BAL) under PBP.

The most common cause of ignition within the Goulburn River National Park is lightning strike, along with human ignition primarily results from farming machinery and sparks from the Ulan railway line (NPWS, 2004). Five wildfires were recorded within the Goulburn River National Park between 1984 and 1998 (NPWS, 2004).

The Sharing and Enabling Environmental Data in NSW (SEED) Fire Extent and Severity Mapping (FESM) (Department of Planning and Environment, 2023), indicates parts of the Feasibility Area and surrounding National Park was subject to bushfire during the 2019-2020 bushfire season, with large areas subject to extreme fire. Anecdotally, the Project Area was the subject of a sustained fire-fighting effort over approximately four weeks in late 2019, focussing on fires to the south and east. The FESM indicates other areas of the National Park have been subject to localised bushfire (between 2016 and 2022), however not in the vicinity of the TWA Feasibility Area.

4.1.3 Vegetation

Vegetation mapping of the TWA Feasibility Area under the state-wide vegetation classification hierarchy in Keith (2006) classifies the site as 'cleared', refer to **Figure 4.1**. The broader Project Area is also largely mapped as cleared with smaller areas adjoining the Feasibility Area and more broadly across the Project Area mapped as Dry Sclerophyll Forest which is in fact predominately grassland with scattered trees. The surrounding land associated with the National Park is mapped as Dry Sclerophyll Forest. This vegetation type represents a large fuel load with the ability to sustain and spread bushfire.

The Feasibility Area is predominately cleared of vegetation as a result of previous agricultural land uses. The Feasibility Area supports grassland and woodland plant community types with scattered trees, refer to **Figure 4.2**.

4.1.4 Topography and Slope

Slope is a key factor in assessing bushfire risk. The slope of the site can influence the rate of spread, causing the fire to slow if it is burning downhill or accelerate if it is moving uphill.

The topography across the entire Feasibility Area (a distance of approximately 1,300 m from east to west) is relatively flat, with an elevation range of approximately 50m from east to west, refer to **Figure 4.3**. Within the broader Feasibility Area, vegetation will sit upslope to the south and east and downslope (0-5 degrees) to the north and west. In relation to the worst-case location (and any location within the western portion of the Feasibility Area), slope alignment to vegetation includes:

- Grassland/woodland/forest vegetation upslope/flat.
- Grassland/forest vegetation (vegetation within the Project Area, roadside vegetation, and vegetation within the National Park) – downslope 0-5 degrees.

4.1.5 Site Access

The Project Area is located approximately 35 km southwest of Merriwa and 79 km northeast of Mudgee. The TWA Feasibility Area is located on the western side of the Project Area with direct access to Wollara Road.

Access is currently provided to the Project Area from the north and south. Wollara Road runs the length of the western boundary of the Project Area and provides the main access to the site. Wollara Road joins Ringwood Road which then joins the Golden Highway, approximately 25 km northeast of the site entrance. Wollara Road joins Wollar Road approximately 5 km southwest of the main access to the site providing emergency access in both an east and west direction. Wollara Road and Ringwood Road are both local roads, providing two-way movement. Ringwood Road is sealed and Wollara Road has both sealed and unsealed sections. As part of the Project, an additional 4.7 km of Wollara Road (north of the National Park boundary) will be sealed prior to sustained operation of the TWA facility.

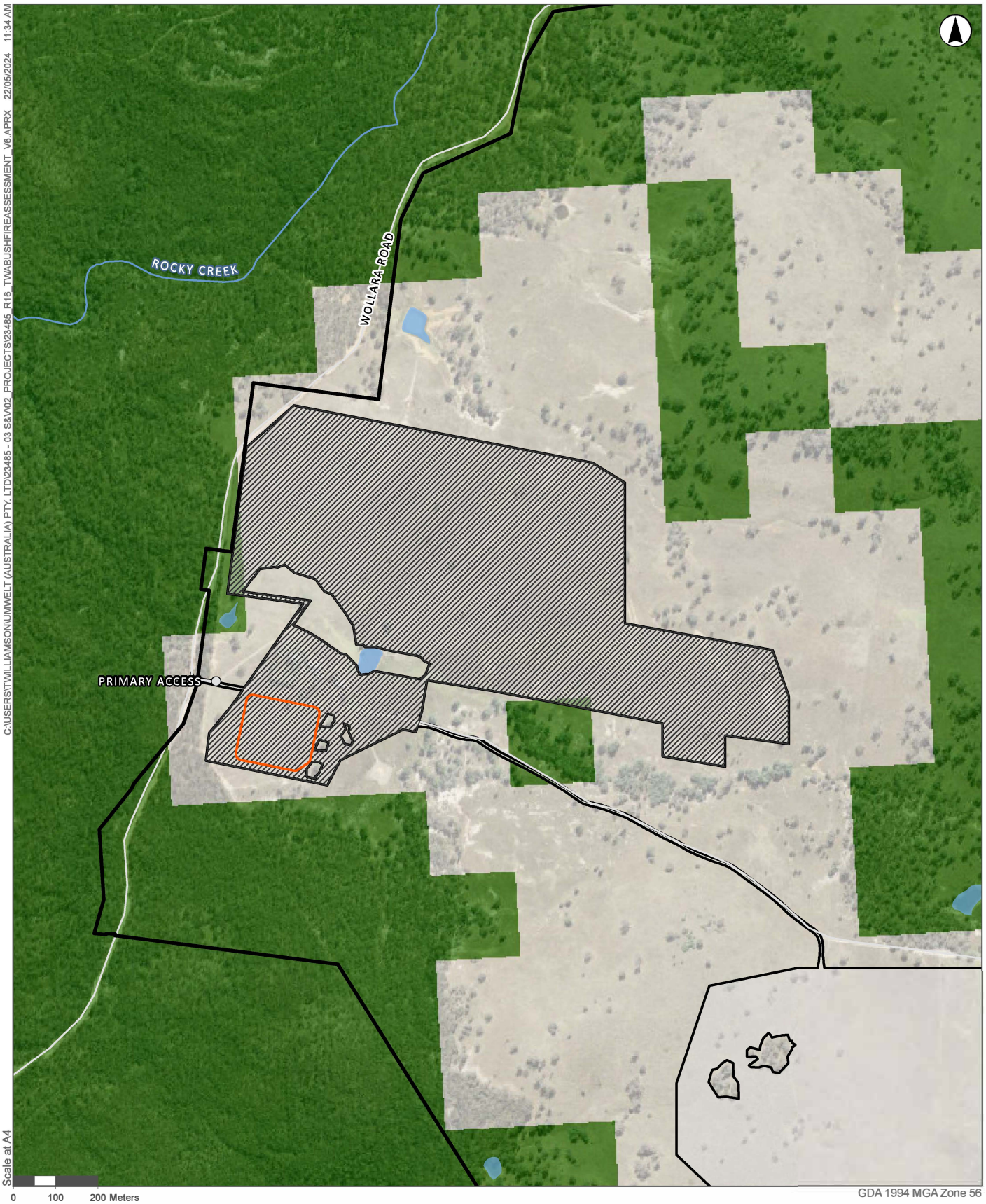


FIGURE 4.1

Vegetation Mapping

Image Source: ESRI Basemap (2024) **Data source:** NSW LPI (2024), NSW DSFI (2024); NPWS Estate (2024); Lightsource BP (2024)

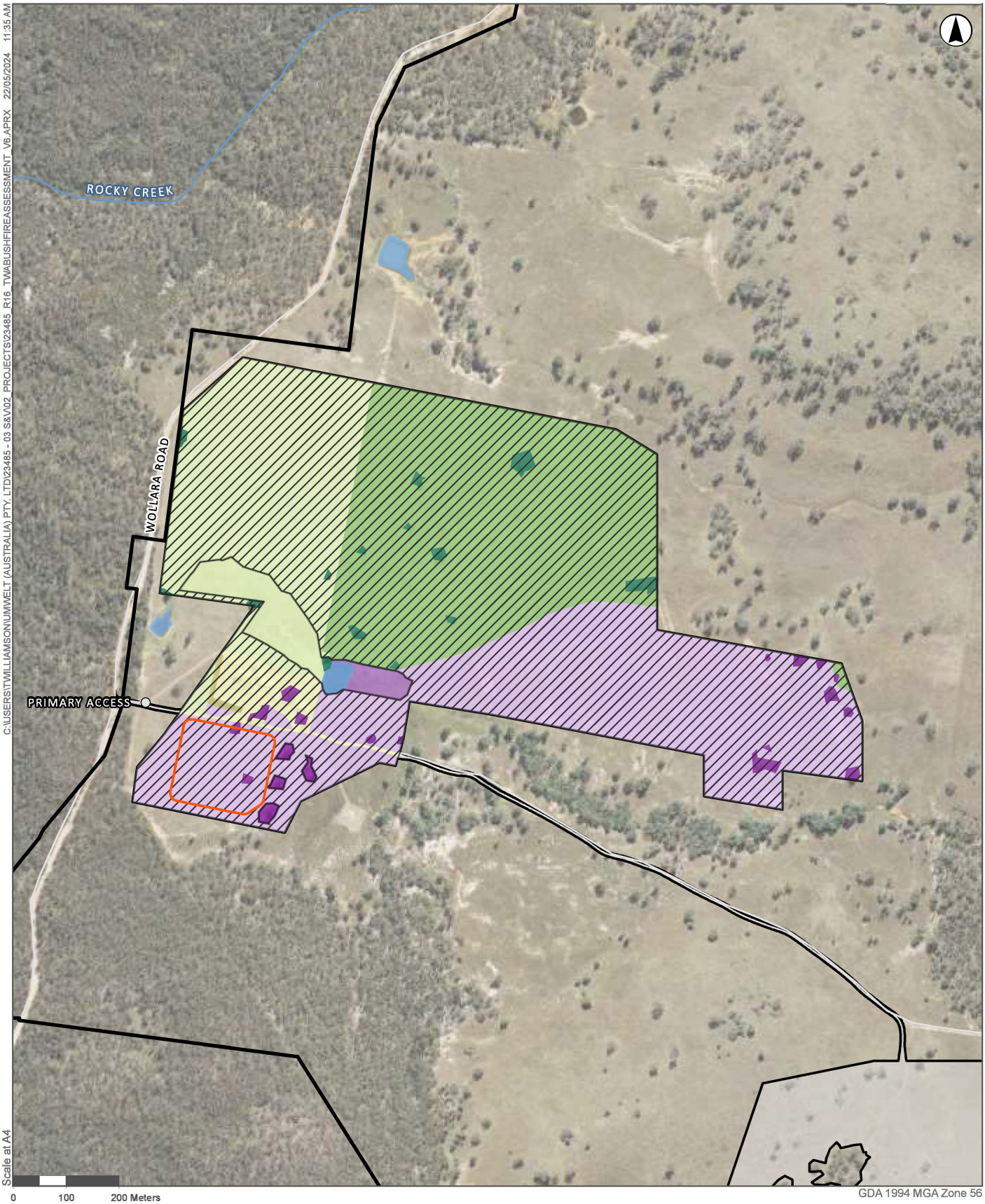
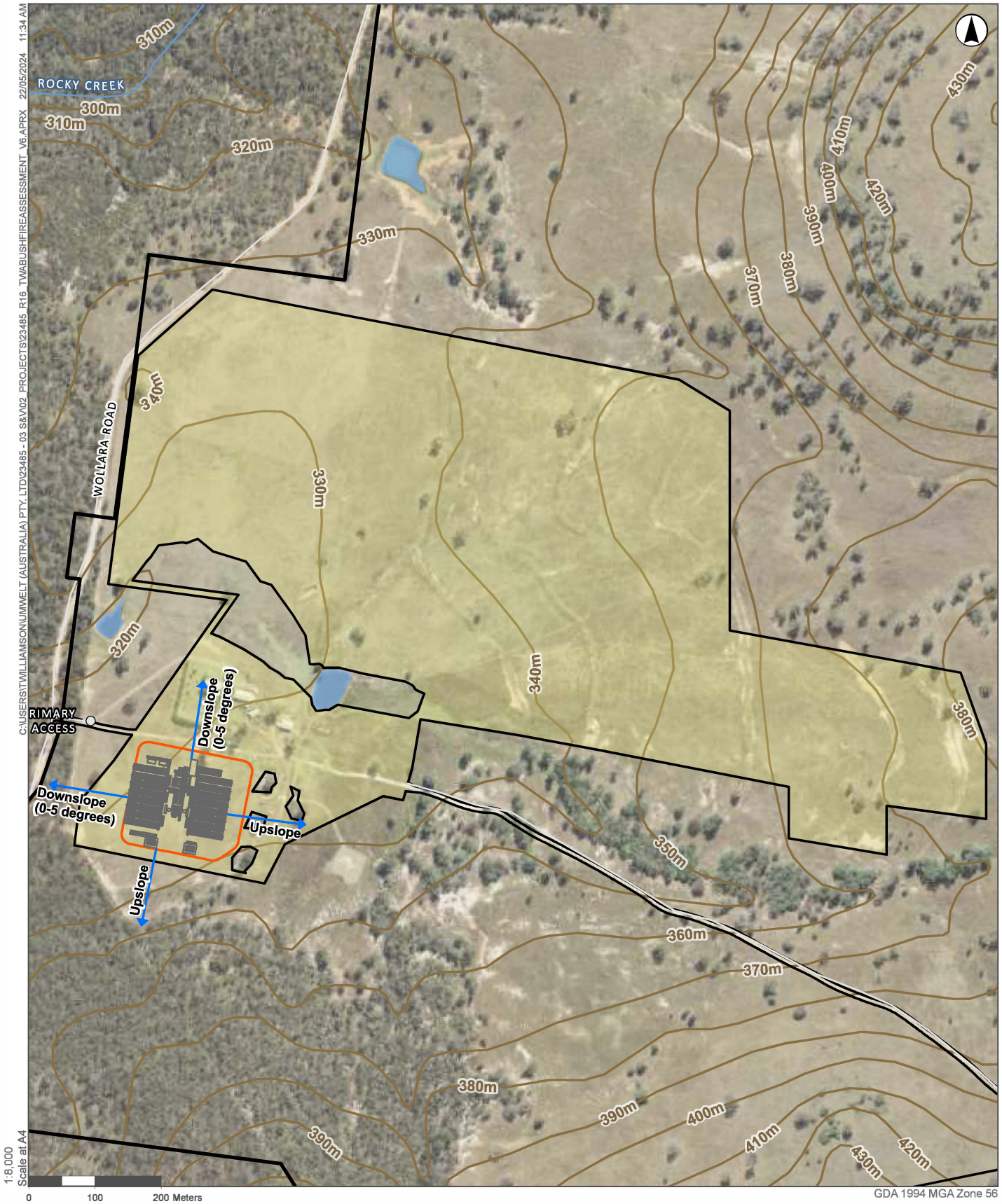


FIGURE 4.2

Plant Community Types in TWA Facility Feasibility Area

Image Source: ESRI Basemap (2024) **Data source:** NSW LPI (2024), NSW DSFI (2024); NPWS Estate (2024); Lightsource BP (2024)



Legend

- Access Points
- Watercourse
- Roads and Tracks
- Contour (5m)
- Indicative TWA Facility
- Project Area
- Development Footprint
- TWA Facility Feasibility Area
- Waterbodies

FIGURE 4.3

Topography

Image Source: ESRI Basemap (2024) **Data source:** NSW LPI (2024), NSW DSFI (2024); NPWS Estate (2024); Lightsource BP (2024)

4.2 Required Bushfire Protection Measures

4.2.1 Risk and Emergency Plan

Consistent with recent renewable energy development consent approvals, Lightsource bp will prepare an Emergency Plan which will form part of Lightsource bp's proposed Risk and Emergency Plan. The Emergency Plan will include specific bushfire protection measures for the proposed TWA Facility during the detailed design phase, in accordance with PBP and in consultation with NSW RFS and NPWS. Detailed design of the TWA Facility and final siting will consider the requirements of PBP and provide for the implementation of appropriate bushfire protection measures. The Emergency Plan will identify all relevant bushfire risks and mitigation measures associated with the TWA Facility, including:

- Detailed measures to prevent or mitigate fires igniting, outlining:
    - APZ locations and management requirements.
    - Access locations, passing bays and any alternate emergency access.
    - Water supply, storage and any other bush fire suppression systems.
    - Code of Conduct (or similar) applicable to all staff and occupants outlining requirements to reduce potential ignition sources (i.e., no smoking or contained smoking areas, restricted access to fuel and electrical sources, no uncontained flammable liquids on site, etc)
- Work that should not be carried out during total fire bans during construction/operation.
- Protocols for demobilising the TWA prior to catastrophic fire risk days.
- Identification of defendable space relative to the position of the TWA and surrounding vegetation, including the location of carparking.
- Siting of power generation equipment relative to BAL areas.
- Availability of fire-suppression equipment.
- Storage and maintenance of fuels and other flammable materials.
- Notification of the local NSW RFS Fire Control Centre for any works that have high potential to ignite surrounding vegetation during construction/operation/maintenance, proposed to be carried out during a bushfire fire danger period to ensure weather conditions are appropriate.
- Development of any proposed land management practices either within the Feasibility Area and more broadly within the Project Area with consideration of existing land management practices undertaken concurrently within the National Park.
- Appropriate bush fire emergency management and relevant evacuation plan.

4.2.1.1 Evacuation Response

The Emergency Plan will outline the response required should evacuation of the TWA Facility be required. This includes (but is not limited to):

- Assigning responsibility for management actions.
- Identifying the relevant contact details (RFS, FRNSW etc) of who should be contacted and when.
- Development of appropriate triggers for evacuation based on the applicable fire danger rating.
- Identification of emergency assembly points on site and appropriate safety procedures.
- Identification of safe assembly points offsite and relevant routes.
- Instructions relating to sheltering on site (if required).

In the event of a bushfire the primary action is to evacuate, however it is acknowledged that there may be a scenario where evacuation is not possible, and the occupants of the TWA Facility may be required to shelter on site. Given the nature of the development and large number of occupants a purpose-built bushfire shelter is not considered appropriate, and occupants would instead shelter in the TWA Facility.

The proposed minimum BAL (refer to **Section 4.2.3**) for the TWA Facility of BAL-12.5 is sufficient to provide shelter in the unlikely event occupants are required to shelter on site. This is consistent with the requirements applied to Ecotourism (Section 6 of PBP), which requires a refuge building constructed to BAL-12.5 or greater.

4.2.2 Asset Protection Zones

An APZ is a fuel-reduced area surrounding an asset to provide a buffer zone to the adjoining bushfire hazard. An APZ provides a defendable space for firefighting operations and if designed correctly and maintained regularly, will reduce the risk of direct flame contact to the asset, damage to the asset from intense radiant heat and/or ember attack.

The required APZ distances applicable to the TWA Facility range from 12 to 29 m and have been calculated utilising Table A1.12.2 of PBP to achieve the radiant heat threshold of 29 kWm^2. Specific APZ distances with respect to slope and vegetation are summarised below:

- Upslope – Grassland 10 m, Woodland 12 m, Forest 24 m.
- Downslope (0-5 degrees) – Grassland 12 m, Forest 29 m.

The TWA Facility can be appropriately located anywhere within the Feasibility Area provided it is appropriately set back from the Development Footprint boundary and can achieve these required APZ distances.

The current 'worst case' scenario provides for between 28 and 54 m of separation distance between the proposed infrastructure and the Development Footprint boundary, which exceeds the required APZ as illustrated on **Figure 4.4**. It is noted that the current conceptual layout proposes services on the southern side of the TWA Facility, however, to maximise the distance to vegetation and increase the separation to potential ignition sources, all services should avoid this area during detailed design.

The APZs will be established during the construction phase and will continue to be maintained over the life of the TWA Facility. Inner Protection Areas around the following components would also be established in accordance with Appendix 4 of PBP:

- **Trees**
    - Tree canopy cover should be less than 15% at maturity.
    - Trees at maturity should not touch or overhang any buildings.
    - Lower limbs should be removed up to a height of 2m above the ground.
    - Tree canopies should be separated by 2 to 5 m.
    - Preference should be given to smooth barked and evergreen trees.
- **Shrubs**
    - Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided.
    - Shrubs should not be located under trees.
    - Shrubs should not form more than 10% ground cover.
    - Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
- **Grass**
    - Grass should be kept mown (as a guide grass should be kept to no more than 100 mm in height); and leaves and vegetation debris should be removed.

4.2.3 Construction Standards

Construction standards in bushfire prone areas are outlined in Australian Standard *AS 3959 Construction of buildings in bushfire prone areas* (AS, 2021) and the National Associated of Steel Framed Housing (NASH) Standard to provide various levels of protection for different building elements. The required construction standard is based on the BAL, and the BAL is determined through the distance to vegetation and effective slope as outlined in Table A1.12.5 in PBP.

The relevant BAL level will depend on the final siting of the TWA Facility; however, the BAL level will not exceed BAL-29 and at a minimum a BAL-12.5 construction standard will be applied. The relevant BAL calculation information from Table A1.12.5 in PBP 2019 is outlined in **Table 4.1**.

Table 4.1 Relevant Bushfire Attack Levels

Slope	Keith Vegetation Formation	Bushfire Attack Level		
		Distance (m) ass to predominant vegetation class		
		BAL-29	BAL-19	BAL-12.5
Upslope and Flat Land	Forest	24 - < 33	33 - < 45	45 - < 100
	Grassland	10 - < 15	15 - < 22	22 - < 50
0>5 degrees downslope	Forest	29 - < 40	40-< 54	54 - < 100
	Grassland	12 - < 17	17 - < 25	25 - < 50

4.2.4 Emergency Access

The TWA Feasibility Area is located on the western edge of the Project Area near Wollara Road. Access through the Project Area to the TWA Facility will be provided via an internal access track from the Project Area primary access point located on Wollara Road. Internal access tracks will provide for appropriate all-weather access around the site. Internal access roads will be designed in accordance with the requirements outlined in Chapter 5 of PBP during the detailed design phase.

Emergency access and egress from the Project Area will be provided via Wollara Road (in both a north and south direction). The Project includes upgrades to Wollara and Ringwood Road in order to facilitate construction which will also assist with improving access to the TWA Facility in the case of an emergency. Two additional emergency access points are proposed providing direct access to the broader Project Area from Wollara Road (refer to **Figure 1.1**).

Bushfire response could be provided from either the north or the south. Local Brigades are located at Wollar and Bylong to the south and Cassilis to the north. The nearest Fire Control Centre is located in Mudgee (79 km northeast, an ~1 hour drive). A Fire Control Centre coordinates and manages local brigade responses to fire and other incidents including natural disasters, traffic accidents and other civil emergencies.

There will also be sufficient space on site for landing rescue helicopters should this be required during an emergency. The details of this area would be outlined as part of the Risk and Emergency Plan, but would likely involve provision of a flat, 20 x 20 m area within the Development Footprint which would be kept clear of obstacles and would be demobilised upon completion of the bulk of the solar farm construction.

4.2.5 Water Supply Services

The TWA Facility will be provided with an adequate supply of water in accordance with PBP. This will include the following:

- Dedicated on site firefighting water supply (minimum 100,000 L) – in addition to the firefighting supply required for the proposed solar farm (volume to be confirmed during the assessment process by the RFS).
- Provision of connection suitable for firefighting purposes located within the TWA Facility (65 mm Storz).
- Fire hydrant/hose reel systems and all firefighting equipment installed and maintained in accordance with relevant Australian Standards.

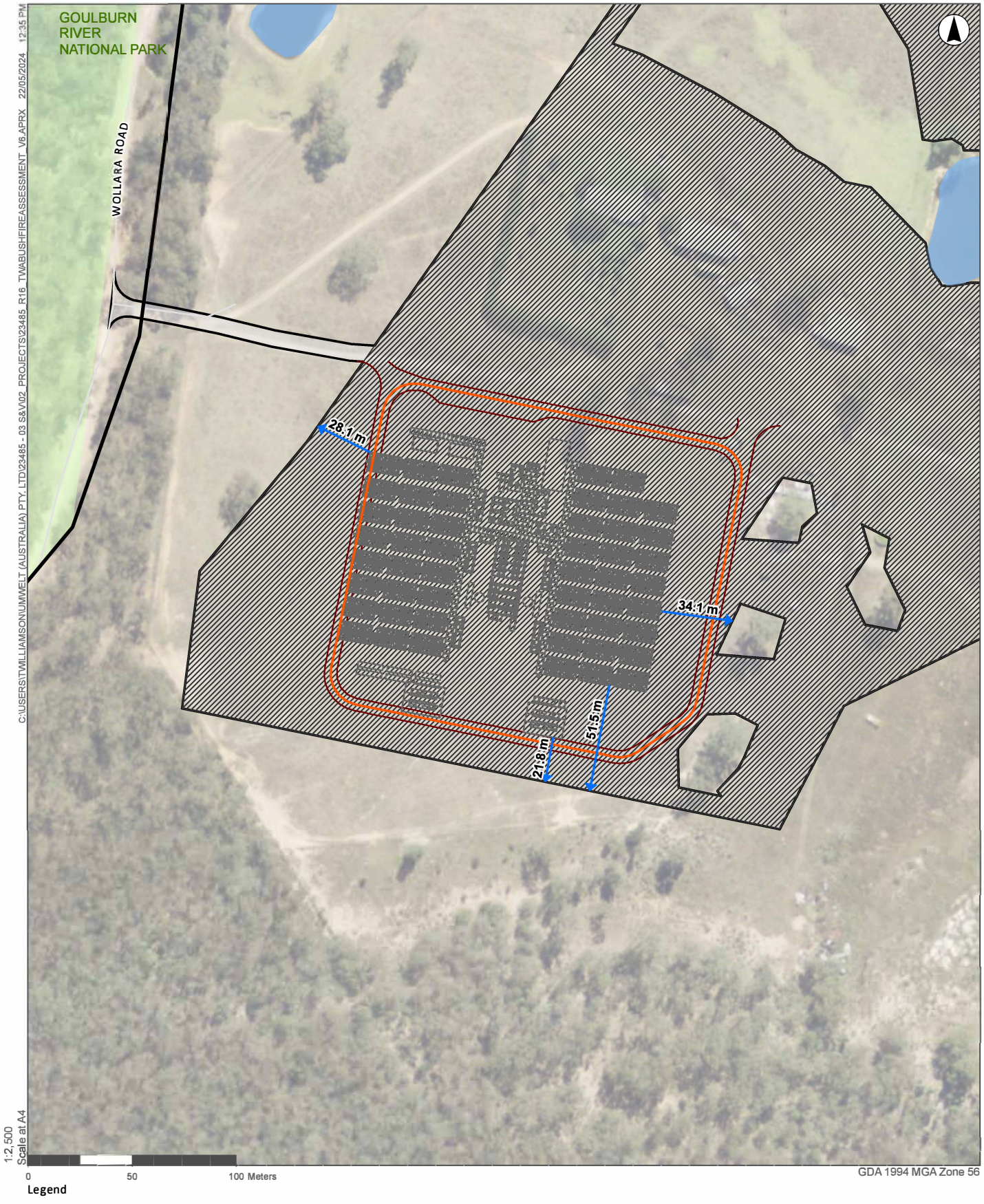


FIGURE 4.4

Distance to Vegetation – Worst Case

Image Source: ENSW Public Imagery (2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023); Lightsource BP (2024)

4.3 Compliance with Planning for Bushfire Protection 2019

The introduction of a TWA Facility and the accommodation of construction staff on site requires consideration from a bushfire management perspective. The existing bushfire threat posed by the surrounding vegetation requires specific design considerations and there is a risk of onsite activities igniting fire during both construction and occupation, including smoking, use of BBQs to feed construction staff, use of outdoor fires, etc. As outlined in **Section 4.2** bushfire threat can be appropriately mitigated through the implementation of appropriate bushfire protection measures. Management of onsite activities associated with occupation of the TWA Facility may include the implementation of a Code of Conduct (or similar), implementation of procedures and signage, inductions and appropriate compliance audits.

The TWA Feasibility Area is appropriately located within an area predominately cleared of vegetation and the TWA Facility can be appropriately sited to provide separation from adjoining forest vegetation providing an appropriate APZ to assist with firefighting. Noting that detailed design of the TWA Facility requires consideration of the relevant APZ (depending on the location) and needs to consider the requirements of PBP including application of the relevant BAL.

With the implementation of bushfire protection measures and the Risk and Emergency Plan proposed in **Section 4.2** in consultation with the RFS and NPWS, it is considered that potential bushfire risk associated with the introduction of a TWA Facility within the Project Area can be appropriately managed.

Table 4.2 provides an overview of compliance with the aims and objectives of PBP (2019), as well as the specific objectives of Chapter 5 of PBP.

Table 4.2 Compliance with PBP 2019 Aims and Objectives

PBP Aims and Objectives	Compliant	Proposed Bushfire Protection Measures
Afford occupants of any building adequate protection from exposure to a bushfire.	Yes	The TWA Facility will be appropriately protected via the implementation of APZs, site access, firefighting equipment and appropriate emergency plan.
Provide for a defendable space to be located around buildings.	Yes	Appropriate APZs will be implemented during the construction phase and maintained during operation to provide a defendable space to all infrastructure.
Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent the likely fire spread to buildings.	Yes	The proposed TWA Facility is appropriately sited to provide separation from adjoining vegetation and appropriate bushfire protection measures (APZ, access, firefighting equipment and emergency response procedures) will be implemented on site.
Ensure that safe operational access and egress for emergency service personnel and occupants is available.	Yes	The TWA Feasibility Area will have direct access to the public road network providing access and egress for emergency vehicles. Appropriate access and egress will be provided for evacuation of residents and appropriate evacuation procedures will be implemented.
Provide for ongoing management and maintenance of bushfire protection measures.	Yes	Implemented APZs and any proposed landscaping will be maintained in accordance with PBP. Access will be clear of any obstructions and maintained at all times. Appropriate firefighting equipment (including dedicated water supply) will be provided and maintained at all times.

PBP Aims and Objectives	Compliant	Proposed Bushfire Protection Measures
Ensure that utility services are adequate to meet the needs of firefighters.	Yes	Services will be installed and managed to meet the needs of firefighters.
Specific Objectives Chapter 5	**Compliant**	**Proposed Bushfire Protection Measures**
Minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided).	Yes	Detailed design of the TWA Facility to retain minimal perimeter exposure and avoid bottlenecks to movement through the facility.
Minimise vegetated corridors that permit the passage of bush fire towards buildings.	Yes	Proposed landscaping to be kept of a minimum, area to be maintained to IPA requirements as outlined in Appendix 4 of PBP.
Provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;	Yes	The TWA Feasibility is not located on a ridge top, steep slope or within saddles and narrow ridge crests.
Ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms;	Yes	Minimum APZ (12m grassland and 29m forest vegetation), dependent on detailed design and final siting of the facility, will be implemented and maintained as IPA. Detailed design will ensure services are not located on the southern side of the TWA Facility and also consider locating the car park on the southern side of the facility to increase separation to adjoining vegetation within the National Park.
Ensure the ongoing maintenance of APZs;	Yes	APZs will be maintained as IPA in accordance with Appendix 4 of PBP.
Provide adequate access from all properties to the wider road network for residents and emergency services;	Yes	The TWA Feasibility Area is located close to the main entrance point to the site providing access to Wollara Road. Wollara Road will provide access to the north and south away from the site in an emergency. Two additional emergency access points will be located along the Project Area boundary providing alternate access to the Project Area from Wollara Road. Various road upgrades are also proposed as part of the Project to facilitate construction which will improve access to the site. Internal access will comply with the access design requirements set out in Chapter 5 of PBP.
Provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression; and	Yes	APZs will be established and maintained within the Development Footprint allowing for active management of the area. The Project will not restrict access to adjoining areas for bushfire mitigation works to be undertaken, including the adjoining National Park.
Ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.	Yes	A minimum supply of 100,000 L will be provided on site in water tanks (concrete or metal). Water supply will be always reliable and accessible for firefighting purposes. Above ground pipes will be metal and appropriate connection suitable for firefighting purposes (65 mm Storz). Fire hydrant/hose reel systems and all firefighting equipment installed within the TWA Facility.

5.0 Conclusion

The introduction of a TWA Facility requires consideration from a bushfire management perspective particularly emergency evacuation and the risk of onsite activities igniting fire during both construction and operation. Appropriate bushfire protection measures will be required to effectively mitigate the associated bushfire risk as outlined in **Section 4.2**. These matters have been addressed to the extent required within this assessment.

The TWA Facility can be appropriately located within the TWA Feasibility Area as there will be adequate separation from surrounding vegetation. An appropriate APZ (12 - 29 m) will be applied to provide separation between the proposed infrastructure to create appropriate defendable space for firefighting and the protection of infrastructure and occupants. Additionally, the TWA Facility will be constructed to a minimum BAL-12.5 construction standard.

With the implementation of a Bushfire Emergency Management Plan, in consultation with the RFS and NPWS, it is considered that potential bushfire risk associated with the proposed TWA Facility can be appropriately managed.

6.0 References

Bureau of Meteorology (2024). Climate Statistics for Australian locations: Monthly Climate Statistics. Australian Government.

Commonwealth Scientific and Industrial Research Organisation (2023). Bushfire best practice guide: Forest Fire Danger Index. Available at: https://research.csiro.au/bushfire/assessing-bushfire-hazards/hazard-identification/fire-danger-index/

Keith, D.A. (2004) From ocean shores to desert dunes: the vegetation of New South Wales and the ACT. Department of Environment and Conservation NSW.

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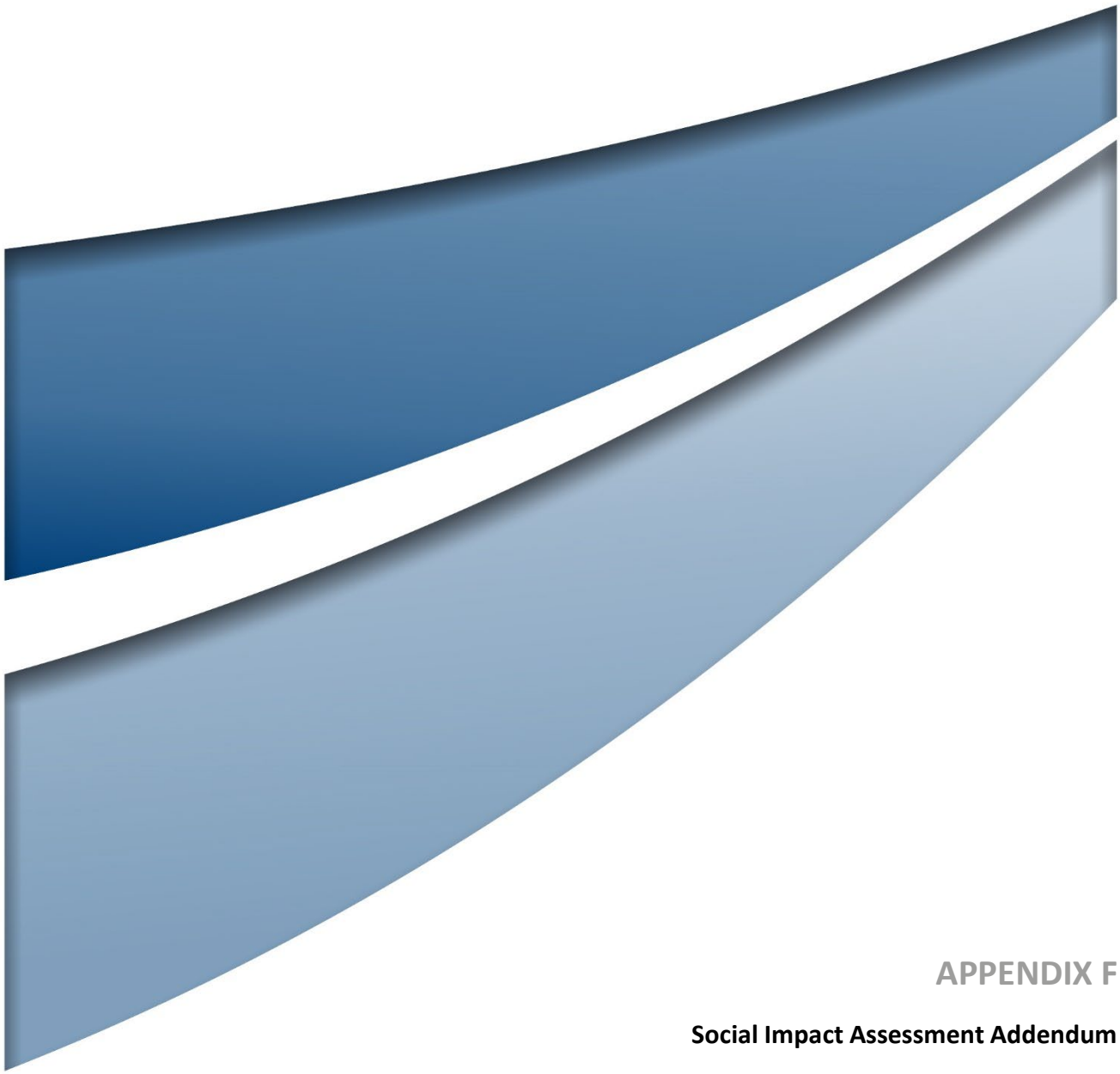
Umwelt (2023). Goulburn River Solar Farm, Environmental Impact Statement

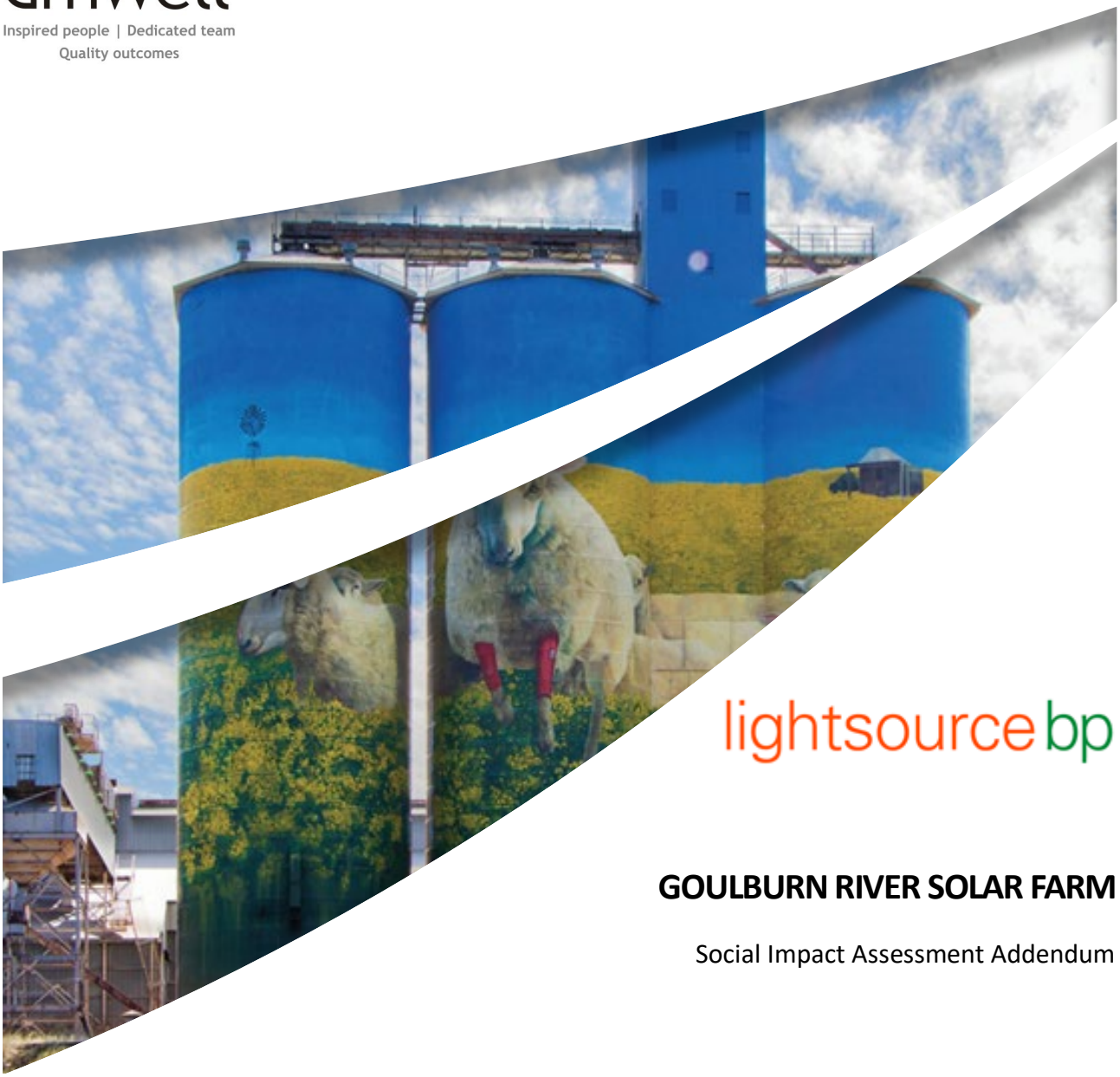


APPENDIX F

Social Impact Assessment Addendum

umwelt

Inspired people | Dedicated team
Quality outcomes



lightsource bp

GOULBURN RIVER SOLAR FARM

Social Impact Assessment Addendum

FINAL

May 2024

GOULBURN RIVER SOLAR FARM

Social Impact Assessment Addendum

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Lightsource bp

Project Director: Malinda Facey
Project Manager: Jessica Henderson Wilson
Technical Director: Jessica Anagnostaras
Technical Manager: Dion Parera
Report No. Appendix F
Date: May 2024

Acknowledgement of Country

Umwelt 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	Jessica Anagnostaras	23 May 2024	J Henderson-Wilson	24 May 2024

Author Declaration

As outlined in the SIA Guideline (DPE, 2023), suitably qualified and experienced practitioner/s should be involved in the preparation of SIA. A suitably qualified person must have:

- Suitable qualifications in a relevant social science discipline.
- Proven experience over multiple years.
- Substantial competence in social science research methods and SIA practices.

