



# Gunnedah Solar Farm

262 Hunts Road Gunnedah

global **environmental** and **advisory** solutions





# State Environmental Planning Policy (Koala Habitat Protection) 2019



Source: Google Earth - Imagery Date 8/2/2021

- Tier 2 development as native vegetation is required to be removed.
- Proposed trees to be removed are considered to be 'Core Koala Habitat'. Their removal is *unlikely* to impose a significant barrier to koala movement or fragmentation of the koala population.
- The subject site was deleted due to the predominate absence of native vegetation.
- The Subject site is comprised of mostly cleared land with nine isolated Koala feed trees. The majority of the Koala feed trees within the study area will be retained following completion of the proposed development.

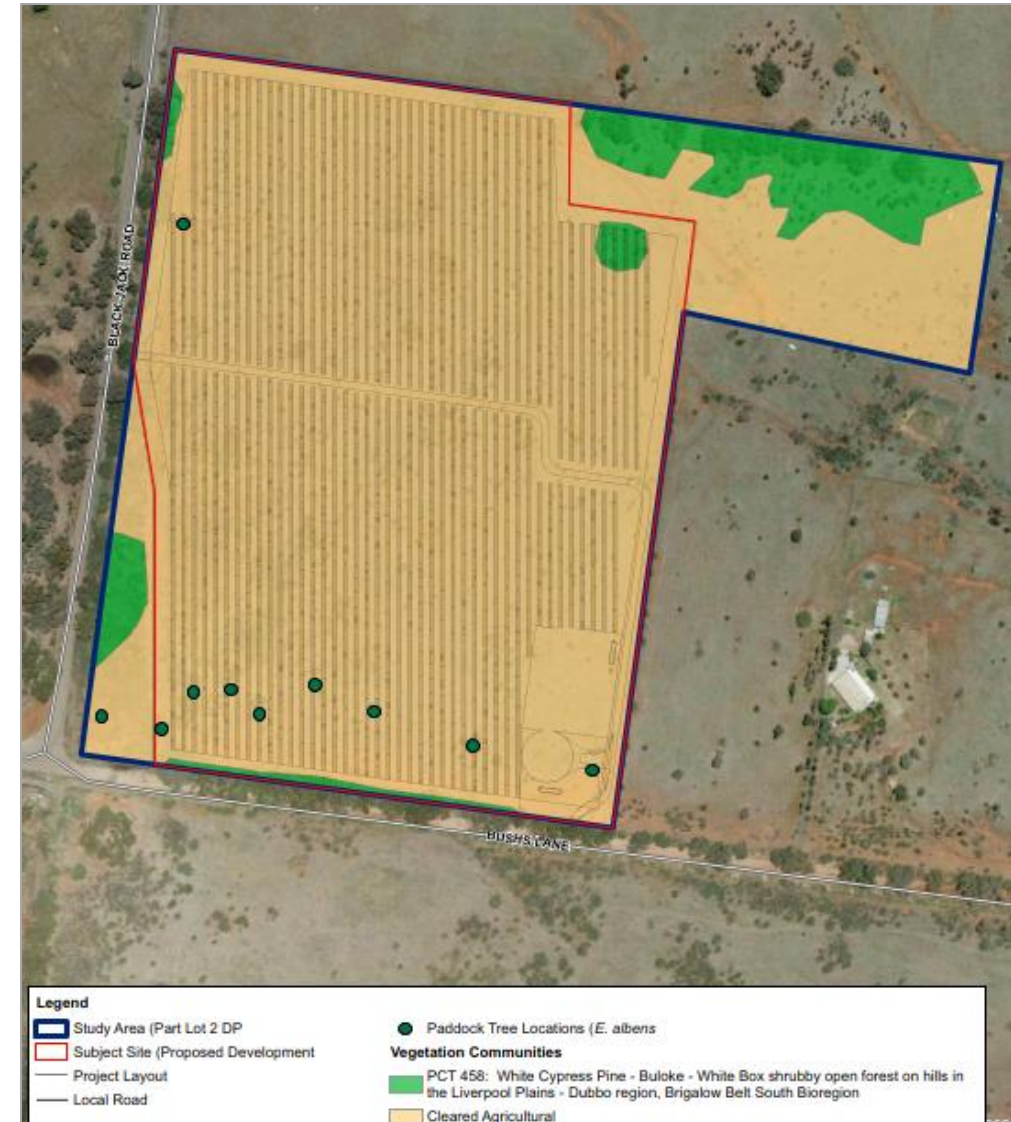
*\*Addressed in RFI issued to Gunnedah Shire Council 8<sup>th</sup> September 2020*



## Plan to manage and protect koalas and their habitat:

- Given the lack of potential direct and indirect impacts, few management measures are recommended. However, Koala Feed Trees to be retained on site should be demarcated and fenced to avoid unintentional impacts. Additionally, planting of Koala Feed Tree species onsite could be strategically positioned to improve connectivity of retained trees to habitat to the north (i.e., Along the western edge of the Study Area to improve connectivity to the north).
- Compensatory measures will include the replacement of Koala Feed Trees at a ratio of 2:1. Koala Feed Trees species will be planted within or adjacent to the Study Area.
- Following construction, planting of Koala Feed Trees will be confirmed through a letter to council. No ongoing monitoring or adaptive management is required due to potential for Koala habitation onsite once fences are erected. Any sightings of koalas (including any injuries or deaths) within proximity of the Study Area will be communicated to Council.

