

APPENDIX 10

Addendum Noise and Visual Impact Assessment



TALLAWANG SOLAR FARM

Noise and Vibration Impact Assessment
Addendum

FINAL

May 2024



TALLAWANG SOLAR FARM

Noise and Vibration Impact Assessment Addendum

FINAL

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on behalf of
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QMS Certification Services

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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.

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Document Status

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	Name	Date	Name	Date
Final	Steve Lyons	16 May 2024	Tim Procter	16 May 2024

Abbreviations and Glossary

Abbreviation	Definition
Day	The period from 7.00 am to 6.00 pm Monday to Saturday or 8.00 am to 6.00 pm on Sundays and public holidays
Decibels (dB)	The units of sound level and noise exposure measurement where a step of 10 dB is a ten-fold increase in intensity or sound energy and actually sounds a little more than twice as loud.
LA90	Background Noise Level. The percentile sound pressure level exceeded for 90% of the measurement period with 'A' frequency weighting calculated by statistical analysis.
LAm _{ax}	The maximum of the sound pressure levels recorded over a measurement period i.e 15 minutes.
LA1(1minute)	The measure of the short duration high-level noises that cause sleep arousal. The noise level is measured as the percentile sound pressure level that is exceeded 1% of the measurement period with 'A' frequency weighting calculated by statistical analysis during a measurement time interval of 1 minute.
LA _{eq} (time)	Equivalent continuous sound pressure level - The value of the sound pressure level of a continuous steady noise that, a measurement interval of time (t), has the same mean square sound pressure as the sound under consideration whose level varies with time. Usually measured in dB with 'A' weighting
Involved landholder	A landholder whose property would have Project infrastructure located on it.
Negligible	Small and unimportant, such as to be not worth considering.
Night	The period between 10.00 pm and 7.00 am
Evening	The period between 6.00 pm and 10.00 pm
Non-involved dwelling	Dwelling located on land owned by landholders not involved in the Project.
NVIA	Noise and Vibration Impact Assessment
Project Amenity Noise Levels	The project amenity noise level seeks to protect against cumulative noise impacts from industry and maintain amenity for particular land uses. Calculated as the recommended amenity noise level less 5 dB and refers to the day, evening and night periods.
Project Intrusive Noise Levels	The project intrusiveness noise level aims to protect against significant changes in noise levels. Calculated as rated background level plus 5 dB and refers to a 15-minute period.
Project Noise Trigger Levels	Target noise levels for a particular noise-generating facility. They are based on the most stringent of the project intrusiveness noise level or the project amenity noise level.
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements.
Receiver	A sensitive land use in close proximity to the development that has the potential to experience impacts associated with the development.
Site Specific	Relating to conditions existing at a particular location.
Sound Power Level	The total sound energy radiated per unit time measured as 10 times a logarithmic scale, the reference power being 12 picowatts
The Proponent	RES Australia Pty Ltd (RES). An independent renewable energy company active in both onshore and offshore wind, solar, energy storage and transmission and distribution.

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1.0 Introduction

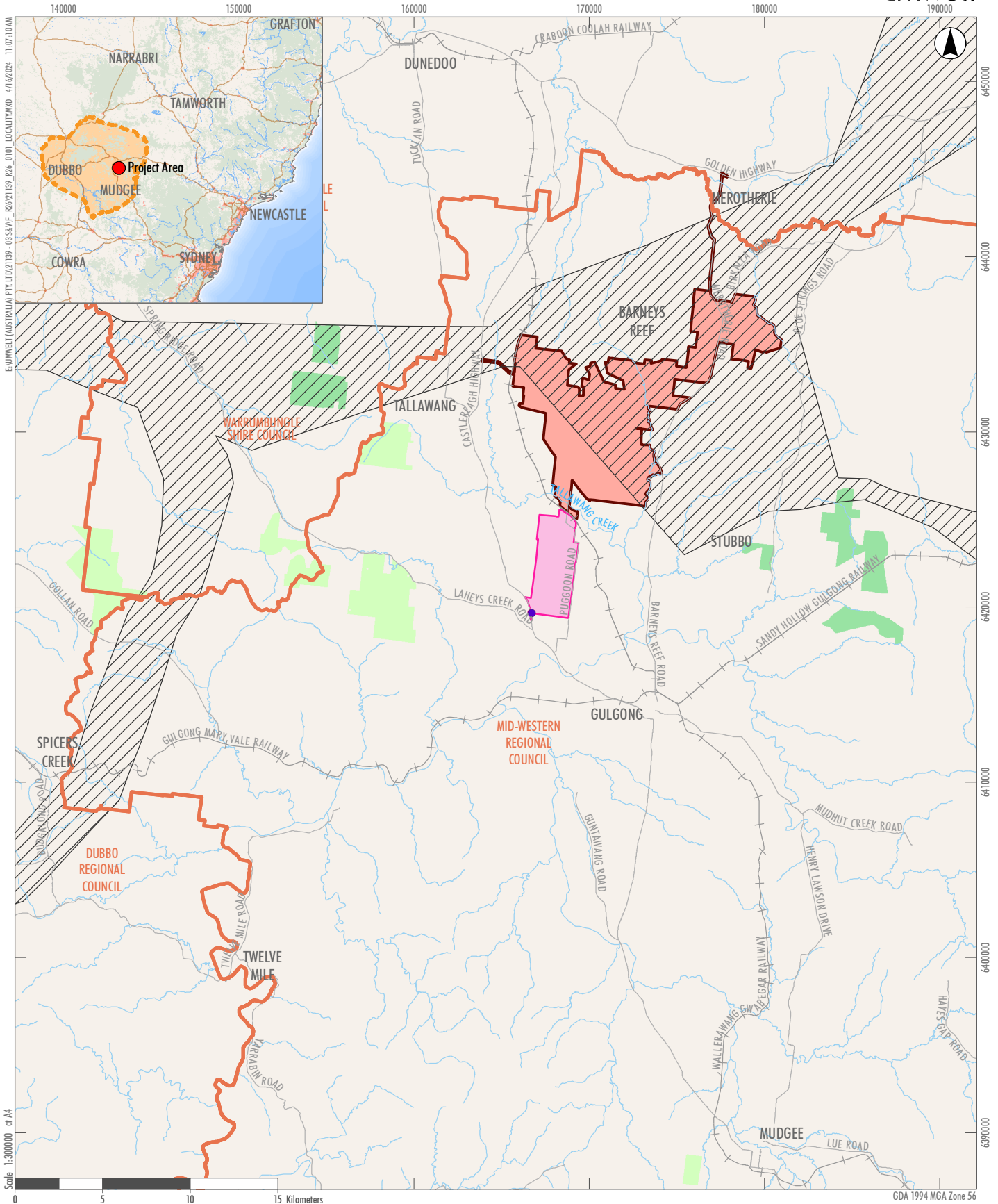
RES Australia Pty Ltd (RES) is seeking to develop the proposed Tallawang Solar Farm in the Central West region of New South Wales (NSW), approximately 8 kilometres (km) northwest of Gulgong within the Mid-Western Local Government Area (LGA) (refer **Figure 1.1**).

Umwelt (Australia) Pty Ltd prepared the Noise and Vibration Impact Assessment (NVIA, 2022) for the Tallawang Solar Farm Project (the Project) on behalf of RES which was included in the Environmental Impact Statement (EIS) for the Project (SSD-23700028). The NVIA provides an assessment of the potential noise and vibration impacts to off-site receivers associated with relevant Project components and included an assessment of both the construction and operational impacts for the Project.

The Environmental Impact Statement (EIS) for the Tallawang Solar Farm (Umwelt, 2022) was placed on public exhibition from 28 October to 24 November 2022. Following analysis of the EIS submissions, RES undertook a thorough review of the Project's design and layout. As a result, RES is proposing to amend the Project as presented in the EIS in response to concerns raised in the EIS submissions and based on further consultation with agencies, landholders and key stakeholders. The proposed amendments include the introduction of a 400-person Temporary Workers Accommodation (TWA) facility, removal of the proposed overhead electricity transmission line (ETL), BESS capacity increase and an updated treatment design for the proposed intersection upgrade at the new site access on the Castlereagh Highway (the Amended Project). Some minor layout refinements and readjustment of the Project Area boundary and development footprint are also proposed as part of the Amended Project.

Umwelt has reviewed the Project amendments to assess whether the changes have a material impact on the outcomes of the NVIA. This Amended NVIA presents a summary of the review and assessment of the Amended Project (as shown in **Figure 1.2**). More specifically, this assessment presents an update of potential noise impacts for the following:

- the potential construction and operational noise levels for the TWA facility (including its associated internal access road, mechanical plant and road traffic noise) as well as the intersection upgrade works on the Castlereagh Highway
- the potential operational noise levels related to the increase in the capacity of the BESS and also incorporate refinement of the proposed equipment selections and layout.



- Legend**
- Tallawang Solar Farm Project Area
 - Barneys Reef Wind Farm Project Area
 - Indicative Proposed Central West Orana REZ Transmission Corridor
 - Indicative Central-West Orana Renewable Energy Zone
 - Access Point
 - Local Government Area Boundary
 - State Forest
 - National Parks (NPWS Estate)
 - Road
 - Drainage Line
 - Railway Line

FIGURE 1.1

Location and Local Context

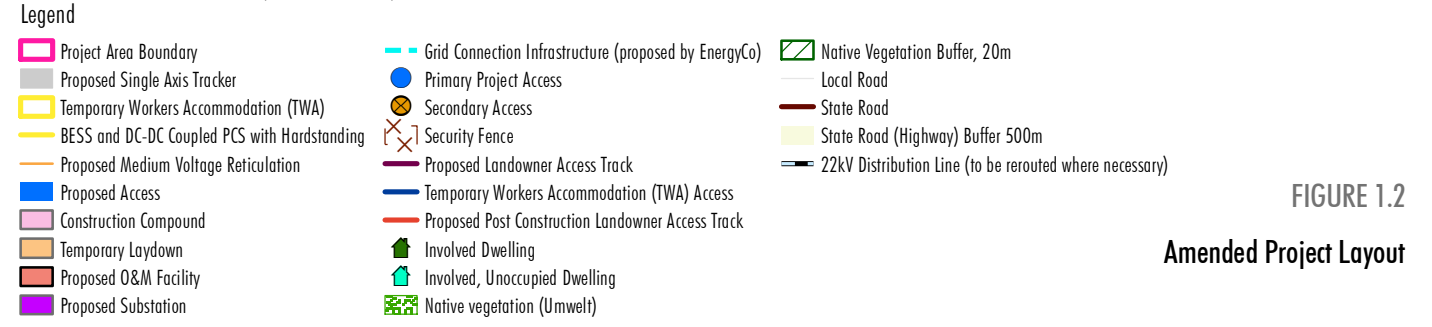
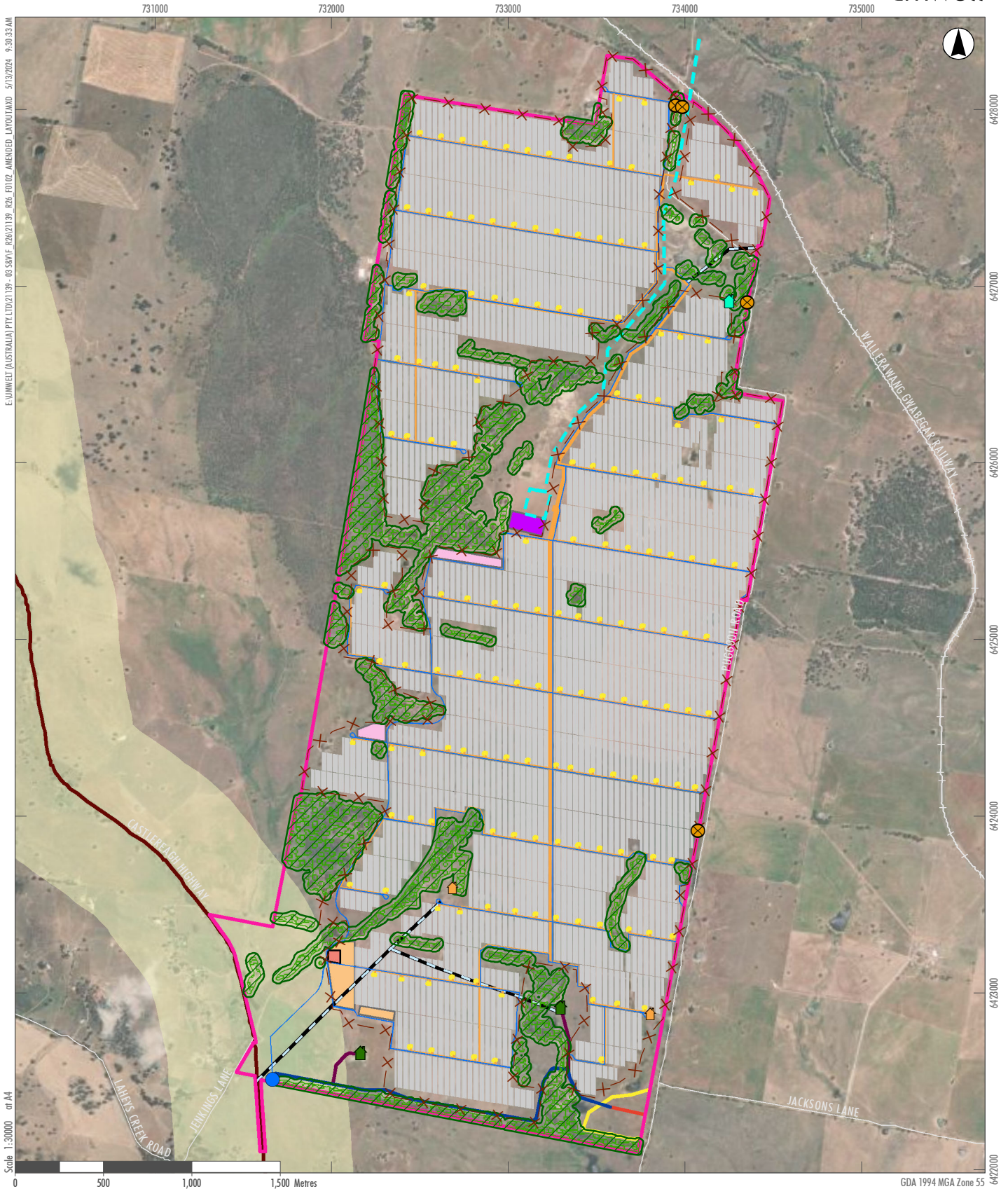