This SIA Addendum Report has been led by Jessica Anagnostaras (SIA Technical Director). The author declares that this report, completed on 24 May 2024:

- Was prepared by an author with suitable qualifications, proven experience and competence in SIA practice, and relevant professional memberships as outlined in **Table E.1**.
- The author understands their legal and ethical obligations in the preparation of the SIA.
- None of the information included in the SIA is false or misleading.
- The SIA contains all relevant information.

Table E.1 Author Qualifications

Requirement	Jessica Anagnostaras, SIA Project Director
Suitable qualifications	Master of Human Rights Bachelor of Arts (International Relations and Social Policy) Certificate in Social Impact Assessment Certificate in Social Risk and Resettlement Management
Proven experience in SIA practice and social science methods	12 years
Professional membership	International Association for Impact Assessment (IAIA) Society for Applied Anthropology
Signature	

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Appendices

1.0 Introduction

This Social Impact Assessment (SIA) Addendum has been prepared to assess the social impacts of the Goulburn River Solar Farm Project ('the Project') Amended Project (2), in particular the inclusion of a proposed on-site Temporary Workers Accommodation (TWA) Facility within the existing Development Footprint.

1.1 Updated Project Overview

Lightsource bp Development Services Australia Pty Ltd (Lightsource bp) propose the development of the Goulburn River Solar Farm, located within the Upper Hunter Shire Local Government Area (LGA), in the state of New South Wales (NSW). The Project is considered a State Significant Development (SSD) under State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). The Project will involve the construction, operation and decommissioning of approximately 550-megawatt peak (MWp) of solar photovoltaic (PV) generation as well as a Battery Energy Storage System (BESS) with 1,030 MWp / 2,060 megawatt hour (MWh) capacity. The Project will also include a substation and connection to an existing 500 kilovolt (kV) transmission line. Subject to development approval, construction would commence in late 2024, with a construction phase of approximately 27 months and operations for 40 years. It is anticipated that 350 peak direct construction jobs, with an average of 250 direct jobs would be generated during the construction period, and an ongoing workforce of up to 10 during operations. The same workforce proposed to construct and operate the solar farm would construct the manage the proposed on-site TWA Facility. For further detail, refer to Amendment Report 2 (Umwelt, 2024).

1.1.1 Background

A SIA was undertaken by Umwelt (Australia) Pty Limited (Umwelt) in May 2023 for the proposed Project as part of the Environmental Impact Statement (EIS) (Umwelt, 2023), as required under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Since the EIS was on public exhibition from June to July 2023, a detailed response to the issues raised during the public exhibition period was provided in a Response to Submissions Report (December 2023).

An Amendment Report (Amendment 1) was submitted across two parts (Part A and Part B) between December 2023 and January 2024, detailing changes made to the Project to address government agency and community submissions. Amendment 1 included a detailed assessment and review of employment and accommodation options for the proposed workforce, as described in the Goulburn River Solar Farm Accommodation and Employment Strategy (Umwelt, 2023). This Strategy proposed the use of a custom-built workforce accommodation facility to house the non-resident workforce and identified a private development proposed in the town of Merriwa.

During the Response to RFI phase following Amendment 1, Lightsource bp consulted with Upper Hunter Shire Council and DPHI and confirmed that an alternative accommodation solution was required for the Project, as the solutions proposed in the Amendment Report (1) were unlikely to be available in time to accommodate the Project workforce. Lightsource bp subsequently identified the option to construct an on-site TWA Facility within the Project Area and Development Footprint, which would be assessed as a new amendment to the Project (i.e., Amendment 2).

1.1.2 Description of the on-site TWA Facility

The proposed on-site TWA Facility is intended to accommodate up to 400 staff comprising the Project's construction workforce of up to 350 workers, accommodation camp staff and site visitors during the Project's construction period. The on-site TWA Facility would span an area of approximately 3 hectares (ha) and is proposed to be located on-site at a location within the TWA Facility Feasibility Area adjacent to the main Project Site access point on Wollar Road, within the Development Footprint. The exact location of the on-site TWA Facility within the TWA Facility Feasibility Area will be confirmed as plans progress.

The updated Project layout showing the location of the on-site TWA Facility Feasibility Area is outlined in **Figure 1.1**. An indicative layout of the proposed on-site TWA Facility itself is shown in **Figure 1.2.**

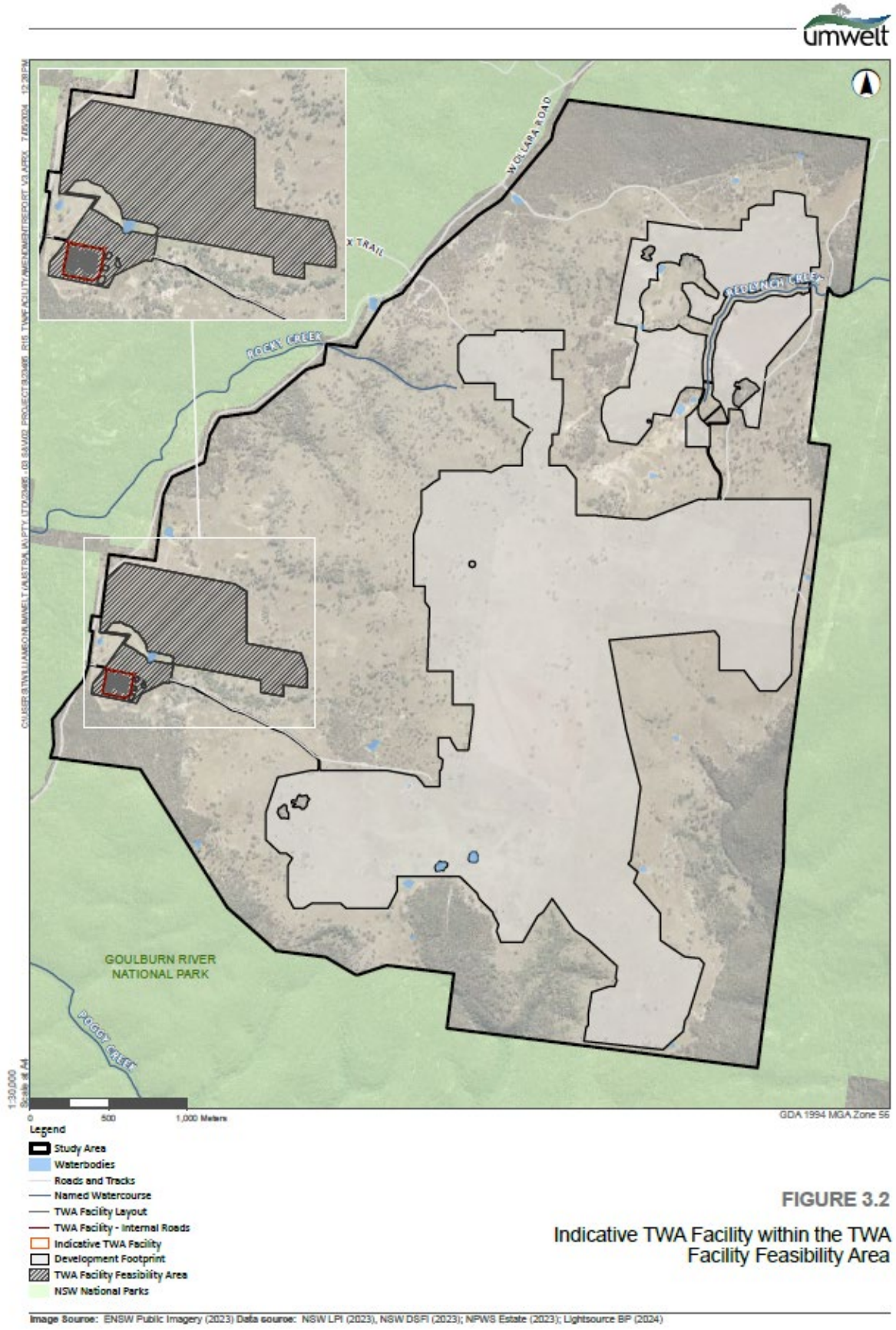

Figure 1.1 Project Layout showing location of the proposed on-site TWA Facility (Figure 3.2 of the Amendment Report (2))

Figure 1.2 Indicative TWA Facility Layout

This would be a temporary facility for use during the construction period and would be decommissioned at the conclusion of the construction period, though Lightsource bp may consider options to re-purpose the on-site TWA Facility infrastructure for potential community use in consultation with local stakeholders. The on-site TWA Facility may be constructed progressively to align with the anticipated increase of construction workforce associated with the Project.

The proposed on-site TWA Facility will consist of prefabricated modular accommodation units, recreational facilities and support buildings interlinked with plug and play services (i.e., water, sewerage and power) as well as covered walkways. The TWA facility will be designed to accommodate up to 400 workers required to construct the Project as well as the maintenance and operation of the on-site TWA Facility itself.

The proposed on-site TWA Facility will include the following components:

- Pre-fabricated rooms.
- Kitchen and dining facilities.
- Administration buildings comprised of offices and reception.
- First aid post.
- Linen and chemical storage rooms.
- Maintenance and cleaning buildings for housekeeping equipment and laundry facilities.

- Ablutions.
- Waste water treatment plant, inclusive of storage facility.
- Electricity generating units and fuel storage.
- Water storage/supply.
- Car, bus and truck parking.
- Recreational facilities such as a gymnasium, a bar area and BBQ facilities.

The construction of the on-site TWA Facility is expected to take 12 weeks from site preparation to commissioning and would be undertaken concurrently with certain road upgrades and any other ancillary works outside of the construction of the actual solar farm itself, including upgrades to Ringwood Road and Wollara Road. Road upgrades to the Golden Highway and Ringwood Road intersection, as well as the proposed sealing of 30 m of Barnett Street turning area is proposed to be completed prior to construction of the on-site TWA Facility. The workforce during this stage is approximately 30 people, who will be housed in accommodation off-site until the on-site TWA Facility is installed.

The on-site TWA Facility would be modular, fabricated off-site, and transported to the Project site for installation. All utilities sit above ground and there is no requirement for ground penetrating works or permanent foundations. Once constructed, the on-site TWA facility is proposed to operate 24 hours a day, 7 days a week for the duration of the 27-month construction period. It is expected that approximately 10 staff would be required to manage the on-site TWA Facility once fully occupied during peak construction, which would form part of the total peak workforce of 350 workers.

A range of general activities would be undertaken to support the functions of the on-site TWA Facility, such as general grounds maintenance, deliveries and waste removal, and worker movements. The operation and management of the on-site TWA Facility would either be undertaken by construction contractors managed by Lightsource bp or would be outsourced to a third party that specialises in managing such facilities.

Specialist activities in relation to the ongoing operation of the on-site TWA Facility, include food delivery, handling and service, housekeeping and laundry services, administration, site maintenance and cleaning, and security. These provide opportunities for local and regional engagement of existing suppliers that are capable of providing these services.

2.0 Methodology

Table 2.1 outlines the approach taken to develop this SIA Addendum.

Table 2.1 Methodology

Component	Purpose	Details / Sources
Stakeholder consultation on Project changes	To inform stakeholders of the changes to the Project and invite feedback on the on-site TWA Facility. To identify potential positive and negative social impacts of the proposed on-site TWA Facility from stakeholder perspectives. To identify means to mitigate negative social impacts and opportunities to enhance positive social impacts through stakeholder input and feedback.	Community engagement records collated and analysed through stakeholder consultation undertaken in early 2024 (refer to **Section 2.1**).
Review existing socio-economic conditions across social locality and updated Project information	To identify any changes in the community and local development context that may influence the social impacts experienced as a result of Amendment (2). To understand any updates or changes to the Project's workforce projections.	Updated project description and workforce data/profile. Publicly available documentation for proximal State Significant Developments.
Update to assessment of social impacts	To assess the likelihood and magnitude of potential social impacts associated with the on-site TWA Facility. To identify and assess social impacts associated with the on-site TWA Facility including those of a cumulative nature due to the number of other proximal projects.	Population change modelling. Amendment Report 2 technical assessments. Community engagement outcomes.
Update mitigation and enhancement measures	To update mitigation and enhancement measures or strategies arising from updated impact assessment.	Identified strategies from local stakeholders. Amendment Report 2 technical assessments. Integration of outcomes from the Amended Accommodation and Employment Strategy (AES).

It is noted that the social locality comprising of the LGAs of Upper Hunter Shire LGA, Mid-Western Regional LGA, and Muswellbrook LGA has not changed since the original SIA (Umwelt, 2023). Additionally, given the recency of the original SIA and the lack of updates to demographic and socio-economic census data since that time, the Social Baseline as presented in that SIA is considered the current and relevant baseline of existing social conditions and context for this SIA Addendum.

The SIA has utilised data from a range of sources to identify and develop a layered picture of the potential social impacts arising from the Project, with analysis framed in accordance with the social impact categories outlined in the original SIA (Umwelt, 2023) and the SIA Guideline (DPHI, 2023), and presented in **Figure 2.1** below.

Figure 2.1 Social impact categories

Source: (DPHI, 2023). © Umwelt, 2022.

The following section outlines the stakeholder consultation and social impact evaluation method in more detail.

2.1 Stakeholder Consultation

Social impact assessment involves the participation and collaboration of people who have an interest in or those that are affected by a project. Consultation in this project has been undertaken in accordance with the requirements of *Undertaking Engagement Guidelines for State Significant Developments* (NSW DPE , 2021) alongside the community involvement needs of SIA practice.

As Burdge (2004) outlines, stakeholders may be affected groups or individuals that:

- Live, work, or recreate near the Project.
- Have an interest in the proposed action or change.
- Use or value a resource associated with the Project.
- Are affected by the Project e.g., may be required to relocate because of the project.

Both quantitative and qualitative information collected through community engagement activities has been analysed to inform the identification and analysis of social impacts associated with the Project, as outlined in **Section 3.0.**

Table 2.2 outlines the engagement mechanisms conducted since March 2024 which have informed this SIA Addendum.

Table 2.2 Engagement Mechanisms and Timing

Mechanisms	Description
Information Provision	
Website, community information line and email	Platforms and tools were established in September 2021 to provide opportunity for the broader community and members of the public to receive information on the Project and to have the opportunity to contact the Project team. These mechanisms have been and will continue to be used including to inform this SIA Addendum. The March 2024 information sheet (see below) was also made available on the Project website (https://lightsourcebp.com/au/project/goulburn-river-solar/).
Local radio advertisement	A radio advertisement was broadcasted via the Radio Hunter Valley station in March and April 2024 to advertise the April and 10 Community information sessions to the broader community.
Project information sheets via post and email	A Project information sheet was distributed in March 2024 via mail drop (to 3,202 residences) and email distribution (to 121 stakeholders including proximal residents and community members.) The information sheet included general Project updates and plans for the on-site TWA Facility.
Consultation	
Project briefings	A Project briefing meeting with Upper Hunter Shire Council was held in March 2024, to provide detail of the Project, Voluntary Planning Agreement and the proposed on-site TWA Facility.
Survey	An online and telephone survey was conducted with local businesses and service providers between March and April 2024 to identify and assess potential social issues, impacts and opportunities relating to the on-site TWA Facility.
Community information sessions	Face-to-face community information drop-in sessions to provide an update on the Project and the plans to develop an onsite TWA Facility was conducted on 9 and 10 April 2024 in the Merriwa Country Women's Association Hall. The results of technical assessments of the Project were shared via poster boards, as well as articulate the proposed mitigation and enhancement measures under consideration to minimise negative and enhance positive impacts of the Project. This was also an opportunity for members of the community to pose questions to the Project team and provide feedback on the proposed TWA Facility.

Table 2.3 and **Table 2.4** below provide an overview of whose feedback and input has informed this SIA Addendum.

To understand who was engaged by what mechanism, **Table 2.3** below has a breakdown of each mechanism, the stakeholder groups engaged via that mechanism, with a number of events / meetings and a number of the people engaged.

Table 2.3 Summary of Consultation Mechanisms to inform the SIA Addendum

Engagement Mechanism	Stakeholder Group	Number of events/meetings	Total number of people engaged
Online Survey	Community residents Local business Proximal landholder / residents	QR Code in newsletter (3,202 receivers) and emailed link (180 receivers) all provided the opportunity to complete the online survey	8 completed survey online
Telephone interviews	Accommodation Provider Community resident Community group / organisation Emergency service provider Local business Local health service provider Nearby landowner / resident	15	15
Community Information Session (April 2024)	Accommodation Provider Community group / organisation Community resident Emergency service provider Host landholder Local business Local Government Local health service provider Nearby landowner / resident	2	30
Email correspondence with invitation to community information session	Host Landholders Proximal landholders Community group members Local businesses	-	121
Radio Advertisement inviting listeners to the April Community Information Session	Broader community	-	-
Newspaper advert including invitation to Community Information Session	Broader community	-	-
Project information sheet printed and posted	Local and broader community	-	3,202
Website traffic (March to April 2024)	Local and broader community	-	161
Total		**17**	**3,594**

Source: (Umwelt, 2024).

Due to multiple stakeholders being engaged by multiple mechanisms, **Table 2.4** provides a breakdown of each stakeholder group, and the number of people engaged within each stakeholder group. Numbers are presented in this way to provide transparency, acknowledging there is overlap across mechanisms for a number of stakeholders, in particular relating to the engagement undertaken with proximal landholders / residents. Similarly, not all stakeholders in a single stakeholder group were engaged in the same way. For the purposes of analysis of the perceived social impacts discussed in **Section 3.0**, the number of participants has been recorded, rather than the number of stakeholder groups engaged.

Table 2.4 Number of Stakeholders Consulted to inform the SIA Addendum[1]

Stakeholder Group	Number of Stakeholders Contacted	Number of Participants
Accommodation Provider	5	5
Broader Community Member (those living within the social locality)	10	10
Community Group/Association	2	2
Health and Emergency Service Provider	7	6
Host/Proximal Landholders (includes all residences along Wollara Road & Ringwood Road)	29	25
Local Business	4	4
Total	**57**	**52**

Source: (Umwelt, 2024).

The survey instrument used to undertake the community engagement is contained in **Appendix A**.

2.2 Social Impact Evaluation

Social impacts associated with the Project have been evaluated by providing a ranking of impacts according to impact characteristics, as defined in the SIA Guideline (DPHI, 2023).

To prioritise the identified social impacts, a risk-based framework has been adopted. Traditionally, the technical risk assessment process has not been greatly amenable to the inclusion of social impacts. One key adaptation of the approach is that both technical ratings and stakeholder perceptions of impacts are assessed. This approach is consistent with Sandman's risk equation (Risk = Hazard + Outrage) (Sandman, 1993), which acknowledges often low correlations between a risk's technical 'hazard' (how much harm it's likely to do) and its 'outrage' (how upset it's likely to make people).

Stakeholder perception of impact is considered an independent and no less valid component of risk; with stakeholder perceptions often varying between individuals and groups, with no single perception more important than another. However, for the purpose of assessment the most common, or what is judged to

[1] Of the engaged stakeholders (n=52), and of those who indicated their gender, there was a higher rate of males (n= 35, 67%) than females (n=17, 33%) who participated or provided responses through the engagement mechanisms. The majority of respondents were between the ages of 55–64 (n= 13, 39%) with an almost equal number of those between the ages of 45-55 (n=7, 21%) and over 65 years old (n=8, 24%). When respondents were asked if they identify as Aboriginal and/or Torres Strait Islander most indicated neither with only one person identifying as Aboriginal (n=1, 11%). Most of those engaged lived in Merriwa (n=41, 80%) and of those who answered how long they had lived in the region for (n=14), most indicated they had lived there for 30 years or more (n=8, 57%).

be the general perception/sentiment of a stakeholder group has been used as a measure of perceived stakeholder risk or impact.

The integration of the outcomes of technical ranking (severity/scale) with stakeholder perceived ranking of impacts (intensity or importance), thus affords a true integration of expert and local knowledge in SIA and enables both types of risk to be addressed in the development of impact mitigation, amelioration, and enhancement strategies. Such an approach is acknowledged in the SIA Guideline (DPHI, 2023) in relation to estimating material effects.

Prioritising impacts in this integrated manner ensures that appropriate assessment and mitigation strategies can be developed that not only address impacts that may require more technical management, but also those impacts that are perceived by stakeholders as of high importance/concern. These perceived concerns are just as important to manage as they have the potential to result in elevated levels of community concerns, complaints and grievances if not addressed appropriately.

As outlined in **Section 3.0**, a range of social impacts have been identified in relation to the Project, that require prioritisation for assessment and appropriate management and/or enhancement. These impacts relate to several social impact categories and have been informed through community engagement and consultation. It should also be noted that social impacts are often not mutually exclusive, with higher order impacts such as population change, resulting in second order impacts such as impacts on sense of community and service provision.

Section 4.0 provides an evaluation of the significance of each potential negative and positive social impact. The assessment is undertaken using the impact characteristics noted above and through the application of a consequence and likelihood framework, as identified in the SIA Guideline (DPHI, 2023). The social significance matrix (refer to **Figure 2.2**), that considers both the magnitude of the potential social impact and the likelihood of the impact occurring is then used to determine an overall evaluation of the social impact. **Figure 2.3** and **Figure 2.4** contain further detail regarding magnitude and likelihood classifications.

Both positive and negative impacts are considered in this regard, with slight adjustments made to the approach to reflect positive impacts, for example, the level of concern becomes level of interest, severity becomes scale of improvement or benefit, sensitivity becomes importance of the improvement or benefit and the equity of its distribution, and so forth.

		Magnitude level				
		1	2	3	4	5
Likelihood level		Minimal	Minor	Moderate	Major	Transformational
A	Almost certain	Low	Medium	High	Very High	Very High
B	Likely	Low	Medium	High	High	Very High
C	Possible	Low	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

Figure 2.2 Social Impact Significance Matrix
Source: SIA Guideline (DPHI, 2023).

Magnitude level	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Figure 2.3 Defining Magnitude Levels for Social Impacts

Source: SIA Guideline (DPHI, 2023).

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g. has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Figure 2.4 Defining Likelihood Levels for Social Impacts

Source: SIA Guideline (DPHI, 2023).

3.0 Social Impact Assessment

This section describes the re-assessed social impacts (both positive and negative) in relation to the on-site TWA Facility and includes measures and/or strategies to mitigate, respond to and address social impacts. Community engagement outcomes are also described as a key input to the identification and re-assessed of social impacts relating to the Project.

3.1 Summary of Impacts Raised through Stakeholder Consultation

Figure 3.1 below summarises both prompted and unprompted social impacts identified by community stakeholders engaged for the purpose of this SIA Addendum and the frequency with which they were raised.

It can be seen from **Figure 3.1** that community-identified impacts associated with the on-site TWA Facility were most frequently associated with perceived impacts on road traffic and safety, with 48% raising the issue of heavy vehicle traffic associated with the on-site TWA Facility, and 35% raising the issue of additional traffic generated by the on-site TWA's residents. This aligns with the original SIA in which road safety and amenity was the most frequently cited impact of the Project.

The creation of local procurement and employment opportunities related to the construction and operation of the on-site TWA Facility were the most frequent positive impacts (with 44% and 37% of respondents raising these, respectively). This also aligns with the original SIA in which 'employment and training for local people' was a commonly cited Project impact.

These impacts and others identified from stakeholder consultation have been grouped according to the SIA categories in **Figure 3.1** and described in further detail in the following sections.

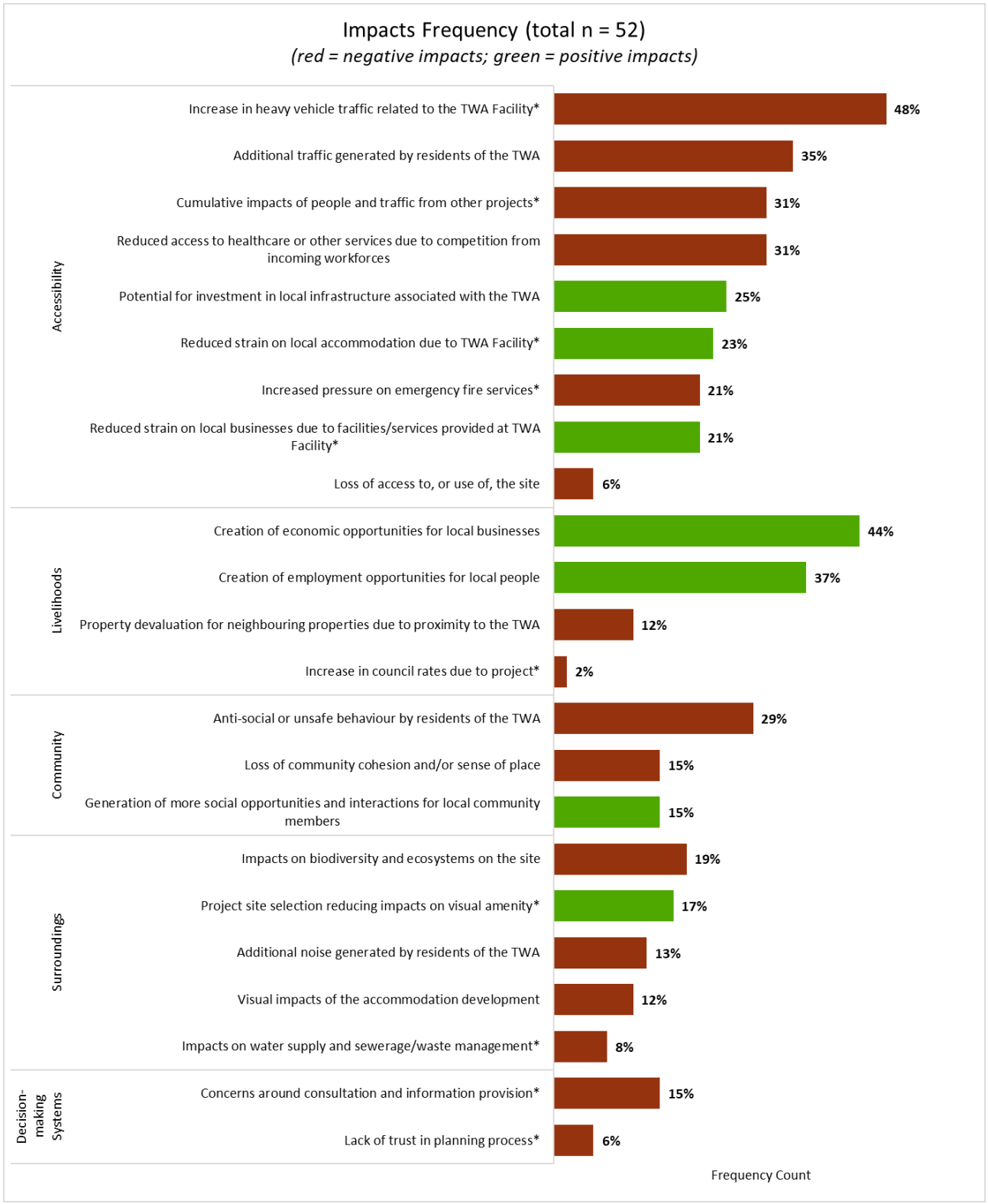

Figure 3.1 Perceived Social Impacts with inclusion of the on-site TWA Facility

**denotes unprompted impacts that were not presented in the survey.*
Source: Umwelt, 2024

3.2 Population Change

This section considers the potential for population change, utilising established population change characteristics adapted from Burdge (2004). Burdge suggests that a population change of greater than 5% in a local area is likely to result in a significant impact being experienced by the host population. Note that the workforce figures used in this section have not been altered from the original SIA, as the workforce numbers remain the same. However, their place of residence has changed (i.e. to the on-site TWA Facility).

Changes to population are a fundamental impact within SIA, given that the size, composition, and behaviours of a community are underpinned by its population and characteristics. Population change (influx and outflux) is usually described as a first-order social impact which has the potential to create second-order social impacts, such as impacts on community infrastructure and services, changes in sense of community, sense of place, social cohesion, and community networks and so forth.

The Project will generate around 250 full time equivalent (FTE) jobs during construction (with a peak of 350 onsite workers), and 10 full time staff during operation and maintenance phases. Construction of the on-site TWA Facility will require a workforce of around 30 workers over a 12-week period at the start of the 27-month construction period anticipated for the solar farm. It is expected that approximately 10 staff would be required to manage the on-site TWA Facility once fully occupied during peak construction.

Key jobs during construction will include operators, project managers, mechanical management, labourers, installation experts and technicians. Pending approval, the construction period is expected to commence in late 2024, with a 27-month construction period. Refer to **Figure 3.2** for a histogram of the anticipated construction workforce across the estimated period.

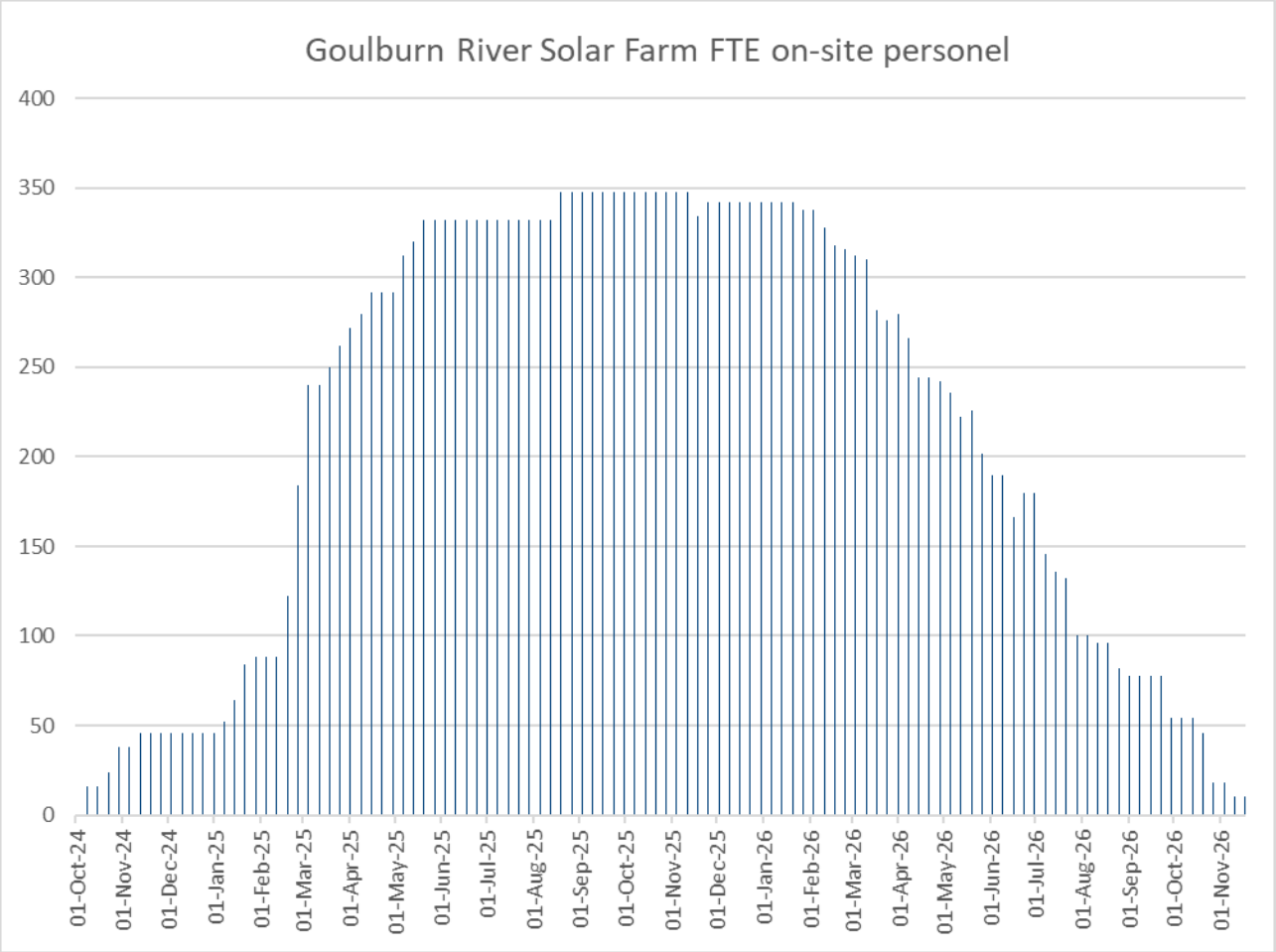

Figure 3.2 Construction Workforce Histogram

Source: (Lightsource bp, 2023).

The maximum on-site workforce at any time is anticipated to peak at approximately 350 workers, inclusive of the 10 operational workers required to manage the on-site TWA Facility. Accommodation for up to 400 workers is proposed to account for the maximum workforce plus irregular site visitors.

3.2.1 Cumulative Development Context

Cumulative social impacts may occur if construction periods of other and nearby major projects overlap with the construction period of the proposed development and consequently may present significant challenges in relation to access to housing, accommodation, and social infrastructure. In contrast, overlapping projects create opportunities to build a pipeline of projects that encourage skilled workers (and their families) to move/relocate to the area, either permanently or in the medium-term, given project continuity.

Table 3.1 outlines the proximal State Significant Developments (SSDs) and whether their construction timeframes are likely to overlap with the Project's anticipated construction timeframe. Note that timeframes for construction have been identified through a review of publicly available information on the DPE's Major Projects Portal (Department of Planning and Environment, 2023) and/or the relevant project's website(s). It is possible that these timeframes may be delayed, and unlikely that they will commence ahead of the proposed dates.

When assessing likelihood of cumulative impact, the assessment considers distance between projects, anticipated size of project workforces, distances to larger-order townships likely to provide the majority of accommodation, employment and service contributions and anticipated construction timelines.

As the Hunter Valley is a popular tourism destination, there may also be competition for accommodation during peak tourism periods or during key events or festivals, when local accommodation may experience high occupancy rates. These periods include the Christmas and Easter holiday periods, school holiday periods, the autumn harvest period of March to May (which coincides with the Hunter Valley Harvest Festival), as well as during popular local events such as the Festival of the Fleeces in Merriwa in June, the Merriwa Springtime Show in September, and wider events such as the Hunter Valley Wine and Beer Festival around June. The Hunter Valley region is also a popular location for music festivals and concerts through the year. Although individual events may be located in specific towns distant to the Project, visitors to the region for these events may choose to travel through and visit other towns in the Project's host or neighbouring LGAs and patronise local accommodation providers. Lightsource bp could help mitigate accommodation impacts by actively avoiding occupying rooms in local accommodation providers during peak periods.

Cumulative impact is considered for projects and other key events up to 100 km from each other given the scarcity of larger townships in the social locality to meet higher-order health, retail, accommodation, supply chain and service needs of projects and workforces. **Table 3.1** below outlines the proximal projects that are likely to have overlapping construction timeframes and therefore potential cumulative social effects across the LGA and potentially beyond. Compared to the cumulative projects identified in the original Accommodation and Employment Strategy (AES) document, Barneys Reef Wind Farm, Wollar Solar Farm, and the Moolarben Mine Extension have been removed as overlapping projects, and Bowdens Silver Mine has been added, due to shifting project timeframes.

Cumulative social impacts of the proximal projects with overlapping construction timeframes relate to population change, employment, procurement, social cohesion, and access to services. Impacts to housing and accommodation are understood to largely be mitigated by the plans for the on-site TWA Facility.

Table 3.1 Proximal Development Projects with Potential Cumulative Social Impact

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Potential overlapping workforce (Peak)
Merriwa Solar Farm SSD-30913035	Upper Hunter Shire LGA	Development of a 550 MW solar farm and a BESS.	Construction to be completed in 2027	Merriwa (30 km)	500 jobs during construction.
Bellambi Heights BESS SSD-33344237	Mid-Western Regional LGA	204 MW per stage or up to 408 MW in one stage. Revised in 2023 to remove the solar farm and only retain the BESS. Construction may be undertaken in either one or two stages.	2025–2026	Castlereagh Highway and Puggoon Road, Beryl (54 km)	Employment generation would include approximately 100 people per battery per stage.
CWO REZ Transmission Infrastructure SSI-48323210	-	Development of new twin double circuit 500 kV transmission lines between Wollar and the proposed substations at Merotherie and Elong Elong.	Mid-2024, for 36 months.	25 km	Peak workforce of 650.
Valley of the Winds Wind Farm SSD-10461	Warrumbungle Shire LGA	800 MW wind farm, up to 175 wind turbines.	Late 2024, for 24-42 months	Coolah (57 km) Located within CWO REZ	400 peak construction workforce.
Tallawang Solar Farm SSD-23700028	Mid-Western Regional Council	Development of a 500 MW solar farm with 200 MW battery energy storage system and associated infrastructure.	Late 2026, for 36 months	Puggoon Rd (50 km) Located within CWO REZ	420 peak during construction.
Birriwa Solar Farm SSD-29508870	Mid-Western Regional LGA	600 MW solar farm with 1000 MW BESS.	Late 2024, for 28 months	Barneys Reef Rd, Birriwa (60 km) Located within CWO REZ	800 peak construction workforce.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Potential overlapping workforce (Peak)
Stubbo Solar Farm SSD-10452	Mid-Western Regional LGA	400 MW solar farm with energy storage.	2024–2026	Blue Springs Rd, Stubbo (48 km) Located within CWO REZ	Approximately 400 people during construction.
Liverpool Range Wind Farm SSD-6696	Warrumbungle Shire LGA, Upper Hunter Shire LGA & Mid-Western Regional LGA	Up to 1,000 MW wind farm with up to 267 wind turbines.	2024–2027 (24 – 36 months)	Coolah (55 km) Located within CWO REZ	550 peak workforce.
Bowdens Silver Mine SSD-5765	Mid-Western Regional LGA	Development of an open cut silver mine and associated infrastructure	Second half of 2024, for 18 months	Lue (83 km)	Peak workforce of 320 during construction.

Based on the information collated in the table above, the total potentially overlapping workforce from the sum of other projects is 4,140 workers.

Figure 3.3 below illustrates the degree to which the construction periods of the above projects overlap with the construction period of Goulburn River Solar Farm. Where a project has an estimated time range for its construction period in **Table 3.1**, the upper limit of that range is used to present a 'worst case' scenario. Additionally, if a project has an unspecified construction period starting in 2024, for the purposes of the chart that project has been given a start date aligning with the Goulburn River Solar Farm to further present a 'worst case' scenario. It can be seen then that there may be as many as nine other projects with construction periods overlapping with the Amended Project at any one time.

Figure 3.4 illustrates the average cumulative workforces for all projects in **Table 3.1** by month. Adding the peak workforces for all potentially overlapping projects together with the workforce of the Amended Project (including the construction workforce and on-site TWA Facility operational workforce) results in **a total cumulative workforce of 4,500 workers**. For the purposes of the chart, each project's 'average' workforce is calculated by dividing their peak construction workforce by the number of months in their construction period. Given that projects' workforces would not be evenly distributed across their construction period, this figure is only indicative of the time periods in which the region around the Amended Project would expect to see peak cumulative workforces. There is potentially a 14-month peak cumulative workforce period in the middle of Goulburn River Solar Farm's construction period (from February 2025 to March 2026).