*\*Addressed in RFI issued to Gunnedah Shire Council 8<sup>th</sup> September 2020*



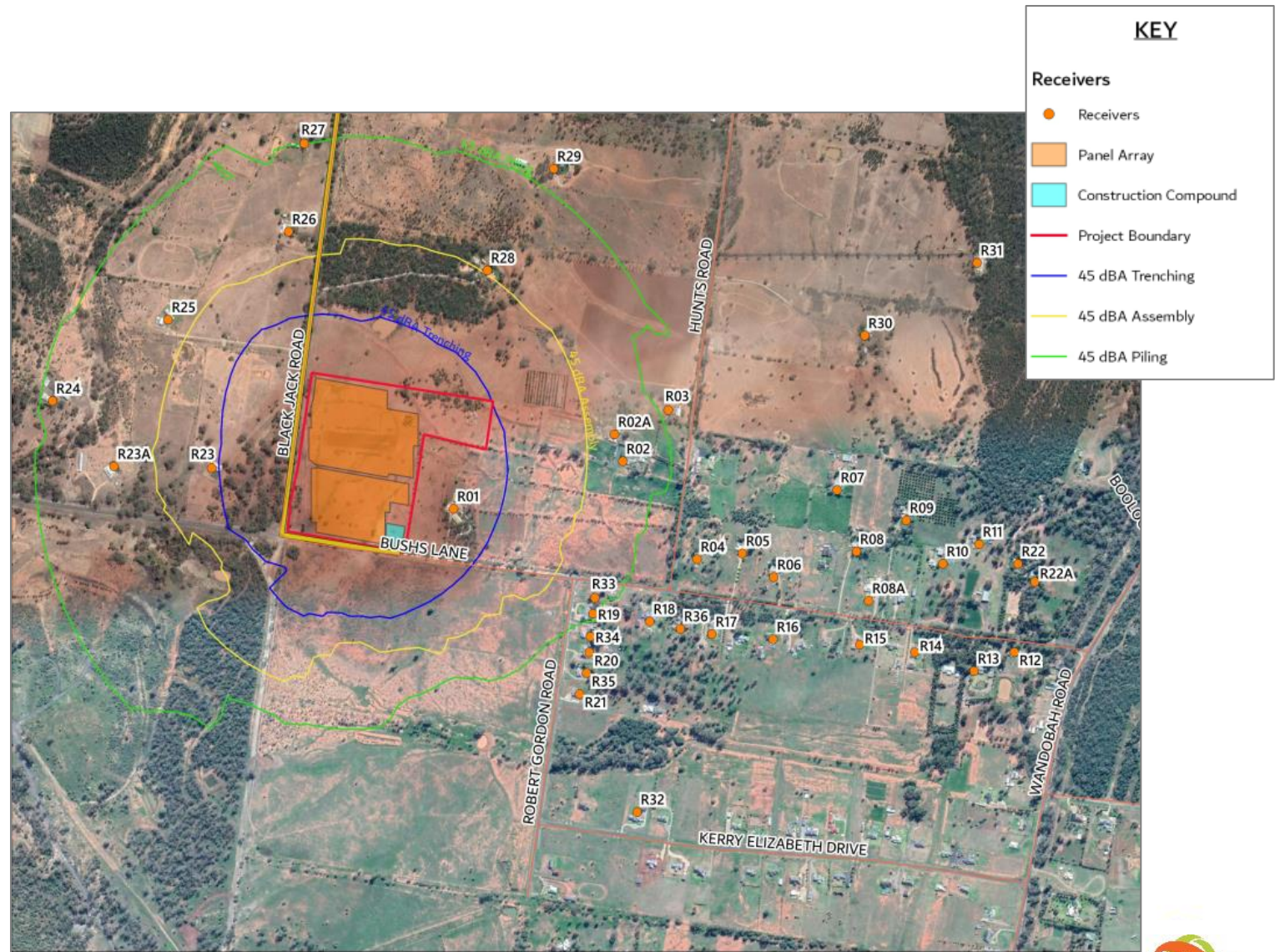


# Noise Impacts

Construction noise impacts are temporary and will be minimised through management procedures. It is noted the work has the potential to cause disruption to surrounding residential premises during the day therefore the following feasible and reasonable mitigation considerations outlined within the NSW EPA Guidelines will be used to manage these impacts.

Mitigation measures like the following are likely to be implemented:

- Using alternative, quieter work methods to reduce the noise at the source;
- Scheduling the noisy work during recommended standard hours;
- Restricting work to defined hours and using respite periods, for example working during defined periods outside business hours and providing respite to residents, subject to negotiation (for example periods of 'quiet' or no work and respite offers, such as movie tickets);
- Temporary relocation of residents to allow a concentrated period of noisy works.