FIGURE 1.2
Amended Project Layout

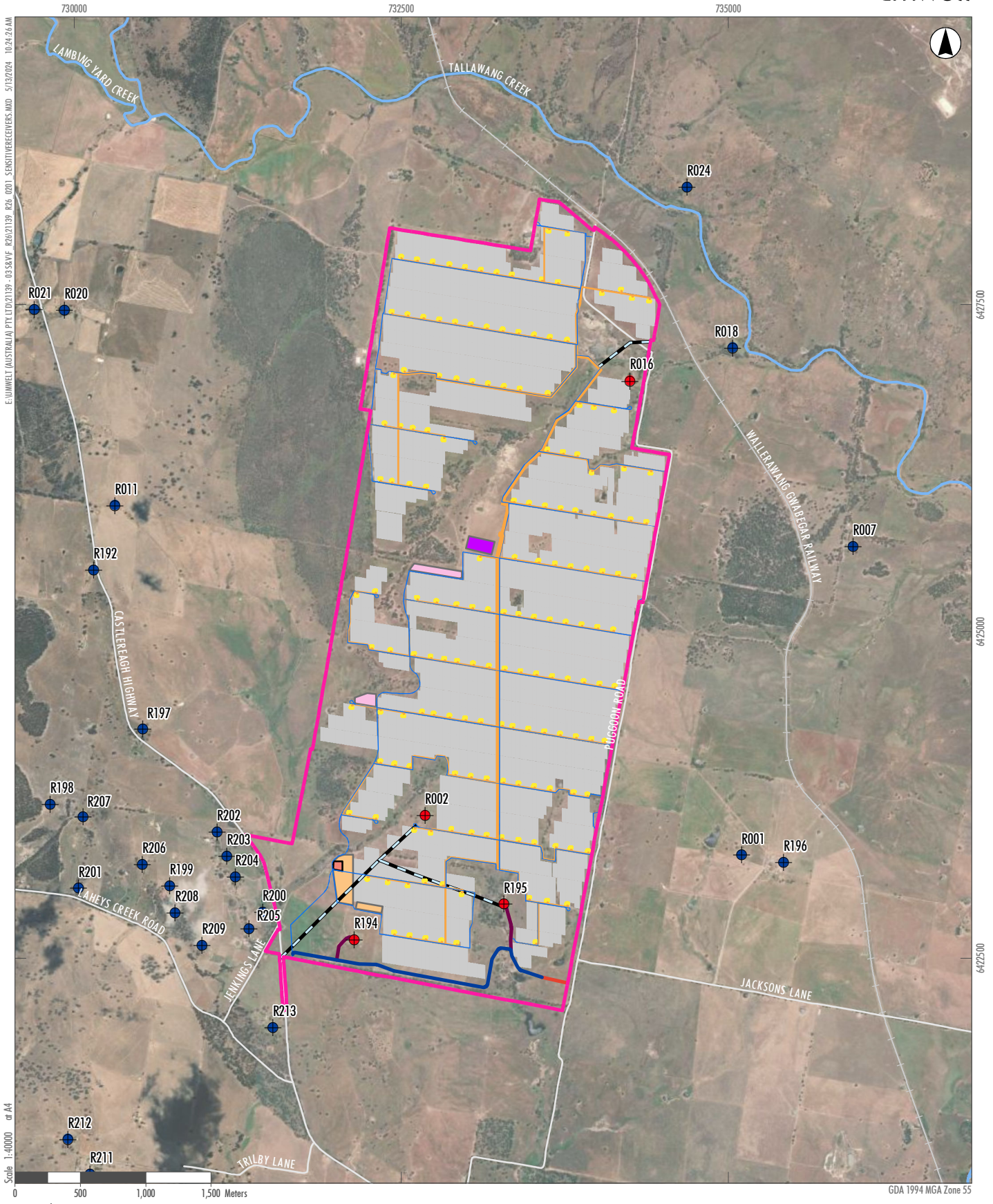
Image Source: ESRI Basemap Data source: NSW DFSI (2022), RES (2024)

2.0 Sensitive Receivers

The Project Area is located within a rural setting with a number of residential receivers distributed within the surrounding area. These are sensitive receivers and there are no other sensitive land uses (such as schools or places of worship) within or surrounding the Project Area.

Residential receivers within the Project Area are involved dwellings (owned by landholders involved in the Project) and are not considered sensitive receivers. The closest non-involved sensitive receivers (i.e. R18 and R200) are located approximately 600 m to east and west respectively from the nearest Project Infrastructure.

Sensitive receivers in the area surrounding the Project are presented in **Figure 2.1** and **Appendix A**.



- Legend**
- Tallawang Solar Farm Project Area
 - Non-associated Dwelling
 - Involved Landholder Dwelling
 - Road
 - Railway
 - Watercourse
 - Construction Compound
 - Temporary Laydown
 - Proposed O&M Facility
 - Proposed Substation
 - Solar Panels
 - Proposed MV Reticulation
 - BESS and DC-DC Coupled PCS with Hardstanding
 - Proposed Access
 - Temporary Workers Accommodation (TWA) Access
 - Proposed Post Construction Landowner Access Track
 - Proposed Landowner Access Track
 - 22kV Distribution Line (to be rerouted where necessary)

FIGURE 2.1

Sensitive Receivers Surrounding the Indicative Solar Farm Project Area

3.0 Updated Construction Noise Assessment

3.1 Construction Staging

The construction period for the Project will be undertaken across multiple stages. The total construction timeframe is anticipated to be approximately 36 months.

The construction stages will broadly include the following:

1. Site Establishment
2. Piling and foundations
3. Assembly of all equipment (trackers, inverters, modules, balance of system)
4. Underground cabling
5. Commissioning
6. Site rehabilitation, removal of temporary construction facilities
7. Road works – intersection upgrade on the Castlereagh Highway
8. Internal access road – Temporary Workers Accommodation (TWA) facility
9. Operation of the TWA facility.

It is likely that some of these stages may occur simultaneously through the progression of the construction program.

3.2 Construction Hours

Any construction activities to be undertaken during standard construction hours will be undertaken in accordance with the ICNG as follows:

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

No construction activities are proposed to occur on Sundays or public holidays. Exceptions to these hours may occur, however would be limited to activities with low noise generation where practicable. These activities will be assessed on a case-by-case basis prior to the commencement of those activities. The Mid-Western Regional Council and surrounding landholders would be notified of any foreseeable exceptions. This would include justifying why works are required outside the standard hours and outlining the timing, duration and potentially expected noise levels.

3.3 Construction Equipment

A range of plant and equipment would be used during construction. The final equipment and plant requirements would be determined by the construction contractor. An indicative list of equipment and plant is provided below:

- Asphalt paver
- Cable trenching and laying equipment
- Concrete truck
- Dump truck
- Forklift
- Impact piling rig
- Mobile crane
- Powered hand tools
- Water truck
- Bobcat
- Compactor
- Delivery trucks
- Electrical works/testing
- Generator
- Light vehicle
- Pneumatic wrench
- Roller
- Bobcat/trencher
- Compressor
- Dozer
- Excavator
- Grader
- Loader
- Power hand tools
- Truck

3.4 Construction Scenarios

For the purposes of this assessment, nine indicative construction scenarios have been modelled to resemble the construction stages. Prediction of the noise levels was undertaken with the proprietary computer noise modelling software SoundPLAN version 8.2, using the CONCAWE noise prediction algorithms. The model was developed using 3-Dimensional terrain data provided by the project team. Ground absorption for the area was modelled as acoustically soft ground.

Each scenario is described in **Table 3.1**. Detailed construction methodologies would be determined following finalisation of the detailed design and construction planning. Typical sound power levels for construction noise sources associated with typical construction activities have been sourced from the Roads and Maritime *Construction Noise Estimator Tool*.

Table 3.1 Indicative Construction Scenarios, Equipment, Quantities and Sound Power Levels

Construction Scenario	Activity description	Equipment	Quantity	Sound Power Levels LAeq(15 min) dB(A)/ unit	Combined Sound Power Level LAeq(15 min) dB(A)
Sc.1	Site Establishment	Excavator	1	110	121
		Delivery trucks	1	108	
		Dozer	1	116	
		Compactor	1	106	
		Grader	1	113	
		Roller	1	109	
		Asphalt paver	1	114	
		Bobcat	1	104	
		Mobile crane	1	98	
		Light vehicle	1	103	
		Generator	1	103	

Construction Scenario	Activity description	Equipment	Quantity	Sound Power Levels LAeq(15 min) dB(A)/ unit	Combined Sound Power Level LAeq(15 min) dB(A)
		Water truck	1	107	
Sc.2	Piling and foundations	Impact piling rig	1	121 (116+5) ¹	122
		Mobile crane	1	98	
		Bobcat	1	104	
		Excavator	1	110	
		Concrete truck	1	109	
Sc.3	Assembly of all equipment (trackers, inverters, modules, balance of system)	Truck	1	108	117
		Compressor	1	109	
		Powered hand tools	1	110	
		Pneumatic wrench	1	113	
		Mobile crane	1	98	
		Generator	1	103	
Sc.4	Underground cabling	Bobcat/trencher	1	104	113
		Cable trenching and laying equipment	1	100	
		Loader	1	112	
Sc.5	Commissioning	Power hand tools	1	110	114
		Electrical works/testing	1	110	
		Mobile crane	1	98	
		Light vehicle	1	103	
Sc.6	Site rehabilitation, removal of temporary construction facilities	Crane	1	98	113
		Forklift	1	100	
		Dump truck	1	110	
		Truck	1	108	
		Light vehicle	1	103	
Sc.7	Road Works - Intersection upgrade	Excavator	1	110	121
		Delivery trucks	1	108	
		Dozer	1	116	
		Compactor	1	106	
		Grader	1	113	
		Roller	1	109	
		Asphalt paver	1	114	
		Bobcat	1	104	
		Mobile crane	1	98	
		Light vehicle	1	103	
		Generator	1	103	
		Water truck	1	107	
Sc.8	Internal Access Road – TWA facility	Vehicle Movements	198	88	111

Construction Scenario	Activity description	Equipment	Quantity	Sound Power Levels LAeq(15 min) dB(A)/ unit	Combined Sound Power Level LAeq(15 min) dB(A)
Sc.9	TWA facility (operation)	Diesel Generator	4	89	96
		Air Conditioning Units	400	64	

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

3.5 Construction Noise Levels

Noise levels from construction activities have been predicted using computer noise modelling. Construction noise levels have been predicted for the indicative construction scenarios described in **Section 3.4**.

The tabulated results for each daytime construction scenario (Sc.1 to Sc.8) are presented in Table B.1 within **Appendix B**. Updated noise level contour maps for each scenario are also presented in **Appendix B**.

The predicted noise levels for each daytime construction scenario (Sc.1 to Sc.8) have been summarised in **Table 3.2** for those receivers where the predicted noise level is greater than the daytime noise management level (NML) of 45 dB(A) LAeq(15 min). The predicted noise levels are presented without any mitigation controls applied. As the predicted construction noise levels are above the noise management level (45 dB(A)) at 13 receivers, reasonable and feasible noise mitigation and management strategies are required in order to reduce the potential impacts on the receivers surrounding the Project area. The locations of the receivers are presented in **Figure 2.1** and **Figure A1.1** in **Appendix A**.

Table 3.2 Predicted Daytime Construction Noise Levels (where greater than 45dB(A)), LAeq(15 min), dB(A)

RecID ¹	Construction Scenario							
	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6	Sc.7	Sc.8
R001	45	46	41	37	38	37	39	25
R002 (involved)	68	67	63	58	59	59	45	34
R016 (involved)	76	78	73	65	66	69	25	19
R018	50	51	46	42	43	42	23	19
R024	49	50	45	41	42	41	19	19
R194 (involved)	60	61	56	52	53	52	61	43
R195 (involved)	63	64	59	55	56	55	55	38
R199	47	48	43	39	40	39	47	32
R200	58	59	54	51	51	50	61	40
R202	47	48	43	39	40	39	48	33
R203	49	50	45	41	42	41	50	34
R204	51	52	47	43	44	43	52	36
R205	56	57	52	48	49	48	59	39
R206	44	45	40	36	37	36	45	30

RecID ¹	Construction Scenario							
	Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6	Sc.7	Sc.8
R208	47	48	43	39	40	39	48	33
R209	50	51	46	42	43	42	51	35
R213	51	52	47	43	44	43	61	36

Notes: ¹ Receivers R002, R016, R194 and R195 are involved in the Project and therefore are not considered sensitive.

The predicted noise levels for the plant associated with the operation of the TWA facility (Sc.9) have been summarised in **Table 3.3**. The predicted noise levels are well below the night-time noise management level (NML) of 35 dB(A) LAeq(15 min).

Table 3.3 Predicted Night-time TWA facility Noise Levels (where greater than 10 dB(A)), LAeq(15 min), dB(A)

RecID ¹	Construction Scenario 9
R001	13
R002 (involved)	14
R194 (involved)	15
R195 (involved)	24
R196	13
R213	11

Notes: ¹ Receivers R002, R016, R194 and R195 are involved in the Project and therefore are not considered sensitive.

3.6 Mitigation Measures and Strategies

The noise and vibration mitigation measures and strategies presented in Section 5.7 of the NVIA submitted as part of the EIS are still appropriate and remain unmodified as a result of the updated noise modelling.

4.0 Updated Operational Noise Assessment

4.1 Modelling Methodology

Prediction of the operational noise levels was undertaken with the proprietary computer noise modelling software SoundPLAN version 8.2, using the CONCAWE noise prediction algorithms. The operational noise model was developed using 3-Dimensional terrain data provided by the project team. Ground absorption for the area was modelled as acoustically soft ground.

4.2 Noise Source Data

RES has provided updated indicative reference noise data for the proposed equipment/plant to be installed on site for the project. This has been supplemented with additional source data from Umwelt's noise source library. The proposed equipment, utilisation, quantities and sound power levels are summarised in **Table 4.1**.