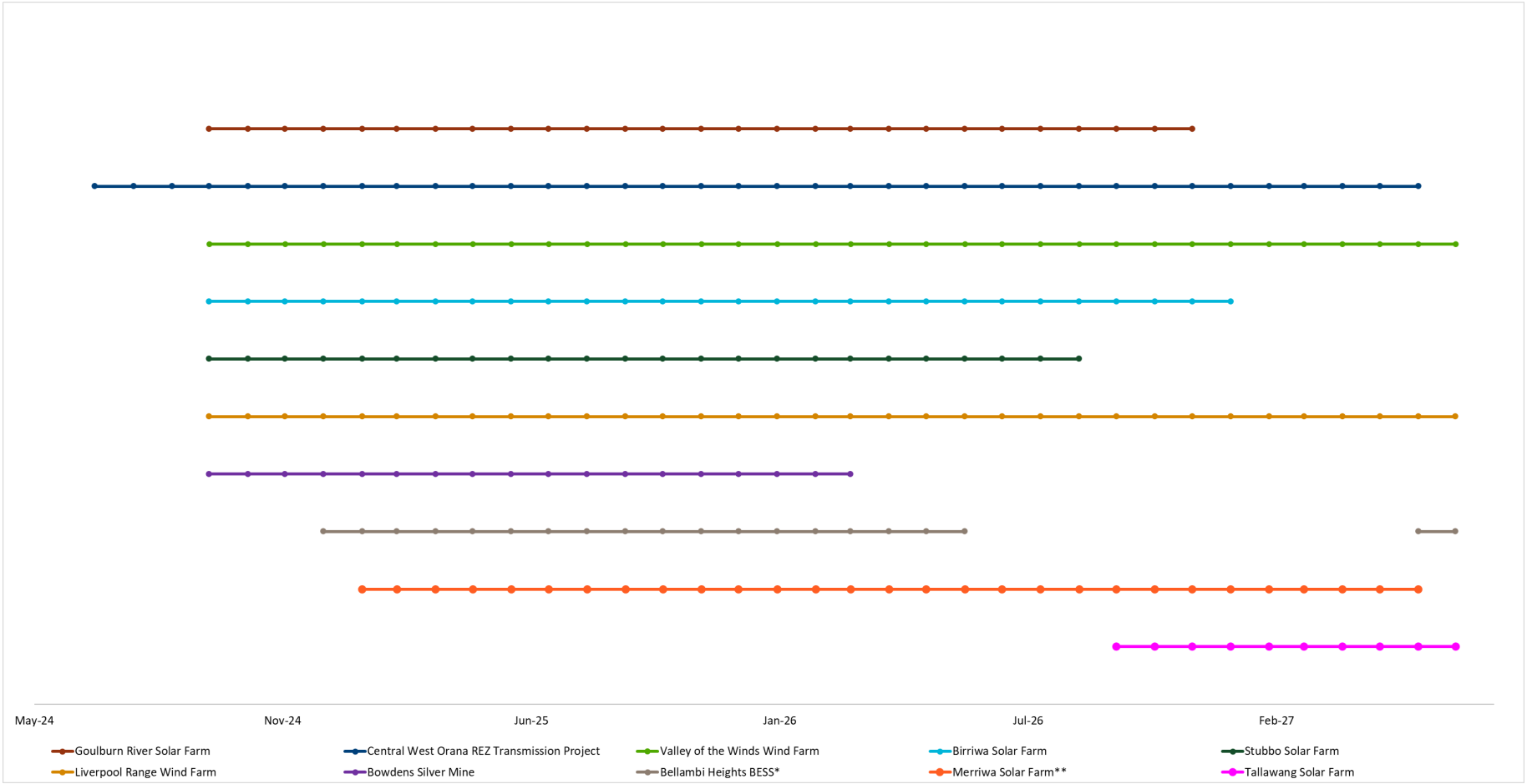

Figure 3.3 Overlapping Construction Timeframes of Proximal Projects with Potential Cumulative Workforce Impacts

Source: Umwelt, 2024

**the two-stage construction approach is used for Bellambi Heights BESS.*

***a construction start timeframe was not available for Merriwa Solar Farm, so an average solar farm construction length of 29 months was used.*

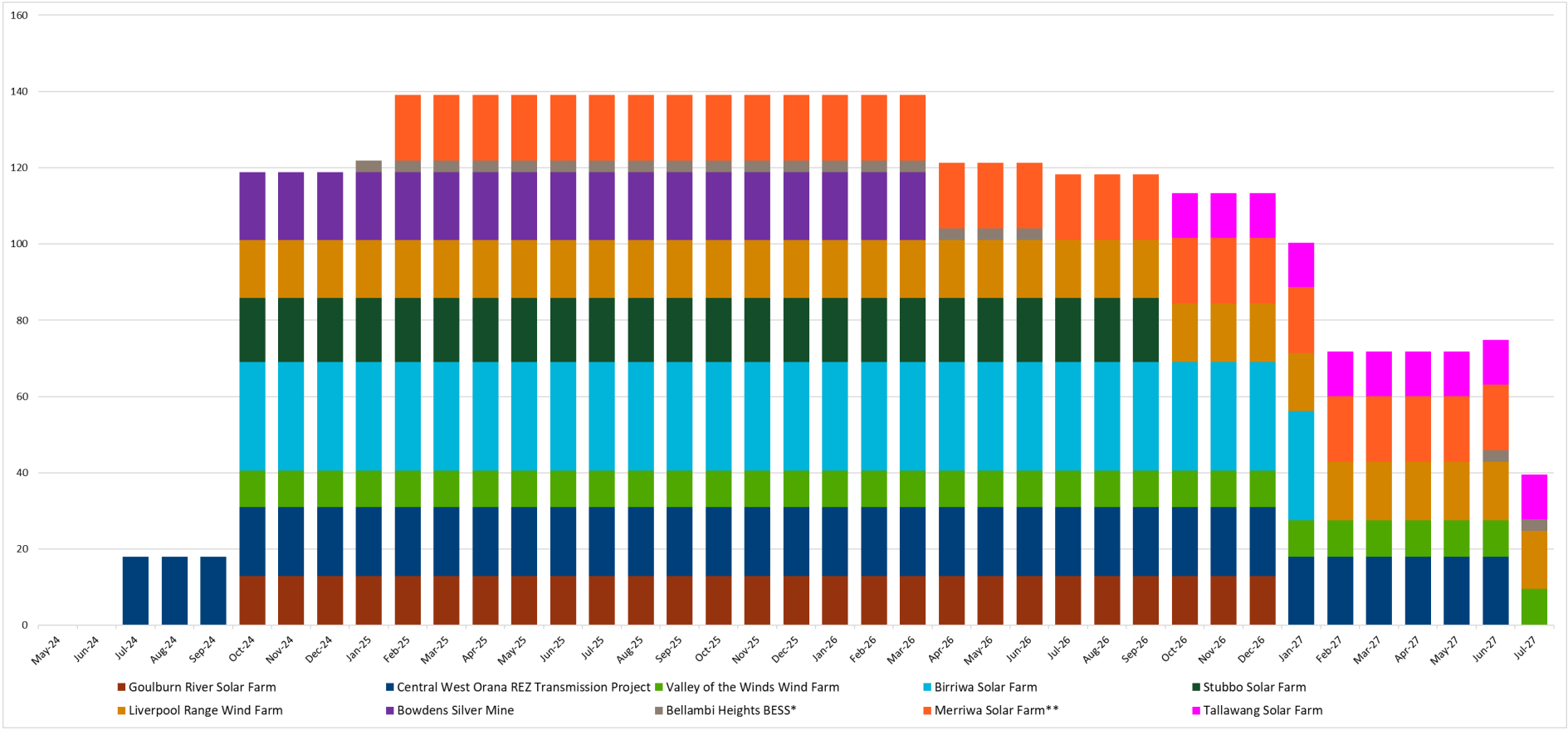

Figure 3.4 Average Cumulative Workforce by Month

Source: Umwelt, 2024

**the two-stage construction approach is used for Bellambi Heights BESS.*

***a construction start timeframe was not available for Merriwa Solar Farm, so an average solar farm construction length of 29 months was used*

3.2.2 Scenario Development and Analysis

To evaluate the potential population change that the Project may contribute to, two scenarios have been developed, based on the degree to which the Project workforce may be sourced from the local labour pool.

The two scenarios are defined below:

- **High** – the most conservative scenario; this assumes that 10% of the workforce may be sourced locally, and therefore 90% of the workforce would migrate in.
- **Low** – an aspirational scenario; this assumes that up to 20% of the workforce may be sourced locally, and therefore 80% of the workforce would migrate in.

The high scenario is understood to be most probable outcome for the Project in terms of realising local employment and the subsequent changes to the broader community, with the low scenario considered aspirational and requiring proactive and targeted effort by Lightsource bp to increase the likely proportion of locally based people to be employed by the Project. Based on this, the high scenario is the assumption adopted in the Project's Amended Accommodation and Employment Strategy (AES) (Umwelt, 2024) and is further outlined in **Section 3.4.2** of this Report.

Using these two scenarios, two analyses have been conducted, with the first considering the total workforce of the Amended Project only and the second accounting for the workforce of the Amended Project plus those of other proximal projects identified with potentially overlapping construction timeframes (as per **Table 3.1**). Through consideration of these other projects, it is assumed that the probable population influx, while temporary, during the construction phase of the Amended Project, would total approximately 4,500 workers in the region. This figure is based on peak construction workforce numbers and hence is considered the 'worst case' scenario for proponents and government to jointly and effectively manage.

Table 3.2 shows the population change prediction determined for both the Project's host LGA of Upper Hunter Shire and for the wider social locality which also includes Mid-Western Regional LGA and Muswellbrook LGA.

Table 3.3 only shows the population change prediction of the cumulative workforce for the social locality, as not all projects will be solely residing in the Upper Hunter Shire LGA.

Table 3.2 Projected Population Change Due to Amended Project

	Upper Hunter Shire LGA	Social Locality
Existing population	14,229	56,299
Workforce	350	350
High Scenario (90% workforce influx)		
Population Influx	324	324
Population Change %	2.3%	0.6%
Low Scenario (80% workforce influx)		
Population Influx	288	288
Population Change %	2.0%	0.5%

Table 3.3 Projected Population Change Due to Amended Project and Cumulative Workforce

	Social Locality
Existing population	56,299
Workforce[2]	4,490
High Scenario (90% workforce influx)	
Population Influx	4,050
Population Change %	7.2%
Low Scenario (80% workforce influx)	
Population Influx	3,600
Population Change %	6.4%

It can be seen from **Table 3.2** that the population change under both scenarios likely to be caused by the Amended Project when considered individually, fall under Burdge's (2004) population change threshold of 5%. Therefore, it is not expected that either Upper Hunter Shire LGA or the wider social locality would experience significant change to its population as a result of the Amended Project when considered individually.

However when considering the population change likely to be caused by the cumulative workforce due to the number of potentially overlapping and nearby projects, as presented in **Table 3.3Table 3.2**, it is evident that significant changes to the social locality population are possible, with the analysis predicting a 6.4% – 7.2% temporary growth in the social locality's population should these projects all be approved and maintain their proposed construction timeframes, and should all workforces reside within the social locality.

Thus, when considered cumulatively, the population change to be experienced across the Upper Hunter Shire LGA and the wider social locality is considered very high in possible impact due to the proportion of nearby projects with overlapping construction timeframes to that of the Amended Project. It is noted that it is unlikely that all of the proposed Projects will be approved for development, and the likelihood of construction timeframes shifting of the proportion which are approved is also possible. It is also unlikely that all project workforces would reside within the Upper Hunter Shire LGA. Based on these variables, the estimated cumulative population change for the social locality may reduce, or increase, depending on the actuality of the various projects proceeding and where their respective workforces are accommodated. Nevertheless, proactive collaboration with other proponents, NSW Government and Council would aid in developing coordinated strategies to mitigate the likely large-scale cumulative population change and any associated social impacts as a result of the temporary population influx.

The following sections discuss the identified social impacts that may flow from the anticipated population change and the establishment of the on-site TWA Facility.

[2] This is the sum of the Amended Project's construction workforce (350 workers) and the cumulative workforce from other projects (4,140 workers).

3.3 Accessibility

Accessibility refers to how people access and use infrastructure, services and facilities in their communities. A range of impacts related to accessibility are relevant here, including impacts to housing and accommodation, local service provision and road infrastructure.

3.3.1 Reduced strain on local accommodation due to the on-site TWA Facility

The proposed on-site TWA Facility is expected to reduce strain on local housing and accommodation provision, due to the known limited availability of housing or accommodation in the social locality.

Recent feedback from accommodation providers, local businesses and other key stakeholders indicated that the Project's plans for the on-site TWA Facility is a positive decision, with 23% of stakeholders engaged stating it as a positive impact (**Figure 3.1**).

> *Good that they are doing a worker's camp, no rooms available right now. I am currently full up with willow tree road workers. – Accommodation Provider.*
>
> *TWA means less strain on local accommodation. …road workers are staying in town, keeping accommodation very busy - Accommodation Provider.*
>
> *(TWA is) better for the project, we wouldn't be able to accommodate that many people. 30 people is more manageable than 450. – Accommodation Provider.*
>
> *The TWA makes sense, it's a long way back to Merriwa or Mudgee if they weren't staying on site. – Emergency Service Provider.*
>
> *Can appreciate the workers need to stay somewhere. I can see that this project is a good step forward. – Nearby landowner / resident.*

The Amended AES (Umwelt, 2024) outlines that the 400-bed on-site TWA Facility will be sufficient to accommodate the entirety of the 350 Project construction workforce during the peak construction period, if they are not local to the area. This therefore alleviates any additional strain that would otherwise be placed on the local short-term accommodation or rental accommodation market. **Table 3.4** below outlines the accommodation option breakdown considering the on-site TWA Facility.

Table 3.4 Accommodation Option Breakdown at Peak Workforce

Accommodation Components (assumes peak workforce of 350)	Number of Workers Housed	Where Workers will be Housed
Local Workforce	Approximately 35	Existing homes
Existing short-term accommodation	0	0 rooms
New short-term accommodation	0	0 rooms
Rental Accommodation	0	0 rented homes
Subtotal available beds	**Approximately 35**	
On-site TWA Facility	Up to 400	On-site TWA Facility
Total available beds	**Up to 435**	

Source: Umwelt, 2024.

There will be a need to accommodate the construction workforce for the on-site TWA Facility and some ancillary road works, of around 30 workers, over a period of around 12 weeks. It will be necessary to house these workers in local accommodation prior to availability of the on-site TWA Facility. The Amended AES notes that existing proximal short-term accommodation can provide approximately 14 rooms to accommodate workers. The Amended AES also notes that a number of existing accommodation and service providers in the region are considering expanding or establishing accommodation offerings to meet anticipated future demand, with a conservative estimate of up to 40 additional beds likely to become available to the Project through local expansion projects. This is summarised in **Table 3.5** below.

Table 3.5 Accommodation Option Breakdown for the on-site TWA Facility Construction Workforce

Accommodation Components (assumes peak workforce of 350)	Number of Workers housed	Housing From
Local Workforce	Approximately 3	Existing homes
Existing short-term accommodation	14	14 rooms
New short-term accommodation	13	40 rooms
Rental Accommodation	0	0 rented homes
Total available beds	**Up to 30**	

Source: Umwelt, 2024.

However, it is not expected that this expansion of accommodation will occur in 2024.

> *We could house 16 people easily, but we have demountable buildings coming over before then - at least 8 of them, so we might be able to house more people by early next year. – Accommodation Provider.*
>
> *I could have 10 or more rooms available after Christmas. – Accommodation Provider.*
>
> *We would be willing to provide 10 rooms. – Accommodation Provider.*

3.3.1.1 Strategies and Enhancement Measures

Community identified strategies to enhance these opportunities include:

- Committing in advance with accommodation providers if a particular number of beds are needed to ensure the service can be provided, due to high occupancy rates.

  Will still have rooms to provide for the project, but its first in best dressed. Should be more room available Jan 2025. – Accommodation Provider

- Ensure the on-site TWA Facility is built in a way that enjoyable for the proposed residents.

  Make sure the camp is better constructed than just dumping demountables, should be a nice place for the people to live there. – Nearby landowner / resident

- Providing formal collaboration or commitment to engaging with accommodation providers, to allow them to expand their services.

  We were planning on doing more rooms, but only if companies agree to commit financially. - Accommodation provider

Given the reliance on local short-term accommodation to house the on-site TWA Facility construction workforce, it is recommended that Lightsource bp consult with accommodation providers regarding Project needs to inform the development or expansion of existing accommodation providers where appropriate.

3.3.1.2 Community-Identified Opportunities of TWA Facility Legacy

The on-site TWA Facility building will be modular-style and all utilities or components will sit above-ground without the need for permanent foundations. Therefore, it is currently intended for the on-site TWA Facility to be dismantled following construction of the Project to be re-used for other projects.

Stakeholder engagement raised this as a potential missed opportunity to instead leave the infrastructure in place following construction to be repurposed as a legacy benefit to the community. 25% raised the 'potential for investment in local infrastructure associated with the TWA' as a potential benefit of the Project (**Figure 3.1**).

> *It's a shame that they plan on taking all the camp infrastructure away afterwards, this could be a good benefit for the town people. – Local business.*

Lightsource bp will continue to explore options to re-purpose the on-site TWA Facility infrastructure for potential community use in consultation with local stakeholders, to maximise the potential Project benefits to the community, however it is likely that the on-site TWA Facility will be demobilised following completion of the bulk of construction.

Community identified strategies to enhance this potential positive impact include:

- Provide more permanent accommodation, rather than only temporary.

  > *Instead of just building a completely temporary accommodation stock, Lightsource bp could provide/build or fund 20 long term / permanent builds to increase housing stock for local people, which might bring an extra family or two to the area and have flow on benefits to the broader community (kids going to school, cheaper housing, more locals in town). This would be a benefit for people in Merriwa to have extra local house/s. – Local business.*
  >
  > *Give buildings to locals for benefit. – Nearby landowner / resident.*

- Organise with another local developer to keep part of the temporary workers accommodation locally available for the next project.

  > *Lightsource bp could sign an agreement with another local project, for them to secure 100 beds in the workers camp so the infrastructure isn't taken elsewhere when the project is finished with it. This shows an economic benefit to local people. – Local business.*

3.3.2 Changes to road conditions and safety for local users

An increase in traffic movements on local roads due to the Project's need to transport materials and personnel to and from the Project site may have impacts on the safety of other road users, as well as causing increased wear and tear on the road surface, particularly by heavy vehicles. It is acknowledged that this is an ongoing impact which has been frequently raised and reported on in the context of the Project, and is not specific, or new, as a result of the introduction of the proposed on-site TWA Facility.

Concerns around Project-related traffic and its impacts on road conditions and public safety were the most frequently raised issue during engagement, with 48% of those engaged raising this as a concern (**Figure 3.1**). The majority of those engaged indicated their concern for public safety due to the increase in traffic associated with the Project more broadly, but also the potential or perceived increase in heavy vehicle traffic movement associated with the TWA Facility specifically.

Although the on-site TWA Facility would reduce the amount of light vehicle traffic travelling on local roads, the TWA Facility also requires additional vehicle movements for its construction and operations, e.g., there would be an estimated additional four deliveries per day of water and other consumables required to support the TWA Facility (e.g., food, water, waste).

Stakeholder engagement outcomes also raised the likelihood that accommodating the bulk of the Project construction workforce at the TWA Facility rather than in other local accommodation would reduce the amount of traffic generated by workers travelling from their off-site accommodation to the Project site.

> *Less people travelling up and down the road is a good thing. – Nearby landowner / resident.*
>
> *Less workers on road are a positive. Not going to bother us greatly, truck' don't bother us. – Nearby landowner / resident.*

It is acknowledged that workers staying in the on-site TWA Facility will still need to drive to and from site at the start and end of their rotations and may also chose to travel to and from the on-site TWA Facility outside their shift times to replenish supplies, and for general recreation. These traffic movements, however, would be less than the movements associated with the workers travelling to the Project site every day if they were accommodated elsewhere offsite.

The Amendment Report (2) identifies that vehicle movements to the Project would on average be lower with the inclusion of the on-site TWA Facility. During the main construction months, it is expected that the TWA Facility would reduce approximately 40% of the private vehicle movements and 60% of shuttle bus movements on the public road network as assessed in the Amendment Report 1 (Umwelt, 2023). These positive outcomes would be further enhanced by implementing a Traffic Management Plan and discouraging or limiting the use of personal vehicles by resident workers of the on-site TWA Facility.

While the reduction in light vehicles has been recognised as a positive change, the Project is expected to temporarily increase the number and frequency of heavy vehicles on the road, which brings safety implications of the potential for additional heavy vehicle traffic for local road users, and pedestrians in the Merriwa township.

> *Disruptive for locals having heavy traffic coming through town, and accidents on road from increase in traffic. – Nearby landowner / resident.*
>
> *Danger to pedestrians from increased trucking movements through Merriwa CBD and residential areas. – Local health service provider.*

Stakeholders have also raised the lack of safe access to and from the Project site along Ringwood Road, Wollar Road, and the Golden Highway. It should be noted that although this feedback has been recorded and considered here, it is not directly related to the on-site TWA Facility and similar concerns were raised and addressed within the EIS and original SIA.

Concerned about Ringwood Rd... the quality of road, livestock crossing, safety of kids at bus stop. Trucks turn around corner (From Golden Highway onto Ringwood Rd*) quickly while I am at bus stops. Trucks will park there, concerned about this – will prevent safety of bus stop. – Nearby landowner / resident.*

Binks Road to National Park portion of Ringwood Road unsuitable for project-related vehicle movements. Numerous potholes (near Rosscommons) – Nearby landowner / resident.

In response to concerns about traffic turning right onto the Golden Highway from Ringwood Road, as part of Amendment (1) Lightsource bp have proposed for all Project traffic to firstly turn left onto the Golden Highway from Ringwood Road, after which they then perform a U-turn at a designated location to come back towards the Merriwa township. Stakeholders raised their apprehension with this plan due to concerns around driver safety and the difficulty in policing such a rule.

I am concerned about the dangerous u turn bay, you will still have trucks turning right off the Golden Highway into the lot where the u turn bay will be. There are lots of crashes in that area of the road, it's very dangerous – Nearby landowner / resident.

Concerned for the Ringwood Rd / Golden Highway intersection, U-turn at Barnett Street is not an appropriate solution… - Nearby landowner / resident.

How will Lightsource bp police the traffic turning out on to the Golden Highway – Nearby landowner / resident.

…Do not believe Project vehicles will follow the left in-left out turn rule. – Nearby landowner / resident.

Furthermore, stakeholders were concerned about the increase in travel times for local people due to an increase in heavy traffic on the Golden Highway, and increased risks of accidents.

Longer travel times for Merriwa residents when oversize loads are using the golden highway. – Local health service provider.

I live in Cassilis and my kids go to primary school in Merriwa, so have to have someone in Merriwa who could pick up her kids in case there is a crash along the Golden Highway, because there are always crashes. When there is a car crash, it shuts the road and is a 3-hr drive around. Apparently, there is a fatality every month on the Golden Highway – Community Resident.

In addition, concerns were raised by local landholders who need to move livestock across Ringwood Road, and how this may be challenging and unsafe during both the construction periods of both the on-site TWA Facility and wider Project due to the large number of heavy vehicle movements.

Concerned about movement of cattle across road during construction…many farmers on this road will have this issue. – Nearby landowner / resident.

We will do large cattle movements (along and across the access road) a *few times a year. Would consider doing this at nighttime if it is safer, at least you can see headlights around the corners. – Nearby landowner / resident.*

Others were more accepting of the traffic impacts, indicating that change is inevitable in the area, and that the community needs to adapt to these changes.

> *It always will be busier for roads, it's just about everyone getting use to the extra traffic on the road. – Emergency service provider.*

Some people engaged for the SIA Addendum indicated their appreciation for the road upgrades proposed by Lightsource bp along the access road.

> *Doing the road up is a good thing, widening it up to make it safer. Lightsource bp are doing that, so that's good. – Emergency service provider.*

> *Once the bitumen is down (road upgraded), reduce dust and safety risks. – Nearby landowner / resident.*

Conversely, another concern raised (albeit by only 2% of those engaged; **Figure 3.1**), was the potential for council rates to increase due to the road being sealed for properties along the access road.

> *Sealing the road would increase our Council rates. – Nearby landowner / resident*

Local media indicates that council rates in the Upper Hunter Shire LGA may increase by at least 30%, however this increase is not related to the Project (Murphy, 2024). Indeed, given the Road Maintenance Fund as part of the Voluntary Planning Agreement (VPA) described below, additional road maintenance costs as a result of the Project are not expected to be passed onto rate payers.

3.3.2.1 Strategies and Mitigation Measures

The community identified strategies to mitigate the potentially negative effects on road safety and road conditions due to the increased traffic on local roads included:

- Upgrades to the Ringwood Road and Golden Highway intersection.

> *A lot better if they built the corner up on Ringwood, flatten the road, so trucks aren't turning out while facing up hill. I drive trucks out of there, it's hard to get up & out on the highway, even if they are turning left. Accidents there are not good - very dangerous corner. – Emergency service provider.*

> *Lightsource bp need to grade the area and cut the hill away east of the intersection to improve visibility / SISD along the highway, rather than utilise Barnett St U-turn. - Nearby landowner / resident.*

> *…right hand turn treatment at intersection required. - Nearby landowner / resident.*

> *Would like to see the intersection upgraded to be safer for all road users - Nearby landowner / resident.*

> *Need to make intersection safer with adding turning lanes on each side of the road. Slip lane is not long enough for the u turn bay, need to have turning lanes there too. Suggested a bypass solution for ongoing Golden Highway traffic by cutting into existing slope, which would allow vehicles a free lane to turn right onto Golden Highway at intersect–on. - Nearby landowner / resident.*

- Improvements to road safety infrastructure in Merriwa township.

  Install/upgrade shared pathways to schools/ hospital/CBD and community facilities – Local health service provider.

  Lightsource bp could implement flashing signage with "trucks entering" before intersection to improve road safety. - - Nearby landowner / resident.

- Communication with local community members and farmers potentially moving cattle, regarding timing of larger vehicle movements.

  Advise community of extended travel times when oversize loads using golden highway – Local health service provider.

  Communicating cattle transport timings to construction company to ensure everyone's safety…Construction Contractor will be in charge of construction and road upgrades, would be great to have the same person to call about any concerns or timings – Nearby landowner / resident.

- The implementation of a community complaints phoneline to allow community members to call contractors directly if they observe potentially dangerous driver behaviour.

  Wanting there to be a complaints line or someone he can call directly if there is issues with the drive behaviour – Nearby landowner / resident.

  Strict rules for employees of the TWA. – Nearby landowner / resident.

Any effects of heavy vehicle traffic can be further mitigated by implementing the Traffic Management Plan, which will include measures such as:

- Scheduling heavy vehicle movements to outside of peak hours where possible.
- Communicating timing of larger vehicle movements ahead of time (particularly for local community members moving livestock).
- Considering community feedback in the proposed changes to the intersection of Ringwood Road and Golden Highway.
- Implementing a community complaints hotline to allow community members to directly report dangerous driver behaviour or incidents.
- Coordination with Council, other nearby projects and other stakeholders to contribute to road improvement programs and jointly manage changes in road conditions caused by the Project.

Upper Hunter Shire Council has also recently endorsed the Project's VPA which includes a Road Maintenance Fund, whereby a portion of Lightsource bp's contributions will be used for the maintenance of roads within the LGA, with preference given to Ringwood Road and Wollara Road in the vicinity of the Project (Lightsource bp, 2024). This fund will further mitigate any increased wear to local roads as a result of the Project's traffic movement.

3.3.3 Cumulative changes to traffic and roads affecting safety for road users

The number of projects with overlapping construction timeframes as described in **Section 3.2.1** indicate that the Project would be one of multiple contributors to increased traffic on local and regional roads, thereby impacting potential for the decrease in road safety conditions, congestion and potential increase in travel times for other road users.

Concerns around the 'cumulative impacts of people and traffic from other projects' were raised by several respondents, with 31% showing concern (**Figure 3.1**).

> *Ongoing cumulative impact of these renewable projects, one after the other in the area. – Local business.*
>
> *Cumulative impact on Merriwa with having the Flaggs Road Solar Project as well. – Nearby landowner / resident.*
>
> *Cumulative impacts of increasing volume of traffic in the next 30 years* (due to other proposed projects) – *Nearby landowner / resident.*
>
> *Concerned about the cumulative impact with Wollar SF, WF projects and–REZ - increased traffic on already dangerous road. – Community resident.*
>
> *Concerned about wind turbines going through town…Cumulative impact of traffic through town and impacts on road. – Local business.*

Though these concerns are valid, the Amendment Report (2) notes that the inclusion of the proposed on-site TWA Facility is expected to contribute positively to the regional cumulative context, by reducing the number of vehicles travelling on the Golden Highway and Ringwood Road, whilst reducing the demand on local services and accommodation service providers required to house the peak construction workforce.

Regardless, any cumulative impacts may be further managed by communication of the Traffic Management Plan with other project proponents, implementation of the Road Maintenance Fund as part of the VPA with Upper Hunter Shire Council to contribute towards maintenance of impacted roads in the LGA, considering the on-site TWA Facility location, design and amenities to encourage the workforce to remain on site for most of their daily needs, and discouraging or limiting the use of personal vehicles by resident workers of the on-site TWA Facility.

3.3.4 Strain on local health services due to resident workforce

Concerns around the incoming construction workforce causing increased strain on local health services were raised and considered in the original SIA. This concern is again raised here, where healthcare and medical services required by the Project's resident workforce at the on-site TWA Facility may cause an increased strain on existing local health services, which could cause a reduction in access for other users and the broader community (but not more than previously assessed in the original SIA and AES).

The social locality has highly limited access to GPs and healthcare specialists (Umwelt, 2023), with improvements in health care being identified as a key focus area for councils of the Upper Hunter Shire and Mid-Western Regional (Upper Hunter Shire Council, 2017) (Mid-Western Regional Council, 2017).

Therefore, the anticipated increase in population of up to 350 people for a period of 27 months could place additional pressure on health services in the region.

Some local residents indicated their concern for the lack of health services in the area, and the potential for the resident TWA workforce to strain that already limited service, with 31% raising this as a concern (**Figure 3.1**).

> *When there are road accidents, where will injured people go. The hospitals and health care in area doesn't have capacity. – Nearby landowner / resident.*

> *If I want to see the doctors, instead of having to wait a week… if I have to wait 3 weeks that would be a pain. – Nearby landowner / resident.*

It was identified that the emergency medical services in the area, particularly ambulance services, are already limited to where they can travel to. A local health service provider explained that some landholders will call the ambulance and are unable to be picked up so would need to transport themselves to the Emergency Department in Merriwa, Muswellbrook, Maitland, or Newcastle. This same local health service provider explained that serious injuries are usually serviced by the Westpac Rescue Helicopter, which would also be the case on the Project site if anything were to go wrong.

> *Ambulance service is not very quick, we have had scenarios where people on properties call the ambulance who have said they won't go, and the people on properties have to transfer themselves to hospital. If there are major injuries, they will fly helicopter anyway to Maitland or John Hunter, anything in between they can come here. Our ED will have capacity for the in-between things. – Local health service provider*

This sentiment was echoed by a local emergency service provider, who indicated that any serious medical incident would require the patient to be airlifted out, therefore, not straining their service.

> *Wouldn't strain our service, if there is a major incident, they would be airlifted like everyone else who has a serious accident. – Local emergency service provider.*

In terms of less urgent medical services, the local Merriwa Multipurpose Service has limited General Practitioner appointments.

> *No doctor here full time, we use telehealth called 'my emergency doctor'. Medicare pay them. The doctor is here 10-4 on Tuesdays and is from Hunter Medical Practice – Local health service provider.*

Alternatively, one nearby landholder identified that the project might be good for the local health services because it may cause extra funding to be provided due to the increase in people in the area.

> *Good for health services, might lead to upgrade or more funding. – Nearby landowner / resident.*

3.3.4.1 Strategies and Mitigation Measures

Community identified strategies, including those suggested by local health service providers, to mitigate this potential impact include:

- Ensure the on-site TWA Facility includes all required first aid equipment onsite and have multiple first aid trained professionals onsite at all times.

Should have a big first aid kit, big cabinet, or multiple little ones & multiple first aid trained professionals. Main things will be blood and pain, so someone who can address this on site would be good. They will need someone on site that is able to stop the blood, transfer to a hospital by calling ambulance or transfer them themselves, or helicopter out. – Local health service provider.

- Encourage on-site TWA Facility workforce to seek general medical services in their respective hometowns prior to arrival at the Project site, to alleviate the potential strain on services in Merriwa and other surrounding communities/townships.

  Hopefully they (incoming workforce) *do everything at home before they come. If they need a doctor on days other than Tuesday, will have to go to Muswellbrook. – Local health service provider.*

- Provide ambulance and emergency service numbers and addresses of the Merriwa Multi-Purpose Service to all workers onsite and keep information accessible for emergencies.
- Inclusion of a helipad or helicopter landing area for ease of medical accessibility.
- Provide financial support to Westpac Rescue Helicopter.

  When you announce the helipad, Lightsource bp could announce a $10,000 donation to Westpac rescue helicopter. This shows that you don't plan on coming to the area and straining the services – it shows you are supporting the services that you will almost be guaranteed to need to use. – Local business.

In order to mitigate these matters, Lightsource bp proposes to provide health facilities and services onsite to its workforce. While the Project had already proposed to include a first aid post onsite, additional health services or related measures available to workers would also include:

- GP services via telehealth.
- Facilitated access to emergency services and regional hospital emergency departments in the event of an emergency.
- Appropriate rollout of an emergency response plan for all workers onsite and residing at the TWA Facility as part of the Construction Management Plan.
- Consideration of the inclusion of a helipad onsite during the construction period.

The facilitated access to GP via telehealth services would be used on an as needs basis to triage health concerns and referring to external health providers if needed (via telehealth services). Continued collaboration with local hospitals is also key to ensure access to local emergency departments, and to ensure there is no additional strain placed on their services.

These recommended facilities and services as part of the on-site TWA Facility have considered existing research which suggests that non-resident workforces tend to access GPs at a similar rate to the general population and access the emergency department at higher rates than the general population. Further, they may lead to more complex caseloads as doctors are not familiar with individuals and often experience limited sharing of patient records (Australian Healthcare and Hospitals Association, 2019).

3.3.5 TWA Facility reducing access for emergency fire services and increasing strain on service

Bushfire safety was a key concern in the original SIA, with capacity of existing emergency services and potential access issues due to Project infrastructure being raised. Additional strain on emergency services or a reduction in their ability to access and suppress fires may have direct safety implications for both the Project's workforce and the surrounding community. These concerns have also been reflected in the context of the on-site TWA Facility, with concerns around the proposed establishment of the on-site TWA Facility reducing access for firefighters to adequately respond to fires, or fires potentially being started by either the on-site TWA Facility's operations or its residents (with 21% of those engaged mentioning it as a negative impact; **Figure 3.1**).

> *Bushfire risks, spreading to neighbouring properties and not being able to put it out due to lack of local capacity. Explained that the 3 people in the RFS… so will be down to 1 old man who won't be able to do much. – Nearby landowner / resident.*
>
> *Bushfire risks to our life, we only live 3km as the crow flies away from project. – Nearby landowner / resident.*
>
> *Concerned about bushfire coming to my property from the project. – Nearby landowner / resident.*
>
> *I'm sorry but I'm not risking my life to go down and fight fires if it's not too flash hot to get in and around… neighbours help each other out in times of bushfire but it needs to be accessible to allow us to do so. – Nearby landowner / resident.*

3.3.5.1 Strategies and Mitigation Measures

Community identified strategies to mitigate this potential negative impact include:

- Ensuring appropriate fire suppression equipment is kept on site, with appropriately trained staff to operate it.

  > *Could have a Cat 7 (firefighting vehicle) on site, with a 15,000L tank for early suppression. – Nearby landowner / resident.*
  >
  > *Having someone on site to get onto it early. – Nearby landowner / resident.*

- Increasing the Asset Protection Zone (APZ) of the broader Project Area to 50 – 100 m.

  > *The Project should have at least a 50m fire break, 100m would be ideal. This would give fire fighters a better chance at stopping the spread of bushfire. – Emergency service provider.*

- Provision of training and familiarisation for nearby residents and landholders in relation to fighting fires in and around the Solar Project. Nearby residents and landholders have indicated that they would help each other out in times of bushfire, however the area needs to be accessible to allow them to do so.

  > *Training on how to fight fires under panels, concerned about spreading quicker due to project… I'm sorry but I'm not risking my life to go down and fight fires if it's not too flash hot to get in and around. – Nearby landowner / resident.*

- Allow livestock grazing in and around panels on Project site to reduce fuel loads.

  If grazing isn't undertaken, fire loads will increase which will increase risk and severity of burns. – Nearby landowner / resident.

- Identifying 'hot trees' after lightning storms as a preventative measure of bushfire

  Do flyovers in helicopters with thermal cameras after lightning storms to identify 'hot trees' and to cool them off, reduces risk of fire starting/spreading. – Nearby landowner / resident.

In addition to this community feedback, the Project's amendment to the Bushfire Threat Assessment assesses the impact of the addition of the on-site TWA Facility on bushfire risk and management (Umwelt, 2024). The assessment found that introduction of the on-site TWA Facility requires consideration from a bushfire management perspective, particularly in terms of the emergency evacuation of the resident workforce and the risk of onsite activities igniting fires during both construction and operations.

The development of a Fire Management Plan (FMP) is recommended to identify all bushfire risks and mitigation measures, including:

- Measures to prevent or mitigate fires igniting.
- Work to be avoided during total fire ban periods.
- Availability of fire-suppression equipment.
- Storage and maintenance of fuels and other flammable materials.
- Notification of the local NSW RFS Fire Control Centre for any works that have high potential to ignite surrounding vegetation during construction/operation/maintenance, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate.
- Development of any proposed land management practices either within the TWA Facility Feasibility Area and more broadly within the Project Area with consideration of existing land management practices undertaken within the National Park.
- Appropriate evacuation plan.

It is recommended for this FMP to then be shared with local emergency services to inform them of the Project's bushfire management practices.

The on-site TWA Facility will also be appropriately located within the TWA Feasibility Area to provide separation from remnant vegetation. Appropriate APZs will be applied to provide separation between the proposed infrastructure to create sufficient space for firefighting and the protection of infrastructure and occupants. Further bushfire management measures are outlined in the Amendment Report (2).

With these mitigation measures it is considered that the potential bushfire risk associated with the proposed TWA Facility can be appropriately managed.

3.4 Livelihoods

Livelihood describes peoples' capacity to sustain themselves through employment or business, any impacts or opportunities related to these, and the distributive equity of any benefits.

3.4.1 Local procurement opportunities for construction and operation of TWA Facility

The inclusion of the on-site TWA Facility presents opportunities for procurement from local businesses during both its construction and operation, and potentially leading to improved economic outcomes for regional businesses and communities. This was reflected in engagement, with 44% of those engaged indicating that the creation of economic opportunities for local businesses was a potential benefit of the inclusion of the on-site TWA Facility (**Figure 3.1**).

> *Go to local businesses straight away as the first businesses engaged. Good story to tell that the first business engaged is local, even if it's just for slashing or something small - it's still a good story to share with the broader community - Local Business.*
>
> *We have a function room that consultants or workers could meet with people in for the Project - Accommodation Provider.*
>
> *(Incoming TWA workforce) Will be good for the pubs and IGA in town, but they will go home for the weekend, so it won't be a significant amount. – Emergency service provider.*
>
> *Balance accommodation between TWA and local businesses so they can benefit financially. -Nearby landowner / resident.*
>
> *There could be an opportunity to provide newspapers to the TWA workers. – Local business.*

The Amended AES (Umwelt, 2024) notes that businesses based in the Mid-Western Regional LGA are suited to service the construction of the Project given the high number of businesses in the construction sector with sufficient likely capability. This in turn would hold true in terms of supporting the construction of the TWA Facility as well. However, the large number of other proposed projects within the Mid-Western Regional LGA needs to be considered in this context, with many proposed to have overlapping construction timeframes. It is recognised that the cumulative demand for local labour and contracting services may reduce the ability for workers and businesses within this LGA, as well as those surrounding, to meet the needs of each individual Project.

Looking towards operation of the TWA Facility, Mid-Western Regional LGA also has high numbers of businesses in Accommodation and Food Services, and Administrative and Support Services (which includes cleaning, pest control, and gardening services), which are likely to offer the types of services relevant to operation and maintenance of the TWA Facility (Umwelt, 2024). Mid-Western Regional LGA, Upper Hunter Shire LGA and Muswellbrook LGA also have a sizeable proportion of their businesses categorised under 'Other Services' which includes businesses mainly engaged in the repair/maintenance of equipment and machinery (ABS, 2022). It is likely then for the contractor or third party engaged by Lightsource bp for the management of the on-site TWA Facility to be able to procure services from local businesses across the social locality to support the operation of the on-site TWA Facility. It is however noted that Lightsource bp, in consultation with Mid-Western Regional Council, have committed to ensuring the Project workforce

would be restricted from travelling to (and from) the Project through the Mid-Western Regional LGA unless the workers reside there, to manage potential cumulative impacts with neighbouring projects.

There was however a perception raised in the community that Lightsource bp may not be prioritising the procurement of local businesses for the Project, with stakeholders emphasising that this is an important benefit that could potentially be felt by local businesses but also important for the level of community acceptance of the Project more broadly.

> *I have already heard on the grape vine that the tenders are going to big third party, which won't benefit local businesses. - Local business.*

> *Ensure the food is coming from local businesses, not a 3rd party vendor that trucks it all in from Sydney or something. Make sure you help the local businesses in being able to service the project. – Local business.*

Conversely, stakeholder engagement outcomes also showed some relief that the Project construction workforce would reside in an on-site TWA Facility, and therefore reducing the potential strain on some local businesses to cater for their needs (with 21% of those engaged mentioning it as a positive impact; **Figure 3.1**).

> *TWA is better outcome for local businesses, 450 is a lot of people, a lot for this area. There isn't even 450 people who live in Sandy Hollow. – Accommodation Provider.*

Encouraging the workforce to remain on-site for most of their daily needs as well as discouraging or limiting the use of personal vehicles would assist in reducing potential strain on local businesses.

Even with the construction workforce remaining largely within the on-site TWA Facility concerns around catering for the grocery needs of the on-site TWA Facility residents were raised due to the limited resources at the local supermarket. This indicates that the Project may need to source groceries from other local businesses or a combination of various local businesses.

> *TWA might strain on local services; IGA already runs out of supplies. - Accommodation Provider.*

> *Consideration of grocery supplies for TWA workers would be required as local sources (IGA etc.) won't be appropriate to facilitate construction workforce. - Nearby landowner / resident.*

However, there are some perceptions that having the on-site TWA Facility onsite and catering for the needs of the resident workforce would reduce the economic benefits felt in nearby towns. One stakeholder suggested that facilitating workers' access to towns (e.g., via a shuttle bus) would increase benefits to local businesses.

> *Disappointed that workers won't be in town, prefer to see workers housed in town by local businesses. - Nearby landowner / resident.*

3.4.1.1 Strategies and Enhancement Measures

Community identified strategies to enhance this potential positive impact include:

- Lightsource bp or their construction contractor to engage with local businesses via a networking or local procurement event.

Host an engagement local Business Night - local business needs and tenders for Muswellbrook Merriwa businesses. This will help to meet and greet and build stakeholders list prior to needing these businesses. – Local business.

- Collaborate with a local supply solutions or procurement business, to link in with other local businesses and ensure benefits are felt locally.