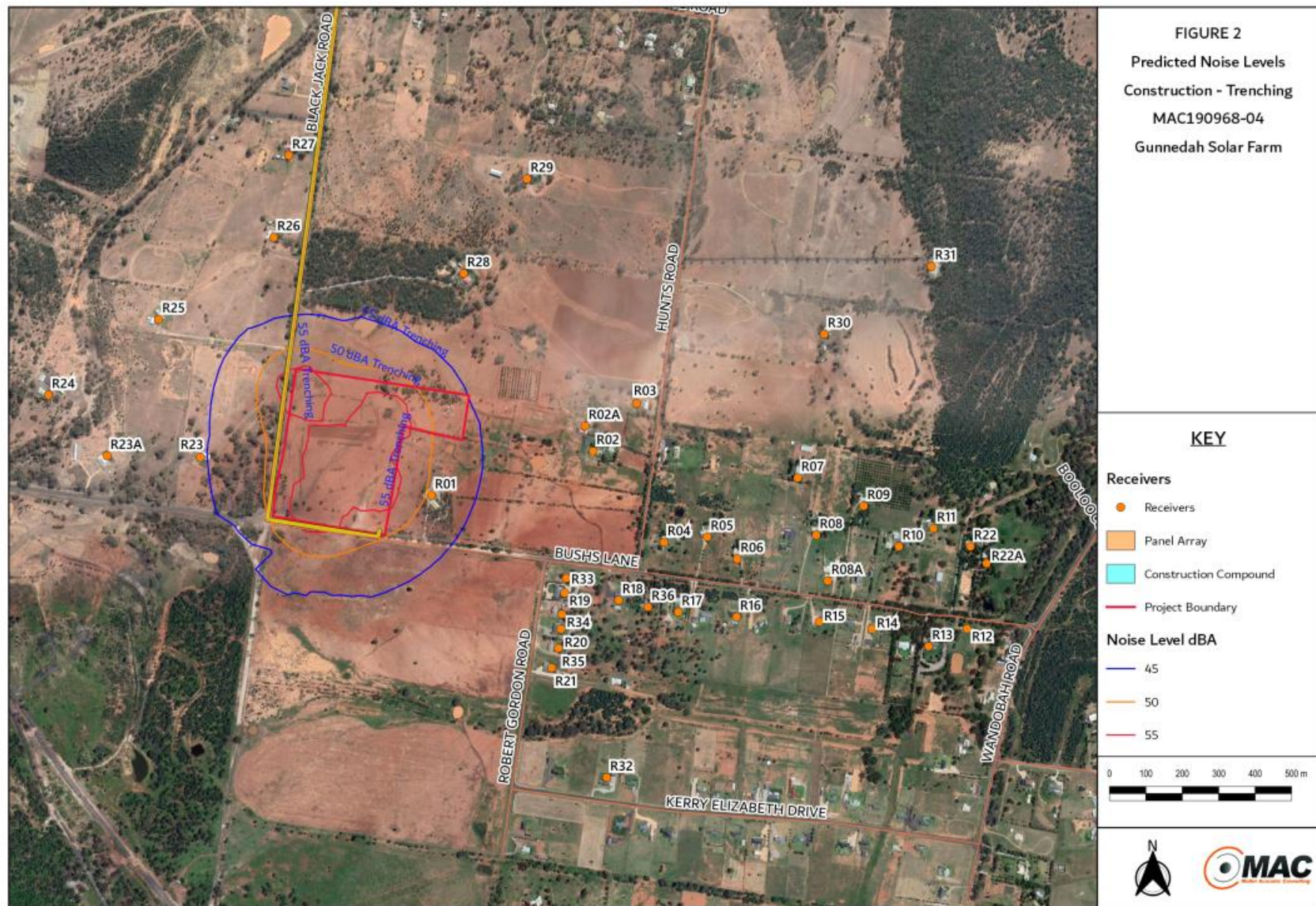
# Mitigation Measures

It is noted that construction noise emissions are anticipated to exceed the relevant NMLs depending on the type of construction and proximity of activities to receivers. The following noise mitigation measures should be considered during the construction phase to reduce emissions to the surrounding community:

- A construction noise management protocol to minimise noise emissions, manage out of hours (minor) works to be inaudible, and to respond to potential concerns from the community;
- Where possible use localised mobile screens or construction hoarding around piling rig/plant to act as barriers between construction works and receivers, particularly where equipment is near the site boundary and/or a residential receiver including areas in constant or regular use (e.g., unloading and laydown areas);
- Operating plant in a conservative manner (no over-revving), shutdown when not in use, and be parked/started at farthest point from relevant assessment locations;
- Selection of the quietest suitable machinery available for each activity;
- Minimise noisy plant/machinery working simultaneously where practicable;
- Minimise impact noise wherever possible;
- Utilise a broadband reverse alarm in lieu of the traditional high frequency type reverse alarm;
- Provide toolbox meetings, training and education to drivers and contractors visiting the site during construction so they are aware of the location of noise sensitive receivers and to be cognisant of any noise generating activities;
- Signage is to be placed at the front entrance advising truck drivers of their requirement to minimise noise both on and off-site; and
- Utilise project related community consultation forums to notify residences within proximity of the site with project progress, proposed/upcoming potentially noise generating works, its duration and nature and complaint procedure.

*\* Addressed in RFI issued to Gunnedah Shire Council 14<sup>th</sup> February 2021*