Table 4.1 Indicative Equipment Quantities and Sound Power Levels

Plant Item	Quantity	Indicative Sound Power Level per unit, dB(A)
Tracker motor	12,675	50 dB(A) with an assumed utilisation of 7% (1 minute per 15 minutes)
PCS Module (Inverter and MV Transformer)	160	100 dB(A) @ 100% Fan – Day Period 97 dB(A) @ 80% Fan – Evening and Night Period
DC-DC Converter	640	87 dB(A)
BESS Container	320	83 dB(A)
Auxiliary Transformer 100 kVA ¹	160	88 dB(A) (83 dB(A) +5 dB)
Substation (MV-HV transformer 150 MVA)	4	90 dB(A)
HVAC (O&M building and control room) ²	2	72 dB(A)
Light vehicle ²	2	103 dB(A)

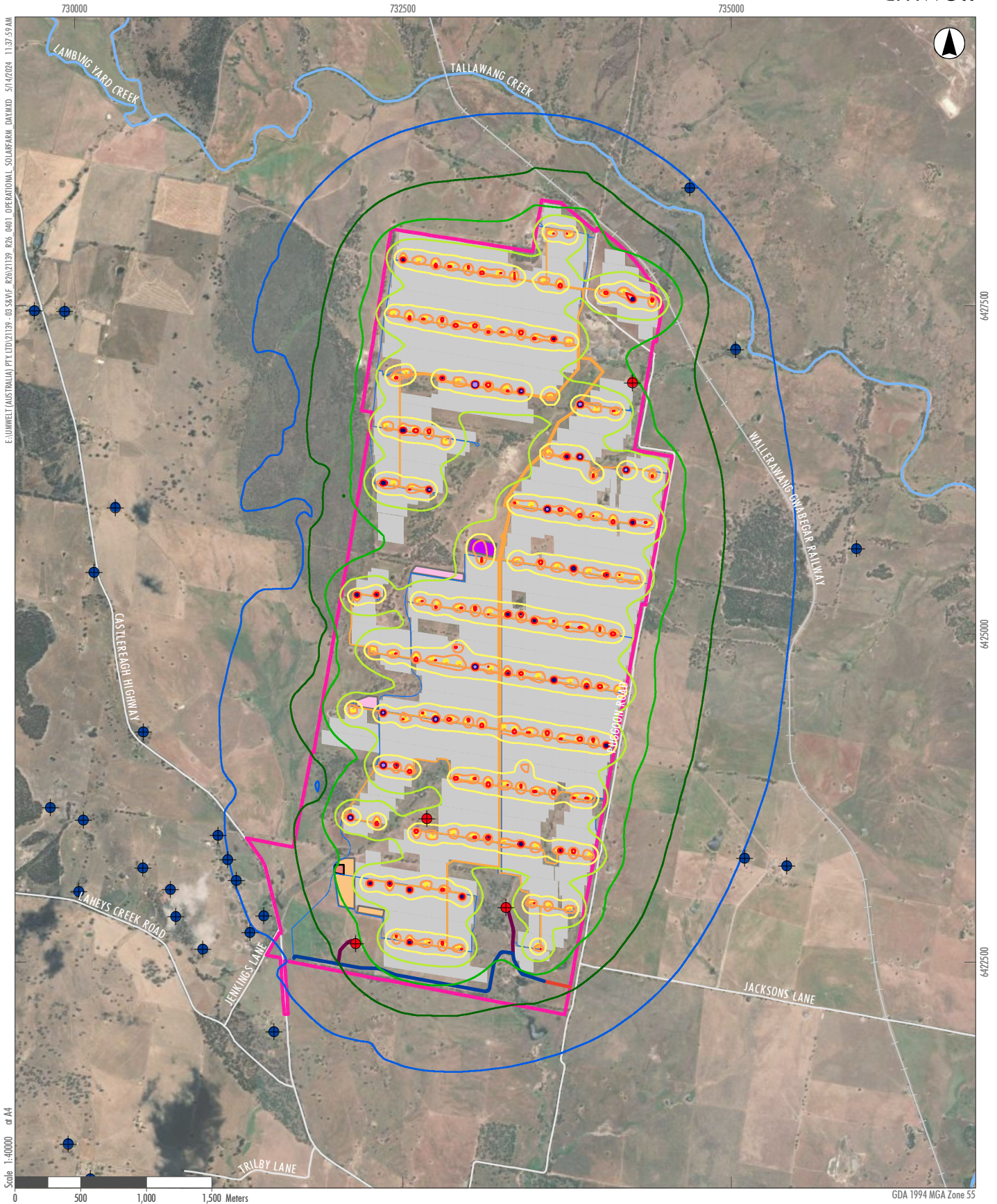
Notes: ¹ Includes an assumed +5 dB penalty for tonality.

² Assumed sound power level sourced from Umwelt noise source library.

4.3 Operational Noise Levels

The noise levels have been predicted under default worst-case meteorological conditions (D-class with 3m/s windspeed or F-class with 2m/s windspeed) in accordance with the *Noise Policy for Industry* (NPfi) (EPA, 2017). The predicted operational noise levels at these sensitive receivers are presented graphically in **Figure 4.1** for the day period and **Figure 4.2** for the evening and night period, and are also tabulated in **Table C.1** within **Appendix C**.

Based on the updated equipment selections and layout, the operational noise levels are predicted to comply with the day noise limit of 40 dB(A), as well as the evening and night-time noise limit of 35 dB(A) at all non-involved receivers. The predicted one-third octave band noise levels at the nearest non-involved receiver (R18) indicate that additional penalties for tonality or low frequency were not applicable to the prediction results. The predicted one-third octave band noise levels R18 are presented in **Table C.2** within **Appendix C**.



Legend

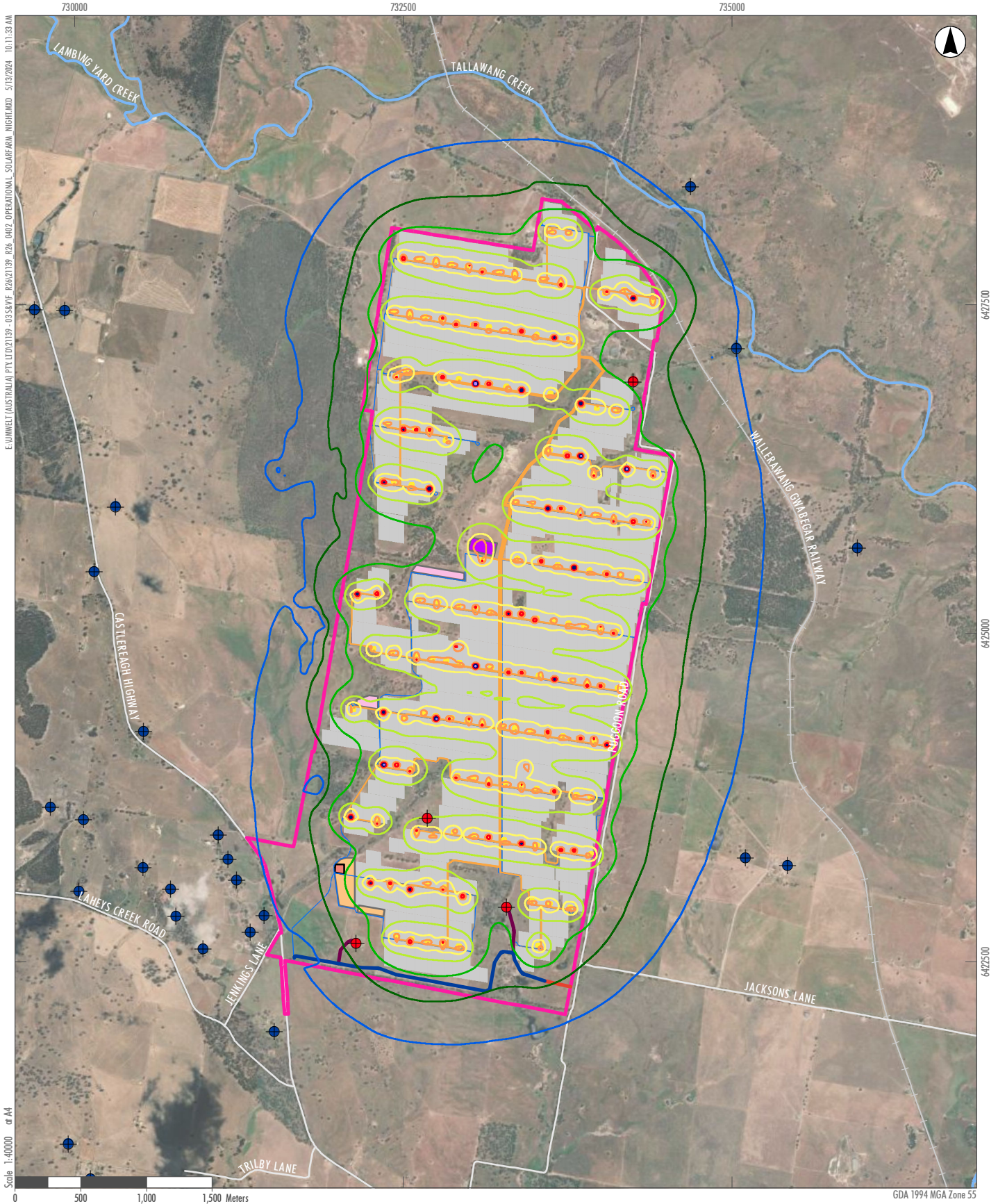
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- Solar Panels
- Construction Compound

- Temporary Laydown
- Proposed O&M Facility
- Proposed Substation
- Proposed Access
- Temporary Workers Accommodation (TWA) Access
- Proposed Post Construction Landowner Access Track
- Proposed Landowner Access Track

- Predicted Noise Level**
- 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)
 - Noise Contour Level 60 dB(A)
 - Noise Contour Level 65 dB(A)
 - Noise Contour Level 70 dB(A)
 - Noise Contour Level 75 dB(A)

FIGURE 4.1

Predicted Operational Noise Levels – Day Period Under Enhanced Meteorological Conditions, LAeq(15 min) dB(A)



E:\UMWELT (AUSTRALIA) PTV\CD\21139 - 03\S&VF_R26\21139_R26_0402_OPERATIONAL_SOLARFARM_NIGHT.MXD 5/13/2024 10:11:33 AM

Scale 1:40000 at A4

0 500 1,000 1,500 Meters

GDA 1994 MGA Zone 55

Legend

- Tallawang Solar Farm Project Area
- Non-associated Dwelling
- Involved Landholder Dwelling
- Road
- Railway
- Watercourse
- Proposed MV Reticulation
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- Solar Panels
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- Proposed Substation
- Proposed Access
- Temporary Workers Accommodation (TWA) Access
- Proposed Post Construction Landowner Access Track
- Proposed Landowner Access Track

Predicted Noise Level

- 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)
- Noise Contour Level 60 dB(A)
- Noise Contour Level 65 dB(A)
- Noise Contour Level 70 dB(A)
- Noise Contour Level 75 dB(A)

FIGURE 4.2

Predicted Operational Noise Levels – Evening And Night Period Under Enhanced Meteorological Conditions, LAeq(15 min) dB(A)

5.0 Updated Road Traffic Noise Assessment

5.1 Construction Traffic

Construction material and equipment would typically be transported via road from the Port of Newcastle, then the Golden Highway and then via the Castlereagh Highway to the Project Area. During the peak of construction, it is estimated that there will be 320 heavy vehicle movements. In addition, it is estimated that there will be a typical average of 140 light vehicle movements per day accessing the Project Area during the peak of construction. It is noted that a temporary increase from the typical light vehicle movements is anticipated during the designated shift change days each fortnight. However, this assessment has considered the typical traffic volumes to be more representative of the potential noise impacts from the construction-related traffic as they have a much higher frequency of occurrence than the fortnightly shift change days.

The following assumptions have been applied in evaluating the potential traffic noise impacts:

- Existing traffic flows on Castlereagh Highway:
 - The existing base-case traffic volumes for the Castlereagh Highway have been derived from local traffic counts conducted in 2009 and extrapolated to the year 2024 assuming a compound growth rate of 2%, as provided by Samsa Consulting as part of the Amended Traffic Impact Assessment (2024).
 - 10% heavy vehicles content for the Castlereagh Highway.
 - It has been assumed that there is a nominal split of 90% of traffic during the day period (7.00 am – 10.00 pm) to 10% traffic volume between the night period (10.00 pm – 7.00 am).
- 50% of the daily project-related light-vehicle movements will be on the roads travelling to the Project Area between 6.00 am and 7.00 am.
- The daily project-related light-vehicle movements will travel to the Project Area with a 50% split to the north and south of the Project Area.
- The daily project-related heavy-vehicle movements will travel to the Project Area from the north.
- An average highway traffic speed of 80 km/h, which is based on the highway speed through Birriwa, where the houses are located nearest to the road edge.

Based on the above assumptions, the indicative construction-related traffic volumes adopted for the noise assessment are presented in **Table 5.1**. Additionally, indicative construction-related traffic volumes for the Barneys Reef Wind Farm project are also presented in **Table 5.1** for the consideration of potential cumulative road traffic noise impacts.

Table 5.1 Indicative Construction-related Traffic Volumes

Location	Period	Parameter	Existing traffic volume (without Project)	Tallowang Project-related traffic volume	Barneys Reef WF traffic volume	Combined traffic volume (Existing + Tallowang)	Combined traffic volume (including Barneys Reef WF)
Castlereagh Highway - North of Project Area	Day (7.00am – 10.00pm)	Light Vehicles	757	35	240	792	1,032
		Heavy Vehicles	84	320	66	404	470
		Total	841	355	306	1,196	1,502
	Night (10.00 pm – 7.00am)	Light Vehicles	84	35	0	119	119
		Heavy Vehicles	9	0	0	9	9
		Total	93	35	0	128	128
Castlereagh Highway - South of Project Area	Day (7.00 am – 10.00pm)	Light Vehicles	757	35	0	792	792
		Heavy Vehicles	84	0	0	84	84
		Total	841	35	0	876	876
	Night (10.00 pm – 7.00am)	Light Vehicles	84	35	0	119	119
		Heavy Vehicles	9	0	0	9	9
		Total	93	35	0	128	128

The predicted road traffic noise levels are presented in **Table 5.2** based on the nominated traffic volumes presented in **Table 5.1**.

Table 5.2 Predicted Traffic Noise Levels including the Tallawang project-related construction traffic

Location	Period	Distance from road edge	Existing traffic noise levels, dB(A)	Existing + Tallawang Combined traffic noise levels, dB(A)	Noise Limit Day/Night period, dB(A)	Noise Level Change, dB(A)	Comply/Exceed
Castlereagh Highway - North of Project Area	Day (7.00 am – 10.00 pm) LAeq(15 hour)	10 m	58.9	64.1	60	5.2	Exceeds the relative increase criterion of as noise level change is greater than 2dB(A)
		20 m	56.1	60.7	60	4.6	Exceeds the relative increase criterion of as noise level change is greater than 2dB(A)
		30 m	54.1	58.5	60	N/A ¹	Complies
		40 m	52.3	56.7	60	N/A ¹	Complies
	Night (10.00 pm – 7.00am) LAeq(9 hour)	10 m	51.1	52.0	55	N/A ¹	Complies
		20 m	48.5	49.4	55	N/A ¹	Complies
		30 m	46.6	47.6	55	N/A ¹	Complies
		40 m	44.8	45.7	55	N/A ¹	Complies
Castlereagh Highway - South of Project Area	Day (7.00 am – 10.00 pm) LAeq(15 hour)	10 m	58.9	59.1	60	N/A ¹	Complies
		20 m	56.1	56.3	60	N/A ¹	Complies
		30 m	54.1	54.3	60	N/A ¹	Complies
		40 m	52.3	52.4	60	N/A ¹	Complies
	Night (10.00 pm – 7.00 am) LAeq(9 hour)	10 m	51.1	52.0	55	N/A ¹	Complies
		20 m	48.5	49.4	55	N/A ¹	Complies
		30 m	46.6	47.6	55	N/A ¹	Complies
		40 m	44.8	45.7	55	N/A ¹	Complies

Notes: ¹ Change in noise level assessment is not applicable if the predicted noise level is below the noise limit.