  Lightsource bp needs to link in with local people to have them vouch for the company and the project. These local people can negotiate and build trust between the Project and the community. E.g. Lightsource bp could set up a 'local buying house' - like a supplier solutions group, and they can be a middleman for everything the project needs on site and ensuring as many of these products and services are sourced locally. Examples like cleaners, laundry services, wet mess staff, drill bits, mechanics etc. – Local business.

  Link in with IGA, don't get things from Coles and woollies in Mudgee - Nearby landowner / resident.

  Support local business is good but if pubs, cafes, bakeries, won't be able to get out to Ringwood Rd. Fund the pub/RSL in town to allow shuttle bus to take people back out to site. – Nearby landowner / resident.

To enhance this opportunity, it is recommended to implement strategies and procurement weightings to maximise the number of sub-contractors and suppliers sourced locally, and for Lightsource bp to communicate procurement opportunities (for both the TWA Facility and the wider Project) openly and transparently to the local community and provide updates on whether any objectives or local procurement targets are achieved.

Adhering to the strategies identified in the AES Addendum would also help maximise local procurement, such as through maintaining a business register and hosting industry forums.

3.4.2 Local employment opportunities for construction and operation of the on-site TWA Facility

As well as providing opportunities for local businesses and contractors, the on-site TWA Facility also presents employment opportunities for the local workforce, thus potentially leading to improved financial outcomes for workers and their families. 37% of those engaged indicated that the creation of employment opportunities for local people was a potential benefit of the inclusion of the on-site TWA Facility (**Figure 3.1**).

Good for the local economy while the project goes through building phase. – Community resident.

Want a job on the Project as it is closer to home - Nearby landowner / resident.

One community resident however commented that solar farm projects such as Goulburn River do not offer as many jobs as other project types, and multiple stakeholders raised the importance of creating job opportunities as a key contributor to the level of community acceptance and support for the energy transition and individual projects alike.

Less job opportunities as compared to thermal or hydro power generation stations…Create more job opportunities with the development of the sustainable business. – Community resident.

However, a nearby resident indicated the limited workforce numbers in the area and reflected on the difficulty in obtaining good workers and keeping them, explaining that the Project may present as competition to local businesses for their workforce.

> *Shortage of workers at the moment, and there's a surplus of jobs. This (the Project) might take away from small business, makes it harder to keep people on the books. - Nearby landowner / resident.*

Additionally, local landholders and residents pointed out that other solar project developments in Wellington and in Mudgee have employed the majority of workers from overseas, who are in Australia on temporary visas. The impact of this was that jobs weren't being provided for local people and was therefore a negative outcome for those projects.

> *Backpacker dominated workforce, not supporting local economy. - Nearby landowner / resident.*

Analyses from the Amended AES (Umwelt, 2024) presented in **Table 3.6** show that there are 1,952 people employed in construction, and 4,066 people employed as trade workers and technicians. In addition, there are a total of 1,088 unemployed people across the three LGAs of the social locality, who are looking for either full-time or part-time work.

Table 3.6 also shows that 764 are employed in jobs relevant to TWA operations (including food delivery, handling and service, housekeeping and laundry services, administration, site maintenance and cleaning, and security). These operational roles also provide additional employment opportunities for the local workforce. Given that only 10 operational workers are required, it is more likely that these roles may be filled from the local workforce.

Table 3.6 Employment by Industry and Job Type Summary

	Mid-Western Regional LGA	Upper Hunter Shire LGA	Muswellbrook LGA	Total
Total Employed Workforce	11,231	6,651	14,814	**32,696**
Workforce Employed in Construction	942	478	505	**1,952**
Workforce Employed as Trade Workers and Technicians	1,998	1,152	1,466	**4,066**
Workforce employed in TWA-related job types[3]	377	148	239	**764**

3.4.2.1 Strategies and Enhancement Measures

Community identified strategies to enhance this potential positive impact include:

- Providing educational opportunities for local people to enable people to be employed by the project.

> *Need educational opportunity in Merriwa to access courses that will support the business, like electrical construction, project management etc. to keep children in town and to address*

[3] TWA-related job types include the following industries of employment: Laundry and Dry-Cleaning Services; Investigation and Security Services; Repair and Maintenance; Building Cleaning, Pest Control and Gardening Services; Food and Beverage Services; Water Supply, Sewerage and Drainage Services; Administrative and Support Services; and Waste Collection, Treatment and Disposal Services.

behavioural issues. Low level of literacy and education… next generation of people will be more educated. – Nearby landowner / resident.

More local jobs by providing opportunities to the local community with adequate training. – Community resident.

- Engage with local groups and businesses to build relationships and maximise local benefit and understanding of the project.

  Could attend the local Chamber of Commerce meetings and have a local person there with you that you have already engaged to emphasise local engagement and local employment. That local person ends up being a liaison because people that don't trust you as a company will go to that local person for insights. – Local business.

As identified in the Amended AES (Umwelt, 2024), the opportunity for local employment may also be enhanced by implementing strategies to target a minimum of 10% of the total construction workforce (including both the construction workforce for the on-site TWA Facility and the Project construction workforce) sourced locally and similarly as for procurement, supporting training, up-skilling and capacity building, in collaboration with local stakeholders and training providers, to improve job-readiness in the pre-construction phase of the Project, and to openly communicate employment opportunities (for both the on-site TWA Facility and wider Project) to the local community and provide updates on whether these objectives are achieved.

3.5 Community & Way of Life

Concerns about perceived impacts relating to community include changes to community cohesion, composition, and character. Way of life refers to impacts on peoples' daily lives – how they live, get around, work, play, and interact.

3.5.1 Decrease in community cohesion and changes in community composition

Large-scale transitions, the introduction of new projects in a social locality, changes to the built and natural environment, and the subsequent influx of new residents and transient construction workforces, can influence levels of social cohesion within a community as well as alter a community's composition and stability (NSW DPE, 2023). This is particularly relevant when considering the cumulative impact of population influx, albeit temporary, as a result of incoming workforces from multiple projects, as described in **Section 3.2**.

The Project's workforce influx carries the potential to cause a change in the character of the community and the levels of social cohesion between members, as well as positively, that the incoming workforce could increase the population and positively contribute to the social and economic stability of the community. Previous experience with other developments in the region, as well as through feedback from local stakeholders, indicates that the incoming temporary construction workforce may be perceived to not share the same values of the local community and that anti-social behaviour could rise affecting residents in and around town.

Recent research has demonstrated that the strongest predictor of acceptance of solar farms were affective responses, with how a person felt about a project highly influencing all other aspects of social license

(Cousse, 2021; Scovell, McCrea, Walton & Poruschi, 2024). Feelings such as dislike, anxiety, and frustration, can produce protective approaches in which people and things that aren't part of the 'familiar' are excluded based on their difference (Pretty, Bishop, Fisher & Sonn, 2007). Communities may then reinforce who is 'part' of the 'real' community and who 'doesn't belong' leading to a sense of exclusion for those depicted as the 'others' (Pretty, Bishop, Fisher & Sonn, 2007; Fisher & Sonn, 2007). This can include project proponents who are not considered to be part of the local community.

Some stakeholders shared concern that the influx of the on-site TWA Facility workers into local communities would increase community division (15% of those engaged; **Figure 3.1**), with a further 29% citing anti-social or unsafe behaviour by the visiting workforce as a particular issue concerning the community (**Figure 3.1**).

> *Safety concern for Dad who lives there alone, he's 88 years old. Workers increasing chances of crime and safety risks. – Nearby landowner / resident.*

> *Concerned about the anti-social behaviour of TWA workers - Crime, trespassing, hunting, driving badly, rubbish along the road. – Nearby landowner / resident.*

The workforce's likelihood to be predominantly male also has implications for gendered impacts to communities, and likely temporary changes to the composition of the community. The influx of a new largely male population may have negative impacts on the safety or perceived safety of female, or older, community members. The largely male (and young) workforce is also likely to demonstrate higher rates of alcohol consumption and therefore the potential for alcohol-fuelled violence or decrease in public safety may increase (Ruddell & Ortiz, 2015).

> *Could have issues with anti-social behaviour in the local pubs between workers and local women. Having a wet mess could make this better or worse, hard to say. Having a wet camp allows workers to bring their own alcohol into the camp, could create issues within the camp with anti-social behaviours. – Local business.*

Concerns for safety and crime onsite was identified by the local police representative, as outlined below.

> *Due the relatively remote location of the site I do have significant concerns about security. Rural and remote crime does impact the Upper Hunter and I believe this project will present an attractive target to people seeking to take advantage of high value equipment and material on site. It should be noted that police presence at the location would be minimal and response to reports of crime will be assessed depending on urgency. – Emergency service provider.*

The influx of on-site TWA Facility resident workers potentially increasing their participation in community activities was a potential positive impact that was identified by some stakeholders during consultation, with 15% of those engaged citing 'generation of more social opportunities and interactions for local community members' as a benefit of the on-site TWA Facility (**Figure 3.1**).

3.5.1.1 Strategies and Mitigation Measures

Community-identified mitigation measures included ensuring the provision of security services at the on-site TWA Facility (which would also provide an additional local procurement opportunity).

We would suggest a strong private security presence, especially during the construction phase. – Emergency service provider.

I recommend having security on site, there are some good local companies to engage. – Local business.

Security workers driving around town? Good for town, there is anti-social behaviour already so this would be good. – Nearby landowner / resident.

Introduce curfews for workers, to ensure they are not out late at night. – Nearby landowner / resident.

To mitigate these matters, Lightsource bp will introduce a Workforce Code of Conduct and minimum acceptable behaviour which must be strictly adhered and the inclusion of security personnel as part of the on-site TWA Facility's operational workforce. Any consumption of alcohol will be controlled, and should alcohol be available at the facility, responsible service of alcohol requirements will apply within designated social areas with set operating times to ensure the wellbeing of employees is appropriately managed. Lightsource bp will also implement onsite drug and alcohol testing for workers on a day-to-day basis.

Ongoing liaison with local councils and police to ensure open communication and identification of emerging issues would also help to mitigate these impacts. The demonstration of proactive and transparent community engagement throughout the lifespan of the Project can also help foster further trust and acceptance of the Project and resident workforce.

Impacts on community cohesion can also be further mitigated by having the TWA Facility location, design and amenities as such to encourage the workforce to remain on site for most of their daily needs, and by discouraging workers from wearing high-vis or other workwear when they do visit townships.

Lightsource bp is also developing a Community Benefit Sharing Strategy for the Project, that includes an annual financial contribution for the life of the Project. The Scheme will include a VPA with Upper Hunter Shire Council and partnerships with the not-for-profit community groups and other educational organisations. Community cohesion may be supported by targeting initiatives that focus on increasing community wellbeing and community participation, with positive impacts on community vibrancy or the character of the community (such as involvement with Merriwa's annual Festival of the Fleeces).

It is recommended that the Community Benefit Sharing Strategy and VPA are designed and developed in consultation with local stakeholders, including Council, community representatives and groups, to ensure that it is participatory in nature and delivers effective social outcomes for the local context. Governance arrangements for the ongoing management and administration of the funding should consider nomination of a community-led steering group to work in collaboration with Lightsource bp to ensure that the initiatives receiving support are aligned with community needs, aspirations, and local priorities.

3.6 Surroundings

The perceived impacts on people's surroundings were discussed by those consulted and included impacts on the amenity of the area and how people experience their surrounds, as well as potential impacts of the Project (including the on-site TWA Facility) on the environment and local habitats.

3.6.1 Concern for locally valued flora, fauna, and ecological habitats

During engagement, 19% of stakeholders indicated that 'impacts on biodiversity and ecosystems on the site' were a concern (**Figure 3.1**). Throughout discussions with landholders who live close to the Project site, several species of flora and fauna that were noted as valued by the local community were discussed as potentially being impacted by the construction activities, and associated traffic.

> *Concern for biodiversity on site, like the bell flower, fairy bells flowers and quolls. – Nearby landowner / resident.*

Other landholders indicated that they are concerned about koalas in the area, as they regularly observe a koala on their property.

Note that no additional impacts to habitats or biodiversity have been identified as a result of the on-site TWA Facility, in addition to those that had already been assessed in the original EIS and SIA.

3.6.1.1 Strategies and Mitigation Measures

Community-identified mitigation measures included:

- Planting as many trees or more than the amount needed to be cleared for the Project.

  > *Plant as many trees as you have to clear – Nearby landowner / resident.*

- Reduce speed limit on dirt road section of Wollara Road.

  > *Should reduce speed on dirt road to 60km to reduce the killing of animals, especially baby emus. – Nearby landowner / resident.*

Limiting vehicle and personnel movement to designated areas would also help to reduce impacts on the local environment.

3.6.2 Reduced changes to visual amenity and sense of place due to the on-site TWA Facility siting

The site selection process for the Project including the on-site TWA Facility has been key in minimising disruption to visual amenity, sense of place, place attachment for local residents and community members. The Project's siting in a remote setting with no adjacent properties or residences within several kilometres, and surrounded by national park, are the main contributors to this minimised social effect.

Of the stakeholders engaged, 17% (**Figure 3.1**) indicated their satisfaction with the location of the Project (and therefore the on-site TWA Facility) in terms of it being 'out of the way' and therefore reducing its impacts on the visual landscape and increasing acceptance of the Project.

> *The problem we had with the Liverpool Range Wind Farm TWA project was that it was going to be at the entry of Cassilis town, it was the visual impact. This project will not be visible, down where people won't see it, that's a positive. – Accommodation Provider.*

A second addendum to the Landscape and Visual Impact Assessment (LVIA) was conducted to determine the visual impacts of the inclusion of the TWA Facility (Envisage, 2024). This assessment found that the on-site TWA Facility would cause no change to the visual impacts from the 14 viewpoints assessed within 4km of the Project site (11 private residential viewpoints and three public viewpoints – Wollara Road, Ringwood Road, and the Golden Highway Intersection). The on-site TWA Facility would not be visible from any residential viewpoints (and so the visual impact remains Low), and only visible from Wollara Road (though it does not change the visual impact from Moderate as per the original assessment). Implementing appropriate setbacks from Wollara Road would help reduce this visibility. **Figure 3.5** below illustrates the locations of the assessed viewpoints in relation to the on-site TWA Facility Feasibility Area.

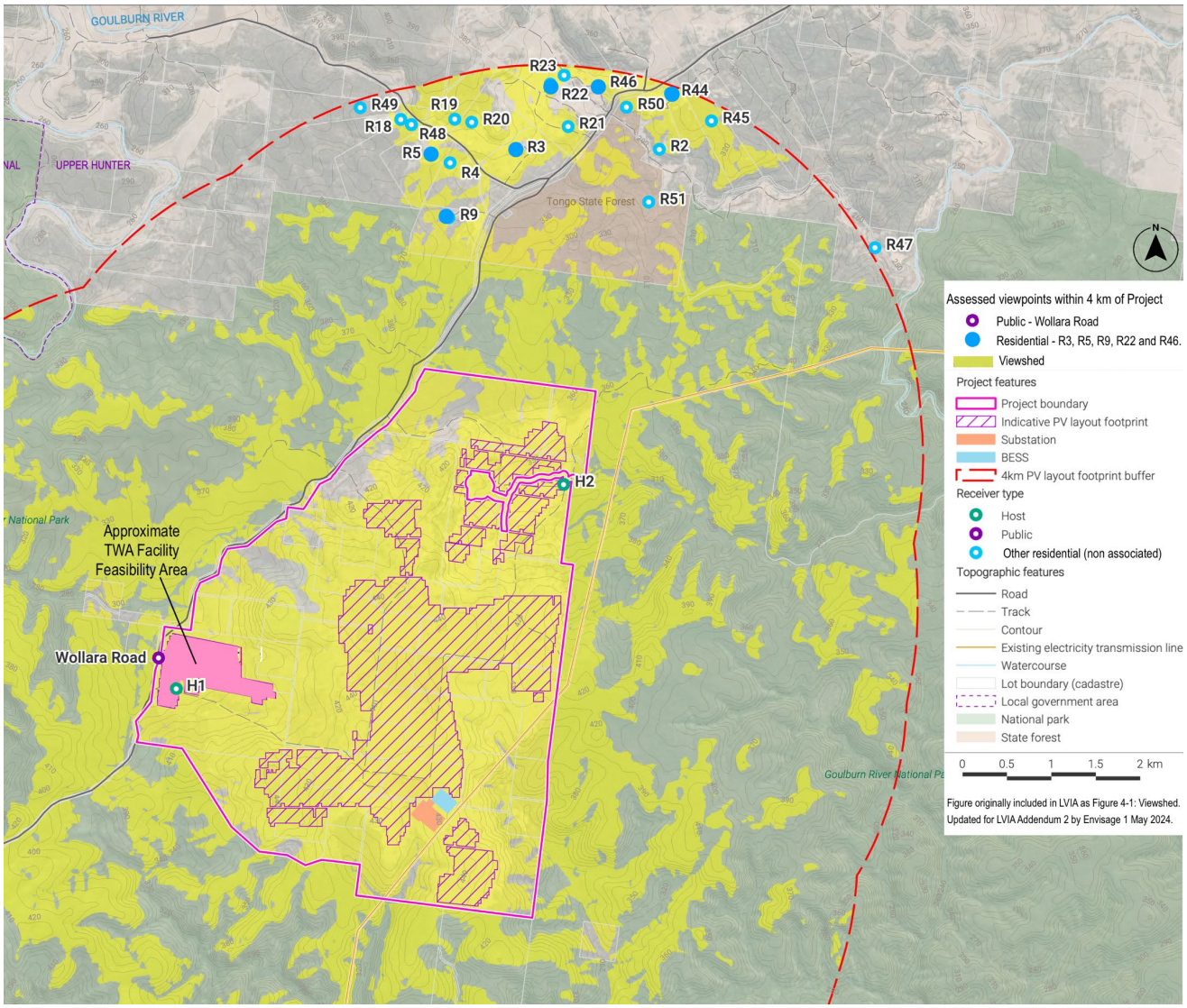

Figure 3.5 Assessed Viewpoints in the LVIA

Source: (Envisage, 2024)

The assessment does note that there would be a temporary increase in lighting impacts at night during operation of the on-site TWA Facility, however given this lighting would not be visible from any residences, the impact of this is considered minimal.

Mitigation measures to reduce the visual impact of the on-site TWA Facility even further include switching external lights off when not required, selecting an inconspicuous colour for the facility buildings or infrastructure such as a dark grey, avoidance of any large-scale signage, and the retention of as much existing vegetation as possible or the planning of targeted vegetation screening.

3.6.3 Increased noise disturbance

The on-site TWA Facility will likely generate additional noise due to the number of workers residing and the day-to-day activities associated with its operations. Noise generation for nearby residents has the potential to disturb or cause annoyance to people's way of life. Noise is also likely to be generated outside of standard working hours due to the residential nature of the on-site TWA Facility.

A number of nearby landholders (13%; **Figure 3.1**) raised concern regarding the increase in noise in the area during construction and operation phases of the on-site TWA Facility. This is in reference to noise produced by not only people living there and traffic in and out of the site, but also the generators that will be needed to power the on-site TWA Facility.

> *What about the extra noise from diesel generators running 24 hours a day. – Nearby landowner / resident.*

Due to the need to transport materials in and out of the Project site, noise irritation may also be experienced by residents living along the access route. Traffic-associated noise may lead to annoyance and disturbance to people's way of life, as well as a temporary change to people's sense of place during the period of construction.

> *Noise impact due to trucks and people on the road. Goes from an amazing peaceful place to chaos for construction period – Nearby landowner / resident.*

As per impacts on visual amenity, the Project's remote location also holds benefits for noise impacts. The Project's Noise and Vibration Impact Assessment (NVIA) Addendum assesses the noise impacts of the inclusion of the on-site TWA Facility (Umwelt, 2024), and concluded that potential noise and vibration impacts from construction of the on-site TWA Facility were predicted to comply with established Noise Management Levels (NMLs) for all nearby residents (sensitive receivers) not involved with the Project and therefore would present minimal impact. Potential noise impacts from operating the on-site TWA Facility were also predicted to be negligible.

Figure 3.6 below illustrates the locations of the nearest residents within 5km of the on-site TWA Facility Feasibility Area.

Lightsource bp will aim to minimise noise as much as possible. As outlined in the original EIS NVIA (Umwelt, 2023), strategies to do so include scheduling work generating high noise during less sensitive time periods, all workers to receive an environmental induction including limitations on high noise-generating activities and location of nearby residents, and a general requirement to keep extraneous noise to a minimum, such as loud stereos/radios, shouting on site, and car door slams. Reducing speed limits in populated areas would assist in reducing noise away from the Project area.

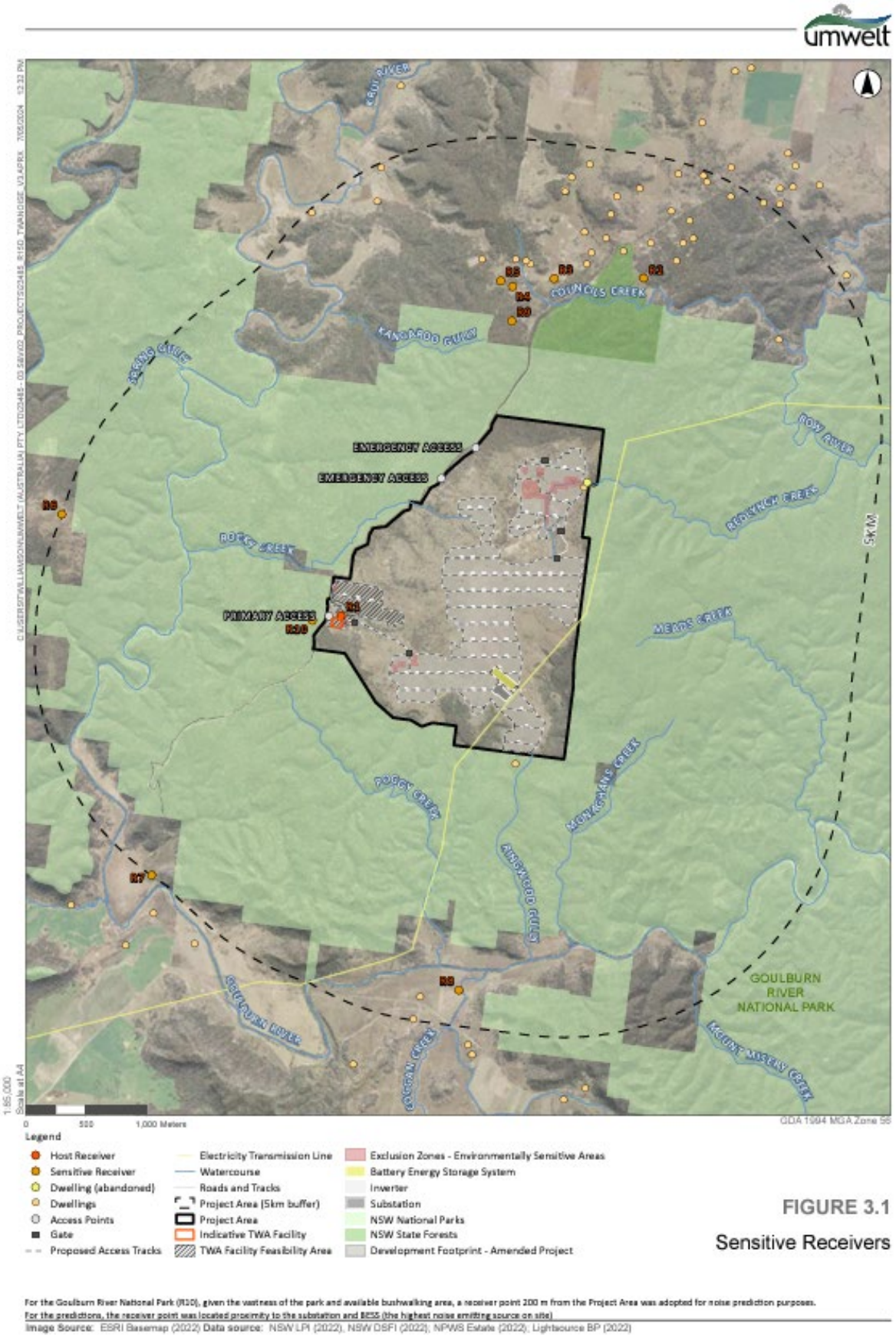

Figure 3.6 Sensitive Receivers (residences) in the Addendum NVIA 2 (Figure 3.1 of the Appendix D of the Amendment Report)

Source: (Umwelt, 2024)

3.6.4 Perceived strain on community water supply and waste management services

There is some perception of the potential for the on-site TWA Facility or wider Project to cause an increased strain on local water resources for the community and on local infrastructure or services such as waste and sewerage treatment facilities. It is understood that this matter is a perception that can be mitigated through effective information provision and awareness raising activities through public communications and community engagement efforts, around the plans for the Project and the day-to-day services and operational needs of the on-site TWA Facility.

This section outlines the feedback on these matters as received from the community and describes the Project's plans to service the on-site TWA Facility to avoid placing unnecessary pressure on local utilities or natural resources.

A small number (8%) of those engaged raised concerns around 'impacts on water supply and sewerage/waste management' (**Figure 3.1**), with concerns that the on-site TWA Facility will further strain local water resources for the community and infrastructure such as waste and sewerage treatment facilities.

> *Where will they put the sewage and rubbish? – Nearby landowner / resident.*
>
> *Question of water and sewerage, as local council does not have capacity – Local health service provider.*
>
> *No water here, hard year or 2. Drought. – Nearby landowner / resident.*

It is estimated that the on-site TWA Facility will generate around 3.5 tonnes of general waste a day during operation, which will be collected regularly alongside waste generated from the Project construction. Cooking oil and grease from the on-site TWA Facility's mess will be stored onsite in drums and subsequently collected by a recycling business offering collection and processing services for cooking oil. Storage and collection of biomatter is expected to occur monthly and will be discharged back to a registered waste management facility. Lightsource bp are also working with a range of potential TWA Facility providers to incorporate waste minimisation and 'circular economy' strategies into the design and operation of the on-site TWA Facility. Developing a Waste Management Plan would formalise these strategies into a document for reference, which would be prepared following Project approval, and prior to construction.

Regarding sewage, the on-site TWA Facility will include its own modular Sewerage Treatment Plant (STP) to manage wastewater. The treated water exiting the STP would not be fit for industrial purposes, however, is able to be used for dust suppression and discharge during the dry months. During wet months, treated water will be discharged onsite in nominated areas, being flat land located at least 50 m from a watercourse. These nominated areas would be highlighted within the CEMP which would be prepared prior to construction.

In terms of water, the on-site TWA Facility is anticipated to require approximately 85,000 L of potable water per day during peak operation. This will be serviced by up to three water truck deliveries of potable water per day (i.e., 30,000 L capacity), with water sourced from a combination of onsite bores with existing Water Access Licences, or by purchasing Water Access Licenses from existing suppliers within the Hunter

subregion. Given the low potable water consumption proposed, it is unlikely that the operation of the on-site TWA Facility would cause notable impacts on the groundwater or surface water availability.

However, the development of a Water Sourcing Strategy is still proposed to account for any possible future water restrictions or shortages and to ensure a sustained water supply is in place to meet the Project's requirements. Existing community concerns around the potential for the Project to strain local natural resources or existing utilities/services would be most appropriately mitigated by improved information sharing and the communication of Project plans around the Water Sourcing Strategy, the on-site TWA Facility's waste and sewerage management practices.

3.7 Decision-Making Systems

Decision-making systems includes the extent to which members of a community can have a say in the decisions that affect their lives, and their access to complaint, remedy, and grievance mechanisms.

3.7.1 Cumulative rate of change and consultation and information provision processes

A real or perceived lack of meaningful consultation or information transparency on projects which are understood to cause major changes to people's lives or their surrounds, have the potential to generate uncertainty, distrust, frustration, scepticism, and a perceived inability to influence project decisions, as well as a sense of helplessness or resignation around the changes happening to communities or regions. The approach that projects take in involving and engaging host communities often directly attribute to the level of social acceptance of a project by a community.

The impacts of engagement and information provision were considered in the original SIA, however this addendum expands on that by considering the cumulative impacts of other proximal projects in development. Note though that these impacts are not specifically due to the inclusion of the on-site TWA Facility.

Concerns around the level of public engagement and communication were raised during consultation on the Project, with 15% of those engaged showing concerns around consultation and information provision, and 8% showing a lack of trust in the planning process more broadly (**Figure 3.1**). it is understood that the nature of these concerns is due to the cumulative development context and the rapid rate of regional change with various proposed projects affecting local communities.

> *The projects being proposed in the area haven't had enough community consultation opportunities… (we) want more information. – Community resident.*

As shown in **Section 3.2.1** there are as many as nine other proximal projects with construction timeframes that may overlap with that of the Project. This exacerbates any lack of consultation or communication from these development proponents, with this cumulative impact of poor engagement potentially leading to significant negative sentiment towards future developments.

Those who indicated their lack of trust in the planning process, explained that they believed the project will go ahead no matter what they say or do because the Australian Government wants renewable energy projects, therefore making the local community members feel powerless.

It will go ahead; it's about how we make it the best for the people of Merriwa and the people on the road. – Nearby landholder / resident.

A lack of communication and/or information may also in turn cause a lack of awareness or understanding of the Project's benefits or a general lack of support for renewable energy.

The project is completely pointless in the Australian context, and therefore a waste of time, money, labour, minerals, resources and our wonderful natural environment; it will cause destruction of fine agricultural land, harm to Australia's baseload power capacity and increased power prices. – Community resident.

Go somewhere else with your solar factory. Please do not proceed with this stupid idea. – Nearby landholder / resident.

Solar panels not made in Australia, so not benefiting Australia – Community group / organisation.

3.7.1.1 Strategies and Mitigation Strategies

Community identified strategies to mitigate this potential negative impact include:

- Engage / hire a dedicated local employee or resource who has capacity to visit local businesses and organisations in person to build relationships and trust.

Lightsource bp need a dedicated full-time engagement person solely on this project, need to have this to maximise local benefit. – Local business.

Connect with community, come to the Festival of the Fleeces to build relationships with the community that the project is impacting. – Nearby landowner / resident.

An ongoing Stakeholder Engagement Strategy, implemented in a way that increases opportunities for the community to work together with Lightsource bp during the project development, is also key to mitigate concerns around engagement. Providing transparent and timely information about the Amended Project that acknowledges the stages of psychological response to change (see **Figure 3.7**) and facilitating spaces for communities and Project representatives to share information and concerns about the Amended Project will all help mitigate community concerns caused by an actual or perceived absence of information.

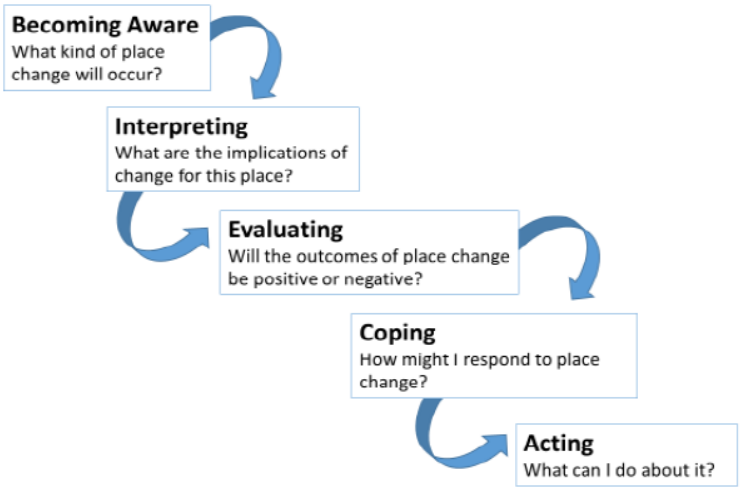

Figure 3.7 Stages of Psychological Response to Place Change

Source: (Devine-Wright, 2009).

The Project's Stakeholder Engagement Strategy moving forward should focus on the following aspects:

- Providing regular updates with local stakeholders.
- Sharing of project information in community-accessible forms.
- Ensuring adequate resourcing to maintain local relationships and develop next steps together.
- Collaborate with other stakeholders such as Council, NSW Government, service providers, and other proponents, through multi-stakeholder forums is also important to develop coordinated strategies to region-wide or cumulative matters towards effective information sharing and consultation.

In terms of information communication, the recent Community Engagement Review (Dyer, 2023) has made some clear recommendations to reduce community concerns, particularly around the cumulative impacts of large numbers of projects. These recommendations include:

- Including information about why there is an urgent need for new renewable energy and transmission infrastructure in their locality. The information should provide details of the proposed developments, such as the location for the project, the type (e.g. wind, solar), the scale of generation and storage projects, and proposed corridors for transmission routes and voltage rating (e.g., 500kV transmission line).
- Messaging about the practical and pragmatic reasons for the energy transition, the limited time available to achieve these significant changes, and the benefits of the energy transition from a regional community perspective.
- Keeping community members, local governments, local members of parliaments, and local facilities informed on these topics, with up-to-date information about what is planned for their locality.

- Targeting communications at the local area (e.g., REZ), as well as communications at state, territory and national levels.

Dyer (2023) notes that these recommendations will "likely ease local anxieties, often driven by misinformation, and allow community members to have confidence that the plan is manageable and the end result will make a material contribution to the transition outcome", which is particularly pertinent when considering the cumulative impacts of multiple projects.

3.8 Health and Wellbeing

Health and wellbeing include peoples' physical and mental health and psychological stress resulting from pressures or changes in their environment.

3.8.1 Impacts on Workforce Health and Wellbeing

There are also potential health and wellbeing impacts for the workers who are proposed to reside in the on-site TWA Facility including:

- Possible feelings of isolation and loneliness due to being away from their families and social networks.
- Inadequate sleep and fatigue due to noise.
- Uncomfortable beds or irregular work schedules.
- Physical health risks due to working physically demanding jobs.
- Physical safety risks due to residing in close proximity to a large-scale construction site and solar panels.

While the recommended provision of onsite health care is described in **Section 3.3.4.1**, the on-site TWA Facility is also planned to include recreational facilities such as a gymnasium, bar area, and BBQ facilities to alleviate some of the boredom or monotony that could be associated with living within the on-site TWA Facility. The provision of mobile phone and internet reception is also crucial to ensure that workers can remain in contact with their family and friends at home. It is also recommended for Lightsource bp to take steps in supporting mental health by providing access to an Employee Assistance Program or similar confidential counselling service, and by providing workforce education programs around mental health.

While it is intended that the on-site TWA Facility will have a wet mess (serves alcohol), which may improve morale, it is intended that there will be restrictions with regards to alcohol consumption (see **Section 3.5.1.1**) to mitigate alcohol-related safety or health and wellbeing risks. Further, as the construction workforce is temporary, and intended to operate on a roster, it is recognised that these impacts will be short-term in nature. Additionally, the relative proximity of the on-site TWA Facility to towns will aid in enabling workers to access local services and facilities and to integrate within the community outside of the individual's shift. It is anticipated that workers may choose to have meals or recreate in Merriwa as the closest major town to the Project as well as to access community facilities and commercial or retail services on an as needs basis. Encouraging workers to have safe, responsible and respectful interactions and participation in host communities will aid in improving the physical and mental health and wellbeing outcomes for workers onsite and may also aid in the building of stronger intercommunal relations between the existing community and the temporary workforce.

Lastly, the risks of the workforce residing in close proximity to an active large-scale construction site and solar panels may be mitigated by establishing emergency preparedness protocols and ensuring that the resident workforce is familiar with them, implementing safety training as part of the worker onboarding process, and collaboration with local emergency services and council as needed to ensure safety for both onsite workers and nearby residents.

4.0 Updated Social Impact Evaluation

This section provides a summary of the updated social impact evaluation. As described in **Section 3.0**, a range of perceived social impacts have been identified in relation to the Project, that require prioritisation for assessment and appropriate management and/or enhancement. It should also be noted that social impacts are often not mutually exclusive, with higher order impacts such as population change, resulting in second order impacts such as impacts on sense of community and service provision.

As noted in the SIA Guideline, the definitions and scale assigned to each of the likelihood and magnitude categories need to be relevant to the impact that is being evaluated and justified in the SIA; and where possible the consequence scale should be based on established measures and standards. The evaluation of social impact significance has involved four main steps as outlined in **Figure 4.1.**

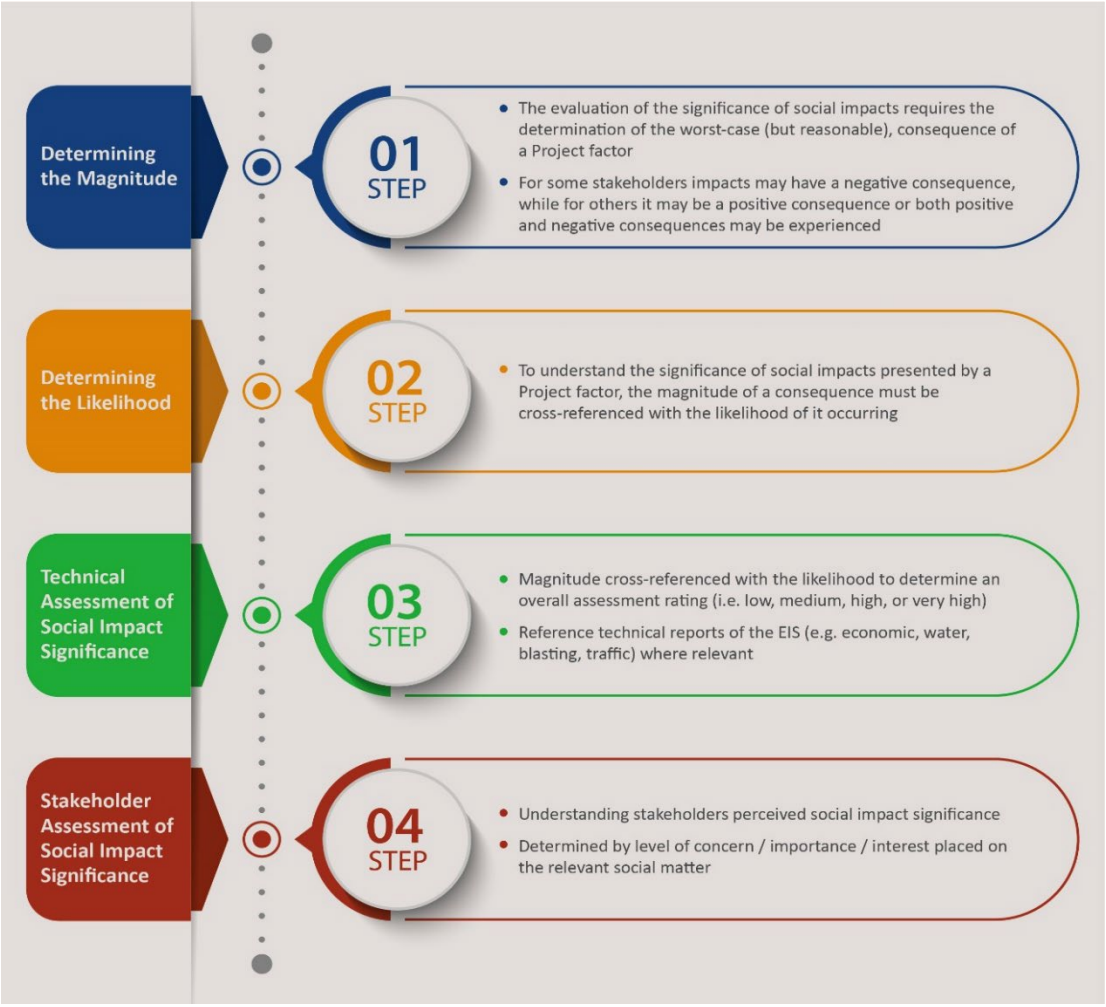

Figure 4.1 Social Impact Evaluation Process

4.1 Social Impact Evaluation

Table 4.1 presents the updated social impact evaluation with the proposed management and enhancement strategies. Note, green cells indicate positive impacts/opportunities, whereas orange cells indicate negative impacts. Darker shades indicate impacts or opportunities of higher significance, while lighter shades indicate lower significance.