# Zone RU4 Primary Production Small Lots

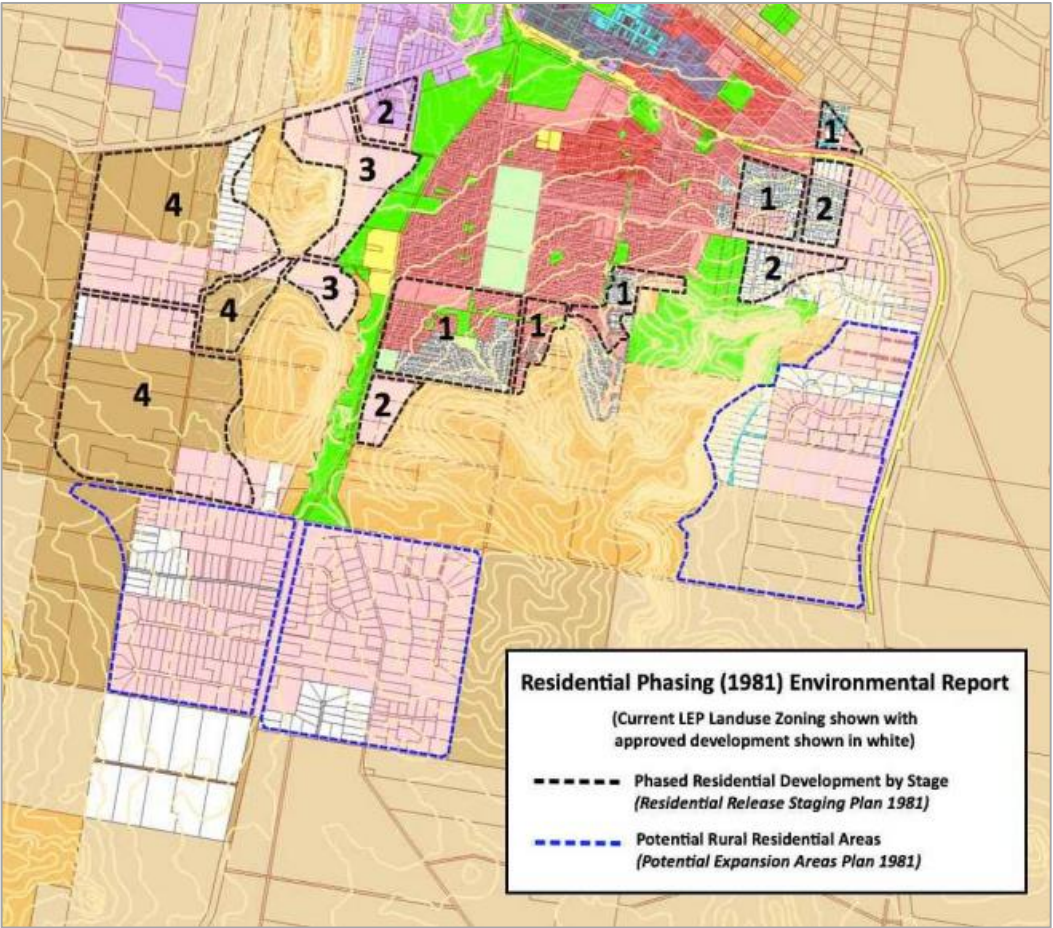
## 1 Objectives of zone

- To enable sustainable primary industry and other compatible land uses.
- To encourage and promote diversity and employment opportunities in relation to primary industry enterprises, particularly those that require smaller lots or that are more intensive in nature.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To maintain the rural and scenic character of the land.
- To ensure that development does not unreasonably increase the demand for public services or public facilities.
- To conserve and enhance the quality of valuable environmental assets, including waterways, riparian land, wetlands and other surface and groundwater resources, remnant native vegetation and fauna movement corridors as part of all new development and land use.
- To provide opportunities for a restricted range of employment-generating development that is compatible with, and adds value to, local agricultural production.
- To minimise conflict between land uses in the zone and with adjoining zones.
- To maintain native vegetation and wildlife corridors.

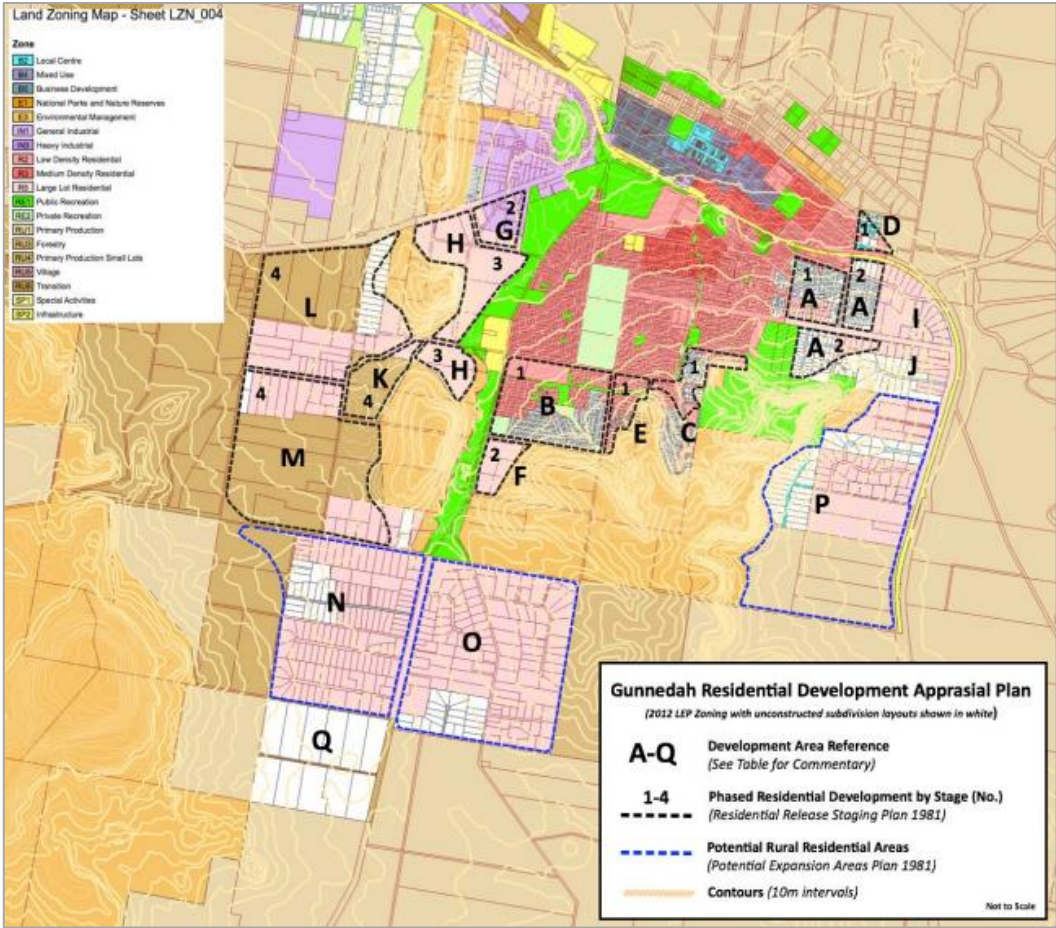




# Gunnedah Landuse Strategy – Volume 4 – Residential Strategy – June 2016



Residential Phasing (1981) Environmental Report



Gunnedah Residential Development Appraisal Plan 2016

# Gunnedah Landuse Strategy – Volume 4 – Residential Strategy – June 2016



*\*Addressed in RFI issued to Gunnedah Shire Council 8<sup>th</sup> September 2020*

## 8.6 Residual Residential Zoned Lands and Stage 3 & 4 (Environmental Report 1981) Appraisal

This section outlines all other areas of R5 Low Density and R2 Large Lot Residential zones that fall outside the four key Residential Masterplan.

These areas are shown against the 1981 Residential Phasing Stages showing that the majority of Stage 1 and 2 are now fully subject to subdivision approvals.