The predicted road traffic noise levels indicate that for the northern approach of the Castlereagh Highway to the Project Area:

- The potential traffic noise level exceeds the daytime noise limit of 60 dB(A) LAeq(15 hour) and the increase due to the additional project traffic exceeds the 2 dB(A) relative increase criterion within 25m of the road edge during the daytime period.
- The potential traffic noise level is predicted to comply with the night-time noise limit of 55 dB(A) LAeq(9 hour) at 10m from the road edge including the additional project traffic during the night-time period.

The predicted road traffic noise levels indicate that for the southern approach of the Castlereagh Highway to the Project Area:

- The potential traffic noise level is predicted to be above the daytime noise limit of 60 dB(A) LAeq(15 hour) at 10m from the road edge however the potential increase in traffic noise levels including the additional project traffic during the daytime period is less than the 2 dB(A) relative increase criterion.
- The potential traffic noise level is predicted to comply with the night-time noise limit of 55 dB(A) LAeq(9 hour) at 10m from the road edge including the additional project traffic during the night-time period.

Typically, the sensitive receivers located in the vicinity of the Project Area are located at a distance greater than 40 m from the edge of the Castlereagh Highway and therefore the additional road traffic noise is likely to be negligible for the majority of sensitive receivers in the area. However, a small pocket of dwellings in the township of Birriwa are located within 25 m of the road edge and are represented by receivers R138, R139, R140, R141, R145, R146, R214. These receivers in Birriwa may experience an elevated road traffic noise level during the construction period.

Potential noise mitigation measures to reduce construction-related traffic noise may include the following:

- Where reasonable and feasible and also safe to do so, slowing the speed of the heavy vehicles as they pass through the Birriwa township from the sign-posted speed of 80 km/h to a nominal speed of 60 km/h.

5.2 Operational Traffic

Operational traffic movements are expected to be in the order of up to 10 vehicles per day, therefore road traffic noise from operational traffic is anticipated to be negligible.

6.0 Updated Cumulative Assessment

6.1 Nearby Projects for Consideration

There are a number of other existing and proposed renewable energy projects within the region, as shown in **Table 6.1**. These include the proposed Barneys Reef Wind Farm project which is planned to be directly north of the Tallawang Solar Farm and the Bellambi Heights BESS project which is planned to be directly south of the Tallawang Solar Farm.

There are three open cut coal mines located within the vicinity of the study area: Ulan Mine, located 25 km east; Moolarben Mine, located 36 km east; and Wilpinjong Mine, located 30 km south-east. Noise and vibration emissions from the operation of these mines include blasting and operation of heavy machinery. Cumulative noise and vibration impacts with the neighbouring mining operations would be limited to the construction phase of the Project and are anticipated to be minimal due to the distance between the operations and the Project.

Apart from the Barneys Reef Wind Farm project, the CWO REZ Transmission Project, Mavis Solar Farm and the Bellambi Heights BESS project, the other projects are located at significant distances (i.e. greater than 5 km) from the Tallawang Project Area. Industrial projects in NSW, such as renewables and/or large scale open-cut mining, are typically able to achieve the NPfl noise limits within 1 to 3 km of the project. On this basis, the large separation distances between the Tallawang Solar Farm and these other projects means that these other projects are not anticipated to contribute to the acoustic environment at the sensitive receivers located near the Tallawang Project Area. Therefore, the assessment of cumulative impacts as presented in **Table 6.1** and further discussed in **Sections 6.2** and **6.3** has been limited to the potential contribution from the Barneys Reef Windfarm project.

Table 6.1 Renewables developments within proximity to the Tallawang Solar Farm

Renewable Development	Developer/ Owner	Details	Distance to Project Area	Status	Potential for overlap and cumulative impacts
Barneys Reef Wind Farm	RES Australia	350 MW wind farm, up to 63 wind turbines	Directly north	In planning	There is potential for the construction periods to overlap with some months. However cumulative noise and vibration impacts from the concurrent construction of the Barneys Reef Wind Farm and the Project would be minimal given that the predicted noise levels associated with the Tallawang Solar Farm on the northern extend of the Project Area would be within the noise management levels, as further discussed in Section 6.2 . These impacts would be dependent on the final timing and duration of construction activities associated with both projects. Once operational, it is anticipated that there would be no cumulative noise impacts due to the operation of the Project adjacent the Barneys Reef Wind Farm project, as further discussed in Section 6.3 .
Beryl Solar Farm	Banpu Energy Australia	87 MW solar farm	5 km south	Operational	Noise emissions during operational activities are minimal. Based on the distance between the two projects, there would be no cumulative impacts expected to occur as a result of the Project.
Beryl BESS	Ratch Australia	100 MW battery storage	10 km south	In planning	Construction period is unlikely to overlap with Tallawang Solar Farm. No cumulative noise and vibration impacts are predicted during the operational phase due to the distance between the two projects.
Bellambi Heights BESS	Vena Energy	408 MW battery storage	Directly south	Approved	Construction period is likely to overlap with Tallawang Solar Farm. However cumulative noise and vibration impacts from the concurrent construction of the two projects would be minimal given that the predicted noise levels associated with the Tallawang Solar Farm on the southern extend of the Project Area would be within the noise management levels. These impacts would be dependent on the final timing and duration of construction activities associated with both projects.
Birriwa Solar Farm and Battery Project	ACEN	600 MW Solar farm with 1000 MW BESS	15 km north east	In planning	Construction period is likely to overlap with Tallawang Solar Farm. However due to the very large separation distance between the two projects it is not expected that there would be any cumulative noise and vibration impacts. Due to the location of this project, construction-related traffic along the Castlereagh Highway is likely to be minimal.
CWO REZ Transmission Infrastructure	EnergyCo	Transmission network infrastructure	Directly north	In planning	Construction period is likely to overlap with Tallawang Solar Farm. However cumulative noise and vibration impacts from the concurrent construction of the two projects would be minimal given that the predicted noise levels associated with the Tallawang Solar Farm on the northern extend of the Project Area would be within the noise management levels. These impacts would be dependent on the final timing and duration of construction activities associated with both projects.

Renewable Development	Developer/ Owner	Details	Distance to Project Area	Status	Potential for overlap and cumulative impacts
Dunedoo Solar Farm	ib vogt	55 MW solar farm with energy storage	30 km north to northwest	Approved	Project approval has been granted for this project. Construction period is not likely to overlap with Tallawang Solar Farm. In addition, construction-related traffic along the Castlereagh Highway is likely to be minimal due to the location of this project.
Mavis Solar Farm	Metka-EGN Australia Pty Ltd	250 MW solar with battery storage	Directly south east	In planning	Construction period is likely to overlap with Tallawang Solar Farm. However cumulative noise and vibration impacts from the concurrent construction of the two projects would be minimal given that the predicted noise levels associated with the Tallawang Solar Farm on the south eastern extend of the Project Area would be within the noise management levels. These impacts would be dependent on the final timing and duration of construction activities associated with both projects.
Mayfair Solar Farm	Elgin Energy	60 MW solar with battery storage	2 km east	In planning	Construction period is likely to overlap with Tallawang Solar Farm. However cumulative noise and vibration impacts from the concurrent construction of the two projects would be minimal given that the predicted noise levels associated with the Tallawang Solar Farm on the eastern extend of the Project Area would be within the noise management levels. These impacts would be dependent on the final timing and duration of construction activities associated with both projects.
Stubbo Solar Farm	Acen Australia	400 MW solar farm with energy storage	7 km east	Approved / Under construction	Construction period is underway and unlikely to overlap with Tallawang Solar Farm. Due to the location of this project, construction-related traffic along the Castlereagh Highway is likely to be minimal.

6.2 Construction Noise

The construction phase for the Tallawang Solar Farm and a number of other projects proposed directly adjacent (such as Barneys Reef Wind Farm, CWO REZ Transmission Infrastructure, Bellambi Heights BESS and Mavis Solar Farm) would overlap or occur concurrently, should the projects proceed as proposed. Therefore, there is potential for cumulative construction noise at those sensitive receivers located near these project areas. The reasonable and feasible management and mitigation strategies applicable to the cumulative construction noise impacts, a collaborative approach to managing potential construction noise impacts may be necessary at times to minimise potential noise impacts at the sensitive receivers nearest to these projects.

6.3 Operational Noise

The operational noise levels from the Tallawang Solar Farm are predicted to comply with the most-stringent night-time project noise trigger level of 35 dB(A) LAeq(15 min) at an approximate distance of 1500m from the Project Area.

The Project is predicted to comply with the project amenity noise levels of 48 dB(A), 43 dB(A) and 38 dB(A) LAeq(15 min) during the Day, Evening and Night periods respectively at the nearest sensitive receivers presented in **Table C1.1**.

Additionally, the Noise and Vibration Impact Assessment (EMM, 2023) prepared for the Bellambi Heights Battery Energy Storage System project located directly to the south of the Tallawang Solar Farm, indicates that the operational noise levels from the Bellambi Heights BESS are predicted to achieve noise levels of 30 dB(A) or less at the sensitive receivers (i.e. R200, R205) located near the Castlereagh Highway and Jackson Lane intersection. This represents a relatively low noise level that is 10 dB below the recommended night-time amenity noise level for Rural Residential sensitive receivers. This low noise level indicates that the potential cumulative noise levels from the concurrent operation of both the Tallawang Solar Farm and the Bellambi Heights BESS is anticipated to be minimal.

Therefore, no cumulative noise impact is anticipated due to the operation of the Project adjacent the Barneys Reef Wind Farm, CWO REZ Transmission Infrastructure, Bellambi Heights BESS and Mavis Solar Farm.

6.4 Road Traffic Noise

The construction-related traffic noise levels have been evaluated with consideration of the concurrent Barneys Reef Wind Farm traffic volumes. The indicative traffic volumes for Barneys Reef Wind Farm are presented in **Table 5.1**, and conservatively assume that the additional traffic only travels on the northern section of the Castlereagh Highway.

The cumulative traffic noise levels considering the simultaneous construction traffic from Barneys Reef Windfarm on Castlereagh Highway are presented in **Table 6.2**.

Table 6.2 Predicted Cumulative Traffic Noise Levels including the Tallawang and Barneys Reef Wind Farm project-related construction traffic

Location	Period	Distance from road edge	Existing traffic noise levels, dB(A)	Existing + Tallawang + BR WF Combined traffic noise levels, dB(A)	Noise Limit Day/Night period, dB(A)	Noise Level Change, dB(A)	Comply/Exceed
Castlereagh Highway - North of Project Area	Day (7.00 am – 10.00 pm) LAeq(15 hour)	10 m	58.9	65.2	60	6.3	Exceeds limit and noise level change is greater than 2dB(A)
		20 m	56.1	61.5	60	5.4	Exceeds limit and noise level change is greater than 2dB(A)
		30 m	54.1	59.2	60	N/A ¹	Complies
		40 m	52.3	57.4	60	N/A ¹	Complies
	Night (10.00 pm – 7.00 am) LAeq(9 hour)	10 m	51.1	52.0	55	N/A ¹	Complies
		20 m	48.5	49.4	55	N/A ¹	Complies
		30 m	46.6	47.6	55	N/A ¹	Complies
		40 m	44.8	45.7	55	N/A ¹	Complies

Notes: ¹ Change in noise level assessment is not applicable if the predicted noise level is below the noise limit.

The predicted road traffic noise levels indicate that for the northern approach of the Castlereagh Highway to the Project Area:

- The potential traffic noise level exceeds the daytime noise limit of 60 dB(A) LAeq(9 hour) and the increase due to the additional project traffic exceeds the 2 dB(A) allowance within 25 m of the road edge during the daytime period.
- The potential traffic noise level is predicted to comply with the night-time noise limit of 55 dB(A) LAeq(9 hour) at 10m from the road edge including the additional project traffic during the night-time period.

Typically, the sensitive receivers located in the vicinity of the Project Area are located at a distance greater than 40 m from the edge of the Castlereagh Highway and therefore the additional road traffic noise is likely to be negligible for the majority of sensitive receivers in the area. However, a small pocket of dwellings in the township of Birriwa are located within 25 m of the road edge and are represented by receivers R138, R139, R140, R141, R145, R146, R214. These receivers in Birriwa may experience an elevated road traffic noise level during the construction period.

6.5 Management and Mitigation of Cumulative Noise Impacts

As discussed, construction and operational noise activities are unlikely to result in cumulative noise impacts, however, construction-related road traffic noise may result in cumulative noise impacts. Potential noise mitigation measures to reduce construction-related traffic noise may include the following:

- Where reasonable and feasible, and also safe to do so, slowing the speed of the heavy vehicles as they pass through the Birriwa township from the sign-posted speed of 80 km/h to a nominal speed of 60 km/h.
- Where reasonable and feasible, coordination and/or staging of arrival and departure times for construction-related traffic may be considered between the Tallawang Solar Farm and Barneys Reef Wind Farm projects.

7.0 Conclusion

An updated assessment of the potential noise and vibration impacts has been prepared for the proposed Tallawang Solar Farm to be located in Tallawang, NSW.

The outcomes of the updated assessment of the amended project were found to be consistent with the Noise and Vibration Impact Assessment submitted as part of the EIS.

Potential construction noise and vibration impacts have been assessed in accordance with the *Interim Construction Noise Guideline* (ICNG), NSW Department of Environment and Climate Change (DECC), 2009. The results were evaluated and the effectiveness of mitigation measures were discussed in **Section 3.0**. Reasonable and feasible noise mitigation will be required during the construction phase of the project, the updated modelling results indicate that the noise and vibration mitigation measures and strategies presented in Section 5.7 of the NVIA submitted as part of the EIS are still appropriate and remain unmodified as a result of the updated noise modelling.

Construction-related road traffic noise has been assessed and it was found that a small pocket of dwellings in the township of Birriwa are located within 25m of the Castlereagh Highway road edge and are represented by R138, R139, R140, R141, R145, R146, R214. These receivers in Birriwa may experience an elevated road traffic noise level during the construction period. Potential noise mitigation measures may include: slowing the speed of the heavy vehicles as they pass through the Birriwa township from the sign-posted speed of 80 km/h to a nominal speed of 60 km/h, where reasonable and feasible, and safe to do so.

Potential operational noise levels have been assessed in accordance with the *Noise Policy for Industry* (NPfI) (EPA, 2017). This assessment found that the Project is expected to comply with the applicable day, evening and night-time noise limits at nearby sensitive receivers not involved with the Project. Therefore no additional noise mitigation is anticipated to be needed for the operation of the Project. The anticipated road traffic related to the operation of the Project is expected to be minimal and therefore will result in a negligible influence on the existing road traffic noise exposure from the road network.