Table 4.1 Social Impact Evaluation

Social Impact Category	Social Impact Description	Existing Impact vs Impact associated with the on-site TWA Facility	Project Aspect	Duration	Extent/Affected Parties	Perceived Significance[4]	Significance Rating[5]			Mitigation or Enhancement	Residual Significance
							L	M	S		
Community	Temporary increase in population to be experienced across the social locality due to multiple concurrent development projects with incoming workforces.	Existing	Construction workforce influx	Construction phase	Local Businesses and Service Providers Other projects and industries Broader Community	M	B	4	H	Proactive collaboration with other stakeholders such as Council, NSW Government, service providers, and other proponents, through multi-stakeholder forums to develop coordinated strategies to region-wide or cumulative matters towards effective information sharing and consultation.	M
Accessibility	Reduced strain on local accommodation due to majority of Project construction workers being housed in on-site TWA Facility.	On-site TWA Facility	Construction workforce influx	Construction phase	Local Businesses and Service Providers Tourists Other projects and industries	M	A	3	H	Housing non-local workforce in the on-site TWA Facility. Lightsource bp to work closely with local accommodation providers to accommodate the workforce required to build the on-site TWA Facility including partnerships to expand existing capacity and early communication of accommodation needs.	VH
Accessibility	Reduced strain on local businesses due to resident workforce using facilities/services provided at on-site TWA Facility.	On-site TWA Facility	Construction workforce influx	Construction phase	Local Businesses and Service Providers Broader Community	M	B	3	H	On-site TWA Facility location, design and amenities to encourage workforce to remain on site for most of their daily needs. Discouraging or limiting use of personal vehicles by resident workers of the on-site TWA Facility. Reducing strain on local supermarket by sourcing groceries, supplies and food stock from other local businesses or a combination of various local businesses.	VH
Accessibility	Increased strain on local health services due to resident workforce at on-site TWA Facility.	On-site TWA Facility	Construction workforce influx	Construction phase	Local Businesses and Service Providers Broader Community	H	B	3	H	Implement an onsite first aid post and ensuring it is appropriately stocked and staffed. Facilitate and enable GP services via telehealth to cater for the workforce's health requirements on an as needs basis. Ensure access to local emergency department and collaborate with local hospital to ensure there is no additional strain placed. Construction Management Plan to detail onsite emergency response protocols.	M

[4] Perceived significance based on the impact frequencies in **Figure 3.1,** 0-15%: Low; 16-29%; 30%+: High.
[5] L = Likelihood (A: Almost Certain, B: Likely, C: Possible, D: Unlikely, E: Very Unlikely); M = Magnitude (1: Minimal, 2: Minor, 3: Moderate, 4: Major, 5: Transformational); S = Significance rating (L: Low, M: Medium, H: High, VH: Very High)

Social Impact Category	Social Impact Description	Existing Impact vs Impact associated with the on-site TWA Facility	Project Aspect	Duration	Extent/Affected Parties	Perceived Significance[4]	Significance Rating[5]			Mitigation or Enhancement	Residual Significance
							L	M	S		
Accessibility **Health & Wellbeing**	On-site TWA Facility reducing access for firefighters to combat fires, or risk of fires increasing due to TWA Facility operations or residents, thus increasing pressure on emergency fire services and impacting safety of TWA Facility residents, nearby residents and surrounding conservation areas.	On-site TWA Facility	Project construction Construction workforce influx	Construction phase	Construction workforce Neighbouring landholders and residents Broader Community Emergency Service Providers Local Government National Parks	M	C	3	M	Development of a Fire Management Plan (FMP). Engage with local emergency services and share FMP. Provision of training and familiarisation for nearby residents and landholders in relation to fighting fires in and around the Project. Presence and maintenance of on-site fire appliances and employees trained in their use. Identifying 'hot trees' after lightning storms to cool them off. Applying appropriate APZs to create sufficient space for firefighting and the protection of infrastructure and occupants.	L
Accessibility **Surroundings** **Health & Wellbeing**	Reduced traffic congestion for local users due to reduction in volume of light vehicle traffic due to the on-site TWA Facility reducing the need for workers to travel to the Project site from offsite accommodation.	On-site TWA Facility	Project construction	Construction phase	Neighbouring landholders and residents Broader Community	H	A	3	M	Discouraging or limiting use of personal vehicles by resident workers of the on-site TWA Facility. Adherence to Traffic Management Plan.	H
Accessibility **Surroundings** **Health & Wellbeing**	Potential decrease in safety of local road users due to increase in heavy vehicle traffic due to operational requirements of the on-site TWA Facility impacting access and condition of the local road network.	On-site TWA Facility	Project construction	Construction phase	Neighbouring landholders and residents Broader Community	H	B	3	H	Scheduling heavy vehicle movements to outside of peak hours where possible. Implementation of Road Maintenance Fund as part of the VPA with Upper Hunter Shire Council to contribute towards maintenance of impacted roads in the LGA. Considering community feedback in any future proposed changes to the intersection of Ringwood Road and Golden Highway. Communicate timing of larger vehicle movements ahead of time, particularly for local community members moving livestock. Implementation of a community complaints hotline to allow community members to directly report dangerous driver behaviour. Adherence to Traffic Management Plan.	M
Accessibility **Surroundings**	Cumulative traffic and road impacts with other projects affecting safety for road users.	Existing	Project construction	Construction phase	Neighbouring landholders and residents Broader community	H	B	3	H	Communication of Traffic Management Plan with other project proponents. Implementation of Road Maintenance Fund as part of the VPA with Upper Hunter Shire Council to contribute towards maintenance of impacted roads in the LGA. TWA Facility location, design and amenities to encourage workforce to remain on site for most of their daily needs. Discouraging or limiting use of personal vehicles by resident workers of the on-site TWA Facility.	M

Social Impact Category	Social Impact Description	Existing Impact vs Impact associated with the on-site TWA Facility	Project Aspect	Duration	Extent/Affected Parties	Perceived Significance[4]	Significance Rating[5]			Mitigation or Enhancement	Residual Significance
							L	M	S		
Livelihoods	Creation of employment opportunities at the on-site TWA Facility for local workforce leading to improved financial outcomes for workers and their families.	On-site TWA Facility	Project construction	Construction Phase	Broader Community Local Businesses and Service Providers	H	B	2	M	Implementation of strategies and actions within the Amended AES to maximise local employment and sourcing from local communities such as through supporting training, up-skilling and capacity building, in collaboration with local stakeholders and training providers, to improve job-readiness in the pre-construction phase of the Project. Implementing strategies to target a minimum of 10% of the construction workforce sourced locally. Openly communicating employment opportunities for both the on-site TWA Facility and the wider Project.	H
Livelihoods	Creation of procurement opportunities at the TWA Facility for local businesses which will increase economic capital for regional businesses and communities.	On-site TWA Facility	Project construction	Construction phase	Broader Community Local Businesses and Service Providers Industry Groups/ Associations	H	B	2	M	Implementation of strategies and actions within the Amended AES to maximise local procurement opportunities such as through maintaining a business register, communicating regularly with local businesses, and attending and hosting industry forums. Collaborate with a local supply solutions or procurement business, to link in with other local businesses and ensure benefits are felt locally. Openly communicating procurement opportunities for both the on-site TWA Facility and the wider Project. Implement strategies and procurement weightings to maximise the number of sub-contractors and suppliers sourced locally.	H
Community	Influx of on-site TWA Facility resident workers potentially increasing participation in community activities with positive impacts on community vibrancy / character of community.	On-site TWA Facility	Project construction	Construction phase	Broader community	L	C	2	M	Development of Community Benefit Sharing Strategy and targeting initiatives that focus on increasing community wellbeing and community participation (e.g. involvement with the Festival of the Fleeces). Encouragement of workforce to participate in local volunteering and community events where appropriate.	H

Social Impact Category	Social Impact Description	Existing Impact vs Impact associated with the on-site TWA Facility	Project Aspect	Duration	Extent/Affected Parties	Perceived Significance[4]	Significance Rating[5]			Mitigation or Enhancement	Residual Significance
							L	M	S		
Community	Decrease in community cohesion and change to composition of the community due to temporary influx of resident Project workforce at the on-site TWA Facility, and/or real or perceived increase in antisocial behaviour.	On-site TWA Facility	Project establishment Construction workforce influx	Construction and Operational Phases	Neighbouring landholders and residents Broader community Special interest groups	M	C	3	M	Workers residing in TWA Facility to adhere to a Code of Conduct that specifies minimum acceptable behaviour. Disciplinary action will apply to breaches of the Code of Conduct. Mandatory compliance with internal policies on respectful behaviour in surrounding towns. Controlled and responsible service of alcohol. Onsite drug and alcohol testing for workers. Employment of security services for the Project site/TWA Facility. Twice yearly (or as needed) meetings with local police to discuss issues and provide updates. On-going liaison with local councils to ensure open communication and identification of emerging issues. Demonstrate proactive, thorough and transparent community engagement, throughout the lifespan of the Project. Discouraging workers from wearing high-vis or other workwear when visiting townships. Encourage workforce to remain on site for most of their daily needs by providing sufficient amenities and resources within the on-site TWA Facility. Targeting Community Benefit Sharing Strategy to initiatives that focus on community wellbeing and participation, in consultation with local stakeholders.	L
Surroundings	Reduced changes to social amenity and sense of place due to Project and the on-site TWA Facility site selection leading to higher levels of community acceptance.	On-site TWA Facility	Project construction and establishment of infrastructure	Construction and operational phases	Neighbouring landholders and residents Broader community	M	B	3	H	Adhere to visual impact management recommendations in the LVIA.	VH
Surroundings	Potential for noise generated by the on-site TWA Facility to cause disturbance and annoyance for nearby residents, affecting community or personal wellbeing.	On-site TWA Facility	Project construction	Construction Phase	Neighbouring landholders and residents	L	D	2	L	Adhere to noise management recommendations in the NVIA.	L
Surroundings	Perceived increased strain on community water supply and waste management services.	On-site TWA Facility	Project construction Construction workforce influx	Construction phase	Neighbouring landholders and residents Broader Community	L	D	3	M	Implement Water Sourcing Strategy and Waste Management Plan. Development of an on-site Sewage Treatment Plant (STP) to avoid pressure on existing systems. Improved information sharing and public communications on operational arrangements of the on-site TWA Facility.	L

Social Impact Category	Social Impact Description	Existing Impact vs Impact associated with the on-site TWA Facility	Project Aspect	Duration	Extent/Affected Parties	Perceived Significance[4]	Significance Rating[5]			Mitigation or Enhancement	Residual Significance
							L	M	S		
Surroundings	Perceived effect on locally valued flora, fauna, and habitats on the Project site.	Existing	Project construction	Construction phase	Neighbouring landholders and residents Broader community	M	C	1	L	Planting trees elsewhere to replace the ones being removed for the Project (i.e., biodiversity offsetting). Limit vehicle and personnel movement to designated areas. Reduce speed limits on dirt road section of Wollara Road. Improve communications and information provision with local communities/residents around biodiversity protection efforts and measures onsite.	L
Decision-making Systems	Concerns around cumulative lack of engagement and information provision leading to feelings of uncertainty, distrust, and perceived inability to influence decisions for both this Project and other developments across the region.	Existing	Project establishment	Construction phase	Neighbouring landholders and residents Broader community Special interest groups Local Businesses and Service Providers	L	C	3	M	Provide consistent, transparent and proactive information provision and consultation with stakeholders throughout Project development. Engage with local groups and businesses to build relationships and maximise local benefit and understanding of the Project. Continue to implement the Project Community Stakeholder Engagement Plan (CSEP) to facilitate effective ongoing engagement. Consider employment of a local Community Liaison Officer. Proactive collaboration with other proponents, NSW Government and Council through multi-stakeholder forums to develop coordinated strategies to cumulative social issues and opportunities.	L
Health and Wellbeing	Potential strain on workforce health and wellbeing due to isolation at the on-site TWA Facility and associated lifestyle.	On-site TWA Facility	Project construction	Construction phase	Project workforce Health services	M	C	2	M	Inclusion and maintenance of recreational facilities at the on-site TWA Facility such as a gymnasium, bar, and BBQ facilities. Provision of mobile phone and internet reception. Supporting mental health by providing access to an Employee Assistance Program or similar confidential counselling service, and by providing workforce education programs around mental health. Establishing emergency preparedness protocols. Implementing safety training as part of the worker onboarding process. Collaboration with local emergency services and council as needed to ensure safety for both onsite workers and nearby residents.	L

5.0 Conclusion

This Social Impact Assessment Addendum has documented the social impacts and social impact management and enhancement measures associated with the introduction of an on-site TWA Facility within the Project development footprint.

Stakeholder-raised concerns or matters not related to the inclusion of the on-site TWA Facility have also been included in this addendum for completeness, to further reiterate or supplement the impacts and mitigation measures identified in the original SIA.

Specifically, key impacts of the inclusion of an on-site TWA Facility include:

- Reduced strain on the local accommodation providers and housing market, by accommodating the workforce at an on-site TWA Facility.
- An overall reduction in the Project traffic due to the on-site TWA Facility, which may potentially lead to improved road safety outcomes.
- Increased potential employment and procurement opportunities for local workers and businesses for the construction and operation of the on-site TWA Facility.
- High population change, albeit temporary, due to the cumulative influx of workers into the region from other proximal development and that of the Project.
- Potential temporary decrease in levels of community cohesion and changes to the community composition due to incoming workforce.
- Potential temporary increased strain on local health services due to the workers accommodated in the on-site TWA Facility.
- Potential increased public safety risk due to fire associated with the residents of the on-site TWA Facility and impacts on emergency services' ability to respond.

Management strategies have also been proposed for the on-site TWA Facility to mitigate the potential negative impacts and to enhance potential opportunities. Key strategies included are:

- Working closely with local accommodation providers to accommodate the workforce required to construct and install the on-site TWA Facility, including partnerships to expand existing capacity and early communication of accommodation needs.
- Implementing measures to reduce strain on local health services, such as through the provision of an onsite first aid station, telehealth GP services for the resident workforce and an onsite helipad.
- Effective scheduling and communication of heavy vehicle movements associated with construction and operation of the on-site TWA Facility to minimise disruption to other road users.
- Workforce behavioural management.
- Proactive efforts to maximise local employment and procurement in the construction and operation of the on-site TWA Facility.

- Targeting the Community Benefit Sharing Strategy to initiatives that focus on increasing community wellbeing and community participation, in consultation with Council and local stakeholders.

The assessment concludes that identified negative social impacts of the on-site TWA Facility can be reasonably mitigated or managed to reduce their significance, with positive impacts potentially maintaining or increasing in significance if appropriate enhancement measures are put in place.

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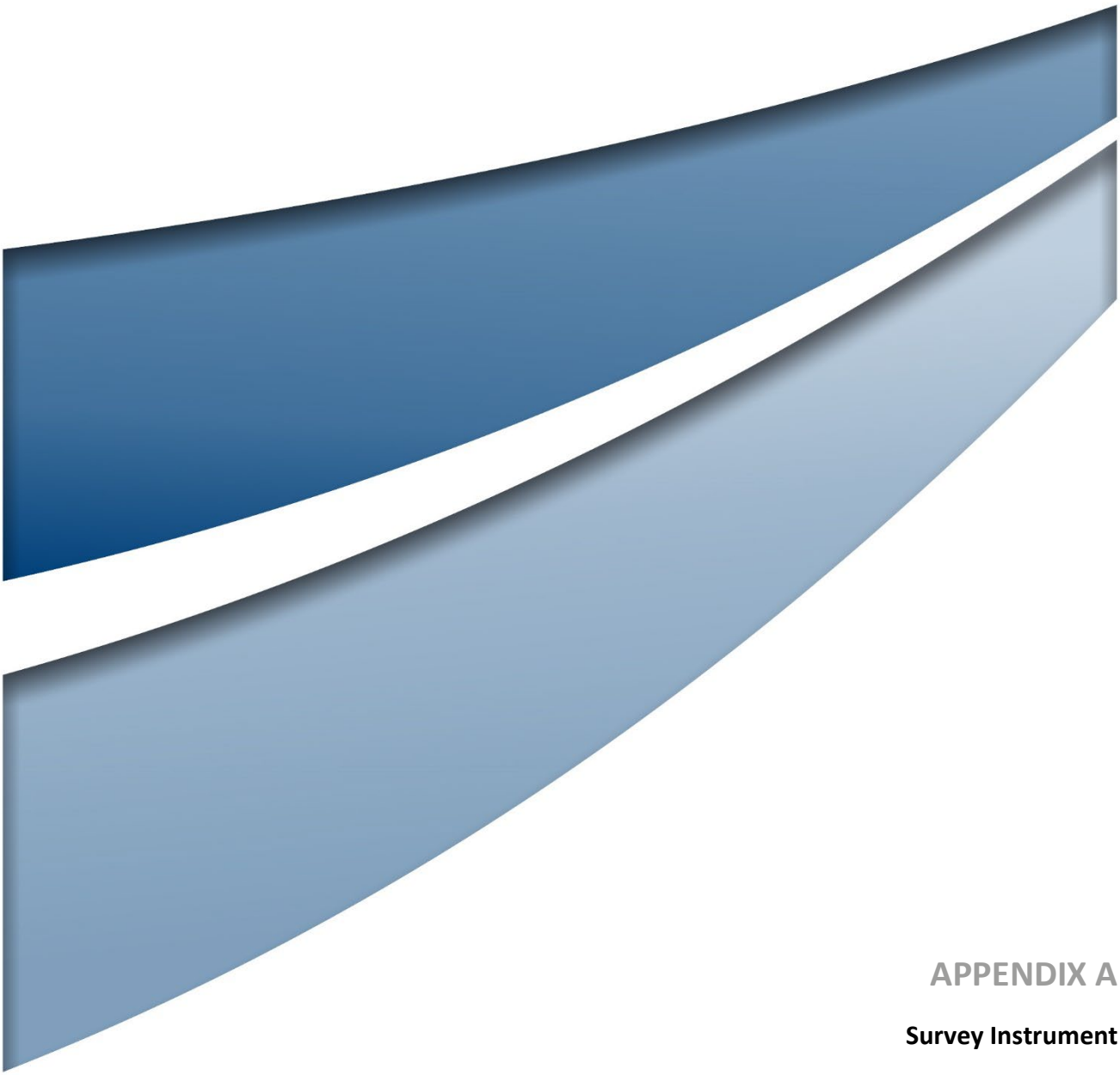


APPENDIX A

Survey Instrument

Goulburn River Solar Farm - Temporary Workforce Accommodation Feedback Survey

Introduction

Lightsource bp (LSbp) is proposing to develop the Goulburn River Solar Farm project to generate solar renewable energy to supply NSW. The Project includes the construction and operation of solar photovoltaic panels generating approximately 550 MWp of energy, along with a Battery Energy Storage System (BESS) of up to 2,060 MWh capacity.

The planning process for Goulburn River Solar Farm is still underway, however construction is proposed to commence by late 2024 and to last approximately 24 months. A peak on-site workforce of 350 direct construction jobs is expected, with an average of around 250 direct jobs throughout the construction period. The Project anticipates an ongoing workforce of up to 10 operational staff over the next 40 years.

To accommodate this workforce and avoid placing undue pressure on existing short-term and rental accommodation, LSbp is looking to locate a Temporary Workforce Accommodation (TWA) facility within the Project site.

The TWA will be designed to accommodate approximately 400 workers, to cover both the Goulburn River Solar Farm workforce and the workforce required to operate the TWA facility itself. As well as standard 4-person accommodation buildings with ensuites, on-site facilities will include a gym, kitchen, dining room, food store, recreation rooms, first aid, laundry, and a wet mess (with limitations on use). The TWA will be managed by the facility's construction contractor, who will in turn engage a camp operator.

All proposed walkways, covers, awnings, pipes and cables would be modular, above ground and will be removed from site at the end of the hire ready for re-use on the next project. There would be no buried services left behind, and no concrete pathways, footings, awnings or other elements sent to landfill.

The TWA would be located close to the site's primary access on Wollara Road, with the exact location to be confirmed through detailed design. The pictures below show a map of the Project site, and an example of a TWA, similar to that proposed for Goulburn River Solar Farm.

We're inviting you to complete this survey to help us gather the community's feedback on the TWA. The survey should take around 5 minutes to complete.

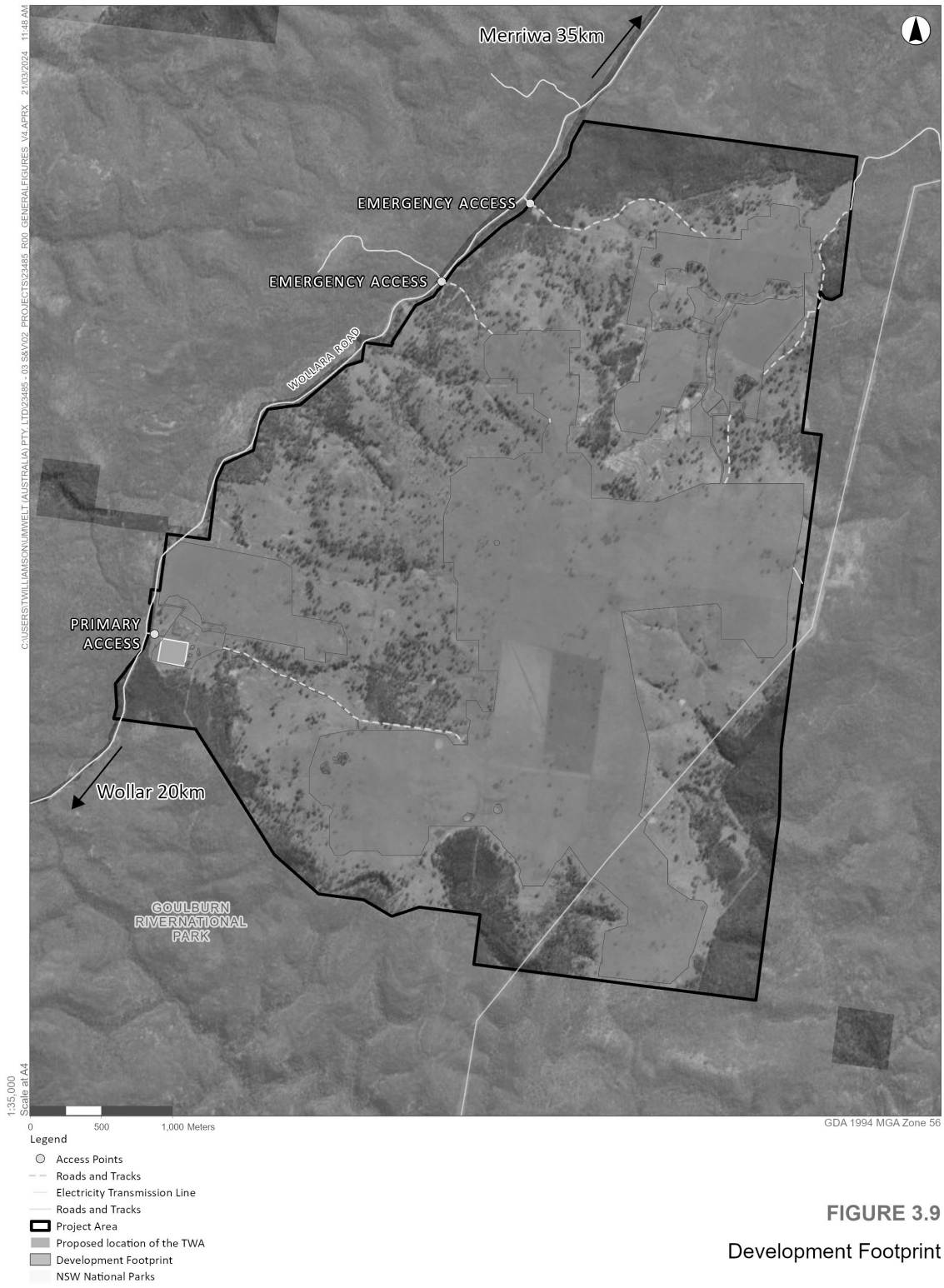


FIGURE 3.9

Development Footprint

Example of a TWA

Goulburn River Solar Farm - Temporary Workforce Accommodation Feedback Survey

Demographics

1. What is your age?

- ◯ Under 18
- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65+
- ◯ Prefer not to say

2. What gender do you identify as?

- ◯ Male
- ◯ Female
- ◯ Non-Binary
- ◯ Prefer not to say

3. Do you identify as Aboriginal and/or Torres Strait Islander?

- ◯ Aboriginal
- ◯ Torres Strait Islander
- ◯ Both
- ◯ Neither

4. What suburb/town do you live in?

5. How long have you lived in the region?

Years

Months

6. How far away from the Goulburn River Solar Farm site do you live?

- ◯ Less than 1km
- ◯ 1km - 5km
- ◯ 5km - 10km
- ◯ 10km - 20km
- ◯ 20km - 30km
- ◯ 30km - 40km
- ◯ 40km - 50km
- ◯ More than 50km
- ◯ Not sure

7. Which stakeholder group best represents you? (Please select the one most relevant)

- ◯ Nearby landowner/ resident (within 10km)
- ◯ Community resident
- ◯ Service provider or local business
- ◯ Aboriginal and/or Torres Strait Islander group/ Corporation
- ◯ Other (please specify)

[ ]

Goulburn River Solar Farm - Temporary Workforce Accommodation Feedback Survey

Impacts

8. Below are some potential **positive** social impacts associated with the establishment of a TWA on the Goulburn River Solar Farm site. Please rate how significant you believe these impacts will be from 'Not at all significant' to 'Very significant'.

	Not at all significant	Slightly significant	Neutral/not sure	Moderately significant	Very significant
Creation of economic opportunities for local businesses	○	○	○	○	○
Creation of employment opportunities for local people	○	○	○	○	○
Potential for investment in local infrastructure associated with the TWA	○	○	○	○	○
Generation of more social opportunities and interactions for local community members	○	○	○	○	○

9. Are there any other positive impacts or opportunities associated with the TWA that you can think of? (Please specify)

10. Can you think of any strategies that could be put in place to enhance these benefits/ opportunities?

11. Below are some potential **negative** social impacts associated with the establishment of a TWA on the Goulburn River Solar Farm site. Please rate how significant you believe these impacts will be from 'Not at all significant' to 'Very significant'.

	Not at all significant	Slightly significant	Neutral/not sure	Moderately significant	Very significant
Additional traffic generated by residents of the TWA	○	○	○	○	○
Additional noise generated by residents of the TWA	○	○	○	○	○
Loss of community cohesion and/or sense of place	○	○	○	○	○
Anti-social or unsafe behaviour by residents of the TWA	○	○	○	○	○
Visual impacts of the accommodation development	○	○	○	○	○
Loss of access to, or use of, the site	○	○	○	○	○
Reduced access to healthcare or other services due to competition from incoming workforces	○	○	○	○	○
Impacts on biodiversity and ecosystems on the site	○	○	○	○	○
Property devaluation for neighbouring properties due to proximity to the TWA	○	○	○	○	○

12. Are there any other negative impacts associated with the TWA that you can think of? (Please specify)

13. Can you think of any strategies that could be put in place to manage or mitigate any potential negative impacts?

14. Is there anything else you wish to make a comment on regarding the TWA?

Goulburn River Solar Farm - Temporary Workforce Accommodation Feedback Survey

Information provision & engagement

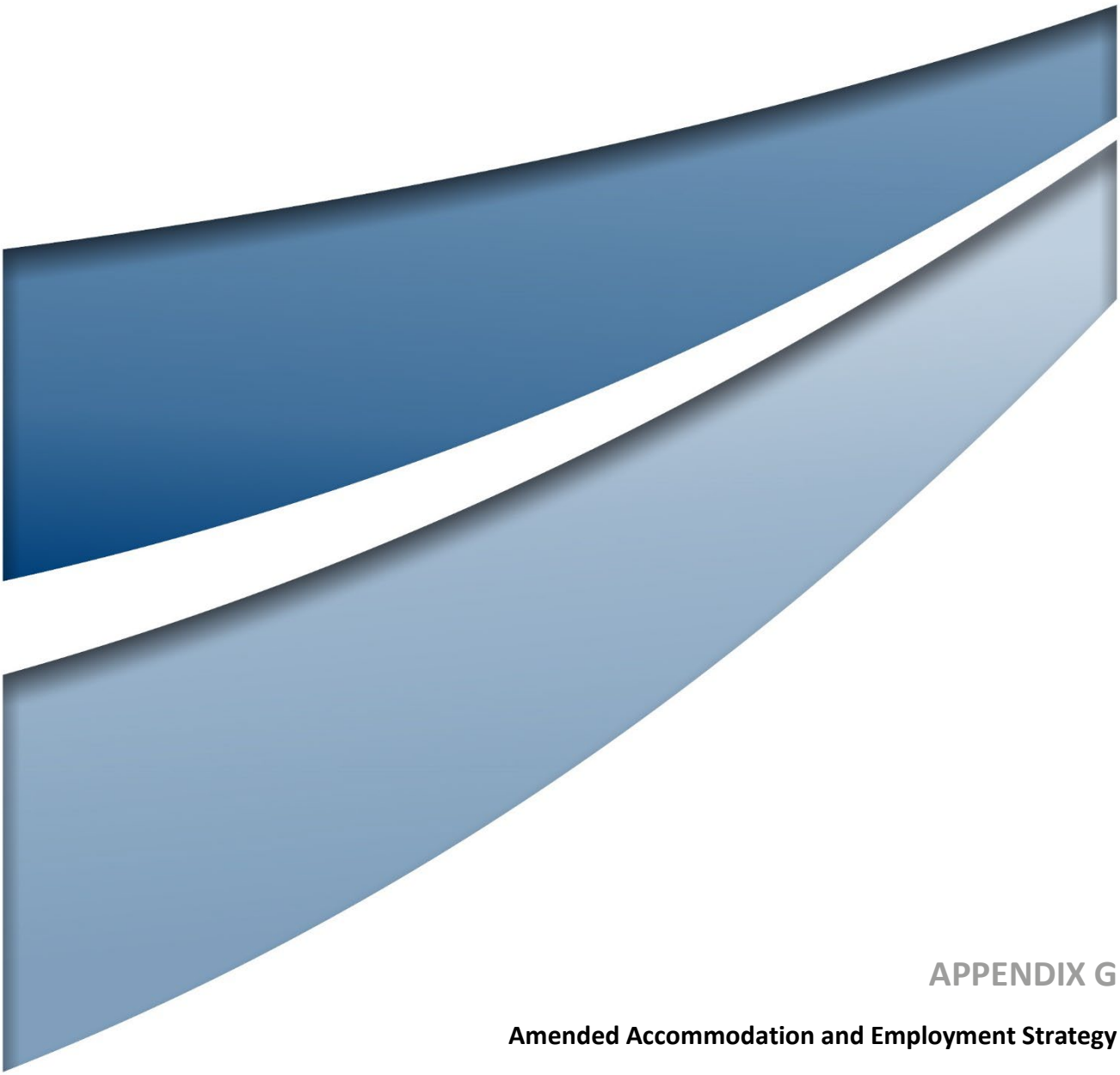
15. Is there any other information you would like to receive on the TWA site and/or assessment process?

16. Thank you! Finally, would you like to be kept up to date with the Goulburn River Solar Farm project? (If yes, please ensure you have entered your contact details below)

- ◯ Yes, I'd like to be contacted directly to discuss the Project
- ◯ Yes, I'd like to receive emails with Project updates
- ◯ No

17. Contact Information

Name	
Address	
Suburb/ Town	
State	
Postal Code	
Email Address	
Phone Number	



APPENDIX G

Amended Accommodation and Employment Strategy

umwelt
Environmental & Social Consultants

lightsource bp

AMENDED ACCOMMODATION AND EMPLOYMENT STRATEGY

Goulburn River Solar Farm

FINAL

May 2024

lightsource bp

AMENDED ACCOMMODATION AND EMPLOYMENT STRATEGY

Goulburn River Solar Farm

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Lightsource bp

Project Director: Jessica Henderson Wilson
Project Manager: Thomas Buchan
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Technical Manager: Dion Parera
Report No. 23485/R13
Date: May 2024

umwelt
Environmental & Social Consultants

Acknowledgement of Country

Umwelt 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
V1	Dr Kate Raynor	23/11/23	Dr Kate Raynor	27/11/23
Final	Dr Kate Raynor	05/12/23	Dr Kate Raynor	05/12/23
Amended	Jessica Anagnostaras	17/05/24	J Henderson-Wilson	23/05/2024

Executive Summary

The purpose of this Amended Accommodation and Employment Strategy (AES) is to update (and supersede) the previously published AES (Umwelt, 2023) to include consideration of changes to the Goulburn River Solar Farm Project's (the Project) plans to accommodate its construction workforce. This Amended AES includes an on-site Temporary Workforce Accommodation (TWA) Facility which is now proposed to be constructed within the Project's development footprint.

The Amended AES provides an overview of the baseline economic, social, and housing context surrounding the Project located near Merriwa in NSW, and outlines Lightsource Development Services Australia Pty Ltd's (Lightsource bp) proposed approach and strategies to managing, enhancing and mitigating key employment and workforce accommodation impacts of the Project.

The Strategy has been informed by interviews with key stakeholders and a desktop analysis of the housing, accommodation and labour force context and conditions for the Upper Hunter, Muswellbrook, and Mid-Western Regional Local Governments Areas (LGAs). The key localities considered in the Amended AES are Mudgee, Wollar, Gulgong, Kandos, Merriwa, Scone, Muswellbrook and Denman which comprise the Project's social locality.

Project Overview

The proposed Project is a large-scale solar farm, located approximately 28 kilometres (km) southwest of the township of Merriwa, and approximately 200 km to the northwest of the closest capital city of Sydney. The Project sits within the Upper Hunter Shire Local Government Area (LGA), in the state of New South Wales (NSW). The proposed Project Area is on partially cleared freehold land with two private owners and is surrounded by the Goulburn River National Park. The Project will involve the construction, operation, maintenance and decommissioning of approximately 550-megawatt peak (MWp) of solar photovoltaic (PV) generation as well as a battery energy storage system.

Construction is proposed to commence by mid-2024, with a construction phase of approximately 24 months. A peak on-site workforce of 350 direct construction jobs is anticipated, with an average of around 250 direct jobs throughout the construction period. Lightsource bp anticipates an ongoing workforce of up to 10 operational staff, with an operational period of 40 years.

Project Accommodation and Employment Context

This Amended AES has identified considerable housing, accommodation, employment and procurement constraints in the social locality, linked to the Project's rural location and the presence of multiple concurrent and proximal projects either proposed or in development. The Amended AES has also identified existing regional strengths, including expertise in the mining and construction sectors and access to land, with the potential capacity to host worker villages or accommodation facilities for in-coming temporary workers.

Availability of Short-term and Rental Accommodation

There is a shortage of short-term accommodation (hotels, motels, and Airbnb properties) in the Upper Hunter, Mid-Western Regional and Muswellbrook LGAs. Considerate use of this existing short-term

accommodation will be necessary to minimise disruption to the local tourism and short-term accommodation market. Analysis has concluded that around 14 workers have the potential to be housed in existing proximal short-term accommodation while approximately 40 additional new short-term accommodation rooms may be established by existing accommodation providers in the social locality in response to anticipated future demand.

The region surrounding the Project is characterised by low rental vacancy rates and low rental stock. Analysis has concluded that very few dwellings would be available for use by the Project without placing unsustainable pressure on the existing private rental market.

Availability of Local Workers and Supply Chain Opportunities

The social locality surrounding the Project is characterised by employment and business strengths in agriculture, forestry and fishing, and mining and manufacturing sectors with some capacity to adapt to support the Project. However, a low unemployment rate across the social locality will make it difficult to achieve a large workforce sourced wholly from within the locality. This challenge is exacerbated by the close proximity of the project to multiple other renewable energy projects (some of which have overlapping construction timelines with the Project) and multiple coal mines in the region, which all compete for the local workforce.

Based on an assessment of cumulative impacts due to the number of proximal projects, as well as through feedback from recent stakeholder engagement and lastly, desktop analysis of local employment conditions, sourcing approximately 10% (approximately 35) of the Project's peak construction workforce from the local community appears feasible, however for a more detailed analysis of local employment assumptions refer to **Section 5.2.1**. This 10% target also applies to the TWA Facility construction workforce, for approximately three local workers.

This Amended AES uses this estimate to ensure that accommodation sufficiency is assessed based on a 'worst case scenario.' The Amended AES also includes recommendations to increase local employment and procurement wherever possible. This estimate is different to the original assumptions supplied in the Economic Impact Assessment (Ethos Urban, 2023) as that was developed earlier in the assessment phase, and updated data has now been considered.

Given the overall low number of TWA operational staff and the types of jobs required, it is expected that these roles could be filled from the local workforce, with any non-local workers being housed at the TWA Facility itself.

Workforce Accommodation Solutions

This Amended AES has identified several opportunities to address the need for accommodation for construction workers and maximise opportunities for local employment and procurement associated with the Project.

Given limited access to existing short-term and rental accommodation in the social locality, Lightsource bp had previously investigated an option to rent up to 300 rooms from a proposed development of 500 fully furnished, self-contained ensuite units within the township of Merriwa to accommodate the Project's construction workforce.

Since the original Goulburn River Solar Farm AES (Umwelt, 2023) there have been further discussions with Upper Hunter Shire Council and DPHI along with further evaluation and planning of suitable accommodation options for the Project workforce. As a result, the establishment of a custom-built 400-bed TWA Facility within the existing Project site has emerged as the preferred solution to accommodate the Project's construction workforce. Further justification for the TWA Facility is provided in the Goulburn River Solar Farm Amendment Report (2) (Umwelt, 2024).

The proposed TWA Facility is expected to require a construction workforce of 30 people for an approximate 12-week period, and an operational workforce of 10 staff for the duration of the Project's construction phase.

Proposed Strategies

- Reduce or avoid upward pressure on housing prices, rental costs and demand that may result from development activities by limiting the amount of rental and short-term accommodation consumed by non-resident workforces.
- Accommodate the non-resident workforce in a custom-built onsite TWA Facility.
- Implement strategies to target a minimum of approximately 35 people (10% of peak workforce) sourced locally, including working alongside organisations such as Programmed or Blackrock Industries to offer traineeships and apprenticeships for local people.
- Transparently communicate employment and procurement opportunities to the local community and provide updates on whether objectives are achieved.
- Pro-actively generate opportunities for employment of under-represented communities, including First Nations people, women, and unemployed people.
- Proactive management and monitoring of outcomes will be achieved through post-approval management strategies and mechanisms that operationalise this Amended AES.

Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
AES	Accommodation and Employment Strategy
APM	Advanced Personnel Management
BESS	Battery Energy Storage System
CWO REZ	Central-West Orana Renewable Energy Zone
DCJ	Department of Communities and Justice
DIDO	Drive-in Drive-out
DPE	Department of Planning and Environment
FIFO	Fly-in Fly-out
FTE	Full Time Equivalent
IER	Index of Economic Resources
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IRSD	Index of Relative Socio-Economic Disadvantage
km	kilometre
kV	kilovolt
LGA	Local Government Area
MOU	Memorandum of Understanding
MW	megawatt
MWh	megawatt hour
NSW	New South Wales
REZ	Renewable Energy Zone
SAL	Suburb and Locality
SALM	Small Area Labour Markets
SEIFA	Socio-Economic Indexes for Areas
The Project	Goulburn River Solar Farm project
TWA Facility	Temporary Workers' Accommodation Facility

Table of Contents

Figures

Tables

1.0 Introduction

The purpose of this Amended Accommodation and Employment Strategy (AES) is to update the previously published AES (Umwelt, 2023) to include consideration of changes to the Goulburn River Solar Farm Project's (the Project) plans to accommodate its construction workforce, namely to include an on-site Temporary Workforce Accommodation (TWA) Facility proposed to be constructed within the Project's development footprint.

The changes to this AES are immaterial, with the exception of new or amended sections as summarised below:

- **Section 1.2.1** – summarises the AES scope relative to the TWA Facility.
- **Section 1.3** – provides an updated Project overview, encompassing changes since the previous AES.
- **Section 3.1** – describes stakeholder engagement undertaken in relation to the TWA Facility.
- **Sections 4.2.4** to **4.4** – describe the TWA Facility and update the objectives, actions and mitigation strategies for Project accommodation.
- **Section 5.2.1.1** – identifies local employment opportunities associated with construction and operation of the TWA Facility.
- **Section 5.2.2.5** – identifies local procurement opportunities associated with construction and operation of the TWA Facility.
- **Sections 5.3** and **5.4** – sets updated objectives, actions and mitigation strategies for Project employment.

Lightsource Development Services Australia Pty Ltd (Lightsource bp; Lightsource bp) is seeking to develop the Goulburn River Solar Farm (the Project) 28 km southwest of the township of Merriwa, in the Upper Hunter Shire. The Project is being assessed under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Further information regarding the Project is provided in **Section 1.3**.

1.1 Background

Umwelt prepared the Environmental Impact Statement (EIS) and a Social Impact Assessment (SIA) for the Project, of which was on public exhibition in June and July of 2023. During the exhibition period, 69 submissions were received. An Accommodation and Employment Strategy (AES) was prepared as a direct response to the findings of the SIA and the feedback as raised through submissions regarding the limited accommodation capacity in the region and the consideration of feasible local employment targets. The AES formed part of the Amendment Report (1).

An amendment to the AES has now been prepared to consider of changes to the Projects plans to accommodate its construction workforce, namely, to include an on-site Temporary Workforce Accommodation (TWA) Facility proposed as an new amendment to the Project (Amendment 2).

1.2 Scope of the AES

The Amended AES has been developed to meet the following objectives:

- Ensure there is sufficient accommodation for the required workforce, taking into consideration the cumulative impacts associated with other developments in the region within the same timeframe.
- Reduce the strain on the local accommodation and housing sector during the influx of workforces.
- Maximise the capacity for Lightsource bp to generate local benefits through local procurement and employment outcomes.
- Support the criteria and goals of Lightsource bp's Industry and Aboriginal Participation Plan (IAPP) developed for the Project[1].
- Identify options for the effective and appropriate accommodation of the Project workforce in response to community, council and agency concerns in relation to temporary workforce accommodation and local employment opportunities.
- Detail the consultation and analysis undertaken to-date to support consideration of accommodation and employment and procurement opportunities associated with the Project.

1.2.1 May 2024 Update

Following the public exhibition of the Project's EIS from June to July 2023 and the subsequent Response to Submissions (RtS) Report in December 2023, a two-part Amendment Report was submitted in December 2023 and January 2024 detailing changes to the Project to enhance its efficiency and minimise its environmental and social impacts (Umwelt, 2023).

Since then, further changes to the Project have been made to incorporate an on-site TWA Facility into the existing Development Footprint in order to accommodate the construction workforce required for the Project. This marks a change to the previous AES, where the recommendation was to partner with a private accommodation development currently proposed in Merriwa NSW.

The addition of the TWA Facility and the subsequent means in which the Project proposes to source and accommodate its workers, has resulted in this Amended AES which captures the relevant updates. An outline of any updates is provided at the start of each subsequent section of this Amended AES.

The following **Section 1.3** has been updated to reflect changes to the Project description since the previously published AES (December 2023).