M	4	Bound by Hunts Road, Black Jack Road, Bushs Lane	This area contains a combination of RU4 Primary Production Small Lots Zone and R5 Large Lot Residential, all minimum lot size 10ha (AB1). <b>Recommendation: Retain Status Quo until all other development areas (D, F and H) are exhausted and reevaluate based on infrastructural servicing facilitation.</b>
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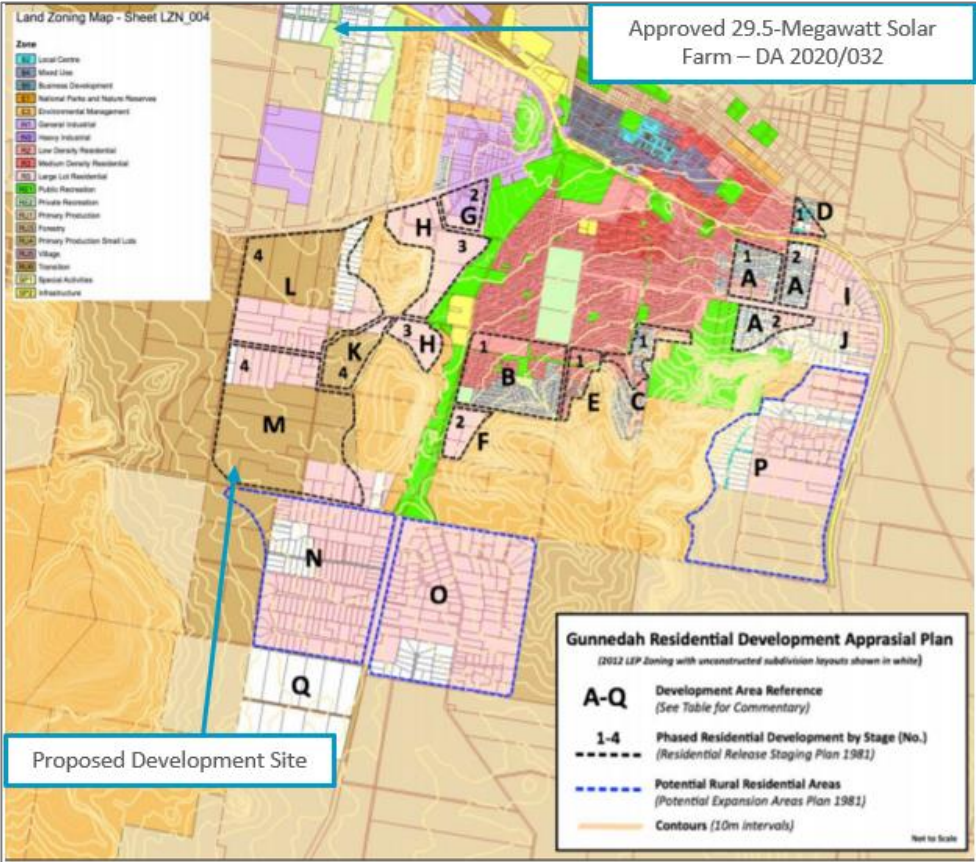


# Gunnedah Landuse Strategy – Volume 4 – Residential Strategy – June 2016

- Three key development areas have been identified as being suitable for rezoning to R2 Low Density Residential to meet projected demand of residential growth up to 2035 and beyond as follows:

	Site Location / Legal Description	Recommended Rezoning:	Land Area	Likely Lot Yield
1.	<b>Howes Road / Wandobah Road North</b>  <i>Lot 221 DP755503 (whole lot), Lot 78 DP755503 (partial), Lot 77 DP755503 (partial), Lot 2 DP542293 (partial), Lot 444 DP755503 (partial), Lot 202 DP755503 (partial), Lot 316 DP755503 (partial).</i>	R5 Large Lot 40ha min to R2 Low Density Residential	63.6ha	636 lots
2.	<b>1 Boundary Road, bordering Maitland Street to the north.</b>  <i>Lots 1 &amp; 5 DP828373</i>  <i>Note recommendation could extend to adjoining lands to the east in future as shown on Structure Plan.</i>	RU1 Primary Production and R2 Low Density Residential to R2 Low Density Residential	4.814ha	48 lots
3.	<b>South (194-204) Wandobah Road</b>  <i>Lot 1 DP740218, Lot 134 DP755503, Lot 138 DP7555032 and portions of Lot 2 DP740218, Lot 302 DP 755503 and Lot 289 DP755503)</i>	R5 Large Lot Residential (40ha minimum) to R2 Low Density Residential.	21.1ha	211 lots
<b>TOTAL POTENTIAL LOTS</b>				<b>895 lots</b>
<i>Post 2025 (Masterplan Lots extinguished) this provides an additional 12 years supply (average of 75 dwellings constructed per year).</i>				