Noise emission during decommissioning activities is expected to be less than construction activities and therefore would comply with the noise management levels for construction.

8.0 References

Tallawang Solar Farm Noise and Vibration Impact Assessment, Umwelt (Australia) Pty Ltd, 24/06/2022.
(NVIA)

Bellambi Battery Energy Storage System Noise and Vibration Impact Assessment, EMM, 26/05/2023.

Noise Policy for Industry, Environment Protection Authority, 2017 (NPfI, EPA).

Interim Construction Noise Guideline NSW Department of Environment and Climate Change, 2009 (ICNG, DECC)

NSW Road Noise Policy, Department of Environment, Climate Change and Water, 2011 (RNP, DECCW)

Construction Noise Estimator Tool, Roads and Maritime, version 4/08/2016

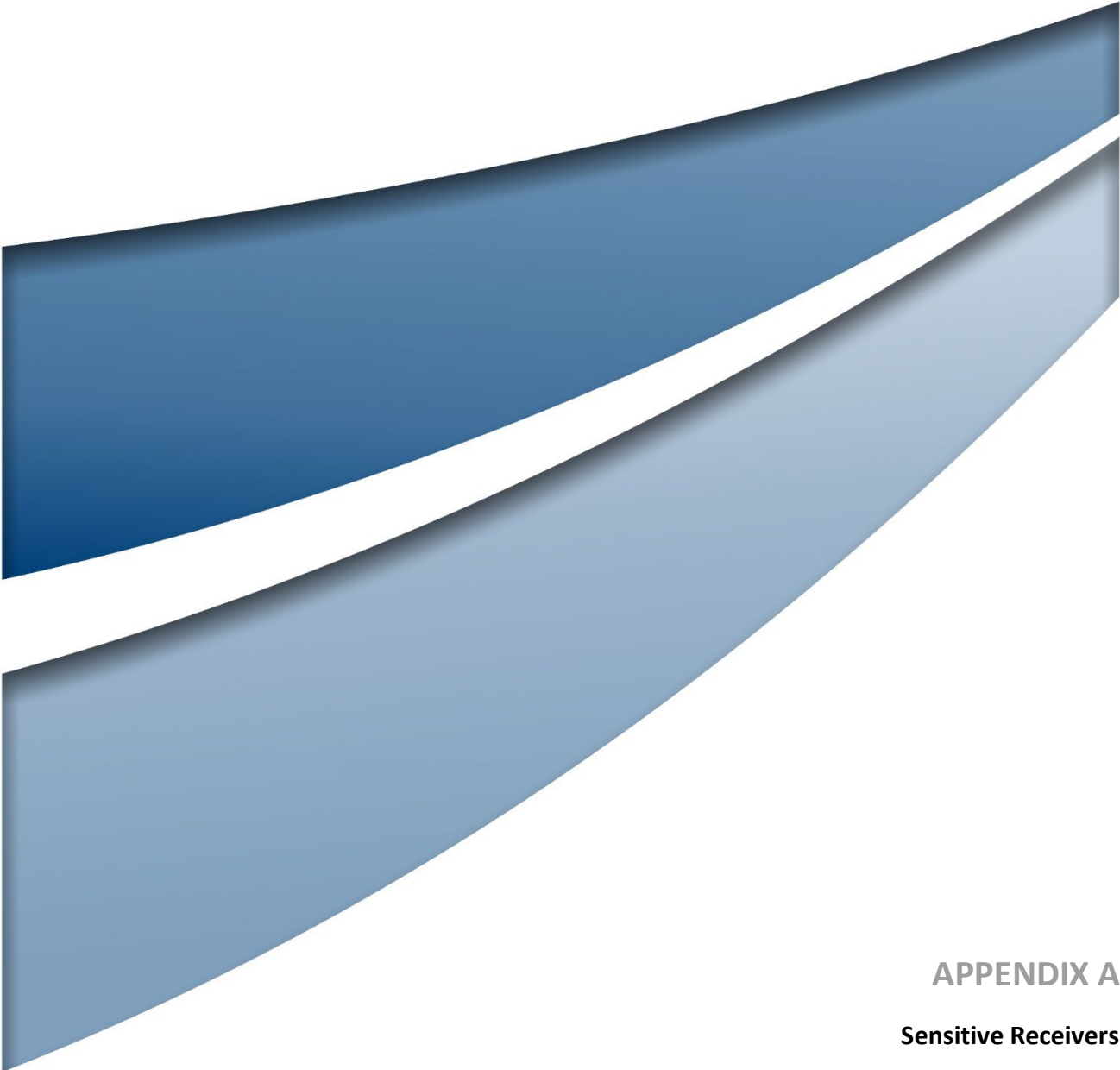
Construction Noise and Vibration Guideline, Roads and Maritime, v 1.0, 2016

German Standard (Deutsche Norm) DIN 4150-3:1999-02 Structural Vibration Part 3: Effects of vibration on structures

British Standard BS7385-2:1993 Evaluation and measurement for vibration in buildings Part 2. Guide to damage levels from groundborne vibration.

Australian Standard AS2436-2010 (R2016) Guide to Noise Control on Construction, Demolition and Maintenance Sites

Transit Noise and Vibration Impact Assessment, Federal Transit Administration, 2018



APPENDIX A
Sensitive Receivers

Table A.1 Sensitive Receivers¹

RecID ¹	Easting	Northing	Lot/plan	Address
R001	735105	6423288	4/DP1078822	340 Jacksons Lane, Beryl 2852
R002	732684	6423592	113/DP750762	978 Castlereagh Highway, Beryl 2852
R003	739792	6424217	112/DP845960	Sanslee, 97 Stubbo Road, Stubbo 2852
R004	740051	6424314	111/DP845960	Sansgrove, 99 Stubbo Road, Stubbo 2852
R005	740171	6424541	8/DP750765	Stubbo, 101 Stubbo Road, Stubbo 2852
R006	743814	6424600	19/DP248716	Pine Glen, 155 Governor Road, Stubbo 2852
R007	735956	6425650	92/DP750762	588 Puggoon Road, Stubbo, 2852
R008	746392	6425699	20/DP750765	Hartford, 262 Blue Springs Road, Stubbo 2852
R009	750461	6425712	1/DP653355	1401 Cope Road, Cope 2852
R010	745579	6425851	2/DP1018333	305 Blue Springs Road, Stubbo 2852
R011	730309	6425962	1/DP815009	1318 Castlereagh Highway, Tallawang 2852
R013	751494	6426597	301/DP791240	Mountain View, 1597 Cope Road, Cope 2852
R014	737556	6426750	41/DP750765	Avoca, 913 Barneys Reef Road, Stubbo 2852
R015	752043	6426885	33/DP750746	1601 Cope Road, Cope 2852
R016	734249	6426916	1/DP332044	Puggoon, 775 Puggoon Road, Tallawang 2852
R017	751728	6426998	300/DP791240	1599 Cope Road, Cope 2852
R018	735034	6427170	194/DP750762	800 Puggoon Road, Tallawang 2852
R019	738063	6427187	110/DP750765	955 Barneys Reef Road, Stubbo, 2852
R020	729923	6427457	207/DP750762	Nungarrin, 1412 Castlereagh Highway, Tallawang 2852
R021	729693	6427462	53/DP750762	Oakville, 1423 Castlereagh Highway, Tallawang 2852
R022	726639	6428293	13/DP248183	Davimel Park, 297 Honeysett Road, Tallawang 2852
R023	727020	6428335	15/DP248183	255 Honeysett Road, Tallawang 2852
R024	734688	6428398	179/DP44925	980 Puggoon Road, Tallawang 2852
R025	728671	6428685	109/DP750762	Allawa, 51 Honeysett Road, Tallawang 2852
R026	746640	6428785	75/DP750765	Highlands, 654 Blue Springs Road, Stubbo 2852
R027	729285	6428970	4/DP248183	Amandeen, 1579 Castlereagh Highway, Tallawang 2852
R028	727804	6428981	16/DP248183	157 Honeysett Road, Tallawang 2852
R029	729317	6429031	3/DP248183	Weemara, 1581 Castlereagh Highway, Tallawang 2852
R030	727899	6429118	9/DP248183	139 Honeysett Road, Tallawang 2852
R031	727602	6429161	10/DP248183	Dejenn Park, 81 Adelong Road, Tallawang 2852
R032	728608	6429214	6/DP248183	76 Honeysett Road, Tallawang 2852
R033	727634	6429309	110/DP750751	Denlo Park, 83 Adelong Road, Tallawang 2852
R034	729349	6429478	1/DP248183	1637 Castlereagh Highway, Tallawang 2852
R035	739303	6429755	1/DP840433	1251 Barneys Reef Road, Stubbo 2852
R036	739667	6430043	118/DP750765	Willow Vale, 1278 Barneys Reef Road, Stubbo 2852
R037	743604	6430074	67/DP750765	The Pinnacle, 709 Blue Springs Road, Stubbo 2852
R038	729420	6430361	71/DP750751	1713 Castlereagh Highway, Tallawang 2852
R039	738773	6430490	5/DP750767	Summervale, 1309 Barneys Reef Road, Tallawang 2852
R040	731877	6430541	11/DP750767	Belvedere, 1716 Castlereagh Highway, Tallawang 2852

¹ Blue shaded lines are involved landholders and therefore not considered sensitive.

RecID ¹	Easting	Northing	Lot/plan	Address
R041	751170	6431134	19/DP750746	Walkerville, 1068 Blue Springs Road, Cope 2852
R042	747674	6431269	2/DP1115925	872 Blue Springs Road, Cope 2852
R043	747261	6431386	2/DP749797	Blue Springs, 917 Blue Springs Road, Cope 2852
R044	747459	6431388	2/DP1115925	872 Blue Springs Road, Cope 2852
R045	729387	6431653	171/DP750751	Talinga, 1848 Castlereagh Highway, Tallawang 2852
R046	738403	6431982	2/DP564042	1451 Barneys Reef Road, Tallawang 2852
R047	738915	6432033	1/DP510112	1449 Barneys Reef Road, Tallawang 2852
R048	729482	6432876	40/DP1248995	1848 Castlereagh Highway, Tallawang 2852
R049	738978	6432893	6/DP750767	Nagundie, 1535 Barneys Reef Road, Tallawang 2852
R050	747573	6433108	58/DP750746	Lenarrybe, 1083 Blue Springs Road, Cope 2852
R051	732504	6433152	2/DP1106998	250 Whistons Lane, Tallawang 2852
R052	725372	6433349	44/DP750751	353 Corishs Lane, Tallawang 2852
R053	741301	6433480	1/DP546205	272 Merotherie Road, Stubbo 2852
R054	750027	6433591	47/DP750742	1062 Blue Springs Road, Bungaba 2852
R055	722401	6433970	18/DP754329	454 Brooklyn Road, Dunedoo 2844
R056	749458	6433983	100/DP827493	1060 Blue Springs Road, Bungaba 2852
R057	740205	6434097	1/DP1248621	1754 Barneys Reef Road, Merotherie 2852
R058	724232	6434264	20/DP253275	41 Suzanne Road, Tallawang 2852
R059	729341	6434318	12/DP750751	2152 Castlereagh Highway, Tallawang 2852
R060	732685	6434324	87/DP750767	Greenmount, 330 Whistons Lane, Tallawang 2852
R061	729320	6434477	12/DP750751	2152 Castlereagh Highway, Tallawang 2852
R062	727927	6434527	2/DP1239728	Tallara, 117 Tucklan Road, Tallawang 2852
R063	723776	6434835	18/DP253275	99 Suzanne Road, Tallawang 2852
R064	741954	6434922	58/DP750761	Rosevale, 463 Merotherie Road, Merotherie 2852
R065	727353	6435018	98/DP750751	7 Corishs Lane, Tallawang 2852
R066	723808	6435047	17/DP253275	The Ridges, 111 Suzanne Road, Tallawang 2852
R067	747607	6435232	3/DP502961	Rocklmond, 1303 Blue Springs Road, Cope 2852
R068	724798	6435472	12/DP253275	158 Suzanne Road, Tallawang 2852
R069	742436	6435580	1/DP1083810	677 Merotherie Road, Merotherie 2852
R070	724475	6435698	13/DP253275	157 Suzanne Road, Tallawang 2852
R071	729507	6435706	2/DP861634	Tallawang, 2282 Castlereagh Highway, Tallawang 2852
R072	749736	6435812	6/DP580295	234 Wonga Roo Road, Bungaba 2852
R073	749554	6435888	5/DP580295	212 Wonga Roo Road, Bungaba 2852
R074	723799	6435931	14/DP253275	155 Suzanne Road, Tallawang 2852
R075	749411	6435972	23/DP580576	198 Wonga Roo Road, Bungaba 2852
R076	729618	6436136	1/DP1201798	Tooravale, 2330 Castlereagh Highway, Tallawang 2852
R077	748873	6436163	20/DP580577	147 Wonga Roo Road, Bungaba 2852
R078	738373	6436233	7/DP750767	Burringbah, 1921 Barneys Reef Road, Barneys Reef 2852
R079	738643	6436250	2/DP581140	Glenbah, 1920 Barneys Reef Road, Merotherie 2852
R080	748681	6436272	19/DP580577	Tintagel, 137 Wonga Roo Road, Bungaba 2852
R081	750038	6436507	3/DP580294	287 Wonga Roo Road, Bungaba 2852