[1] The IAPP is based on a framework introduced by the NSW Government to support and create better long-term outcomes for First Nations people, businesses, and communities. It includes targets to develop direct and indirect opportunities in the Project's supply chain, provide funding for local initiatives and support educational and training opportunities and forms part of Lightsource bp's successful bid for a Long-Term Energy Service Agreement.

1.3 Overview of the Project

Lightsource bp propose the development of the Goulburn River Solar Farm. The Project sits within the Upper Hunter Shire Local Government Area (LGA), in the state of New South Wales (NSW). Other regional population centres nearby include Muswellbrook (75 km east of the Project), Scone (76 km northeast of the Project), and Mudgee (60 km southwest of the Project).

The proposed Project Area is on partially cleared freehold land with two private owners and is surrounded by the Goulburn River National Park. The Project will involve the construction, operation, maintenance and decommissioning of the solar farm and battery energy storage system (BESS), with construction proposed over 27 months and operations for 40 years.

The Project, as described in the Amendment Report (Umwelt, 2023) will involve the construction, operation, maintenance, and decommissioning of approximately 550 megawatt peak (MWp) of solar photovoltaic (PV) generation as well as a BESS with 1,030 MWp / 2,060 megawatt hour (MWh) capacity. The Project also comprised supporting infrastructure including a substation and connection to an existing 500 kilovolt (kV) transmission line. The Project will include various associated infrastructure, including road repairs and upgrades to Ringwood Road, temporary construction facilities, operation and maintenance buildings, internal access roads, civil works and electrical infrastructure to connect the Project to the existing transmission line which passes through the Project Area.

1.3.1 Proposed Amendments

An on-site TWA Facility is being proposed to accommodate the anticipated peak workforce required to construct the Project, under a new amendment to the Project (i.e. Amendment 2), (see description in **Section 4.2.4**). The requirement to develop an on-site TWA Facility was determined through consultation with government agencies and in response to agency submissions raised on the Response to Submission (RtS) and Amendment Report (1).

1.3.2 Workforce Overview

Subject to development approval, construction of the Project would commence by mid/late 2024, with a construction phase of approximately 27 months. Lightsource bp anticipates a peak on-site workforce of 350 fulltime equivalent (FTE) direct construction jobs, with an average of approximately 250 FTE direct jobs throughout the construction period (see workforce histogram in **Figure 1.1**). Lightsource bp anticipates an ongoing workforce of up to 10 staff during operations.

Apart from direct employment opportunities associated with the development itself, the employment benefits are expected to extend through local supply chains to include vehicle and equipment servicing, fencing contractors, uniform suppliers, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and other supporting businesses.

While Lightsource bp aims to drive local employment opportunities where possible for local job seekers and contractors, analysis indicates approximately 10% of the peak workforce (35 people) may be able to be sourced locally (see **Section 5.2.2**).

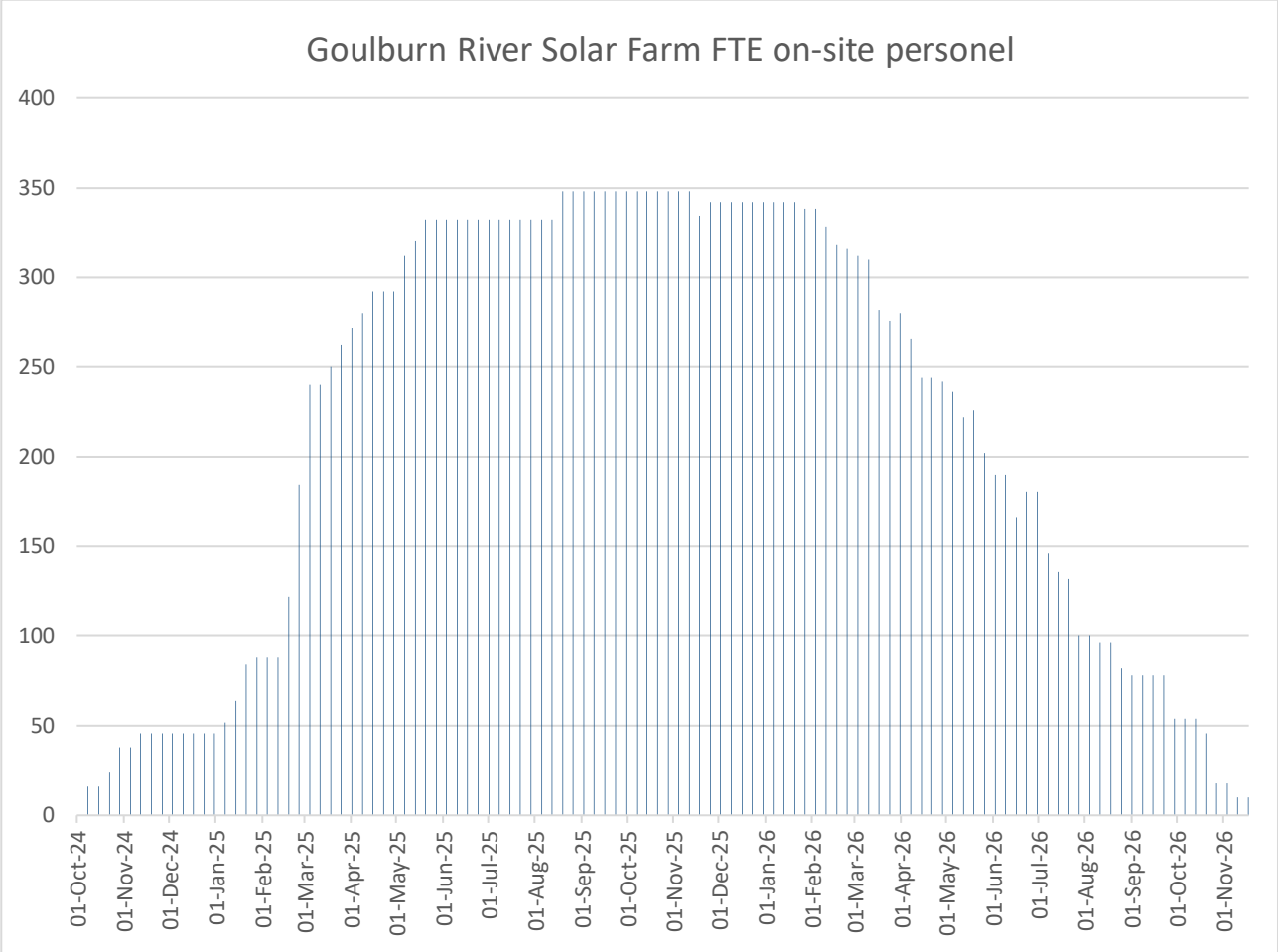

Figure 1.1 Goulburn River Solar Farm FTE Onsite Personnel (construction only)

Source: (Lightsource bp, 2024).

1.4 Limitations

This Amended AES has been developed based on preliminary workforce forecasts provided by Lightsource bp and a review of existing publicly available data on short-term accommodation availability. It reflects estimates based on these data inputs, complemented by feedback from Project stakeholders including local councils, community groups and local businesses. The exact numbers of workers may differ based on changing construction timelines and/or changed access to short-term accommodation and rental accommodation. Construction timelines and workforce estimates will be finalised once civil and electrical contractors have been appointed and a detailed design process undertaken.

2.0 Regional Profile

The following section provides an overview of the socio-economic context relevant to the development.

Section 2.0, including the cumulative impacts (**Section 2.6**), has not changed as a result of this May 2024 update as the content has not materially changed since the previously published AES, nor would any updates to other projects in **Section 2.6** materially alter the outcomes of this Amended AES.

2.1 Defining the Social Locality

Statistical areas defined by the Australian Bureau of Statistics (ABS), as well as the land tenure composition of properties in or nearby the Project Area, have been used to determine the social locality (or 'area of social influence') as represented in **Figure 2.1.** The primary communities of interest that comprise the social locality for the purpose of this Amended AES are outlined in **Table 2.1** and **Figure 2.2**.

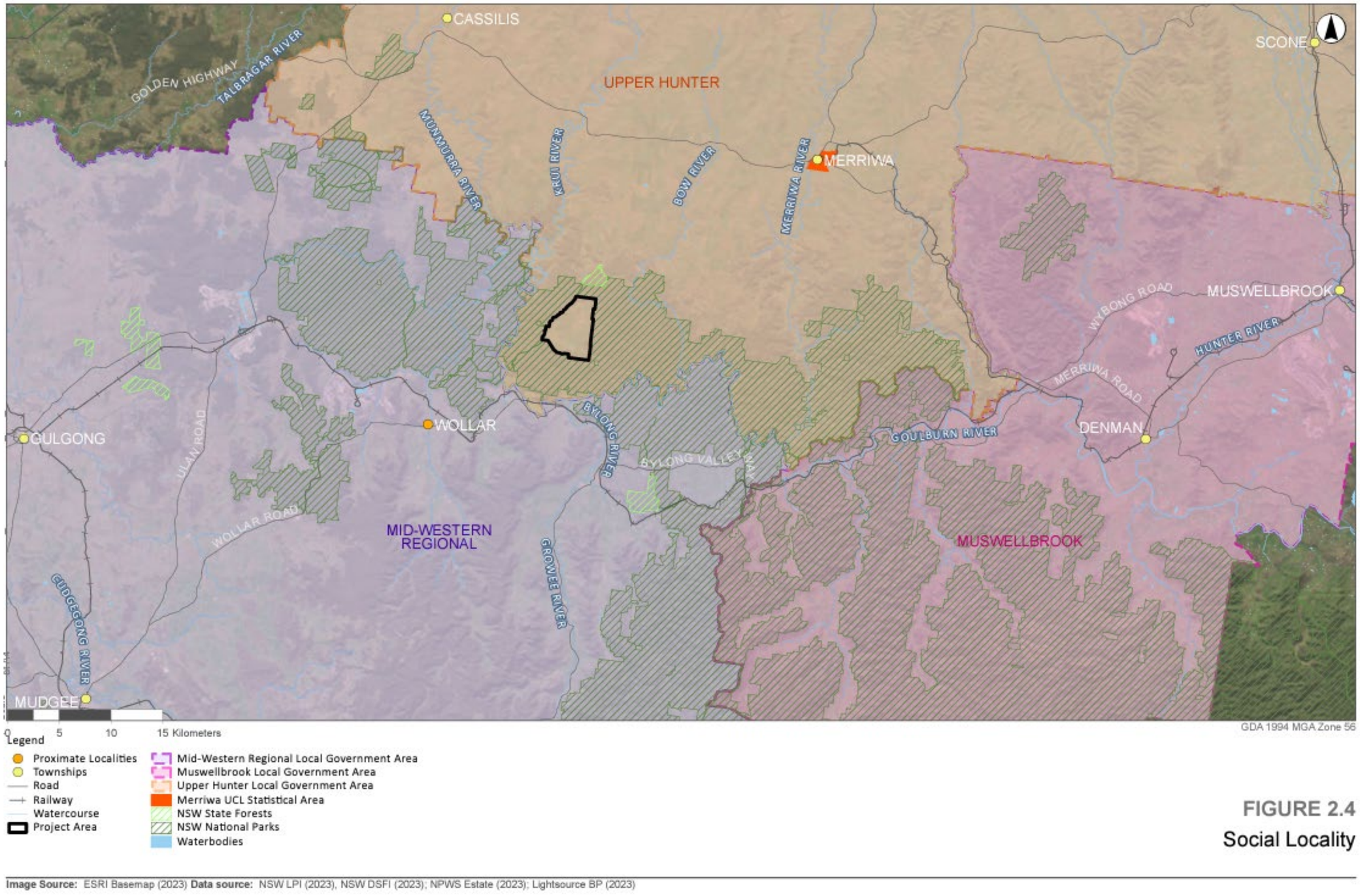

Figure 2.1 Social Locality

Table 2.1 Key Settlements

Settlement Type	Township or Area (Population)	Reason for Inclusion
Host Local Government Area	Upper Hunter Shire LGA (14,229)	As a host LGA for the Project, Upper Hunter Shire LGA is likely to experience the highest accommodation and employment impacts and opportunities.
Neighbouring Government Areas	Mid-Western Regional LGA (25,713) Muswellbrook LGA (16,357)	As neighbouring LGAs for the Project, Mid-Western Regional and Muswellbrook LGAs are likely to experience employment impacts and opportunities. Muswellbrook LGA may experience some accommodation impacts and opportunities. Note: It is not proposed that any workers are accommodated in the Mid-Western LGA. Mid-Western Regional and Muswellbrook LGAs have a larger population and labour force, with strong regional expertise in mining industries and the potential to support renewable energy projects.
Geographically adjacent (within 30 min drive)	Merriwa (1,825)) Wollar (50)	These settlements are included due to their physical proximity to the Project and possibility of providing services or accommodation to support the Project. Note: following consultation with Mid-Western Council, it is not proposed for any workers to be accommodated in the Mid-Western LGA.
Proximal (within 60-minute drive) and primary order settlements (population over 10,000 people)	Mudgee (11,457)	
Proximal (within 60-minute drive) and secondary order settlements (population between 1,000 and 10,000 people)	Denman (1,821) Gulgong (2,680) Kandos (1,263) Scone (5,824)	
Neighbouring (between 60 to 120-minute drive) and primary order settlements (population over 10,000 people)	Muswellbrook (12,272)	These settlements are included due to the size of their populations, which means these localities are likely to serve as higher-order townships with a greater density of businesses, services, and infrastructure. They may be potential residential locations for project workforces.

Source: Umwelt, 2023.

Figure 2.2 Regional Geographical Scales

Source: (Umwelt, 2023).

2.2 Regional Demographic Context

Table 2.3 provides an overview of the key demographic characteristics of the LGAs under consideration in this Amended AES. **Table 2.4** provides an overview of the key townships. The tables in the following section are colour coded according to the legend in **Table 2.2** to demonstrate difference between the localities and the NSW average.

Table 2.2 Table Colour Scheme Meaning

Colour	Meaning
	Figure lower than the NSW average or median*
	Figure higher than the NSW average or median*

**Not applicable for population, and IEO, IRSD, IRSAD, or IER scores.*

Table 2.3 Regional Overview

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA	NSW
Population	14,229	25,713	16,357	8,072,163
Key Townships	Merriwa, Scone	Mudgee, Wollar, Gulgong, Kandos	Denman, Muswellbrook	-
Median Age (Years)	42	42	37	39
Percentage of population older than 65 years	21.2%	27.3%	15.6%	17.7%
Percentage of population younger than 15 years	18.6%	19.5%	27%	18.2%
Population growth 2011 to 2021	+475 +3.45%	+3395 +15.21%	+77 +0.47%	+ 1,154,505 +16.68%
Projected population growth 2021 to 2041	-475 -3.33%	+1842 +7.16%	+982 +5.98%	+ 861,477 10.67% increase
Proportion of population with a Bachelor degree or higher	6%	13.3%	4%	27.8%
Proportion of population with vocational qualifications	23.1%	24.5%	23%	15.1%
Index of Education and Occupation (IEO)[2]	3rd decile	4th decile	1st decile	-
Index of Relative Socio-Economic Disadvantage (IRSD)[3]	5th decile	5th decile	3rd decile	-
Index of Economic Resources (IER)[4]	7th decile	7th decile	4th decile	-

[2] The Index of Education and Occupation (IEO) is designed to reflect the educational and occupational level of communities. The education variables in this index show either the level of qualification achieved or whether further education is being undertaken. A low score indicates relatively lower education and occupation status of people in the area in general. For example, an area could have a low score if there are: many people without qualifications, or many people in low skilled occupations or many people unemployed, AND few people with a high level of qualifications or in highly skilled occupations.

[3] The Index of Relative Socio-economic Disadvantage (IRSD is a general socio-economic index that summarises a range of information about the economic and social conditions of people and households within an area. Unlike the other indexes, this index includes only measures of relative disadvantage. A low score indicates relatively greater disadvantage in general. For example, an area could have a low score if there are: many households with low income, many households with no qualifications, many people in low skill occupations.

[4] The Index of Economic Resources (IER) focuses on the financial aspects of relative socio-economic advantage and disadvantage, by summarising variables related to income and wealth. This index excludes education and occupation variables because they are not direct measures of economic resources. A low score indicates a relative lack of access to economic resources in general. For example, an area may have a low score if there are: many households with low income, or many households paying low rent, AND; few households with high income, or few owned homes.

Implications:

- The **Upper Hunter Shire and Mid-Western Regional LGAs have a population with a higher median age and larger proportion of people over the age of 65**. This indicates that the population is aging. This has implications for labour force participation and access to employees and underlines the need for specific health and social service infrastructure provision in the region. Comparatively, **Muswellbrook LGA has a median age below the NSW average and a lower proportion of people aged below 65 years**.
- IRSD scores indicate that the **LGAs of Upper Hunter Shire and Mid-Western Regional have average levels of low-income, low-qualification and low-skilled households**. Muswellbrook LGA is an exception, exhibiting substantially higher rates of disadvantage than other LGAs in the region. This has implications for access to skilled labour forces and presents opportunities for targeted training and education programs.
- IER scores indicate that **Mid-Western Regional and Upper Hunter Shire LGAs have relatively high levels of economic resources**, with higher proportions of households earning high incomes and owning their own homes. Comparatively, **Muswellbrook LGA has substantially higher proportions of households with few economic resources** and higher levels of vulnerability to economic shocks.
- **The population of all LGAs have grown at rates below the NSW average between 2011 and 2021**, with Muswellbrook LGA experiencing the lowest growth. This is followed by Upper Hunter Shire LGA. Compared to the other LGAs, Mid-Western Regional experienced the highest rate of growth.
- **Between 2021 and 2041, the populations of Mid-Western Regional and Muswellbrook LGAs are predicted to increase**. However, this growth rate is not expected to be substantial and will be below NSW's growth rate. Opposingly, **the population of Upper Hunter Shire is expected to decline**. A slow population growth rate, or a decline, can increase business willingness to re-locate or invest in other regions.
- **All LGAs have lower levels of university degree qualifications compared to the NSW average, but rather have a higher proportion with certificate qualifications**. This represents a substantial proportion of the population with a trade qualification, suggesting higher levels of alignment with workforce requirements for construction phases of development.

Source: ABS Community Profiles, 2021 (ABS, 2021) (ABS, 2021) (ABS, 2021), & Socio-Economic Indexes for Areas (SEIFA), 2021.

Table 2.4 Key Townships Overview

	Upper Hunter Shire LGA		Mid-Western Regional LGA		Muswellbrook LGA				NSW
Town	Merriwa	Scone	Mudgee	Gulgong	Wollar	Kandos	Muswellbrook	Denman	
Population	1,825	6,035	11,457	2,680	52	1,263	12,272	1,821	8,072,163
Median Age	45	39	41	35	35	54	35	43	37
Population Change (2011–2021)	+35 +1.95%	+346 +6.3%	+1,064 +10.14%	+299 +12.55%	-208 -80%	- 21 -1.63%	+481 +4.08%	+19 +1%	+ 1,154,505 +16.68%
IRSD	2nd decile	3rd decile	4th decile	2nd decile	2nd decile	1st decile	2nd decile	3rd decile	
IER	2nd decile	4th decile	5th decile	2nd decile	3rd decile	1st decile	2nd decile	4th decile	
IEO	2nd decile	2nd decile	1st decile	1st decile	2nd decile	1st decile	1st decile	1st decile	

Implications:

- Most townships have experienced minimal population growth between 2011 and 2021. Gulgong and Mudgee have experienced the highest increase, but this growth rate is still below the NSW average. The townships of Wollar and Kandos have both experienced a population decline.
- All townships have low SEIFA metrics, indicating higher rates of disadvantage.

Source: ABS Community Profiles, 2021 (ABS, 2021) (ABS, 2021) (ABS, 2021).

2.3 Regional Housing Context

Housing and accommodation shortages are acknowledged in policy documents across the social locality. For example, the Muswellbrook Local Strategic Planning Statement (2020) identifies a lack of housing diversity as a key challenge for the LGA and includes a planning priority to '*provide opportunities for growth in housing, including a greater mix of housing types to cater for the needs of different residents*.' Similarly, the Mid-Western Regional Local Strategic Planning Statement (2022) states that the Shire is seeking to focus on delivering affordable and adaptable housing options through effective land use planning and ensure that there is sufficient housing stock and varied residential housing options to account for growth. Mid-Western Regional Council has provided documentation to all renewable energy proponents highlighting a current lack of accommodation in the LGA and indicating their preference for TWA facilities to avoid unsustainable pressure on existing short-term accommodation. The Upper Hunter Shire LGA Local Strategic Planning Statement (2020) also recognises the need for greater housing affordability and diversity, and, as such, is aiming to encourage a range of housing types and densities, facilitate rural residential development, and support affordable and social housing.

Table 2.5 provides an overview of key housing characteristics across the LGAs, while **Table 2.6** shows the key townships within the social locality for the Project. The tables highlight that rental and housing prices are lower than NSW averages and that the proportion of low-income households in housing stress is also lower than NSW averages. However, household median incomes are also lower than NSW, and rental vacancy rates are lower than the average in Upper Hunter Shire and Muswellbrook LGAs.

Table 2.5 Regional Housing Overview

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA	NSW
Housing Market Indicators				
Weekly median household income	$1,429	$1,486	$1,628	$1,829
Proportion of low-income households in housing stress	47.8%	48.4%	43.9%	52.8%
Median house price	$540,000	$690,000	$480,000	$895,000
Median weekly rent (June 2023)	$410	$480	$420	$600
% rental price increase 2018 and 2023	46.4%	45.4%	27.2%	25%
Rental vacancy rate	0.32%	1.29%	0.56%	1.23%

Implications:

- All LGAs have a **lower weekly household income** than the State median. However, this is offset by a lower cost of living in the study area regarding median house price and median rent.
- **Rental prices have increased substantially between 2018 and 2023 in the LGAs of Upper Hunter Shire and Mid-Western Regional**. Rental prices have also increased in Muswellbrook LGA, but this growth is more consistent with the NSW average.

Sources: (DCJ Statistics, 2022; Real Estate Investor, 2023; Real Estate Investor, 2023; Real Estate Investor, 2023).

Table 2.6 Key Townships Housing Overview

	Upper Hunter Shire LGA		Mid-Western Regional LGA			Muswellbrook LGA			NSW
Town	**Merriwa**	**Scone**	**Mudgee**	**Gulgong**	**Wollar**	**Kandos**	**Muswellbrook**	**Denman**	
Median weekly household income	$1,208	$1,507	$1,678	$1,371	$1,875	$677	$1,628	$1,427	$1,829
Proportion of low-income households in housing stress	37.9%	39.5%	42.8%	51.2%	N/A	70.1%	40.4%	42.2%	52.8%
Median house price	$371,250	$568,000	$703,500	$559,250	N/A	$360,000	$465,000	$420,000	$895,000
House price increase between 2018 and 2023	$121,250 (35%)	$200,000 (36%)	$308,500 (78%)	$264,250 (89.5%)	N/A	$170,000 (89.5%)	$165,000 (35.4%)	$120,000 (28.5%)	$230,000 (36.1%)
Median weekly rental price	$350	$500	$540	$460	N/A	$350	$450	$450	$600
Rental vacancy rates	0.67%	0.52%	2.61%	0.48%	NA	0.78%	0.68%	0.45%	1.23%
Rental price increase 2018 and 2023 (%)	$100+ (40%)	$170+ (51.5%)	$165+ (44%)	$140+ (43.7%)	N/A	$120+ (52.1%)	$110+ (32.3%)	$90+ (25%)	$120+ (25%)

Implications:

- **Median weekly incomes are below the NSW median**.
- All townships with available data have reported **a significantly high increase in median house prices between 2018 and 2023**. The highest increases were reported in the townships of Kandos, Gulgong and Mudgee.
- Apart from the township of Mudgee, **rental vacancy rates remain very low.** The lowest rental vacancy was evident in Denman (0.45%) and the highest was evident in Mudgee (2.61%). Low rental vacancy rates indicate that there are limited rental properties available for incoming workforces.

Sources: (ABS, 2021; ABS, 2021; ABS, 2021; Real Estate Investor, 2023; Real Estate Investor, 2023; Real Estate Investor, 2023).

2.4 Community Facilities and Services

The workforce associated with the Project is most likely to access services and facilities in Merriwa (the town likely to host the largest number of workers), followed by Mudgee (the closet primary order town) and Muswellbrook (a larger town within 75 minutes of the Project and a larger town along the transport route from Newcastle).

Upper Hunter Shire is a base for 13 primary and secondary schools and a TAFE Campus. Key services include an airport, two hospitals and associated allied specialist and health services. Upper Hunter Shire also has a variety of entertainment and cultural facilities. Merriwa hosts a multi-purpose service medical centre and a surgery employing two general practitioners (GP).

Mid-Western Regional LGA provides a series of higher-order services, including 11 primary and secondary schools and a TAFE. Services and population in the Mid-Western Regional LGA are concentrated in the town of Mudgee. Mudgee provides multiple allied specialist and health services, an airport and is connected to Sydney via daily train and bus services.

The Muswellbrook LGA also hosts a number of key services. This includes eight primary and secondary schools, public transport to Sydney, a TAFE campus and one hospital. Services are concentrated in the town of Muswellbrook.

Analysis conducted by EnergyCo on the Central West Orana Renewable Energy Zone, and echoed in the 2022 to 2025 Western Primary Health Network Needs Assessment (Primary Health Network Western NSW, 2022), has identified substantial gaps in health services in the region, with marked shortages in GPs, specialist medical practitioners and hospital beds, particularly in the Upper Hunter LGA (EnergyCo, 2022).

Table 2.7 provides a further overview of the facilities and services currently available in the social locality, services identified through local government webpages and community support directories.

Table 2.7 Community Facilities and Services

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA
Health services, including surgeries, hospitals and multi-purpose centres	• Scott Memorial Hospital • Murrurundi Hospital • Merriwa Multi-Purpose Service • Merriwa Surgery.	• Mudgee Health service • Gulgong Multi-Purpose Service • Kandos Medical Health Practice • Mudgee Medical Centre.	• Muswellbrook Hospital • Ungooroo Outreach Clinic • Hunter Medical Practice • Muswellbrook Doctors • Brook Medical Centre.
Educational options	• 13 primary and secondary schools across the LGA • TAFE campus.	• 11 primary and secondary schools • TAFE campus • Country University Centre (Under Construction).	• 8 primary schools and secondary schools • TAFE Campus.

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA
Key Transport Infrastructure	• Scone Memorial Airport • Aberdeen is the last stop on the CityLink and gets direct train services from Newcastle daily, buses running between Scone, Aberdeen, Muswellbrook and Denman.	• Mudgee Airport • Daily train and bus services from Sydney.	• Daily train services to Sydney, Armidale, and Newcastle.
Employment Service	• Joblink Plus, APM, Workskill.	• Sureway Employment and Training, Skillset, APM, Verto.	• APM, Harvey Recruitment, Joblink Plus.
Cultural and Entertainment Facilities	• 2 art galleries, 5 museums, 5 library branches, 3 swimming pools	• 2 art galleries, 5 museums, 4 library branches, swimming pool	• 2 art galleries, 1 swimming pool, 1 golf club, 1 cinema and 2 library branches.
Housing Services	• Upper Hunter Homeless Support & Upper Hunter Community Services are both located outside of the LGA in Muswellbrook.	• Mudgee Department of Communities & Justice (DCJ) Office • Housing Plus.	• Upper Hunter Homeless Support • Upper Hunter Community Services.
Police Stations	• Scone • Merriwa • Murrundi • Moonan Flt • Cassilis.	• Dunedoo • Kandos • Mudgee • Gulgong • Rylestone.	• Muswellbrook • Denman.

Source: (Mid-Western Regional Council, 2023; Upper Hunter Shire Council, 2023; Muswellbrook Shire Council, 2023).

2.5 Regional Economic Context

The Upper Hunter Regional Plan 2041 outlines the goals and actions for the Upper Hunter Region to achieve a sustainable future (NSW Department of Planning and Environment, 2022). The plan applies to 10 local government areas including the Upper Hunter and Muswellbrook Shires. The Plan establishes the following objectives with relevance to the AES:

- Diversify the Hunter's mining, energy and industrial capacity.
- Ensure economic self-determination for Aboriginal communities.
- Create a 15-minute region made up of mixed, multi-modal, inclusive and vibrant local community.
- Plan for "Nimble neighbourhoods", diverse housing and sequenced development.
- Plan for business and services at the heart of healthy, prosperous and innovative communities.
- Build an inter-connected and globally focused Hunter. The economy is expected to further diversify and cater to demand for renewable energy.

- Increased infrastructure assets and skilled workforce to support more renewable energy generation.

The Upper Hunter is recognised as undergoing a transition with major transformation occurring in power generation and emerging technologies. The existing high voltage transmission lines and transport infrastructure mean the Hunter plays an important role in powering NSW.

Table 2.8 provides an overview of the key trends and characteristics of both regional economies and highlights relevant LGA-level insights. Data reveals that employment in Mid-Western Regional and Muswellbrook LGAs is predominately focused on the mining sector, with significant regional strengths in this sector. In contrast, Upper Hunter Shire LGA is highly reliant on agriculture, forestry and fishing. Across all LGAs, there is a large proportion of workforce employed as technicians and trades workers, suggesting higher likelihood that locals will have appropriate skill sets to support construction of the Project.

Table 2.8 Regional Economy Overview

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA	NSW
Unemployment rate	4.9%	4%	5.1%	4.9%
Top 5 industries of employment	Agriculture, Forestry and Fishing: (22.9%) Health Care and Social Assistance: (10.6%) Education and Training-: (9.8%) Manufacturing: (8.3%) Retail Trade: (8.0%)	Mining: (15%) Health Care and Social Assistance: (11.1%) Retail Trade: (9.2%) Construction: 8.3% Education and Training/ Accommodation and Food Service: (7.9%)	Mining: (21.5%) Health Care and Social Assistance: (9.0%) Retail Trade: (9.0%) Agriculture, Forestry and Fishing: (7.1%) Accommodation and Food Services: (6.8%)	Hospitals (except psychiatric hospitals) - 4.2% Supermarket and Grocery Stores – 2.5% Other Social assistance Services – 2.45 Computer System design and related Services – 2.3% Aged Care Residential Services – 2.2%
Top 5 occupation types	Technicians and trades workers: 1152 (17%) Labourers: 1136 (16.7%) Managers: 1037 (15.3%) Machinery operators and drivers: 892 (13.1%) Professionals: 825 (12.2%)	Technicians and trades workers: 1998 (17.5%) Professionals: 1607 (14.1%) Managers: 1591 (13.9%) Machinery operators and drivers: 1473 (12.9%) Labourers: 1298 (11.4%)	Technicians and trades workers:(19.4%) Machinery operators and drivers: (18%) Labourers: (13.8%) Community and personal service workers: (10.3%) Professional: (10.1%)	Professionals: 952,131 (25.8%) Managers: 536,820 (14.6%) Clerical and administrative workers: 480,612 (13.0%) Technicians and trades workers: 436,589 (11.9%) Community and personal service workers: 390,779 (10.6%)
Labour force participation rate	60.5%	57.8%	60.1%	58.7%

Sources: (ABS, 2021; ABS, 2021; ABS, 2021; Department of Jobs and Skills Asutralia, 2023)

2.6 Cumulative Social Impacts

Cumulative social impacts may occur if construction periods of other and nearby major projects overlap with the construction period of the proposed development and consequently may present significant challenges in relation to access to housing, accommodation, and social infrastructure. In contrast, overlapping projects create opportunities to build a pipeline of projects that encourage skilled workers (and their families) to move/relocate to the area, either permanently or in the medium-term, given project continuity.

Table 2.10 outlines the State Significant Developments (SSDs) in the Central-West Orana Renewable Energy Zone and whether their construction timeframes are likely to overlap with the Project's construction timeframe. Note that timeframes for construction have been identified through a review of publicly available information on the DPE's Major Projects Portal (Department of Planning and Environment, 2023). It is possible, and indeed likely, that many of these timeframes will be delayed, and unlikely that they will commence ahead of the proposed dates.

When assessing likelihood of cumulative impact, the assessment considers distance between projects, anticipated size of project workforces, distances to larger-order townships likely to provide the majority of accommodation, employment and service contributions and anticipated construction timelines.

As the Hunter Valley is a popular tourism destination, there may also be competition for accommodation during peak tourism periods or during key events or festivals, when local accommodation may experience high occupancy rates. These periods include the Christmas and Easter holiday periods, school holiday periods, the autumn harvest period of March to May (which coincides with the Hunter Valley Harvest Festival), as well as during popular local events such as the Festival of the Fleeces in Merriwa in June, the Merriwa Springtime Show in September, and wider events such as the Hunter Valley Wine and Beer Festival around June. The Hunter Valley region is also a popular location for music festivals and concerts through the year. Although individual events may be located in specific towns distant to the Project, visitors to the region for these events may choose to travel through and visit other towns in the Project's host or neighbouring LGAs and patronise local accommodation providers. Lightsource bp could help mitigate accommodation impacts by actively avoiding occupying rooms in local accommodation providers during peak periods.

Cumulative impact is anticipated for projects and other key events up to 100 km from each other given the scarcity of larger townships in the social locality to meet higher-order health, retail, accommodation, supply chain and service needs of projects and workforces. The impacts are colour coded according to **Table 2.9**.

Table 2.9 Cumulative Social Impact Colour Scheme Legend

Colour	Meaning
	No/unlikely cumulative impact
	Possible cumulative impact
	Likely cumulative impact
	Highly likely cumulative impact

Table 2.10 Cumulative Impact of Proximal Developments

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Request for SEARs yet to be submitted						
Piambong Wind Farm	Mid-Western Regional LGA	550 MW wind farm.	Construction to commence in 2026 (tentative)	Piambong (100 km)	400 jobs during construction and 15 jobs during operation.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing and accommodation is **unlikely** given distance between projects and differences in development phases.
SEARS						
Beryl Battery Energy Storage System SSD-61460977	Mid-Western Regional LGA	Development of a 100 MW / 200 MWh battery energy storage facility with associated infrastructure.	Construction to commence in 2025 (tentative)	Holleys Lane, Gulgong (80 km)	40 FTE during construction.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing and accommodation is **possible** given distance between projects and differences in development phases.
Prepare EIS						
Sandy Creek Solar Farm SSD-41287735	Warrumbungle Shire LGA & Dubbo Regional LGA	Development of a 700 MW solar farm and relevant infrastructure.	Construction to commence in late 2025 or early 2026	Dapper Rd, Dunedoo (100 km) Located within CWO REZ	270 workers during construction, but this could increase to a peak of 350 over a 28-month period.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing and employment is **possible** given distance between projects and differences in development phases.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Cobbora Solar Farm SSD-29491142	Warrumbungle Shire LGA & Dubbo LGA	Development of a 700 MW solar farm with energy storage and relevant infrastructure.	2025–2028 (tentative)	Spring Ridge Road, Cobbora (100 km) Located within CWO REZ	Peak construction workforce of 700.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Barneys Reef Wind Farm SSD-24106966	Mid-Western Regional LGA	350 MW wind farm, up to 63 wind turbines.	2025–2027	Castlereagh Highway, 16 km north of Gulgong (50 km) Located within CWO REZ	340 jobs during the construction phase and approximately 10 jobs during the operational phase.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given proximity of projects.
Orana Wind Farm SSD-58260958	Warrumbungle Shire LGA & Mid-Western Regional LGA	Construction and operation of a wind farm with up to 92 wind turbines, battery storage and associated infrastructure.	2025–2027	Dunedoo (124 km) Located within CWO REZ	580 construction workers and 12 FTE operational staff.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Merriwa Solar Farm SSD-30913035	Upper Hunter Shire LGA	Development of a 550 MW solar farm and a BESS.	Construction to be completed in 2027	Merriwa (30 km)	500 jobs during construction.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given proximity between projects. However, indicative timing suggests that Goulburn River Solar Farm peak construction will likely be completed before Merriwa Solar Farm commences, reducing the scale of impact.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Dapper Solar Farm SSD-52217961	Warrumbungle Shire LGA	Development of a 300 MW solar farm and associated infrastructure.	2025–2026	Sandy Creek, Cobbora (110 km) Located within CWO REZ	250 FTE during construction, with 350 during peak construction.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Exhibition						
Bellambi Heights Solar Farm SSD-33344237	Mid-Western Regional LGA	Originally a 200 MW Solar Farm (one stage), 200 MW Battery (built in 2x 100 MW stages), connecting to existing 330 kV transmission line. Revised in 2023 to remove the solar farm and only retain the BESS.	2025–2026	Castlereagh Highway and Puggoon Road, Beryl (54 km)	Employment generation would include approximately 70–100 people for battery per stage.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given proximity between projects and overlapping development phases.
CWO REZ Transmission Infrastructure SSI-48323210	-	Development of new twin double circuit 500 kV transmission lines between Wollar and the proposed substations at Merotherie and Elong Elong, and connections from these lines to renewable energy generation and storage projects in the CWO REZ.	2024–2027	25 km	Peak workforce of 650, with a construction period of 36 months.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on employment and access to services is **highly likely** given proximity between projects and differences in development phases. Impacts to housing are mitigated by plans for a temporary workforce accommodation camp.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Response to Submissions						
Wellington South Battery Energy Storage Facility SSD-27014706	Dubbo Regional LGA	Development of a 500 MW and 1000 MWH BESS.	2024	Goolma Rd, Wuuluman (140 km)	100 construction workers and 2 workers during operation.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Spicers Creek Wind Farm SSD-41134610	Warrumbungle Shire LGA & Dubbo Regional LGA	Development of up to 117 wind turbines.	2025–2028	Sweeneys Lane, Elong Elong (80 km) Located within CWO REZ	Up to 300 construction jobs.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects.
Dubbo Gas Energy Storage System (Dubbo Firming Power Station) SSD-28088034	Dubbo Regional LGA	60 MW gas fired power station, hydrogen generation plant and 2.5 km and 500 m gas pipelines.	2024–2025	Yarrandale Rd, Dubbo (185 km)	Not Available.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Moolarben OC3 Extension Project SSD-33083358	Mid-Western Regional LGA	Extension of open cut mining at OC3 to the south.	Construction to be completed in 2025	Ulan Rd, Ulan (48 km)	Not Available.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Orana BESS SSD-45242780	Dubbo Regional LGA	Development of a 400 MW / 1600 MWh battery energy storage system and associated infrastructure and connection works.	2024	Goolma Road, Montefiores (140 km)	100–150 jobs during construction.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Valley of the Winds Wind Farm SSD-10461	Warrumbungle Shire LGA	800 MW wind farm, up to 175 wind turbines.	2025–2027	Coolah (57 km) Located within CWO REZ	400 peak construction workforce.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects and overlapping construction time frames.
Tallawang Solar Farm SSD-23700028	Mid-Western Regional Council	Development of a 500 MW solar farm with 200 MW battery energy storage system and associated infrastructure.	2025–2027	Puggoon Rd (50 km) Located within CWO REZ	380 full time equivalent (FTE) jobs during construction (with a peak of 420), and 10 FTE jobs during operation.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects and overlapping construction timeframes.
Birriwa Solar Farm SSD-29508870	Mid-Western Regional LGA	600 MW solar farm with 1000 MW BESS.	2025–2027	Barneys Reef Rd, Birriwa (60 km) Located within CWO REZ	Peak construction workforce of 800. 20 full time equivalent jobs throughout operations, 28-month construction period.	Construction timeframes may overlap throughout in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects and overlapping timeframes.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Assessment						
Bowmans Creek Wind Farm SSD-10315	Muswellbrook LGA, Singleton LGA & Upper Hunter Shire LGA	Construction and operation of a wind farm with up to 60 wind turbines and associated infrastructure.	Commencing 2024 (tentative)	Bowmans Creek (96 km)	150 peak construction workforce.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Hills of Gold Wind Farm SSD-9679	Tamworth Regional LGA, Upper Hunter Shire LGA & Liverpool Plains LGA	Up to 65 wind turbines with a maximum capacity of 420 MW.	2024–2026	Morrisons Gap Rd, Hanging Rock (101 km)	Up to 272 jobs during construction and up to 34 operational jobs.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Determination						
Dubbo Quarry Continuation Project SSD-10417	Dubbo Regional LGA	Expansion of existing hard rock quarry into two new areas.	N/A	Sheraton Rd, Dubbo (180 km)	12 equivalent FTE, with a peak of 14.	Cumulative impact **unlikely** due to location and low workforce numbers.
Maryvale Solar Farm SSD-8777	Dubbo Regional LGA	Development of a 125 MW solar farm and relevant infrastructure	2024	Maryvale Rd, Maryvale (150 km)	Approximately 100 workers during construction.	Cumulative impact **unlikely** due to distance and construction timing.
Dubbo Project (formerly known as the Dubbo Zirconia Mine) SSD-5251	Dubbo Regional LGA	Mining of ore to produce Zirconia and Niobium products.	2022–2024	Toongi Rd, Toongi (190 km)		Cumulative impact **unlikely** due to distance and construction timing.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Apsley Battery Energy Storage System SSD-35160796	Dubbo Regional LGA	Development of a 120 MW / 240 MWh battery energy storage facility with associated infrastructure.	2024	Mitchell Highway, Apsley (150 km)	50 jobs during peak construction, with 5 FTE staff during operation with the potential for up to 50 casual positions.	Cumulative impact **unlikely** due to distance, construction timing and low workforce numbers.
Wellington North Solar Farm SSD-8895	Dubbo Regional LGA	Development of a 300 MW solar farm and associated infrastructure.	2022–2024	Goolma Rd, Wellington (100 km)	250 peak construction workforce.	Cumulative impact **unlikely** due to distance and construction timing.
Wollar Solar Farm SSD-9254	Mid-Western Regional LGA	290 MW solar farm.	2024	Mudgee (22 km)	Construction workforce of up to 300 over a two-year period.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **highly likely** given proximity between projects.
Uungula Wind Farm SSD-6687	Dubbo Regional LGA	Development of up to 97 wind turbines with energy storage and relevant infrastructure.	2024–2025	Uungula (120 km)	250 direct and 400 indirect full time equivalent positions over the construction period. Once operational, there would be 12 direct and 35 indirect jobs. Construction expected to take approx. 30 months.	Cumulative impact unlikely due to distance between projects.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Dunedoo Solar Farm SSD-8847	Warrumbungle Shire LGA	Development of a 55 MW solar farm with energy storage.	2024	Allweather Road, Dunedoo (70 km)	100–125 Peak workforce, with a 10–12 month construction period. Up to three FTE staff during operation.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible (though limited)** given small workforce.
Stubbo Solar Farm SSD-10452	Mid-Western Regional LGA	400 MW solar farm with energy storage.	2025–2026	Blue Springs Rd, Stubbo (48 km) Located within CWO REZ	Employment generation would include approximately 400 people during construction over 2 years.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects.
Bowdens Silver Mine SSD-5765	Mid-Western Regional LGA	Development of an open cut silver mine and associated infrastructure.	2024–2026	Maloneys Rd, Lue (100 km)	Construction workforce up to 246 on-site workers and 74 off-site, and between 192–228 workers over 15 years of operations. Peak workforce of 320. Construction timeframe of 18 months.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible (though limited)** given distance between projects.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Liverpool Range Wind Farm SSD-6696	Warrumbungle Shire LGA, Upper Hunter Shire LGA & Mid-Western Regional LGA	Up to 1,000 MW wind farm with up to 267 wind turbines.	2025–2027	Coolah (55 km) Located within CWO REZ	Up to 800 construction workers and 47 roles during operations. 550 peak workforce, approx. 24–36 months for construction.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects.
Operational						
Suntop Solar Farm SSD-8696	Dubbo Regional LGA	Development of a 170 MW solar farm.	N/A	Suntop Rd, Suntop (161 km)	N/A.	No, project is operational.
Dubbo Hospital Redevelopment Stage 1/2 SSD-5250	Dubbo Regional LGA	Dubbo Base Hospital Redevelopment Stage 1 and 2.	N/A	Myall Street, Dubbo (180 km)	Not Available.	No, construction is complete.
Dubbo Base Hospital Redevelopment Stage 3/4 SSD-7720	Dubbo Regional LGA	Construction and operation of Dubbo Base Hospital Redevelopment Stage 3 and 4.	N/A	Myall Street, Dubbo (180 km)	Not Available.	No, construction is complete.
Beryl Solar Farm SSD-8183	Mid-Western Regional LGA	109 MW solar farm	N/A	Beryl (50 km)	N/A.	No, project is operational.
Kyoto Wind Farm MP06_0055	Muswellbrook Shire LGA & Upper Hunter Shire LGA	A 200 MWh wind farm.	N/A	Middlebrook and Mountainview Stations, Scone (62 km)	N/A.	No, project is operational.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Bodangora Wind Farm MP10_0157	Dubbo Regional LGA	A 113 MW operational wind farm.	N/A	Gillinghall Rd, Bondangora (130 km)	N/A.	No, project is operational.
Ulan Coal Complex, Moolarben Coal Complex and Wilpinjong Mine	Mid-Western Regional LGA	Open cut and underground mine, operational with approval until 2033.	N/A	29 km	Production of up to 20 MT if run-of-mine coal per annum, with a peak workforce of 931.	Cumulative impacts **possible** given distance between projects and existence of an operational workforce.
Cobbora Coal Mine MP10_0001	Warrumbungle Shire LGA, Mid-Western Regional LGA & Wellington LGA	Operational Coal Mine.	N/A	Cobbora (140 km)	N/A.	No, project is operational.
Wellington Solar Farm SSD-8573	Dubbo Regional LGA	A 174 MW solar farm and associated infrastructure.	N/A	Goolma Rd, Wellington (100 km)	N/A.	No, project is operational.