# Approved: 29.5MW Electrical Generation Works - 131 Quia Road Gunnedah





# Gunnedah Landuse Strategy – Volume 3 – Industrial Development Strategy – June 2016

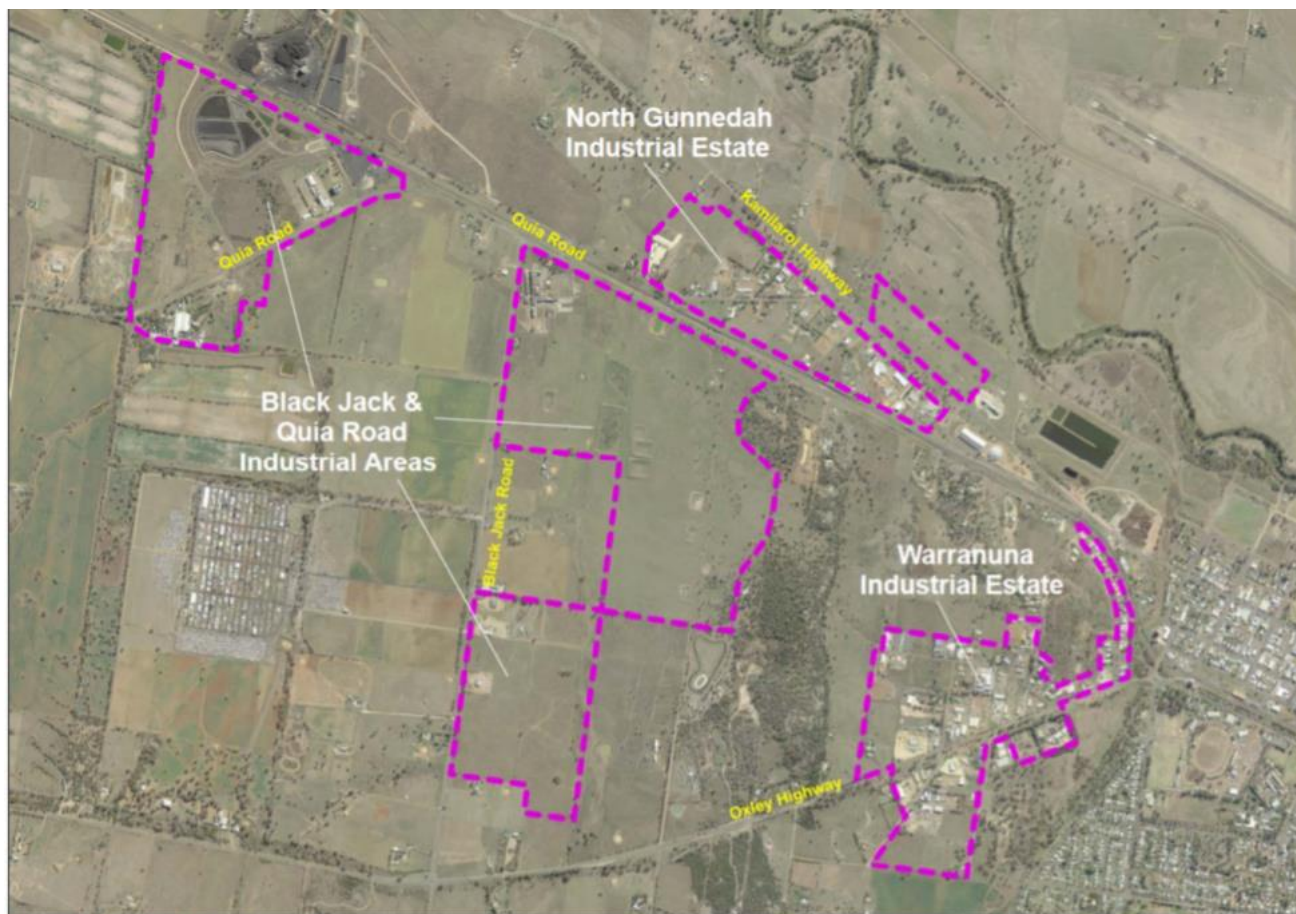


Figure 33 Industrial Precincts Context

## 5.4.1 Key Industrial Issues

- Gunnedah Shire has approximately 412 Ha zoned industrial but, it is been estimated that 60% of this land is undeveloped or under-developed. This is mainly due to the lack of appropriate water and sewer infrastructure, with access to a sizeable and reliable electricity supply also an issue.
- Gunnedah is in a prime position to maximise growth opportunities delivered by a revitalised mining industry driving strong economic and population growth.
- However, future economic security is at risk due to the severe lack of water and sewer infrastructure to service medium-to-heavy industry. Access to a sizeable and reliable electricity supply is also an issue.
- An updated s.64 Servicing Strategy has seen commitments by Gunnedah Shire Council to link the three Industry Precincts (Warranuna, North Gunnedah and Black Jack and Quia Roads) into 'Western Industrial Servicing Area'.
- These infrastructural improvements include involving extension of the sewer, installation of a pump station and rising main to service the Black Jack and Quia Road precinct and construction of a water supply reservoir and reticulated system on Borthistle Road.
- Gunnedah Shire Council is not in a position to fund the entire cost of the proposed water and sewer infrastructure projects, with the estimated total cost being \$ 8,889,000. Council has committed to investing \$4million in the projects and will seek \$889,000 in contributions from private developers. This leaves a shortfall of \$4 million.