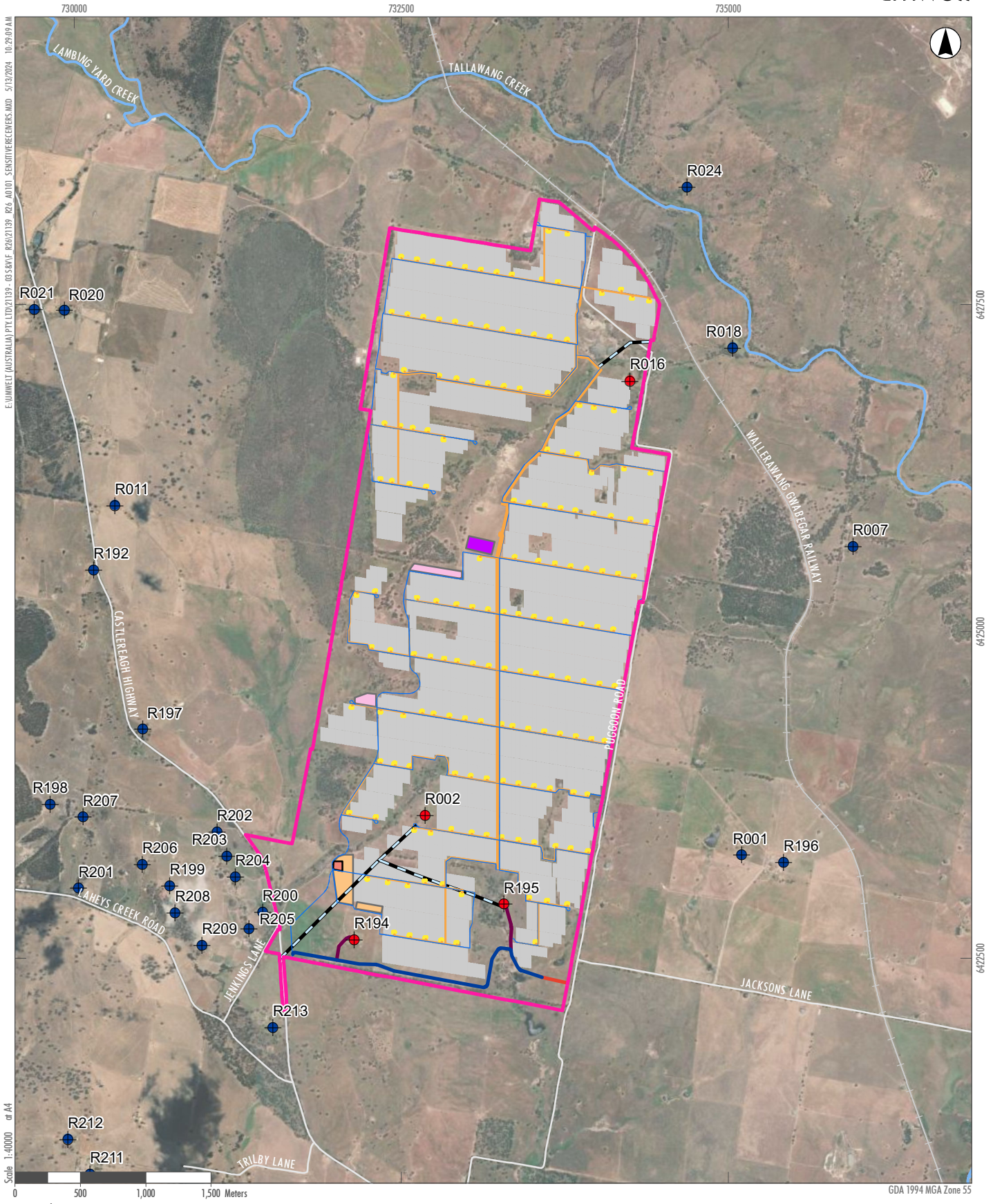
RecID ¹	Easting	Northing	Lot/plan	Address
R082	748271	6436626	17/DP582178	57 Wonga Roo Road, Bungaba 2852
R083	737809	6436663	92/DP39787	1995 Barneys Reef Road, Barneys Reef 2852
R084	748003	6436683	16/DP582178	31 Wonga Roo Road, Bungaba 2852
R085	750536	6436692	67/DP750742	341 Wonga Roo Road, Bungaba 2852
R086	742809	6436739	46/DP750761	677 Merotherie Road, Merotherie 2852
R087	751013	6436894	59/DP750742	Fydlyn, 394 Wonga Roo Road, Bungaba 2852
R088	748708	6436990	18/DP582178	101 Wonga Roo Road, Bungaba 2852
R089	726157	6436996	73/DP750764	Spire View, 145 Spir Road, Tallawang 2852
R090	748149	6437439	13/DP582179	1572 Blue Springs Road, Bungaba 2852
R091	748180	6437538	12/DP582179	1588 Blue Springs Road, Bungaba 2852
R092	751072	6437797	79/DP750742	449 Wonga Roo Road, Bungaba 2852
R093	729469	6437826	7/DP1088464	2493 Castlereagh Highway, Tallawang 2852
R094	748202	6437908	11/DP581164	1635 Blue Springs Road, Bungaba 2852
R095	748696	6438109	9/DP581164	Glen Ewan, 1656 Blue Springs Road, Bungaba 2852
R096	748382	6438291	9/DP581164	Glen Ewan, 1656 Blue Springs Road, Bungaba 2852
R097	727239	6438505	121/DP754334	1776 Tucklan Road, Dunedoo 2844
R098	729868	6438566	5/DP1088464	2584 Castlereagh Highway, Tallawang 2852
R099	748812	6438635	8/DP249415	Braemore, 1678 Blue Springs Road, Bungaba 2852
R100	729820	6438757	4/DP1088464	Iview, 2610 Castlereagh Highway, Tallawang 2852
R101	727715	6438780	29/DP750764	1744 Tucklan Road, Tallawang 2852
R102	747915	6438808	7/DP249415	1727 Blue Springs Road, Bungaba 2852
R103	748617	6438827	6/DP249415	Birkalla, 1730 Blue Springs Road, Bungaba 2852
R104	748497	6439327	4/DP249415	1772 Blue Springs Road, Bungaba 2852
R105	747661	6439337	10/DP248170	1743 Blue Springs Road, Bungaba 2852
R106	744931	6439575	39/DP750761	Oakvale, 82 Birkalla Road, Merotherie 2852
R107	748444	6439591	3/DP249415	1802 Blue Springs Road, Bungaba 2852
R108	724069	6439656	60/DP754334	Laheys Creek Road, Dunedoo 2844
R109	748328	6439782	73/DP750742	Lazy H, 1811 Blue Springs Road, Bungaba 2852
R110	745508	6439792	19/DP750742	110 Coppers Lane, Bungaba 2852
R111	724694	6439865	2/DP530869	Warwick Farm, 165 Laheys Creek Road, Dunedoo 2844
R112	744044	6439931	2/DP854876	Laurellen, 135 Birkalla Road, Merotherie 2852
R113	729138	6440094	1/DP1101501	700 Tucklan Road, Birriwa 2844
R114	749735	6440216	81/DP750742	1940 Blue Springs Road, Bungaba 2852
R115	731267	6440390	1/DP1088464	Black Hill, 2832 Castlereagh Highway, Birriwa 2844
R116	728786	6440815	2/DP1042117	Green Hills, 916 Tucklan Road, Birriwa 2844
R117	740309	6441017	34/DP750755	908 Birriwa Bus Route, Merotherie 2852
R118	727051	6441366	42/DP754334	Mimosa, 1488 Tucklan Road, Dunedoo 2844
R119	725978	6441411	B/DP383061	Girraween, 2018 Avonside Road, Dunedoo 2844
R120	737615	6441427	2/DP601252	591b Birriwa Bus Route South, Birriwa 2844
R121	735108	6441894	37/DP750755	Mongarlowe, 344 Birriwa Bus Route, Birriwa 2844
R122	750157	6442033	1/DP590275	Blairmount, 944 Birkalla Road, Bungaba 2852

RecID ¹	Easting	Northing	Lot/plan	Address
R123	751070	6442039	1/DP750742	Blairmount, 2178 Blue Springs Road, Bungaba 2852
R124	741745	6442068	1/DP854876	Round Camp, 1085 Birriwa Bus Route, Merotherie 2852
R125	731850	6442100	3/DP1067219	Col-Dor, 2988 Castlereagh Highway, Birriwa 2844
R126	747981	6442350	1/DP523527	Birkalla, 675 Birkalla Road, Bungaba 2852
R127	747822	6442476	1/DP900600	Birkalla, 675 Birkalla Road, Bungaba 2852
R128	748801	6442615	11/DP750742	782 Birkalla Road, Bungaba 2852
R129	727194	6442802	38/DP754334	Hillside, 2219 Avonside Road, Dunedoo 2844
R130	722585	6442859	1/DP388215	1602 Avonside Road, Dunedoo 2844
R131	739018	6443028	40/DP750755	Roseleigh, 737 Birriwa Bus Route, Birriwa 2844
R132	740562	6443034	81/DP750755	678 Birriwa Bus Route North, Merotherie 2852
R133	719334	6443106	22/DP754289	1323 Laheys Creek Road, Dunedoo
R134	731877	6443172	69/DP750764	Oregon, 3085 Castlereagh Highway, Birriwa 2844
R135	732545	6443215	7001/DP93500	3112 Castlereagh Highway, Birriwa 2844
R136	735422	6443234	45/DP750755	217 Birriwa Bus Route, Birriwa 2844
R137	727682	6443286	15/DP754334	1271 Tucklan Road, Dunedoo 2844
R138	732649	6443401	2/DP7248	3142 Castlereagh Highway, Birriwa 2844
R139	732663	6443426	4/DP7248	3148 Castlereagh Highway, Birriwa 2844
R140	732681	6443453	5/DP7248	3150 Castlereagh Highway, Birriwa 2844
R141	732711	6443485	7/DP7248	3180 Castlereagh Highway, Birriwa 2844
R142	733369	6443537	68/DP750755	50 Birriwa Bus Route, Birriwa 2844
R143	732760	6443551	11/DP7248	3162 Castlereagh Highway, Birriwa 2844
R144	732651	6443585	3/DP337458	3151 Castlereagh Highway, Birriwa 2844
R145	732823	6443619	3/DP7248	3172 Castlereagh Highway, Birriwa 2844
R146	732871	6443693	7/DP7248	3180 Castlereagh Highway, Birriwa 2844
R147	732814	6443761	127/DP750764	Old School Residence, 3183 Castlereagh Highway, Birriwa 2844
R148	720805	6443864	1/DP1009802	Yurunga, 1360 Avonside Road, Dunedoo 2844
R149	721682	6443935	74/DP754334	1439 Avonside Road, Dunedoo 2844
R150	729497	6444044	53/DP750764	The Valley, 380 Birriwa Road, Birriwa 2844
R151	741187	6444130	9/DP750755	951 Birriwa Bus Route, Merotherie 2852
R152	736832	6444161	2/DP1004819	406 Birriwa Bus Route, Birriwa 2844
R153	724845	6444535	2/DP1111266	1058 Tucklan Road, Dunedoo 2844
R154	736223	6444614	1/DP1004819	Kilara, 356 Birriwa Bus Route, Birriwa 2844
R155	739771	6444712	74/DP750755	678 Birriwa Bus Route, Merotherie 2852
R156	728865	6444874	48/DP750764	Belinda Vale, 59 Park View Road, Birriwa 2844
R157	720582	6444960	8/DP754334	Avonside Road, Dunedoo 2844
R158	733622	6445092	88/DP750764	Durrie, 3357 Castlereagh Highway, Birriwa 2844
R159	735405	6445436	83/DP750755	Durrie, 244 Birriwa Bus Route, Birriwa 2844
R160	739298	6445477	73/DP750755	631 Birriwa Bus Route, Birriwa 2844
R161	733024	6445516	47/DP750774	3189 Castlereagh Highway, Dunedoo 2844
R162	722866	6445522	1/DP355822	Bellerive, 990 Avonside Road, Dunedoo 2844
R163	735590	6445547	5/DP750755	Ekaby Cottage, 261 Birriwa Bus Route, Birriwa 2844

RecID ¹	Easting	Northing	Lot/plan	Address
R164	743040	6445670	5/DP1083440	1505 Merotherie Road, Merotherie 2852
R165	746827	6445854	1/DP1206032	13374 Golden Highway, Leadville 2844
R166	720012	6446160	681/DP580855	1190 Avonside Road, Cobbora 2844
R167	738318	6446188	4/DP750755	261 Birriwa Bus Route North, Birriwa 2844
R168	731113	6446208	50/DP750774	Birriwa Road, Dunedoo 2844
R169	730541	6446229	85/DP750764	380 Birriwa Road, Birriwa 2844
R170	731193	6446384	50/DP750774	Birriwa Road, Dunedoo 2844
R171	719898	6446398	681/DP580855	1190 Avonside Road, Cobbora 2844
R172	727505	6447820	1/DP1016050	Werona, 809 Tucklan Road, Dunedoo 2844
R173	717593	6448931	17/DP754301	1129 Golden Highway, Cobbora 2844
R174	718753	6449415	55/DP754291	1127 Golden Highway, Dunedoo 2844
R175	726919	6449974	24/DP754291	570 Tucklan Road, Dunedoo 2844
R176	722759	6450102	17/DP754291	Redbank Park, 568 Avonside Road, Dunedoo 2844
R177	725541	6451643	16/DP754291	Kurrajong Park, 398 Tucklan Road, Dunedoo 2844
R178	722037	6452020	35/DP754291	168 Minemoorang Road, Dunedoo 2844
R179	722478	6452532	1/DP1188433	Bonniedoon, 91 Minemoorang Road, Dunedoo 2844
R180	724106	6452992	21/DP882681	195 Avonside Road, Dunedoo 2844
R181	724113	6453155	20/DP882681	Millawah, 162 Avonside Road, Dunedoo 2844
R182	724042	6453242	20/DP882681	Millawah, 162 Avonside Road, Dunedoo 2844
R183	726703	6454008	161/DP754291	Mogimil Street, Dunedoo 2844
R184	726271	6454112	162/DP754291	Mogimil Street, Dunedoo 2844
R185	725938	6454123	2/DP214250	Mogimil Street, Dunedoo 2844
R186	726208	6454123	163/DP754291	Mogimil Street, Dunedoo 2844
R187	725790	6454154	1/DP214250	Mogimil Street, Dunedoo 2844
R188	725726	6454170	165/DP754291	Mogimil Street, Dunedoo 2844
R189	724737	6454414	169/DP754291	13 Avonside Road, Dunedoo 2844
R190	724652	6454557	171/DP754291	Arizona, 22 Avonside Road, Dunedoo 2844
R191	737523	6441673	1/DP601252	Mayfield Cottage, 591a Birriwa Bus Route, Birriwa 2844
R192	730145	6425470	7/DP1043594	Gaucha Ranch, 1223 Castlereagh Highway, Beryl 2852
R194	732142	6422641	112/DP750762	900 Castlereagh Highway, Beryl 2852
R195	733284	6422912	114/DP750762	Glengarry, 343 Puggoon Road, Beryl 2852
R196	735434	6422789	4/DP1078822	340 Jacksons Lane, Beryl 2852
R197	730522	6424253	131/DP750762	900 Castlereagh Highway, Beryl 2852
R198	729814	6423678	4/DP1043594	320 Laheys Creek Road, Beryl 2852
R199	730728	6423051	7/DP255140	Jarah, 172 Laheys Creek Road, Beryl 2852
R200	731440	6422851	2/DP255140	937 Castlereagh Highway, Beryl 2852
R201	730032	6423036	10/DP255140	234 Laheys Creek Road, Beryl 2852
R202	731093	6423464	5/DP255140	Bobbie, 975 Castlereagh Highway, Beryl 2852
R203	731165	6423282	4/DP255140	Simmo's Shack, 955 Castlereagh Highway, Beryl 2852
R204	731230	6423122	3/DP255140	Mundi-Mundi, 937 Castlereagh Highway, Beryl 2852
R205	731334	6422726	1/DP255140	22 Jenkins Lane, Beryl 2852