Source: (Department of Planning and Environment, 2023).

3.0 Key Stakeholder Engagement

To support the preparation of the original AES, targeted engagement has been undertaken between 5 October and 2 November 2023 with the following stakeholder groups. This engagement has been undertaken in addition to other community and government agency consultation undertaken to inform and support the preparation of the RtS and Amendment Report (1).

Table 3.1 Stakeholder Engagement to Inform the AES

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
Accommodation Providers				
Local developer (name redacted)	Upper Hunter Shire LGA	MS Teams Meeting	• The project aims to build a 500-room workers camp in Merriwa using recycled shipping containers, which will accommodate the staff of renewable energy projects in the area. The camp will offer various facilities and benefits for the workers and the local community, and will have potential long-term uses for tourism, aged care, housing, or relocation.	9 October 2023
The Golden Fleece Motor Inn	Upper Hunter Shire LGA	In person discussion	• The hotel owner is willing to host the project workers but has limited availability due to high demand from various customers. The hotel has 17 rooms and a high occupancy rate of 95% and faces challenges in expanding and staffing.	11 October 2023
The Royal Hotel Cassilis	Upper Hunter Shire LGA	In person meeting	• The pub owner is keen to cater for the project, as it will boost their business. They offer dinner and lunch on selected days and have 15 rooms available for accommodation. They are planning to expand and could provide more rooms and cabins if they have a formal agreement with Lightsource bp.	12 October 2023
Merriwa RSL	Upper Hunter Shire LGA	In person meeting	• The RSL is exploring the option of adding up to 25 modular units in its backyard to accommodate the project workers. They are in talks with a modular dwelling company.	12 October 2023
RM Property	Upper Hunter Shire LGA	In person meeting	• The rental manager has a high occupancy rate of 98% for their rentals and Airbnb's in the area, which vary depending on the season and the demand. They suggest that the project should use a hybrid approach of different accommodation options to share the economic benefit with the local community.	13 October 2023

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
Merriwa Motor Inn	Upper Hunter Shire LGA	In person discussion	• The Motor Inn has 14 rooms available for the project workers at a discounted rate.	13 October 2023
The Property Shop Mudgee	Mid-Western Regional LGA	Phone call	• The owner highlighted the challenge of finding accommodation for the project workers in Mudgee and surrounds, due to the low availability of housing stock and the negative community perception of previous solar farm workers. Also noted the lesson learnt from mining companies who made a deal with local council to build cabins and guarantee their occupancy, however, the shared community memory of mining affects the town's tourism and property market.	5 October 2023
Sandy Hollow Tourist Park	Upper Hunter Shire LGA	In person discussion	• The tourist park can currently offer 25 rooms (including cabins, hotel rooms, and a house), but have plans to expand their capacity up to 40 rooms for the project workers with additional cabins.	13 October 2023
Ellamara Giants Creek	Upper Hunter Shire LGA	In person discussion	• Expressed capacity to book out up to 17 beds (requires room sharing with king singles) with the capacity to build up to 12 more rooms.	13 October 2023
Grapevine Motel – Denman	Muswellbrook Shire LGA	In person meeting	• Would consider booking out 10–12 rooms at a time to the project, however, currently has 98% occupancy rate. Explained that they would not book out entire venue to solar farm workers, as they want to continue relationship with regulars.	13 October 2023
Brightlands Living	Muswellbrook Shire LGA	MS Teams Meeting	• Discussed existing development in planning in Muswellbrook, including 450 lots of long-term housing with the capacity to house the Project workforce.	17 October 2023
Employment Providers				
Blackrock Industries	Muswellbrook Shire LGA	In person meeting	• Discussed opportunities to place local workers, apprentices, and prisoner-program participants on the project. Also discussed the opportunity to partner with Brightlands Living in their accommodation.	12 October 2023

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
			• Blackrock Industries described how participants from their successful prisoner program found work in the local mining industry, and how these learnings could be transferred to this Project. Blackrock Industries also described their ability to engage local people into the Project's construction workforce, including opportunities for trainee and apprenticeships for people who identify as Indigenous. Blackrock Industries assumes they would be able to provide at least 30 local workers for the construction of the Project, being a mix of prisoner program participants, labouring roles, and some trainees.	
Programmed	Muswellbrook Shire LGA	Phone call	• Would be interested in working with Lightsource bp to help provide local (Merriwa, Muswellbrook and Singleton) skilled labour, but also a campaign targeting Year 12 students, labouring roles and farming workers who could do flexible shifts. • Programmed indicated their interest in working with Lightsource bp, as they would be able to provide skilled local workers from Merriwa, Muswellbrook, and Singleton to work on the Project. They indicated they could implement a campaign targeting various cohorts such as students in year 12, labouring roles, and farm workers with the flexibility to do other part-time work. Considering the competitive industries in the region, and what Programmed have been able to provide for other Projects in the area, Programmed indicated there is a key opportunity for the Project in terms of employing local workforce, should Lightsource bp provide traineeships and/or apprenticeships for local people.	19 October 2023
Local Government				
Upper Hunter Shire Council	Upper Hunter Shire LGA	In person meeting	• Discussed social impacts of population growth in Merriwa. Raised concerns about the proposed design of the accommodation campsite.	12 October 2023
		MS Teams Meeting	• Discussed the proposed accommodation campsite, and where it was up to in the development process. • Discussed the Project's response to the incoming workforce impact to medical services in the area. Explained the conversation with the local health provider, and Lightsource bp shared their Telehealth offering to all incoming workforce. Lightsource bp provided an update on the AES process.	8 November 2023

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
Muswellbrook Shire Council	Muswellbrook Shire LGA	In person meeting	• Expressed desire to see renewable energy proponents support transition programs to help those working in mining to move to renewable energy, acknowledging there aren't many operational roles. Expressed preference for long-term housing and options that encouraged people to remain in the community, not Drive-in-Drive-Out (DIDO).	12 October 2023
Mid-Western Regional Council	Mid-Western Regional LGA	MS Teams Meeting	• Expressed satisfaction with the Project AES plan to avoid use of temporary accommodation in Mid-Western Region.	19 October 2023
Industry / Community Groups				
Merriwa Chamber of Commerce	Upper Hunter Shire LGA	In person meeting	• The Chamber of Commerce invited Lightsource bp to attend a meeting to present the project and the accommodation plans to the local businesses. They expressed a positive attitude towards the project and its economic benefits and suggested that Lightsource bp should collaborate with TAFE and schools to promote the industry to young people.	13 October 2023
Merriwa – Cassilis Alliance	Upper Hunter Shire LGA	Phone call	• Advertising to all the smaller business owners and Airbnb hosts is important, as they may be looking at building additional accommodation. Great opportunities for local people.	5 October 2023
Gulgong Chamber of Commerce	Mid-Western Regional LGA	Phone call	• Lack of available accommodation in Gulgong currently.	5 October 2023
Health Provider				
Merriwa Surgery	Upper Hunter Shire LGA	In person discussion	• Indicated there were sufficient health services in Merriwa at present, especially if workers were encouraged to seek non-urgent care in their home communities while being triaged through the Multi-Purpose Centre for emergency care.	13 October 2023

Source: Umwelt, 2023.

3.1 May 2024 Update

The addition of the proposed on-site TWA Facility to the Project necessitated further engagement with the local community and key stakeholders to gather feedback, explore options and plans, and to support the preparation of this Amended AES and the Amended Social Impact Assessment (SIA) (Umwelt, 2024) prepared as a component of the Amendment Report (2).

Engagement was conducted in March and April 2024 with the stakeholder groups included in **Table 3.2.**

Table 3.2 Stakeholder Engagement to Inform the Amended AES

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2024
Accommodation Providers				
The Golden Fleece Motor Inn	Upper Hunter Shire LGA	Telephone discussion	• The hotel owner indicated that the TWA Facility was a good idea for the Project, as her accommodation is full and is nearly fully booked out until December 2024. • The hotel owner indicated they would still be interested in hosting the project workers, as they would have more availability in January 2025. However, it is first in best dressed policy, and they would only have capacity to provide 10 rooms. The hotel has 17 rooms and a high occupancy rate of 95% and faces challenges in expanding and staffing.	23 April 2024
The Royal Hotel Cassilis	Upper Hunter Shire LGA	Telephone discussion	• The pub owner is still interested in catering for the project, as it will boost their business. They offer dinner and lunch on selected days and have 15 rooms available for accommodation. They are still considering expansion, however, would need a formal agreement with companies building projects in the area.	23 April 2024
RM Property	Upper Hunter Shire LGA	In person discussion at drop-in session	• The rental manager indicated that the TWA Facility would reduce strain on local accommodation. They have a higher than usual occupancy rate (previously approximately 98%) for their rentals and Airbnb properties in the area, due to road works happening close by. • Indicated concern that the TWA might strain on local services, as the IGA already runs out of supplies.	10 April 2024

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2024
Merriwa Motor Inn	Upper Hunter Shire LGA	In person discussion	• The Motor Inn indicated that they have 14 rooms and would be willing to provide up to 10 rooms for the project workers.	23 April 2024
Sandy Hollow Tourist Park	Upper Hunter Shire LGA	In person discussion	• The tourist park manager indicated that the TWA Facility is a good outcome for local accommodation providers, due to decreasing the strain on number of workers needing accommodation. • The Manager indicated that they could offer accommodation to 30 workers (including cabins, hotel rooms, and a house) after their renovations which will be concluded by mid-2024. • Also noted that they have a function room which could be utilised as a meeting room or training facility room for workers.	23 April 2024
Local Businesses				
Blackrock Industries	Muswellbrook Shire LGA	Telephone discussion	Discussions included various ways Lightsource bp could maximise their local benefit for the project, summarised and listed below. • Instead of temporary accommodation, consider building or funding permanent housing to increase local housing stock, benefiting the community. • Foster trust by engaging with locals through initiatives like a 'local buying house' for local procurement and attending Chamber of Commerce meetings. • Engage a dedicated, local, full-time engagement person for the project to maximise local benefits. • Source food and security locally, support local businesses, and ensure access to emergency medical services via a helipad. • Host engagement events for local businesses, prioritize engaging local businesses first to build community rapport.	23 April 2024

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2024
Merriwa Hardware	Upper Hunter Shire LGA	Drop in session attendance	• Owners of the Hardware store indicated that the TWA Facility will provide benefits for the local businesses due to workforce driving through Merriwa and getting supplies in town. They shared the importance of this benefit for the local businesses. • Their hardware business mainly just services local people and would only consider undertaking large contracts if the payment cycles were 21 or 30 days. Shared their experience with other large contractors having a 61 business day payment cycle, and how this is unsustainable for their small business.	10 April 2024
Merriwa Newsagency	Upper Hunter Shire LGA	Drop in session attendance	• Owner of the newsagency indicated that the Project, including the TWA Facility, will see benefits for the local businesses in Merriwa, and suggested that they could provide newspapers to the TWA Facility workers on a regular basis.	10 April 2024
Local Government				
Upper Hunter Shire Council	Upper Hunter Shire LGA	Online meeting with Director Environmental & Community Services	• Lightsource bp presented the TWA Facility concept to the councillors. • Director of Environmental & Community Services supportive of the on-site TWA Facility, this is the preferred accommodation solution of Council. • The Upper Hunter Shire Councillors are also broadly supportive. The TWA Facility concept was presented to them at the Ordinary Council meeting on the 25th March. • Whilst Cr [Name redacted] raised some concern about impacts on the roads and questioned whether this would reduce economic benefits to Merriwa, the majority of councillors agreed that the on-site TWA was their preferred accommodation solution.	25th March 2024
		Councillor attendance at drop-in session	• Generally supportive of the TWA Facility but wants to make sure the camp is better constructed in a way that is a nice place for people to live rather than just rows of demountable buildings.	10 April 2024

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2024
Community Groups				
Merriwa Progress Association	Upper Hunter Shire LGA	Phone call	• Flagged concerns about the road. • Was concerned how late the Progress Association became aware of the Project, but also recognised the effort taken to engage.	15 April 2024
Merriwa CWA	Upper Hunter Shire LGA	Drop-in session Attendance	• Would be interested in seeing the TWA Facility use local businesses	10 April 2024
Health Providers				
Merriwa Multi-Purpose Medical Centre	Upper Hunter Shire LGA	In person discussion	• Indicated there were sufficient health services in Merriwa at present, especially if workers were encouraged to seek non-urgent care in their home communities while being triaged through the Multi-Purpose Centre for emergency care. • Suggestion to have multiple first aid trained professionals on site • Explained that if there were major injuries, they will be flown by helicopter to Maitland or John Hunter. A helipad or dedicated spot-on site for helicopters to land would be a good idea.	19 April 2024
Rural and Regional Health - Hunter Valley Sector,	Upper Hunter Shire LGA	Email correspondence	• Suggestion to include the ambulance/emergency services numbers, and address of Merriwa Multi-Purpose Service as that is the closest Emergency Department to the TWA.	23 April 2024
Merriwa Pharmacy	Upper Hunter Shire LGA	Drop in session attendance and completion of an online survey	• Feedback that the TWA Facility is far enough out of town to not overload local services. • Recommended that Lightsource bp advise community of extended travel times when oversize loads carrying infrastructure are using the Golden Highway and going through town.	10 April 2024

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2024
Emergency Services				
Upper Hunter Police	Muswellbrook LGA	Email correspondence	• Remote location raises significant security concerns due to rural and remote crime. • Suggest implementing strong private security presence, particularly during construction, due to minimal police presence and potential attractiveness of high-value equipment/materials on site.	28 April 2024
Merriwa RFS	Upper Hunter Shire LGA	Drop in session attendance	• Local representative of the Merriwa RFS discussed history of fire fighting in the vicinity of the Project Area, and opportunities to best stop the spread of bushfire. This could include a prior arrangement with a helicopter company or clearing additional fire breaks outside of the Project Area *(note, the last is not feasible due to the ecological values present. Tracks in the broader Project Area will however be maintained both for access and as fire breaks*).	10 April 2024
Merriwa Volunteer Rescue Association	Upper Hunter Shire LGA	Telephone call	• General support for the TWA Facility, due to the long drive from the site to Merriwa or Mudgee if workers were not staying on site. • Roads are always going to get busier, irrespective of the TWA Facility, its more about driver behaviour and getting locals more comfortable with extra traffic on the road.	19 April 2024

4.0 Accommodation Framework

4.1 Accommodation Framework Scope

This Accommodation Framework aims to provide evidence-based recommendations to manage the social opportunities and impacts associated with housing the temporary construction workforces required for the Project.

Updates made in May 2024 to this section as a result of the introduction of the proposed onsite TWA Facility to the Project are as follows:

- **Section 4.2.4** May 2024 Update – Proposed Temporary Workforce Accommodation (TWA) Facility.
    - **Section 4.2.4.2** TWA Facility Construction, Operation and Management.
    - **Section 4.2.4.3** Accommodation of the TWA Construction Workforce.
- **Section 4.2.5** Accommodation Summary.
- **Section 4.3** Workforce Accommodation Plan Objectives (Updated).
- **Section 4.4** Accommodation Actions and Mitigation Strategies (Updated).

Other sections have not been updated as the content has not materially changed since the original AES was published (December 2023), and/or any updates would not materially alter the outcomes of this Amended AES.

4.2 Accommodation Profile – Review of Options

In developing the framework and profile, the following accommodation types have been considered:

- **Existing short-term accommodation** – this includes self-catering houses and units (typically listed on short stay services such as Airbnb and HomeAway), motels, hotels and camping/caravan parks (most suitable would-be cabin style facilities), with the availability of properties influenced by a strong visitor economy.
- **Emerging short-term accommodation** – this includes new short-term accommodation (as defined above) that is likely to become available in time for Project construction timelines. This new housing has been identified through stakeholder engagement with local accommodation providers currently planning to expand their offerings in response to anticipated future demand.
- **Longer term accommodation** – this includes rental properties available in the social locality. The availability of these properties is influenced by the supply and future development of housing options in the target area.
- **Custom-built temporary accommodation** – this includes purpose-built worker's sites designed to meet the needs of a single project or multiple proximal projects.

4.2.1 Existing Short-term Accommodation

This section considers levels of availability of this accommodation type, based on the following assumptions and limitations:

- Short-term accommodation stock:
    - For the purposes of this study, an 'entire place' on Airbnb has been counted as two beds, despite there likely being opportunity to fit more than one person in a home and multiple workers sharing a rental being a common practice in the industry. Similarly, each room listed in short-term accommodation has been counted as space for one person, despite some rooms including more than one bed. These are conservative estimates and reflect a 'worst case scenario' in relation to accommodation availability.
    - For the purposes of this analysis, all short-term accommodation has been considered as 'able to be occupied' by incoming work forces. However, it is likely that certain accommodation types, e.g., cottages or luxury retreats are unlikely to be utilised by the incoming workforce. This assumption is therefore less conservative.
- Short-term accommodation occupancy:
    - Data derived from AirDNA (2023) identified that across the three LGAs the average occupancy rate ranged between 51% and 61.6% (see **Figure 4.1**). The highest occupancy rate was recorded in Muswellbrook LGA (61.6%). Although this data is based on Airbnb occupancy only, it is assumed that this is indicative of occupancy and demand trends for short-term accommodation in general.
    - Between January 2022 and April 2023, occupancy rates in Upper Hunter Shire and Mid-Western Regional LGAs Airbnb peaked in April 2022 at 66.7% and 71.9%. Occupancy rates peaked in May 2022 for Muswellbrook LGA, which recorded an occupancy rate of 79.9%.
    - This framework uses a conservative estimate of 80% occupancy rates across Airbnb and hotel and motel accommodation, thus assuming that 20% of total stock is available to incoming workforces.
    - This framework acknowledges the cumulative impact of multiple construction projects competing for access to remaining short-term accommodation. It therefore aims to access 20% of the available short-term accommodation. This approach also accounts for the presence of accommodation in the room count that is not 'appropriate' for the workforce.
    - Following discussions with Mid-Western Regional Council, it has been determined that short-term accommodation providers within Mid-Western Regional LGA will not be considered as available to the Project. Subsequently, while data is presented for Mid-Western Regional LGA in **Table 4.1** and **Table 4.2**, they are not considered in the final room availability figures.

Table 4.1 below provides an overview of short-term accommodation availability across the Upper Hunter, Mid-Western Regional, and Muswellbrook LGAs, while **Table 4.2** provides an overview of Airbnb availability for the same LGAs.

As mentioned, assessment of room occupancy rates is based on a conservative estimate of 80% occupancy rates across Airbnb and hotel and motel accommodation, and final availability is based on the assumption that 20% of available stock is available to the incoming Project workforce.

Table 4.1 Short Term Accommodation Availability

LGA	Town	No. of short-term accommodation providers	Total no. of short-term accommodation rooms	Number of rooms available at 80% occupancy rate	Number of rooms available to the Project (20% of rooms available)
Upper Hunter Shire LGA	Merriwa	3	36	7	1
	Scone	10	46	9	2
Mid-Western Regional LGA[5]	Mudgee	94	1,033	361	0
	Gulgong	5	53	18	0
	Wollar	0	0	0	0
	Kandos	1	4	0	0
Muswellbrook LGA	Muswellbrook	2	124	25	5
	Denman	0	0	0	0
Total		**115**	**1,296**	**451**	**8**

Source: (Accommodation Tourism Data Warehouse, 2023).

Table 4.2 Airbnb Rooms Available as of May 2023

LGA	Number of Listings	Number of rooms	Number of Rooms available at 80% Occupancy Rate	Number of Rooms available to the Project (20%)
Muswellbrook LGA	24	48	10	2
Upper Hunter Shire LGA	46	92	18	4
Mid-Western Regional LGA[6]	621	1,242	0	0
Total	**691**	**1,382**	**42**	**6**

Source: (AirDNA, 2023).

[5] Following discussions with Mid-Western Regional Council, it has been determined that short-term accommodation providers within Mid-Western Regional LGA will not be considered as available to the Project.

[6] Following discussions with Mid-Western Regional Council, it has been determined that short-term accommodation providers within Mid-Western Regional LGA will not be considered as available to the Project.

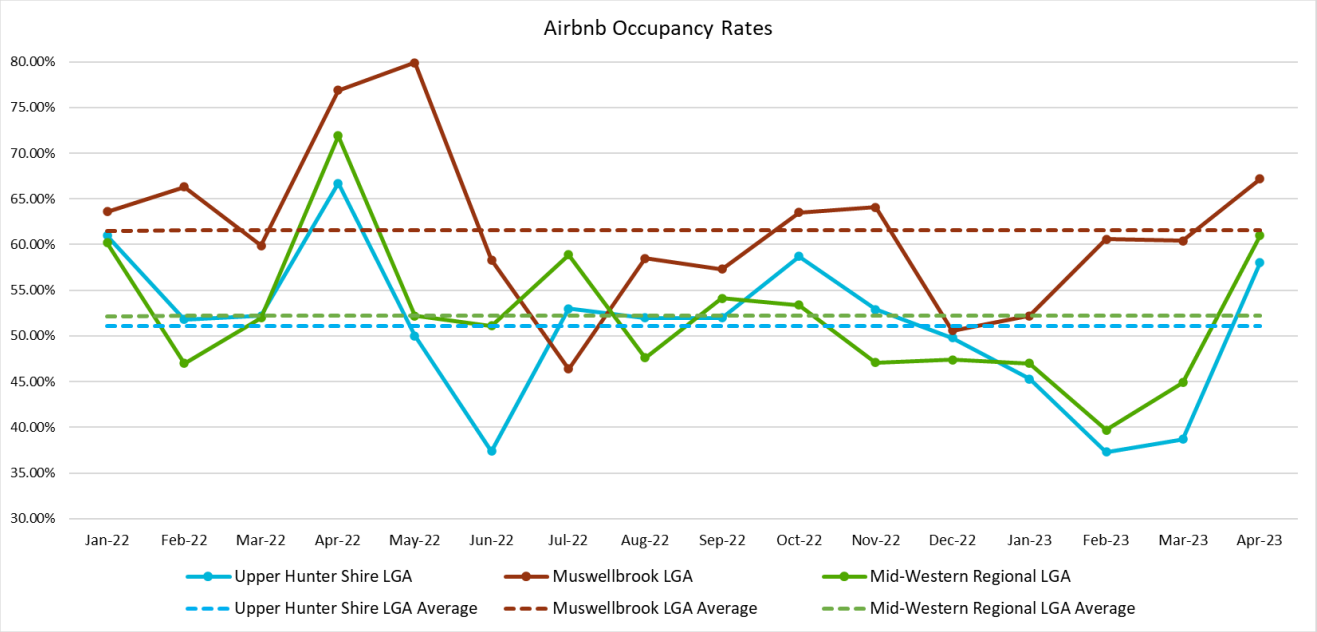

Figure 4.1 Airbnb Occupancy Rates

Source: (AirDNA, 2023).

Based on the above analysis and assumptions made, the accommodation framework anticipates that approximately 14 workers may be housed in existing proximal short-term accommodation without causing significant impact to the existing tourism sector and other short-term accommodation users within the social locality.

4.2.2 Emerging short-term accommodation

Based on engagement conducted for this Amended AES (summarised in **Section 3.0**), feedback has been provided that many existing accommodation and service providers in the region are considering expanding or establishing accommodation offerings to meet anticipated future demand, as outlined in **Table 4.3** below.

Table 4.3 Accommodation Providers with Potential Future Expansion

Options	Current Number of Beds	Potential Expansion	Relevance to Project
The Golden Fleece Motor Inn	25	Up to 10 beds	Within 30 min drive of the project. Walking distance to services in Merriwa town.
The Royal Hotel Cassilis	15	Between 15 to 25 beds	Within 30 min drive of the project. Have indicated willingness to expand to 25 beds.
Merriwa RSL	0	Potentially 25 beds	Within 30 min drive of the project. Walking distance to services in Merriwa town.
RM Property	2	Approximately 15 beds	Within 1 hour drive of the Project.
Merriwa Motor Inn	14	14 beds	Within 30 min drive of the project.

Options	Current Number of Beds	Potential Expansion	Relevance to Project
			Walking distance to services in Merriwa town.
Sandy Hollow Tourist Park	25	Up to 40 beds	Within 30–45 min drive of the project. Existing food and transport facilities for workers.
Ellamara Giants Creek	0	Approximately 15 beds	Within 45 min drive from the Project. Self-contained facilities.
Brightlands Living – Muswellbrook	0	450 beds (proposed), however, distance from the Project is likely to be prohibitive	Within 90 min drive from the Project.

Source: Umwelt, 2023.

It is likely a proportion of these providers will follow through with plans to expand their accommodation offerings, especially if Lightsource bp commits to renting a proportion of beds during the Project's construction period. This Amended AES conservatively considers **up to 40 additional beds are likely to become available to the Project** through local expansion projects.

4.2.3 Rental Accommodation

The information presented in this section regarding private rental availability is based on a desktop review undertaken in September 2023. There is currently low rental availability in the key townships surrounding the Project (refer to **Table 4.4**).

Table 4.4 Rental Accommodation Availability as of September 2023

Township	Rental Population	Vacancy Rate	Rental Stock Available	Stock Available to the Project (up to 5%)
Merriwa	24.1%	0.67%	7	0
Scone	27.5%	0.52%	14	1
Mudgee	30.7%	2.29%	124	0
Gulgong	23.3%	0.56%	7	0
Wollar	23.8%	N/A	0	0
Kandos	23.5%	1.43%	11	0
Muswellbrook	34.8%	0.78%	46	2
Denman	21.6%	0.45%	4	0
Total (excluding NSW)	**213**			**3**

Source: (Real Estate Investor, 2023).

With respect to houses available for rent and their contributions to this accommodation framework:

- It is assumed that approximately three workers per rented house may be housed in each rental property as house-sharing is common across rosters and most homes in the area are three or four bedrooms.
- It is recommended that Lightsource bp avoid accessing more than 5% of available rental homes in any locality to avoid displacing lower income households or increasing rental prices.
- Therefore, a **maximum of 3 homes, housing approximately 9 workers**, are likely to be available to the Project construction workforce.

4.2.4 May 2024 Update – Proposed Temporary Workforce Accommodation (TWA) Facility

On-site accommodation that utilises temporary structures is not commonly used in the surrounding areas at present, although stakeholder engagement and a review of EIS documentation from proximal projects suggests this is changing. While the region has a history of some temporary workforce facilities designed to house mining and infrastructure construction workforces, there are currently no existing temporary workforce accommodation facilities with the capacity to house workforces associated with the Project. Given the size of the Project's construction workforce (350 at peak), and the relatively low number of available local short-term accommodation options, Lightsource bp has determined that housing the workforce within alternate accommodation is necessary.

An option to rent up to 300 rooms from a proposed development of 500 fully furnished, self-contained ensuite units within the township of Merriwa was initially considered to accommodate the bulk of the construction workforce for the Project. Following detailed review of this proposal and its development timelines alongside feedback from Council and DPHI, an on-site TWA Facility has been identified as the preferred accommodation solution.

4.2.4.1 TWA Facility Siting and Design

The TWA Facility would span an area of approximately 3 hectares (ha) and is proposed to be located on-site within the identified TWA Facility Feasibility Area, as outlined in

Figure 4.2 below. The TWA Facility Feasibility Area is adjacent to the main Project access point on Wollar Road and wholly within the Development Footprint. The exact location of the TWA Facility within the TWA Facility Feasibility Area will be confirmed as detailed planning progresses. **Figure 4.2** shows an indicative location of the TWA Facility.

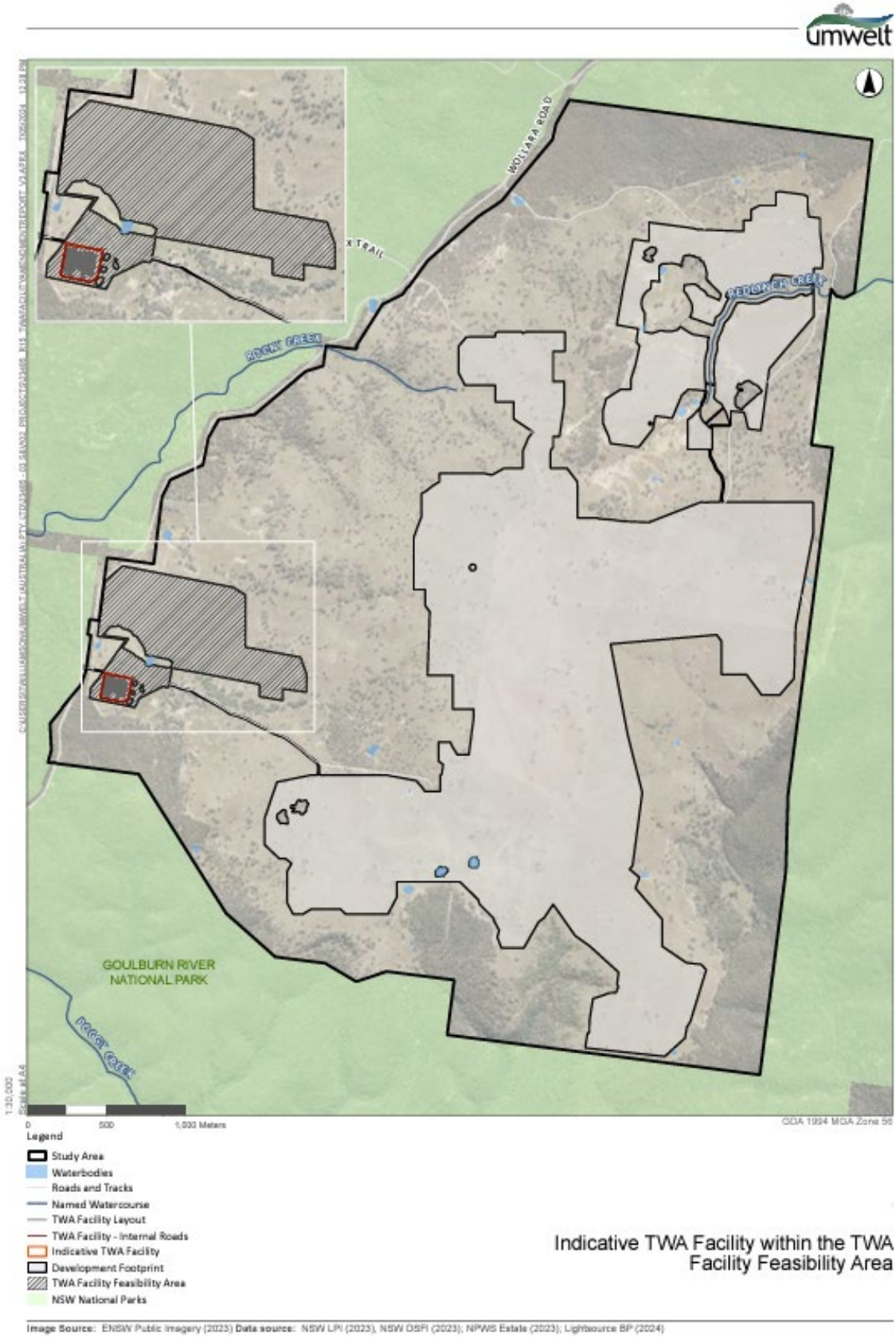

Figure 4.2 Indicative Location of the TWA Facility within the TWA Facility Feasibility Area

This would be a temporary facility for use to accommodate workers during the construction period and would be decommissioned at the conclusion of the construction period. The TWA Facility is likely to be constructed progressively to align with the anticipated increase of construction workforce associated with the Project.

The proposed TWA Facility will consist of prefabricated modular accommodation units, recreational facilities and support buildings interlinked with plug and play services (i.e., water, sewerage and power) as well as covered walkways. The TWA Facility will be designed to accommodate up to 400 workers required to construct the Project as well as the maintenance and operation of the TWA Facility itself.

The proposed TWA Facility will include the following components:

- Pre-fabricated rooms (standard 4-person staff quarter buildings with ensuites).
- Kitchen and dining facilities.
- Administration buildings comprised of offices and reception.
- First aid post.
- Linen and chemical storage rooms.
- Maintenance and cleaning buildings for housekeeping equipment and laundry facilities.
- Ablutions.
- Waste water treatment plant, inclusive of a waste storage facility.
- Electricity generating units and fuel storage.
- Water storage/supply.
- Car, bus and truck parking.
- Recreational facilities such as a gymnasium, a bar area and BBQ facilities.

4.2.4.2 TWA Facility Construction, Operation and Management

The construction of the TWA Facility is expected to take 12 weeks from site preparation to commissioning and would be undertaken concurrently with road upgrades and any other ancillary works outside of the construction of the actual solar farm itself. The workforce during this stage is approximately 30 people, who will be housed in accommodation off-site until the TWA Facility is completed, as discussed previously. The TWA Facility would be modular, fabricated off-site, and transported to the Project site for installation. All utilities would sit above ground and there is no requirement for ground penetrating works or permanent foundations.

Once constructed, the TWA Facility is proposed to operate 24 hours a day, 7 days a week for the duration of the construction period (approximately 27 months). It is expected that the TWA Facility would require approximately 10 operational staff following construction.

A range of general activities would be undertaken to support the functions of the TWA Facility, such as general grounds maintenance, deliveries and waste removal, and worker movements. The operation and

management of the TWA Facility would either be undertaken by construction contractors managed by Lightsource bp or would be outsourced to a third party that specialises in managing such facilities.

Services in relation to the ongoing operation of the TWA Facility, include food delivery, handling and service, housekeeping and laundry services, administration, site maintenance and cleaning, and security. in addition to the estimated 10 operational roles for the TWA Facility, these likely contracted services provide opportunities for applicable local and regional businesses to potentially procure to the Project (see **Section 5.2.1**).

4.2.4.3 Accommodation of the TWA Construction Workforce

As noted in **Section 4.2.4.2**, the construction of the TWA Facility will require 30 workers to be housed in local accommodation for the 12-week construction period.

As per **Section 4.2.1**, approximately 14 workers may be housed in existing proximal short-term accommodation. **Section 4.2.2** also notes that a number of existing accommodation and service providers in the region are considering expanding or establishing accommodation offerings to meet anticipated future demand, with a conservative estimate of up to 40 additional beds likely to become available to the Project through local expansion projects. Therefore, it is expected that there is likely to be sufficient local short-term accommodation to house the TWA Facility construction workforce for this short-term period.

Of the approximately 10 operational staff, any non-local workers will be accommodated at the TWA Facility itself. However given the types of operational jobs required at the TWA Facility and the low number required, this is expected to be minimal as it is likely that these roles could be sourced from the local workforce.

4.2.5 May 2024 Update – Workforce Accommodation Summary

Table 4.5 provides an overview of accommodation availability and likely distribution based on the known existing accommodation context as per the originally published AES (December 2023). It reflects the then proposed accommodation composition at a peak workforce of 350, and shows the non-local workforce being accommodated through a mixture of existing and new short-term accommodation, including at the proposed development in Merriwa.

Table 4.6 shows the updated accommodation breakdown with the introduction of the on-site TWA Facility, indicating that all non-local workers would be housed in the TWA Facility.

Table 4.5 Original AES – Accommodation Option Breakdown at Peak Workforce (without the TWA Facility)

Accommodation Components (assumes peak workforce of 350)	Number of Workers housed	Housing Form
Local Workforce	Approximately 35	Existing homes
Existing short-term accommodation	14	14 rooms
New short-term accommodation	40	40 rooms
Rental Accommodation	9	3 rented homes
Subtotal available beds	**Up to 100**	

Accommodation Components (assumes peak workforce of 350)	Number of Workers housed	Housing Form
Merriwa Temporary Accommodation development	Up to 300	Temporary Accommodation development
Total available beds	**Up to 400**	

Source: Umwelt, 2023.

Table 4.6 May 2024 Update – Accommodation Option Breakdown at Peak Workforce (including the TWA Facility)

Accommodation Components (assumes peak workforce of 350)	Number of Workers housed	Housing Form
Local Workforce	Approximately 35	Existing homes
Existing short-term accommodation	0	0 rooms
New short-term accommodation	0	0 rooms
Rental Accommodation	0	0 rented homes
Subtotal available beds	**Approximately 35**	
On-site TWA Facility	Up to 400	TWA Facility
Total available beds	**Up to 435**	

Source: Umwelt, 2024.

4.3 Workforce Accommodation Plan Objectives (Updated)

In light of the introduction of the proposed onsite TWA Facility, the key objectives of the Accommodation Framework for the Project are to:

- Maximise the use of the TWA Facility to accommodate the Project's construction workforce.
- Ensure accommodation is accompanied by sufficient recreational opportunities and health services to avoid any negative impacts on existing communities.
- Reduce or avoid upward pressure on housing prices, rental costs and demand that may result from the population influx due to development activities.
- Encourage the development or expansion of existing accommodation providers where appropriate, particularly to accommodate the construction workforce of the TWA Facility itself.
- Prioritise procurement and employment of local business and workers to reduce impact on housing demand.
- Account for any cumulative effect on local housing or accommodation by considering other nearby projects with incoming workforces and other localised factors such as the known seasonal tourism trends for short-stay accommodation demand.

These objectives inform the proposed actions and mitigation strategies in the following section.

4.4 Accommodation Actions and Mitigation Strategies (Updated)

The actions in **Table 4.7** have been updated to reflect the plans to establish the TWA Facility for the Project's construction phase.