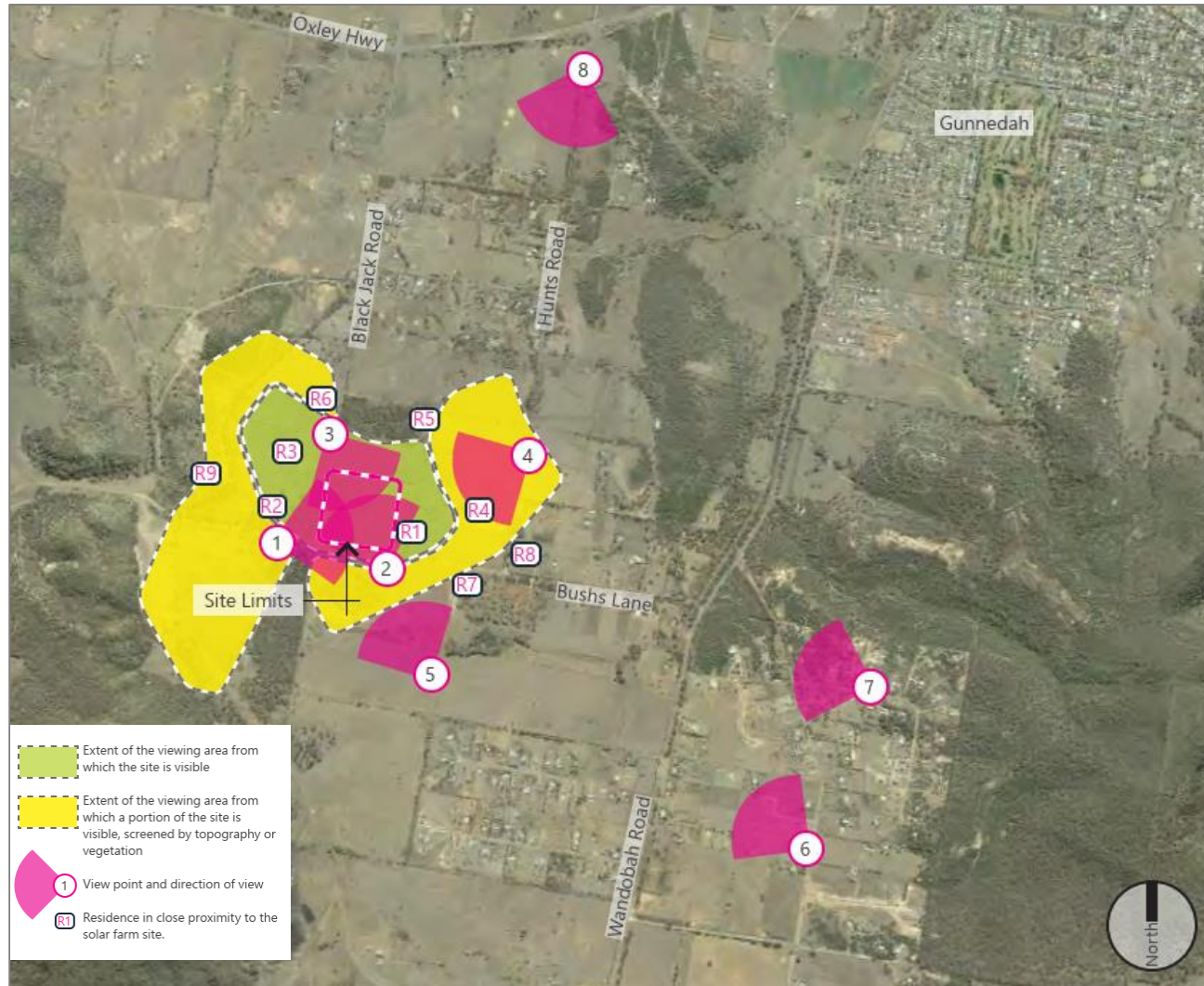
# Visual Impacts

## Viewpoint Visual Impact Summary

Viewpoint 8	Visibility	Visual absorption capacity	Visual impact rating
VP 1	Moderate	Medium	Moderate
VP 2	Moderate	Medium	Moderate
VP 3	Moderate	High	Low
VP 4	Low	High	Low
VP 5	None	High	None
VP 6	None	High	None
VP 7	None	High	None
VP 8	None	High	None
VP 9	None	High	None

- The Applicant accepts a condition of consent to be applied outlining the requirement for landscaping to be established and maintained for the lifespan of the asset that adequately screens the site
- A detailed landscaping plan will be provided to Council prior to issue of the Construction Certificate.
- The landscaping plan will consist of a mixture of hardy local native species of variable heights planted in staggered rows so as to provide an increased level of coverage.
- A 10 m buffer zone will be established between the lot boundary and the site security fence within which landscaping will be established and maintained.

*\*Addressed in RFI issued to Gunnedah Shire Council 19<sup>th</sup> March 2020*







- A two-day site visit was undertaken on 10 and 11 March 2020 by a registered landscape architect and environmental planner who has substantial experience analysing and mitigating visual impacts on the landscape.
- The site is at the toe of a hill and gently sloping down toward the northeast. Generally, the surrounding land is forested with paddocks for agriculture carved out of the woodland.
- The existing trees provide an effective screen for the development, especially as it is set low to the ground.

**Figure 2.2:** Viewing Zones

The viewing zones indicated as distance from the subject site. Figure 2.3 shows specific locations of each viewpoint that will be discussed in Section 4.



## Viewpoint 1



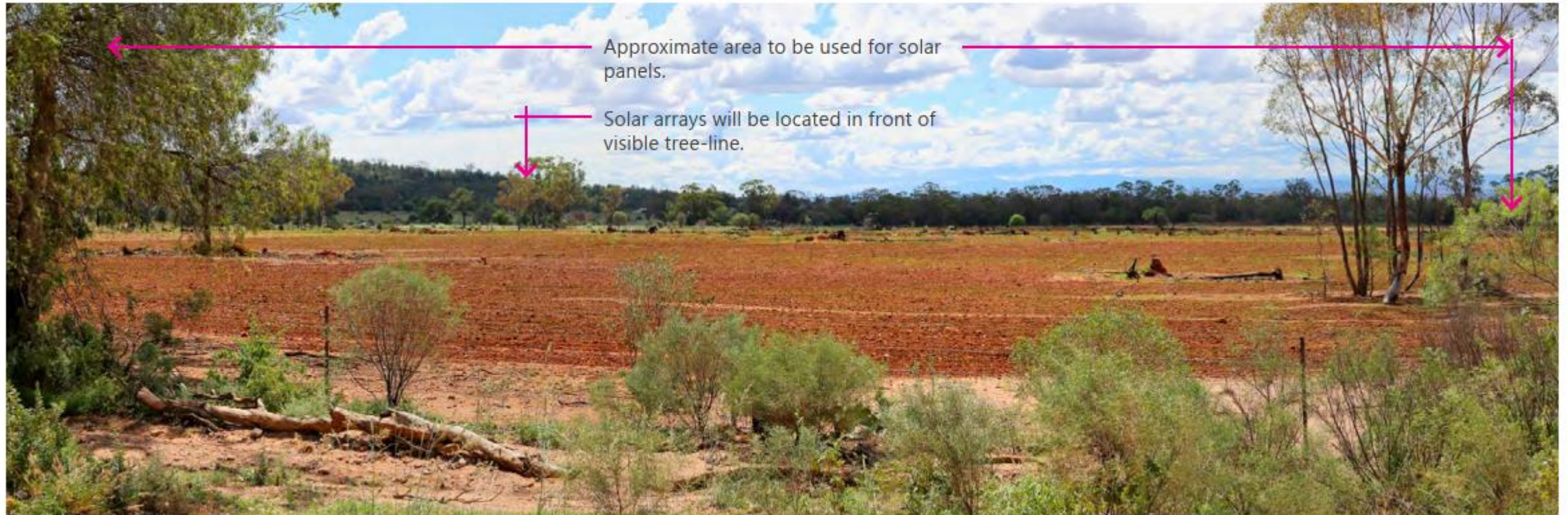
### Comments:

This represents the first view of the solar farm when traveling eastward on Bushs Lane. There are no publicly available views further than 70m from the site. There are only 4 residential properties with potential views into the site from this direction - the closest being 200m from the development site and the others 400m from the site.