RecID ¹	Easting	Northing	Lot/plan	Address
R206	730521	6423219	8/DP255140	186 Laheys Creek Road, Beryl 2852
R207	730065	6423581	11/DP255140	Rozelle, 242 Laheys Creek Road, Beryl 2852
R208	730769	6422847	6/DP255140	162 Laheys Creek Road, Beryl 2852
R209	730977	6422599	145/DP750762	128 Laheys Creek Road, Beryl 2852
R210	734857	6420346	64/DP750762	146 Puggoon Road, Beryl 2852
R211	730120	6420846	70/DP750762	Trilby, 187 Trilby Lane, Beryl 2852
R212	729949	6421114	143/DP750762	Glenleigh, 190 Trilby Lane, Beryl 2852
R213	731518	6421970	1/DP1012925	Triangle Hill, 727 Castlereagh Highway, Beryl 2852
R214	732655	6443475	1/DP337458	3151 Castlereagh Highway, Birriwa 2844
R215	742985	6440263	2/DP854876	Laurellen, 135 Birkalla Road, Merotherie 2852
R216	742976	6440299	2/DP854876	Laurellen, 135 Birkalla Road, Merotherie 2852
R217	742960	6440354	2/DP854876	Laurellen, 135 Birkalla Road, Merotherie 2852
R218	742928	6440354	2/DP854876	Laurellen, 135 Birkalla Road, Merotherie 2852
R219	742898	6440368	2/DP854876	Laurellen, 135 Birkalla Road, Merotherie 2852

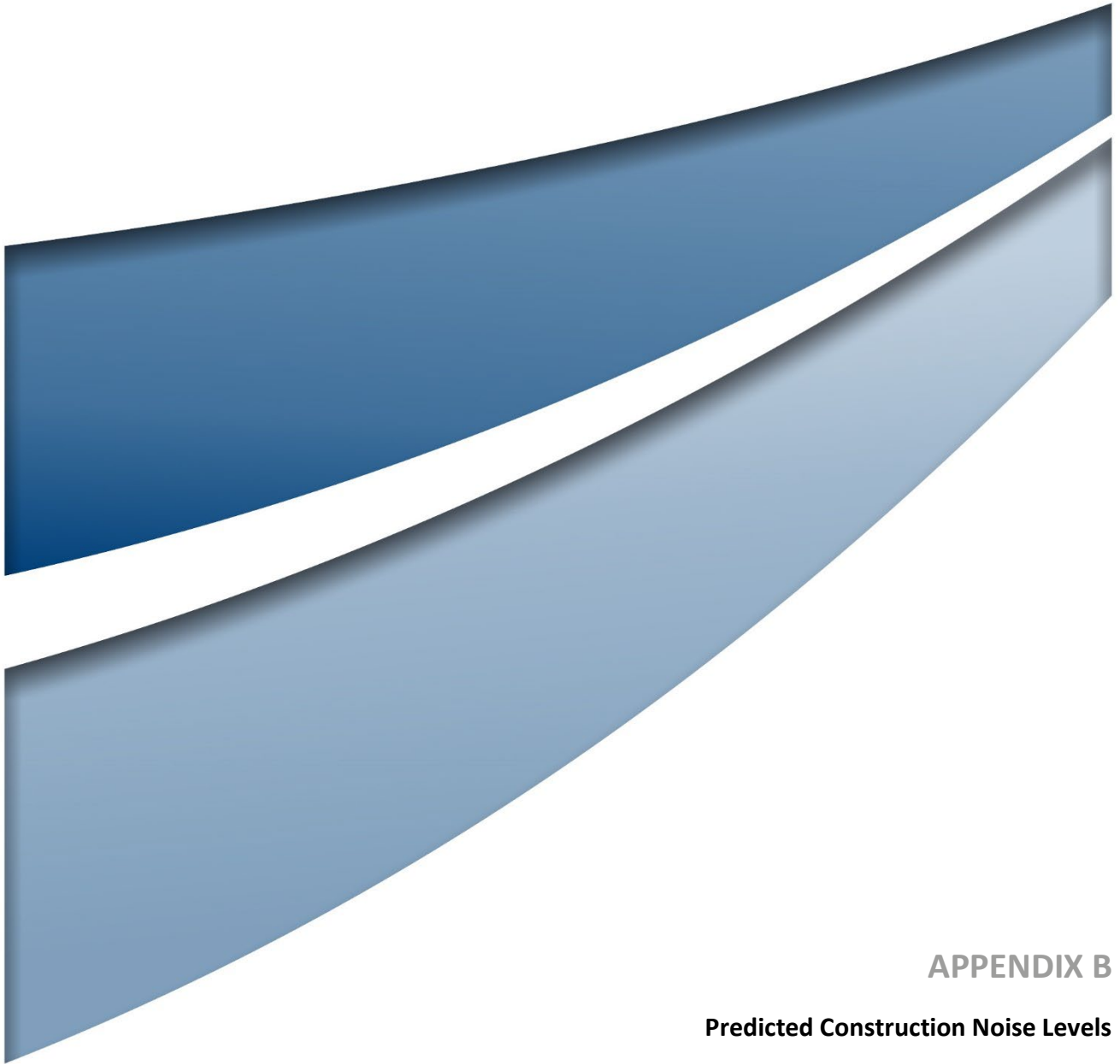
Notes: ¹ Receivers R002, R016, R194 and R195 are involved in the project and therefore are not considered sensitive.



- Legend**
- Tallawang Solar Farm Project Area
 - Non-associated Dwelling
 - Involved Landholder Dwelling
 - Road
 - Railway
 - Watercourse
 - Construction Compound
 - Temporary Laydown
 - Proposed O&M Facility
 - Proposed Substation
 - Solar Panels
 - Proposed MV Reticulation
 - BESS and DC-DC Coupled PCS with Hardstanding
 - Proposed Access
 - Temporary Workers Accommodation (TWA) Access
 - Proposed Post Construction Landowner Access Track
 - Proposed Landowner Access Track
 - 22kV Distribution Line (to be rerouted where necessary)

FIGURE A1.1

Sensitive Receivers Surrounding the Indicative Solar Farm Project Area



APPENDIX B

Predicted Construction Noise Levels

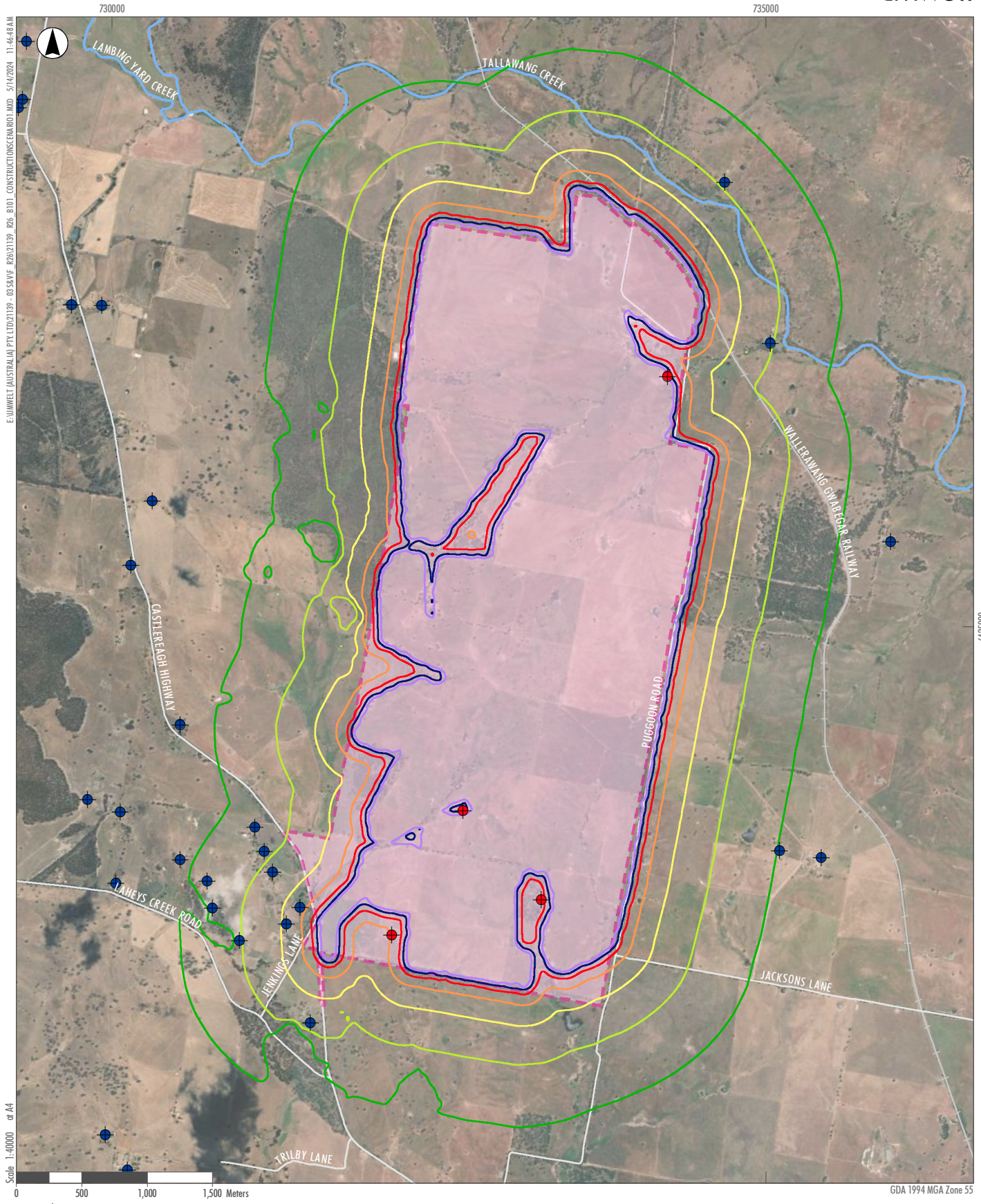
Table B.1 Predicted Daytime Construction Noise Levels (where >20dB(A)), LAeq(15 min) dB(A)

RecID ¹	Easting	Northing	Lot/plan	Construction Scenario							
				Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6	Sc.7	Sc.8
R001	735105	6423288	Lot4/DP1078822	45	46	41	37	38	37	39	25
R002 (involved)	732684	6423592	Lot113/DP750762	68	67	63	58	59	59	45	34
R003	739792	6424217	Lot112/DP845960	20	21	<20	<20	<20	<20	<20	<20
R007	735956	6425650	Lot92/DP750762	42	43	38	34	35	34	27	<20
R011	730309	6425962	Lot1/DP815009	36	37	32	28	29	28	<20	<20
R014	737556	6426750	Lot41/DP750765	32	33	28	24	25	24	<20	<20
R016 (involved)	734249	6426916	Lot1/DP332044	76	78	73	65	66	69	25	<20
R018	735034	6427170	Lot194/DP750762	50	51	46	42	43	42	23	<20
R019	738063	6427187	Lot110/DP750765	29	30	25	21	22	21	<20	<20
R020	729923	6427457	Lot207/DP750762	36	37	32	28	29	28	23	<20
R021	729693	6427462	Lot53/DP750762	34	35	30	26	27	26	22	<20
R023	727020	6428335	Lot15/DP248183	20	21	<20	<20	<20	<20	<20	<20
R024	734688	6428398	Lot179/DP44925	49	50	45	41	42	41	<20	<20
R025	728671	6428685	Lot109/DP750762	28	29	24	20	21	20	<20	<20
R027	729285	6428970	Lot4/DP248183	31	32	27	23	24	23	<20	<20
R028	727804	6428981	Lot16/DP248183	23	24	<20	<20	<20	<20	<20	<20
R029	729317	6429031	Lot3/DP248183	31	32	27	23	24	23	<20	<20
R030	727899	6429118	Lot9/DP248183	24	25	20	<20	<20	<20	<20	<20
R031	727602	6429161	Lot10/DP248183	22	23	<20	<20	<20	<20	<20	<20
R032	728608	6429214	Lot6/DP248183	27	28	23	<20	20	<20	<20	<20
R033	727634	6429309	Lot110/DP750751	22	23	<20	<20	<20	<20	<20	<20
R034	729349	6429478	Lot1/DP248183	30	31	26	22	23	22	<20	<20
R035	739303	6429755	Lot1/DP840433	21	22	<20	<20	<20	<20	<20	<20
R038	729420	6430361	Lot71/DP750751	28	29	24	20	21	20	<20	<20

RecID ¹	Easting	Northing	Lot/plan	Construction Scenario							
				Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6	Sc.7	Sc.8
R039	738773	6430490	Lot5/DP750767	21	22	<20	<20	<20	<20	<20	<20
R040	731877	6430541	Lot11/DP750767	35	36	31	27	28	27	<20	<20
R045	729387	6431653	Lot171/DP750751	23	24	<20	<20	<20	<20	<20	<20
R051	732504	6433152	Lot2/DP1106998	22	23	<20	<20	<20	<20	<20	<20
R192	730145	6425470	Lot7/DP1043594	35	36	31	27	28	27	32	<20
R194 (involved)	732142	6422641	Lot112/DP750762	60	61	56	52	53	52	61	43
R195 (involved)	733284	6422912	Lot114/DP750762	63	64	59	55	56	55	55	38
R196	735434	6422789	Lot4/DP1078822	43	44	39	35	36	35	39	24
R197	730522	6424253	Lot131/DP750762	43	44	39	35	36	35	40	25
R198	729814	6423678	Lot4/DP1043594	38	39	34	30	31	30	39	25
R199	730728	6423051	Lot7/DP255140	47	48	43	39	40	39	47	32
R200	731440	6422851	Lot2/DP255140	58	59	54	51	51	50	61	40
R201	730032	6423036	Lot10/DP255140	41	42	37	33	34	33	42	26
R035	739303	6429755	Lot1/DP840433	47	48	43	39	40	39	48	33
R038	729420	6430361	Lot71/DP750751	49	50	45	41	42	41	50	34
R039	738773	6430490	Lot5/DP750767	51	52	47	43	44	43	52	36
R040	731877	6430541	Lot11/DP750767	56	57	52	48	49	48	59	39
R045	729387	6431653	Lot171/DP750751	44	45	40	36	37	36	45	30
R051	732504	6433152	Lot2/DP1106998	40	41	36	32	33	32	40	26
R192	730145	6425470	Lot7/DP1043594	47	48	43	39	40	39	48	33
R193	732106	6421009	Lot102/DP1203462	50	51	46	42	43	42	51	35
R194	732142	6422641	Lot112/DP750762	35	36	31	27	28	27	36	22
R195	733284	6422912	Lot114/DP750762	37	38	33	29	30	29	39	23
R196	735434	6422789	Lot4/DP1078822	37	38	33	29	30	29	39	23
R197	730522	6424253	Lot131/DP750762	51	52	47	43	44	43	61	36
R198	729814	6423678	Lot4/DP1043594	45	46	41	37	38	37	39	25

RecID ¹	Easting	Northing	Lot/plan	Construction Scenario							
				Sc.1	Sc.2	Sc.3	Sc.4	Sc.5	Sc.6	Sc.7	Sc.8
R199	730728	6423051	Lot7/DP255140	68	67	63	58	59	59	45	34
R200	731440	6422851	Lot2/DP255140	20	21	<20	<20	<20	<20	<20	<20
R201	730032	6423036	Lot10/DP255140	42	43	38	34	35	34	27	<20
R202	731093	6423464	Lot5/DP255140	36	37	32	28	29	28	<20	<20
R203	731165	6423282	Lot4/DP255140	37	38	33	29	30	29	26	<20
R204	731230	6423122	Lot3/DP255140	32	33	28	24	25	24	<20	<20
R205	731334	6422726	Lot1/DP255140	76	78	73	65	66	69	25	<20
R206	730521	6423219	Lot8/DP255140	50	51	46	42	43	42	23	<20
R207	730065	6423581	Lot11/DP255140	29	30	25	21	22	21	<20	<20
R208	730769	6422847	Lot6/DP255140	36	37	32	28	29	28	23	<20
R209	730977	6422599	Lot145/DP750762	34	35	30	26	27	26	22	<20
R210	734857	6420346	Lot64/DP750762	20	21	<20	<20	<20	<20	<20	<20
R211	730120	6420846	Lot70/DP750762	49	50	45	41	42	41	<20	<20
R212	729949	6421114	Lot143/DP750762	28	29	24	20	21	20	<20	<20
R213	731518	6421970	Lot1/DP1012925	31	32	27	23	24	23	<20	<20

Notes: ¹ Receivers R002, R016, R194 and R195 are involved in the project and therefore are not considered sensitive.