Table 4.7 Accommodation – Implementation Actions and Objectives

Aspect	Mitigation/Management Objective	Development Phase				Responsible Party			Implementation Actions or Strategy
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
Short-term accommodation availability	Avoid placing unsustainable pressure on existing short-term and tourism accommodation and 'crowding out' other visitors.	■	■	■		■	■		Accommodate the construction workforce in the TWA Facility to avoid placing unsustainable pressure on existing short-term accommodation and rental accommodation in the social locality. See **Section 4.2.4** for justification. Note that accommodation will also be required for the Project's operational workforce of 10 workers, however due to the low number and permanent nature of the roles it can be presumed that this workforce will be based locally.
		■	■			■	■		Work with local accommodation providers to provide advanced notice of accommodation requirements of the TWA Facility construction workforce and anticipate timing of key tourism events.
Workforce population impacts	Avoid placing unsustainable pressure on existing health systems due to workforce population influx.		■			■			Ensure provision of an adequately staffed first-aid station within the TWA Facility. This includes provision of GP telehealth services to meet the needs of workers associated with the Project. Have multiple workers trained in first aid. Consider inclusion of a helipad or dedicated area for helicopters to land to allow rapid transport of injured workers to nearby hospitals in an emergency. This could form part of the Development Footprint (i.e., as a flat, 20x20m area kept clear of obstacles) and could be demobilised upon completion of the bulk of the solar farm construction.
Rental accommodation availability	Avoid placing inflationary pressures on rental prices or displacing other residents of the social locality by competing for limited rental housing.		■			■	■	■	Accommodate the construction workforce in the TWA Facility to avoid placing unsustainable pressure on existing short-term accommodation and rental accommodation in the social locality. See **Section 4.2.4** for justification.
Local workforce	Maximise local procurement and employment opportunities to reduce the need for accommodating a non-local workforce.	■	■	■	■	■	■		Follow the actions identified in the employment framework (See **Table 5.5**).
New accommodation availability	Encourage the development or expansion of existing accommodation providers to meet Project and cumulative demand where appropriate.	■	■			■	■		The accommodation of the TWA Facility construction workforce in local short-term accommodation providers is reliant on existing providers expanding their existing capacity. Consider exploring options, partnering with, and/or funding existing local accommodation providers to expand their accommodation capacity. See **Table 4.3** for a list of providers currently considering expansion.
Traffic management and workforce fatigue management	Reduce individual workforce traffic impacts and reduce worker fatigue and road safety risk.	■	■			■	■	■	Accommodate the construction workforce in the TWA Facility to avoid the requirement of transporting workers from short-term accommodation locations to and from the Project Site.
Temporary workforce accommodation facility	Meet the accommodation and catering needs of a temporary workforce while reducing impacts on existing residents and communities.	■	■			■	■		Accommodate the construction workforce in the TWA Facility to minimise negative social and environmental impacts. Design the TWA Facility to consider the health and wellbeing needs of the resident workforce, such as including adequate recreational facilities.

Aspect	Mitigation/Management Objective	Development Phase				Responsible Party			Implementation Actions or Strategy
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
Workforce management	Promote workforce safety and avoid impacts of workforce behaviour on local community.								Mandatory compliance with Lightsource bp's Code of Conduct. Controlled management of service of alcohol onsite. Develop and communicate Emergency Preparedness Plans and incorporate into site onboarding processes. Maintaining close relations and communication with local emergency services and council throughout construction.
Cumulative workforces	Minimise the impacts of cumulative workforces from multiple projects on their host and surrounding communities.								Commitment to consider cumulative effects of multiple projects and collaborate with key stakeholders (e.g. local councils and other project proponents) to develop appropriate solutions.

5.0 Employment and Procurement Framework

5.1 Employment and Procurement Framework Scope

The purpose of this local employment and procurement framework is to provide evidence-based recommendations to manage the local employment and procurement opportunities associated with the Project.

An effective local employment and procurement strategy ensures that local entities have full, fair and reasonable opportunity to bid for the supply of key goods or services for the Project. Therefore, outcomes of an effective local employment and procurement strategy will ideally include:

- Creation of training and employment opportunities through procurement processes, clauses and specifications in contracts. It is important to note that these opportunities may lag and trainees may not have the opportunity to benefit from the Project but will have the opportunity to benefit from future projects.
- Directly targeting harder-to-reach or more vulnerable and marginalised groups when creating employment and procurement opportunities.
- Encouragement of local economic development and growth.
- Engagement of local small-to-medium enterprises (SMEs) and social benefit suppliers, providing them with the same opportunities as other larger businesses, including the ability to engage in procurement processes.

Updates to this section as a result of the proposed onsite TWA Facility to the Project are as follows:

- **Section 5.2.1.1** Local Employment Opportunities Associated with Construction and Operation of the TWA Facility (Updated).
- **Section 5.2.2.5** Local Procurement Opportunities Associated with Construction and Operation of the TWA Facility (Updated).
- **Section 5.3** Objectives (Updated).
- **Section 5.4** Employment Actions and Mitigation Strategies (Updated).

Other sections have not been updated as the content has not materially changed since the originally published AES (December 2023), and/or any updates would not materially alter the outcomes of this Amended AES.

5.2 Employment Profile - Employment and Procurement Context

The Project will generate an anticipated peak of around 350 FTE direct construction jobs, with an average of 250 FTE direct jobs from mid-2024 to 2026 (refer to **Figure 1.1** for employment histogram). Employment is likely to extend through local supply chains to fuel supply, vehicle servicing, uniform suppliers,

hotels/motels, B&Bs, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and many other businesses through Project multiplier effects.

It is recognised that most 75% of jobs in renewable energy over the next 15 years are likely to be suited to labourers, trades and technicians and professionals (Briggs, Rutovitz, Dominish, & Nagrath, 2020). **Figure 5.1** illustrates the diverse range of jobs and skill sets that renewable energy projects will likely require and shows the percentage breakdown of different roles on a typical solar farm project (for example, 11% of solar farm roles are for electrical trade assistants, and around 4.1% are for administrative workers).

As shown in **Figure 5.1**, electrical trade and technicians (18%), electrical trade assistants (11%) and solar roofers/ installers (9.8%) will be the largest number of jobs created.

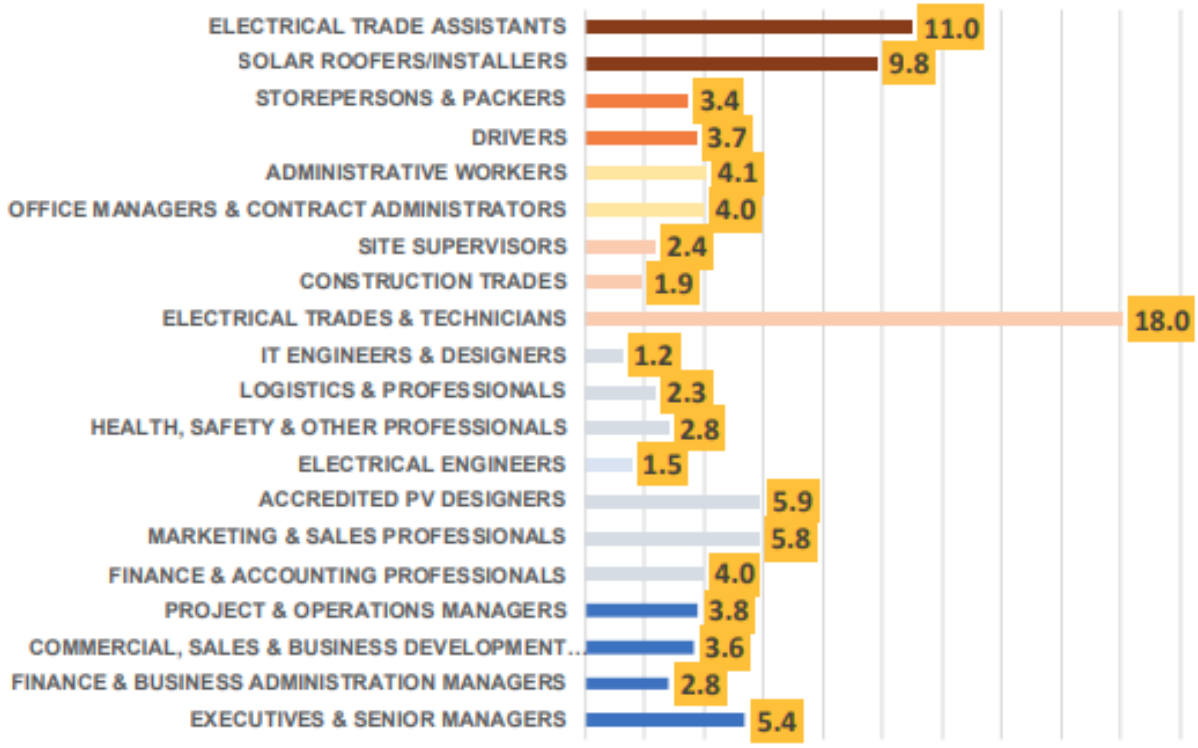

Figure 5.1 Key Occupations for Solar Farms

Source: (Briggs, Rutovitz, Dominish, & Nagrath, 2020).

5.2.1 Employment Profile and Opportunity Across the Social Locality

This section of the Amended AES considers the existing employment profile of the social locality and assesses the degree to which jobs associated with the Project are likely to be filled by local residents. Analysis focuses on local workers employed in the construction sector or employed as trade workers and technicians, as existing research suggests these sectors and roles are most likely to benefit from jobs in renewable energy construction (Doyle, 2014). It also considers those who are currently unemployed and seeking work in the social locality, as another key potential source of workforce.

The Amended AES tests three potential scenarios of local employment opportunities during peak construction (see **Table 5.1**), testing the likelihood of 5%, 10% or 15% of total peak workforce being derived from workers residing in the social locality.

Table 5.1 Local Employment Scenarios at Peak Construction

Local Employment Scenarios	Scenario One (5% of peak workforce)	Scenario Two (10% of peak workforce)	Scenario Three (15% of peak workforce)
Number of local people who could be employed	18	35	53

Source: Umwelt, 2023.

As **Table 5.2** shows, across Mid-Western Regional, Upper Hunter Shire and Muswellbrook LGAs there are a total of 32,696 people employed in any industry, 4,066 people employed as trade workers and technicians and 1,952 people employed in construction.

Table 5.2 Employment by Industry and Job Type Summary

	Mid-Western Regional LGA	Upper Hunter Shire LGA	Muswellbrook LGA	Total
Total Employed Workforce	11,231	6,651	14,814	**32,696**
Workforce Employed in Construction	942	478	505	**1,952**
Workforce Employed as Trade Workers and Technicians	1,998	1,152	1,466	**4,066**

Source: (ABS, 2021).

Considering those in the labour force who are currently unemployed, there are a total of 1,088 unemployed people across the three LGAs who are looking for either full-time or part-time work (see **Table 5.3**).

Table 5.3 Labour Force Status for the Social Locality

	Mid-Western Regional LGA	Upper Hunter Shire LGA	Muswellbrook LGA	Total
Unemployed, looking for full-time work	282	136	234	**652**
Unemployed, looking for part-time work	187	89	160	**436**
Total	**469**	**225**	**394**	**1,088**

Source: (ABS, 2021).

The estimated 18, 35 or 53 local workers represent 0.4%, 0.9% or 1.3% of all workers employed as trades workers and technicians, 0.9%, 1.8% or 2.7% of all those working in the construction industries or 1.7%, 3.2% or 4.9% of all unemployed people in the social localities[7].

Based on an assessment of cumulative impacts due to the number of proximal projects, as well as through feedback from recent stakeholder engagement and lastly, desktop analysis of local employment conditions, a 10% local employment proportion (or 35 local workers under Scenario Two above) is considered feasible for the Project. This is also the figure assumed for the preceding accommodation assessment (see **Section 4.2.5**).

[7] These figures do not consider the applicability of the skillsets of unemployed people in the social locality.

5.2.1.1 Local Employment Opportunities Associated with Construction and Operation of the TWA Facility (Updated)

The analysis provided in **Section 5.2.1** focused on local workers employed in the construction sector or employed as trade workers and technicians and is equally relevant for construction of the TWA Facility as it is for the solar farm. Therefore, the same scenario of a 10% local employment proportion can be applied to the TWA Facility construction, resulting in at least three workers out of the 30 workers required likely to be sourced from the local workforce.

As mentioned in **Section 4.2.4.2**, the TWA Facility will also require an operational workforce of approximately 10 workers following its establishment, in roles including food delivery, handling and service, housekeeping and laundry services, administration, site maintenance and cleaning, and security. These provide additional employment opportunities for the local workforce.

Table 5.4 indicates the workforce in the social locality currently employed in job types that may be relevant to the TWA operations.

Table 5.4 Employment by Industry and Job Type Summary

	Mid-Western Regional LGA	Upper Hunter Shire LGA	Muswellbrook LGA	Total
Total Employed Workforce	11,231	6,651	14,814	**32,696**
Workforce employed in TWA-related job types[8]	377	148	239	**764**

Given the low number of operational workers required, it is more likely that these roles may be sourced from the local or regional workforce.

5.2.2 Procurement Opportunities Across the Social Locality

The capacity for local businesses to benefit from procurement opportunities depends on both the internal processes, priorities and policy of the procuring company and the capacity and connectedness of local companies and organisations and the networks that support them (Esteves, Brereton, Samson, & Barclay, 2010). Additionally, the availability of appropriately skilled employees will need to be accounted for, as multiple projects will likely be under construction at the same time, with similar procurement and workforce needs. This is particularly relevant for the Upper Hunter Shire and Mid-Western Regional LGAs, due to their locations within the CWO REZ and the scale of concurrent renewable energy project predicted for the area.

This section of the report highlights the number of companies in each LGA, by annual turnover. While business size and industry does not directly reflect capacity to supply goods or services to the Project, it provides an overview of local business capacity and helps to inform Project procurement strategies.

[8] TWA-related job types include the following industries of employment: Laundry and Dry-Cleaning Services; Investigation and Security Services; Repair and Maintenance; Building Cleaning, Pest Control and Gardening Services; Food and Beverage Services; Water Supply, Sewerage and Drainage Services; Administrative and Support Services; and Waste Collection, Treatment and Disposal Services.

Note also that business locations are determined by the location in which the business is registered, which is complicated by businesses which operate in multiple locations. Therefore, the following business counts do not necessarily reflect all business operations within their respective LGA.

5.2.2.1 Upper Hunter Shire LGA

As **Figure 5.2** shows, there are currently 1,838 businesses operating within the Upper Hunter Shire. The majority of these businesses are in the agriculture, forestry and fishing sector and therefore are likely to have limited opportunity to service the Project. Within the LGA, 232 businesses were in the Construction sector, making it the second largest in the LGA. 42 businesses (2.3%) are Manufacturing-based. Around 49% of Construction businesses and 54% of Manufacturers are larger businesses with an annual turnover of over $200,000, providing some opportunity for Lightsource bp to source local contractors from within the LGA.

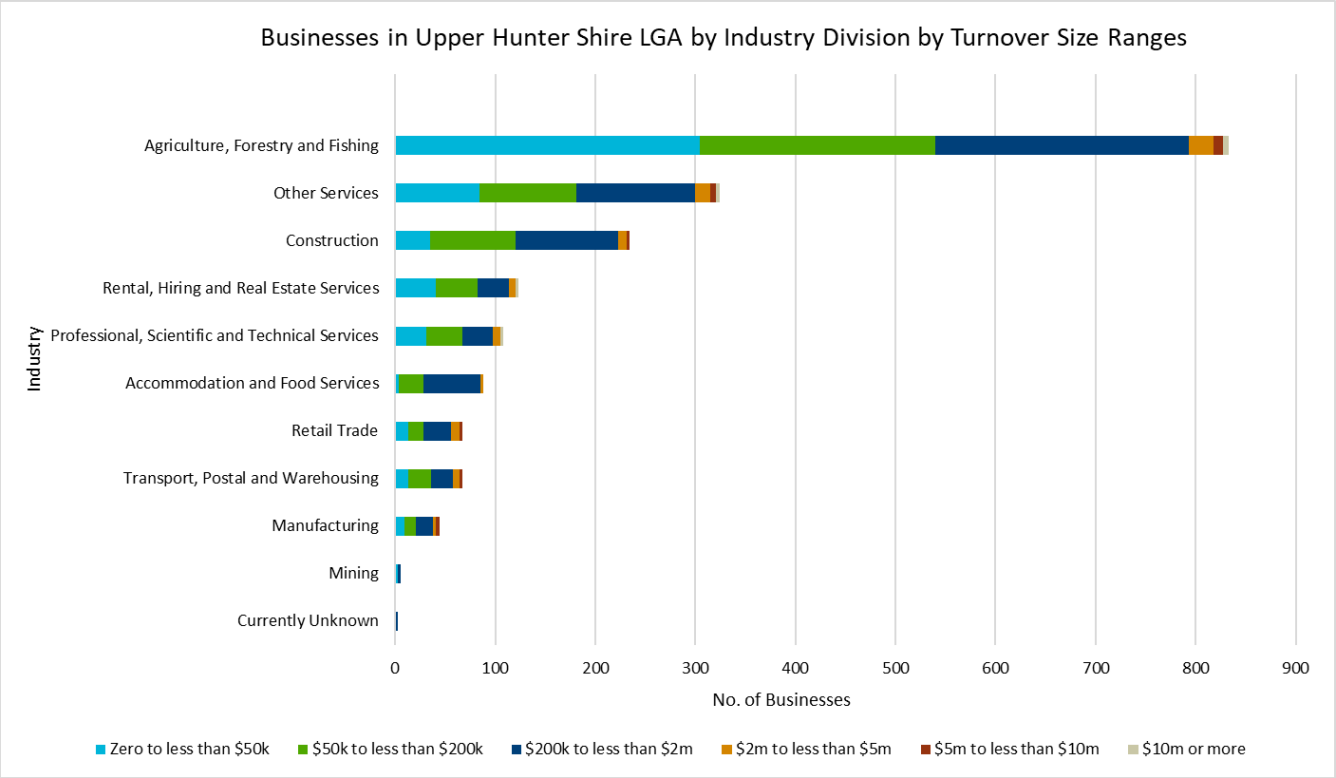

Figure 5.2 Businesses in Upper Hunter Shire LGA by Industry Division by Turnover Size Ranges

Source: (ABS, 2022).

5.2.2.2 Muswellbrook LGA

Figure 5.3 indicates that there are currently 1,067 businesses operating within Muswellbrook LGA. Like Upper Hunter LGA, the largest number of businesses relate to agriculture, forestry and fishing. Of all businesses, 117 were in the Construction sector (11%) and 33 businesses (3.1%) were Manufacturers. Around 46% of Construction businesses and 36% of Manufacturers have an annual turnover of over $200,000, providing some opportunity for Lightsource bp to source local contractors from within the LGA.

Note that Mining is Muswellbrook LGA's largest industry and employer, employing a third of the workforce (REMPLAN, 2023), however is not represented in **Figure 5.3** since virtually all mining businesses are registered outside of the LGA.

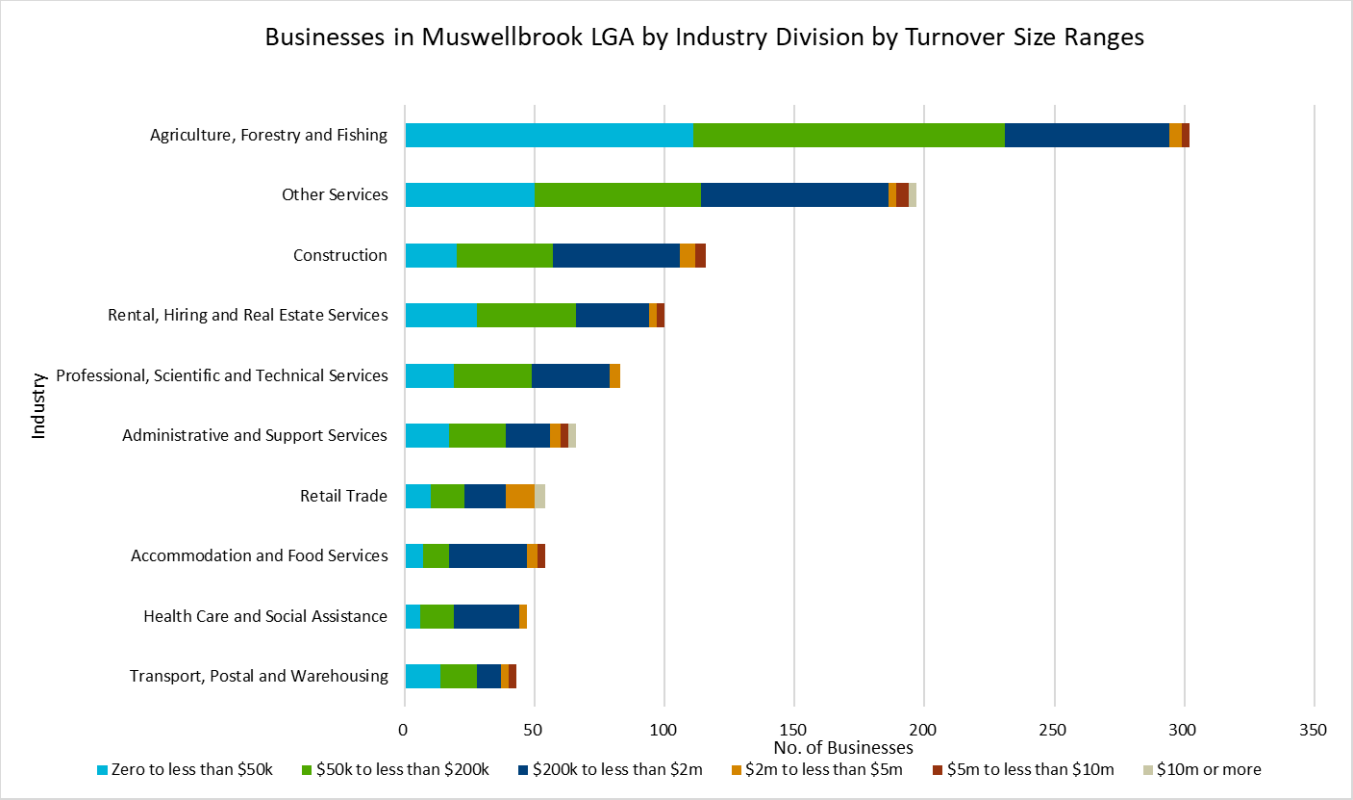

Figure 5.3 Businesses in Muswellbrook LGA by Industry Division by Turnover Size Ranges

Source: (ABS, 2022).

5.2.2.3 Mid-Western Regional LGA

As **Figure 5.4** illustrates, in the Mid-Western Regional LGA, there were 2,856 businesses operating in the LGA with over 42% of these businesses being in the Agricultural, Forestry and Fishing sector. Construction is the second largest industry by number of businesses (433), representing just over 15% all businesses in the LGA. Of these construction businesses, 42% have a turnover size of over $200,000 per year and 6% have a turnover size of over $2,000,000.

Manufacturing in the Mid-Western Regional LGA is the 9th largest industry by turnover size, with 117 businesses. 53% of these businesses have a turnover of over $200,000, while 11% have a turnover of above $2,000,000. As a result, Mid-Western Regional LGA is likely to have a larger capacity to benefit from procurement opportunities associated with the Project than Muswellbrook and Upper Hunter LGAs.

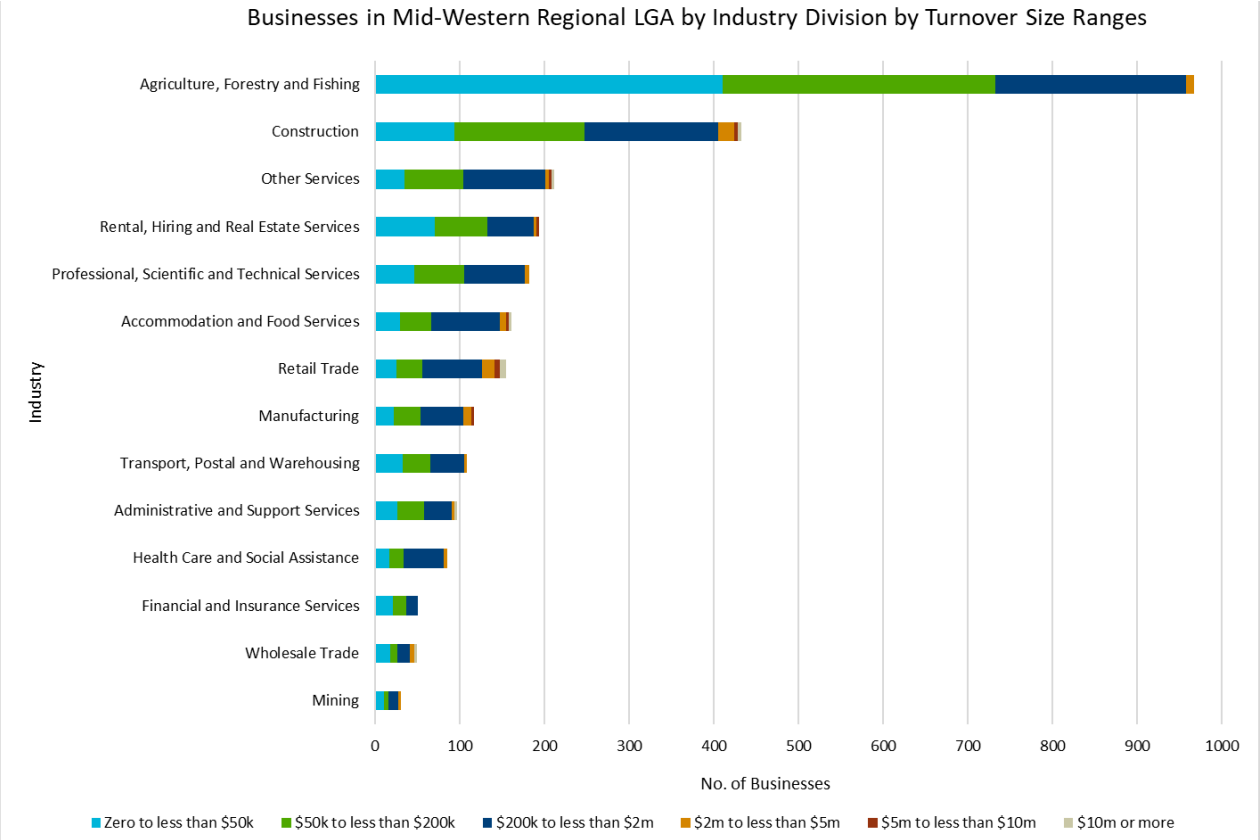

Figure 5.4 Businesses in Mid-Western Regional LGA by Industry Division by Turnover Size Ranges

Source: (ABS, 2022).

5.2.2.4 Local Procurement Summary

An analysis of existing Construction and Manufacturing businesses within the social locality indicated that Mid-Western Regional LGA has the largest number of businesses with likely capability to service the Project.

Both Muswellbrook and Upper Hunter Shire LGAs are significantly smaller in terms of population and their Construction and Manufacturing capacity. While Muswellbrook LGA may benefit from regional strengths in mining and related industries, the Upper Hunter Shire's existing reliance on agriculture may indicate a lower capability to benefit from Project procurement opportunities.

5.2.2.5 Local Procurement Opportunities Associated with Construction and Operation of the TWA Facility (Updated)

The analysis of existing Construction and Manufacturing businesses presented in **Section 5.2.2** indicates that the Mid-Western Regional LGA is well placed to service the construction of the Project given that it has the largest number of business with sufficient likely capability. This in turn would hold true in terms of supporting the construction of the TWA Facility as well.

A comparison of **Figure 5.2, Figure 5.3**, and **Figure 5.4** indicates that the Mid-Western Regional LGA has the highest number of businesses in Accommodation and Food Services, and Administrative and Support Services (which includes cleaning, pest control, and gardening services), which are likely to offer the types of services relevant to operation and maintenance of the TWA Facility. However, the large number of other

proposed projects within the Mid-Western Regional LGA need to be considered in this context, with many proposed to have overlapping construction timeframes. It is recognised that the cumulative demand for local labour and contracting services may reduce the ability for workers and businesses within this LGA, as well as those surrounding, to meet the needs of each individual Project.

All LGAs also have a sizeable proportion of their businesses categorised under 'Other Services' which includes businesses mainly engaged in the repair/maintenance of equipment and machinery (ABS, 2022). It is likely then for the contractor or third party engaged by Lightsource bp for the management of the TWA Facility to be able to procure services from local businesses to support the operation of the TWA.

5.3 Employment and Procurement Objectives (Updated)

All local employment and procurement strategies will build on initiatives already undertaken by the renewable energy sector in enhancing sustainable and strategic procurement practice, thus contributing to building stronger communities and generating wider social benefits.

In light of the introduction of the proposed onsite TWA Facility, the key objectives of the employment framework for the Project are to:

- Implement strategies to target a minimum of 10% of the construction workforce (including both the construction workforce for the TWA Facility and the Project construction workforce) sourced locally (i.e., from the host and neighbouring LGAs).
- Meet the baseline requirements and implement strategies to support achievement of the stretch goals of the AEMO Tender Guidelines Merit Criteria 8 for regional economic development. This includes a goal of 40% of supply chain inputs coming from Australia and New Zealand during the development phase, 51% during the operations and maintenance phase and 10% of steel products and components using locally milled steel, where doing so does not undermine the viability of the Project as a whole.
- Implement strategies and procurement weightings to maximise the number of sub-contractors and suppliers sourced locally.
- Generate lasting training and skills development opportunities for the region.
- Pro-actively generate opportunities for under-represented communities, including First Nations people, women, and unemployed and under-employed people.
- Transparently communicate employment and procurement opportunities (for both the TWA Facility and wider Project) to the local community and provide updates on whether objectives are achieved.

These objectives inform the proposed actions and mitigation strategies in the following section.

5.4 Employment Actions and Mitigation Strategies (Updated)

The actions in **Table 5.5** have been updated to include support of local employment and procurement for the construction and operation of the TWA Facility.

Table 5.5 Employment and Procurement – Implementation Actions and Objectives

Aspect	Mitigation/Management Objective	Project Phase				Responsible Party			Implementation Action or Strategy
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
Local employment and procurement	Encourage local employment and procurement for construction and operation of the solar farm and TWA Facility.								Establish, review and maintain a Project Goods and Services Register database. Communicate regularly with the database via email updates or other communications method. Ensure the Goods and Services Register relates to ICN Gateway or other industry pathways. Engage with local training providers such as Blackrock Industries and Programmed to explore training and apprenticeship opportunities to maximise local employment.
Local employment and procurement	Build local familiarity and connections with Lightsource bp and the Project requirements.								Utilise Project newsletters, website, and media releases at key milestones throughout the Project development, construction and operation timeline to promote information on how local suppliers may become involved in the project. Employ a local Community Liaison Officer to maximise local engagement. Attend and host industry forums that target local and regional business sectors to communicate employment and procurement opportunities on the projects. Establish an ICN Gateway pre-construction. Hold a "Meet the contractor" drop-in session for local businesses to familiarise themselves with the successful EPC contractor. Schedule early ICN industry briefings in major towns around projects to give an overview of the projects and their resourcing needs. Provide social procurement information and links to support for SMEs to respond to social procurement requirements. Link attendees to industry partners that can assist with their tender. Document events and register Expressions of Interest collected at these events. Work directly with local stakeholders including the Merriwa Chamber of Commerce, Gulgong Chamber of Commerce, Regional Development Australia, Blackrock Industries, Programmed and local schools and TAFE to co-host local events to advertise employment and procurement opportunities.
Local employment and skills development	Ensure local businesses have full, fair and reasonable opportunity to bid for the supply of key goods and services.								Include a requirement in contracts that procurement entities comply with any binding Australian Industry and Aboriginal Participation Plan (IAPP). Information and support will be offered through a workshop that outlines the AIP requirements, including procurement from local companies.
Local employment and skills development	Collaborative approach to support pathways into training and regional employment and procurement opportunities.								Schedule workshops with regionally based local employment agencies to discuss opportunities and develop a collaborative approach to workforce opportunities.
Local procurement	Link local companies and organisations with larger contractors and manufacturers to support local opportunities across the entire supply chain.								Ensure supplier enquiries received via Lightsource bp Goods and Services Register are shared with solar panel manufacturers and major construction companies.

Aspect	Mitigation/Management Objective	Project Phase				Responsible Party			Implementation Action or Strategy
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
Local employment and skills development	Building local skills capacity.								Investigate partnering with local TAFEs and providers such as Blackrock Industries, Programmed and Protech to develop training programs and scholarships directly related to key skills shortages in the region, particularly electrical trades and engineering. Partnering with the Country Education Fund to provide opportunities for students to gain industry experience through work experience, internships, traineeships etc.
Local employment and skills development	Build pathways into the renewable energy sector for school leavers.								Work with local schools to establish annual excursions, vocational training partnerships and sponsorship of school awards nights.
Local employment and procurement	Contribute to the development of local supply chain and industry capability								Explore opportunities for investment and innovation in the local supply chain in the NSW renewable energy sector, including innovative responses to R&D related challenges faced by the project. Lightsource bp is currently investigating the development of a renewable energy training centre based in Wellington, NSW.
First Nations local employment and skills development	Increase First Nations participation and employment.								Advertise employment and procurement opportunities for both the wider Project and TWA Facility broadly, with a particular focus on First Nations businesses and community members. Engage with Aboriginal-owned companies to explore Aboriginal employment and training opportunities. Partner with LGAs and organisations (e.g., NSW Indigenous Chamber of Commerce) to identify Certified and Registered Indigenous businesses. Establish and maintain a register of local and regional Certified and Registered Aboriginal businesses. Establish and maintain a register of key communication channels, key contacts and mechanisms for engaging with relevant stakeholders and ensure consistent use of these channels throughout construction and operation of the Project and TWA Facility. Ensure that all direct recruitment activities, procurement opportunities, workforce and service needs targeting Aboriginal and local community members are visible through multiple channels, including: • LGAs • LALCs • Native Title holders or applicants • Traditional Owner Corporations • Aboriginal employment and health services • Community organisations and agencies that support opportunities for Aboriginal people. Establish processes and selection criteria that provide equal opportunity for First Nations employment and procurement. Embed selection criteria to prioritise sub-contractors that are Certified and Registered Aboriginal businesses, or are owned, managed or staffed by Aboriginal people. Register with organisations (e.g. Supply Nation) to enable access to their register of Aboriginal businesses.

Aspect	Mitigation/Management Objective	Project Phase				Responsible Party			Implementation Action or Strategy
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
									Facilitate pathways for Indigenous job seekers to build required skills and move into available employment opportunities by: • Working with existing schools and relevant organisations (e.g. the Clontarf Foundation), to develop scholarships and training programs for Indigenous school leavers. • Prioritising working with Registered Training Organisations with existing protocols and mechanisms for encouraging Indigenous trainees. Build in participation targets for First Nations industry and community by delivering on the Project IAPP, that demonstrates commitments towards achieving baseline requirements and stretch goals for First Nations people.

6.0 Conclusion (Updated)

The Amended AES for the Goulburn River Solar Farm has provided an overview of the baseline economic, social and housing context relevant to the Project. It has identified considerable housing, accommodation, employment and procurement constraints in the social locality, linked to the Project's location. The impact of the Project has also been considered, with additional analysis to assess cumulative impacts of concurrent SSD projects proposed nearby; and has identified existing regional strengths, including regional expertise in mining and construction sectors and access to land with the capacity to host a temporary workforce accommodation facility for workers.

Data has been collected through a combination of desktop analysis of existing databases as well as direct engagement with key stakeholders. This information has been used to inform an evaluation of accommodation and employment options and opportunities.

The Amended AES finds that a 10% local employment option (or 35 workers, assuming a peak workforce of 350 personnel) is potentially feasible. Similarly to the Project construction workforce, 10% of the TWA Facility construction workforce is also likely to be sourced from local employment. The workforce required to operate the TWA Facility, although relatively small (approximately 30 staff), also offers opportunities for local employment in addition to the Project construction workforce.

The Amended AES also finds that up to 14 non-local workers may be accommodated in existing accommodation without creating undue strain on the existing local accommodation and housing environment. However, the inclusion of the proposed onsite TWA Facility located within the Project's development footprint has alleviated many previously identified concerns around the Project's workforce creating additional strain on the locality's short-term and rental accommodation.

It is expected that the entirety of the Project's non-local construction workforce would be housed at the TWA Facility, with the only significant need to use local short-term accommodation being to house the 30 workers required to construct the TWA Facility itself, over a period of 12 weeks. This mitigates long-term strain on local accommodation; however the workforce required to construct the TWA Facility would remain reliant on local accommodation providers' plans to expand their current accommodation capacity, thus partnering with or funding these existing local accommodation providers to expand their accommodation capacity is still of importance (see **Section 4.2.2**).

As detailed in **Section 4.4** and **Section 5.4**, this Amended AES includes several strategies to enhance positive social outcomes and mitigate negative social outcomes for the Project. These include:

- Accommodating the construction workforce in the TWA Facility to avoid placing unsustainable pressure on existing short-term accommodation and rental accommodation in the social locality.
- Work with local accommodation providers to provide advanced notice of accommodation requirements of the TWA Facility construction workforce and anticipate timing of key tourism events.
- Consider partnering with or funding existing local accommodation providers to expand their accommodation capacity to accommodate the TWA Facility construction workforce.
- Establish, review and maintain a Lightsource bp Goods and Services Register database and make this available to head contractors to support local procurement.

- Utilise Project newsletters, website and media releases at key milestones throughout the Project development, construction and operation timeline to promote information on how local suppliers may become involved in the Project.
- Promote and fund apprenticeships and traineeships as a key employment strategy and work with regional employment agencies, Training Services NSW, education providers and Group Training Organisations to develop strategies to enable apprentices to access work experience across different infrastructure projects.
- Engage with Aboriginal-owned companies to explore Aboriginal employment and training opportunities and establish and maintain a register of local and regional Certified and Registered Aboriginal businesses.

This Amended AES has identified limited options to house the Project's construction workforce in existing local accommodation, therefore necessitating the inclusion of the TWA Facility. There are also notable opportunities to employ local workers and procure local goods and services while also maximising social benefits to communities and reducing potential negative impacts. Proactive management and monitoring of outcomes will be achieved through post-approval management strategies and mechanisms, as outlined in this report.

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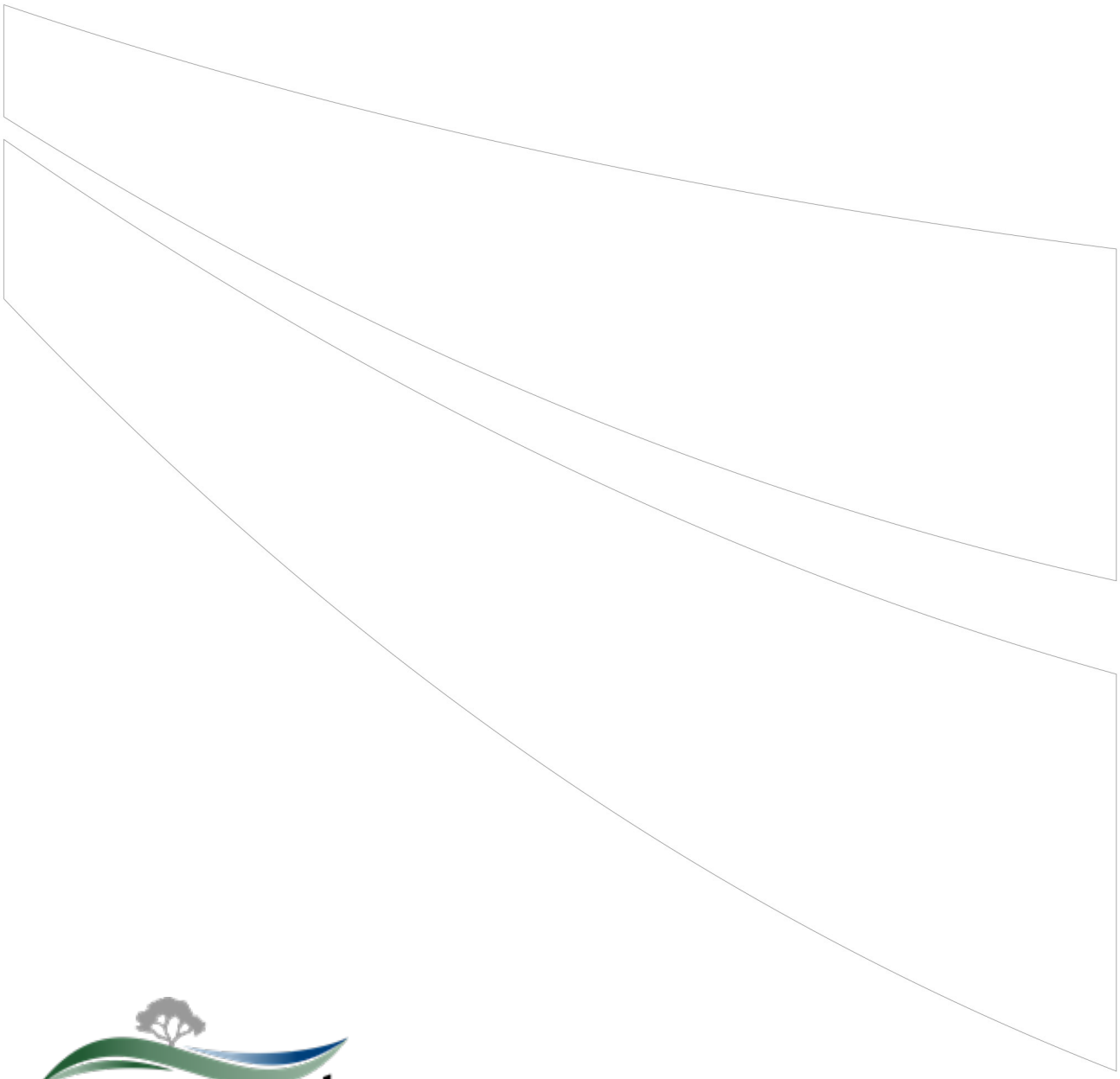

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