Note the dense vegetation along Bushs Lane. This extends past the solar farm and offers only occasional glimpses of the solar arrays.



## Viewpoint 2



### Comments:

This is the view available from Bushs Lane at the point nearest the site. This is the best available view from the roadway as most of it is screened by foreground shrubs. Views like this will typically be from a moving vehicle.

There is a residential property near this viewpoint. It is located 100m from the solar arrays and will have views of the development through a vegetated fenceline.



### Viewpoint 3



#### Comments:

This viewpoint is the first location from which the solar arrays can be seen from Black Jack Road while travelling from the north. As such, views from the north are limited to only 220m from the solar farm.



## Viewpoint 4



### Comments:

This view is from the best viewing location from Hunts Road. The land slopes down from the solar farm site, potentially offering clear views of the solar arrays. However, thick stands of trees and lower level vegetation obstructs most of the views. There is the possibility that the tops of the solar arrays will be visible in the morning and evening, when they panels are at their full height.



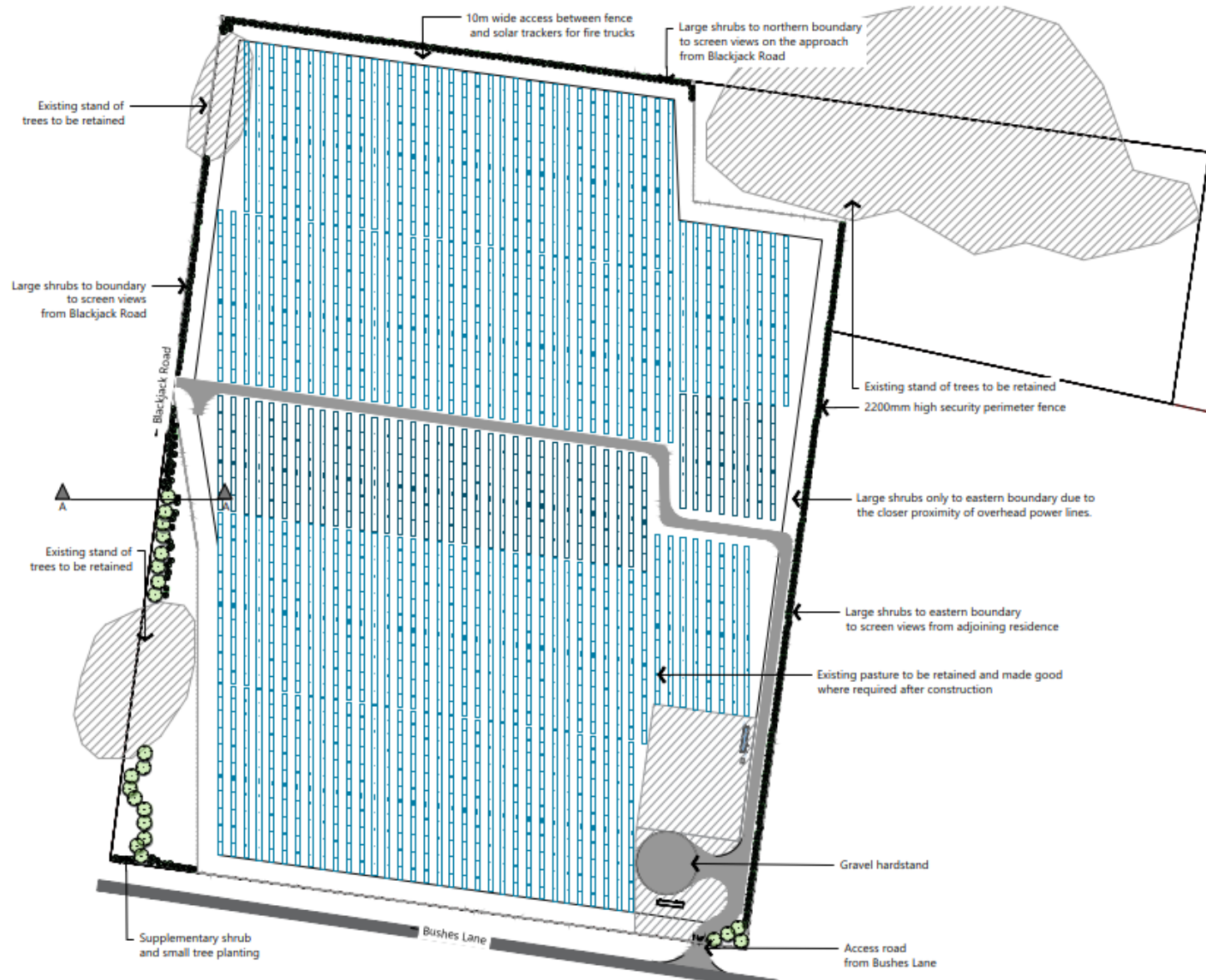
## Viewpoint 5



### Comments:



This view is from an area that is being developed with residential properties. Even though it is fairly close to the development site, there are no views of the site.





#### PLANTING LEGEND

Refer to Planting Schedule

-  Proposed small trees
-  Proposed large shrubs

#### PLANTING SCHEDULE

Botanical Name	Common Name	Pot Size	Height	Spacing m
<b>Small Trees / Large Shrubs</b>				
<i>Acacia dearii</i>	Green Wattle	2.5 litre	5	As shown
<i>Acacia decora</i>	Western Silver Wattle	2.5 litre	4	As shown
<i>Acacia pendula</i>	Weeping Myall	2.5 litre	13	As shown
<i>Acacia salicina</i>	Native Willow	2.5 litre	13	As shown
<i>Melaleuca armillaris</i>	Honey Myrtle	2.5 litre	5	As shown
<i>Melaleuca bracteata</i>	Black Tea Tree	2.5 litre	15	As shown

#### Notes:

1. Contractor to make good of any disturbance made to existing pasture