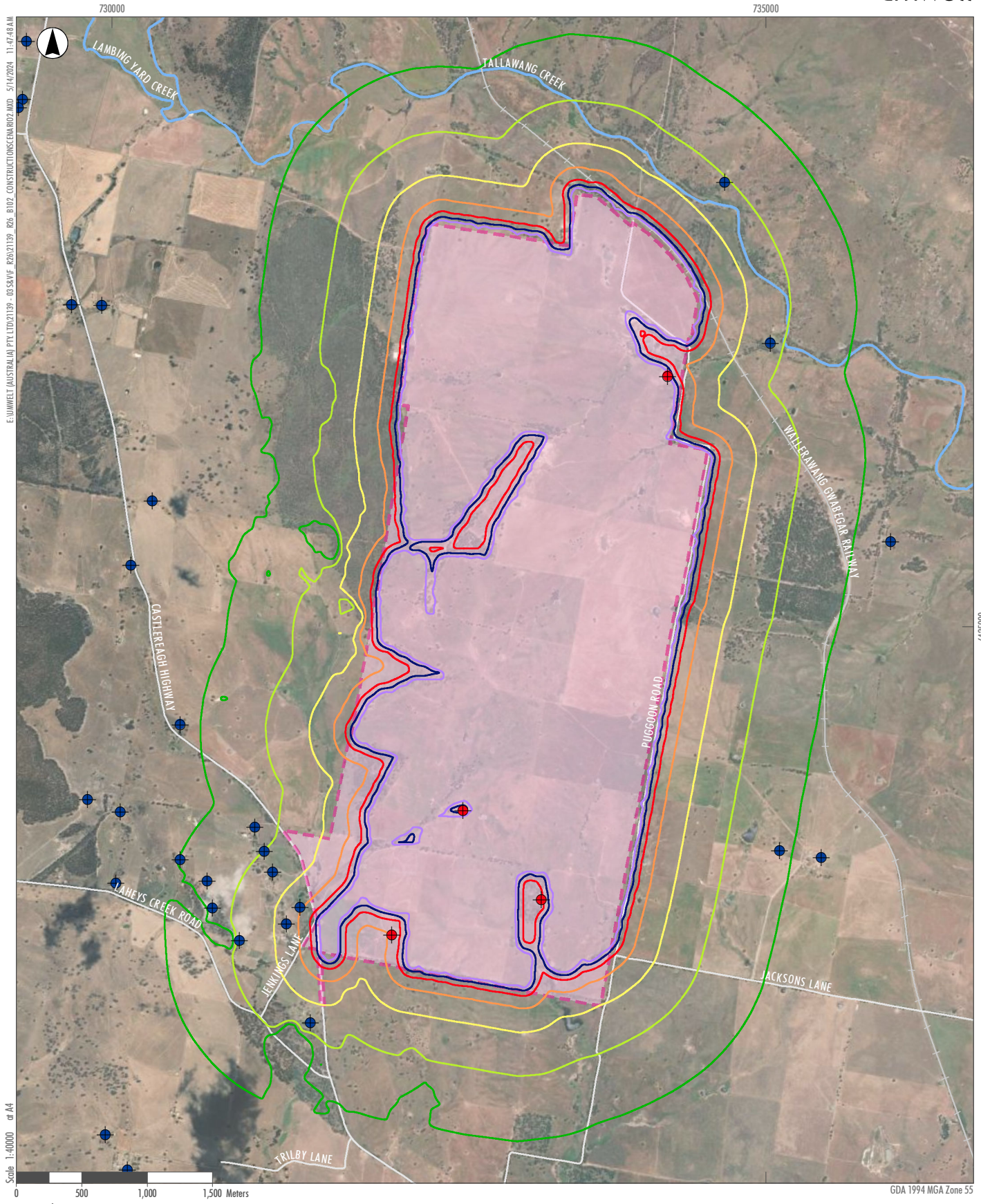
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 Scale 1:40000 at A4

6425000

GDA 1994 MGA Zone 55

- Legend**
- Tallowang Solar Farm Project Area
 - Non-associated Dwelling
 - Involved Landholder Dwelling
 - Road
 - Railway
 - Watercourse
- Predicted Noise Levels**
- Noise Contour Level 45 dB(A)
 - Noise Contour Level 50 dB(A)
 - Noise Contour Level 55 dB(A)
 - Noise Contour Level 60 dB(A)
 - Noise Contour Level 65 dB(A)
 - Noise Contour Level 70 dB(A)
 - Noise Contour Level 75 dB(A)

FIGURE B1.1
Construction Scenario 1
Predicted Noise Levels Under Enhanced
Meteorological Conditions, LAeq(15 min) dB(A)



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Scale 1:40000 or A4

6425000

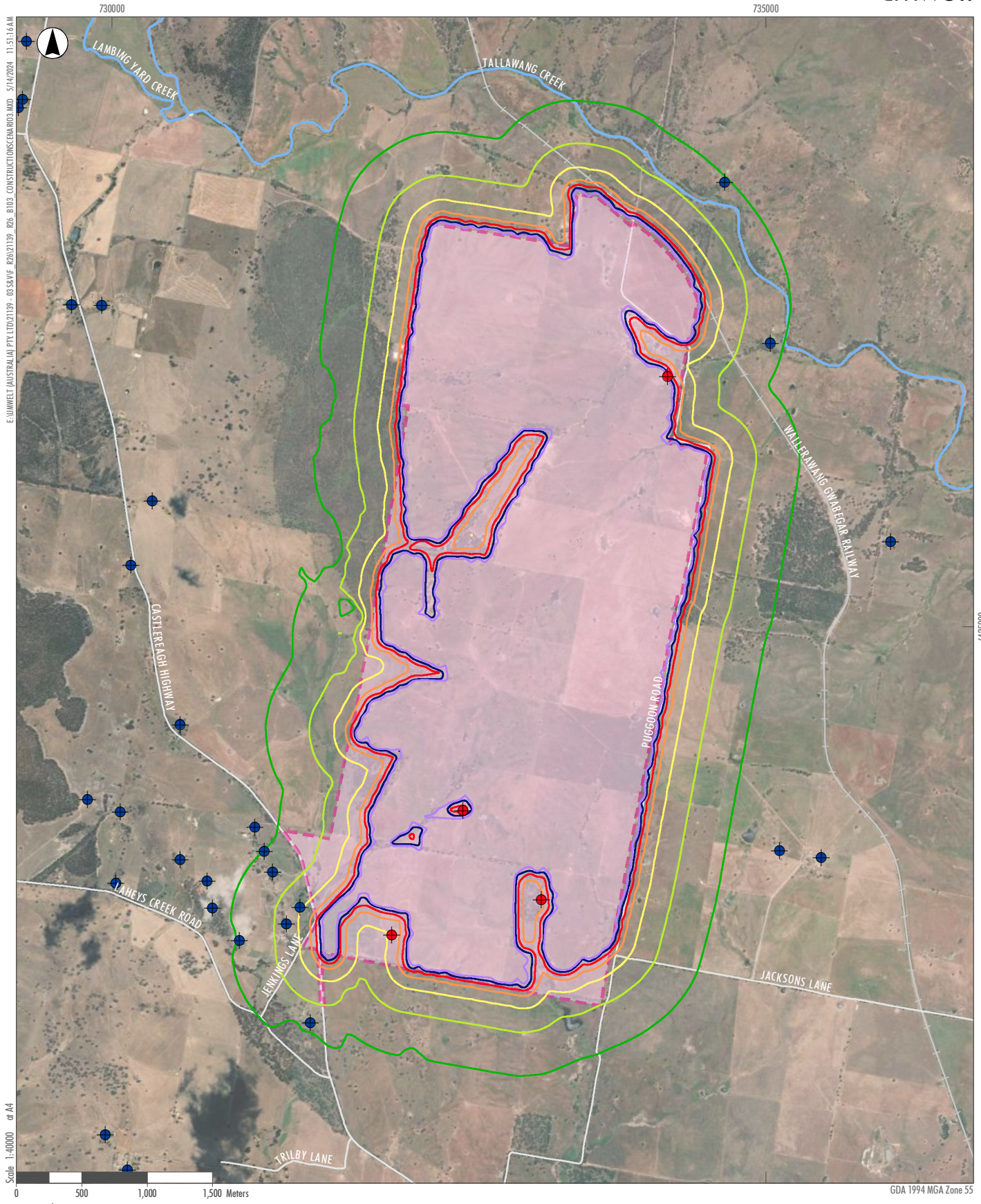
GDA 1994 MGA Zone 55

Legend

- | | |
|-----------------------------------|-------------------------------|
| Tallowang Solar Farm Project Area | Predicted Noise Levels |
| Non-associated Dwelling | Noise Contour Level 45 dB(A) |
| Involved Landholder Dwelling | Noise Contour Level 50 dB(A) |
| Road | Noise Contour Level 55 dB(A) |
| Railway | Noise Contour Level 60 dB(A) |
| Watercourse | Noise Contour Level 65 dB(A) |
| | Noise Contour Level 70 dB(A) |
| | Noise Contour Level 75 dB(A) |

FIGURE B1.2

Construction Scenario 2
Predicted Noise Levels Under Enhanced
Meteorological Conditions, LAeq(15 min) dB(A)

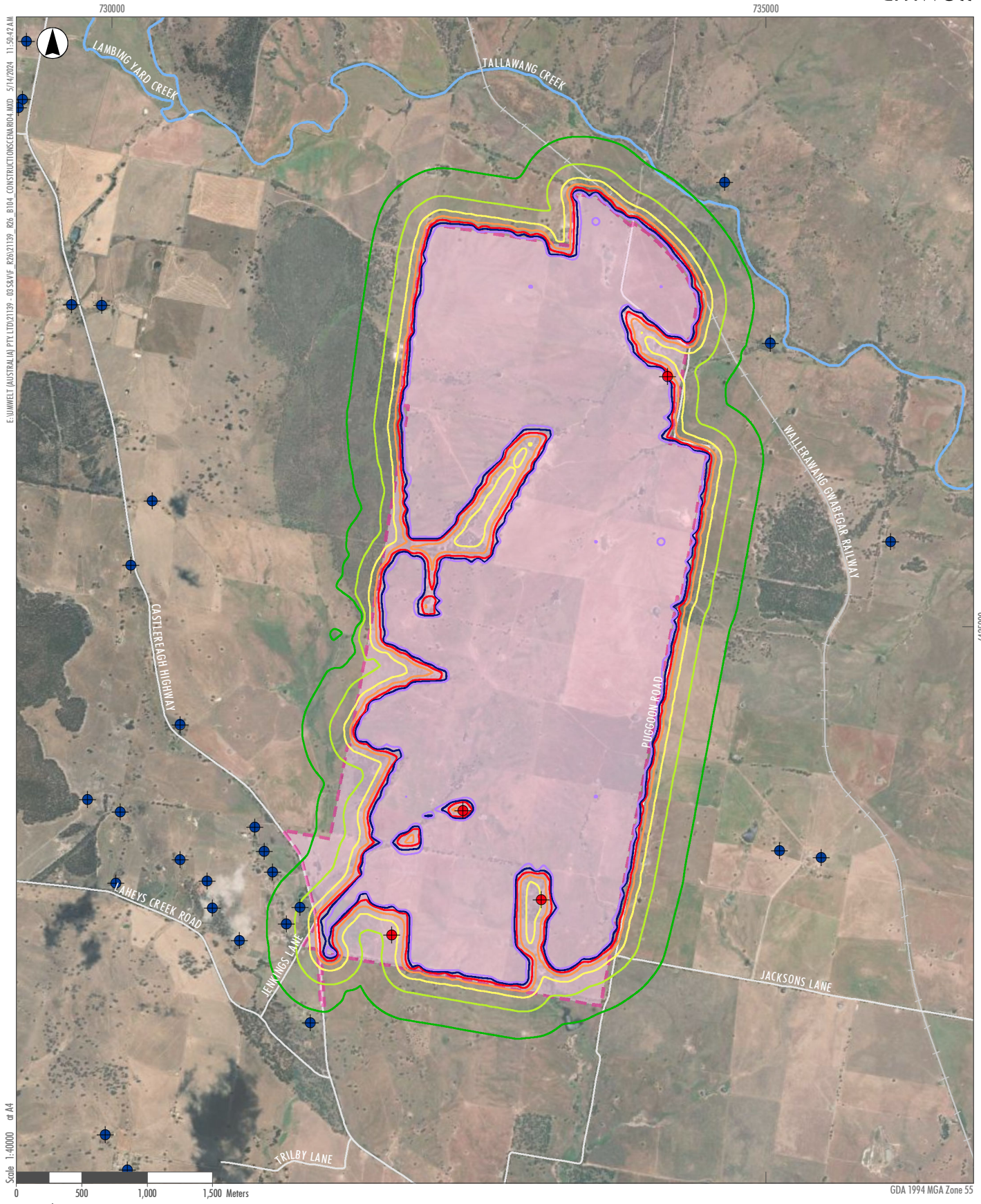


Legend

- Tallawang Solar Farm Project Area
 - Non-associated Dwelling
 - Involved Landholder Dwelling
 - Road
 - Railway
 - Watercourse
-
- Predicted Noise Levels**
- Noise Contour Level 45 dB(A)
 - Noise Contour Level 50 dB(A)
 - Noise Contour Level 55 dB(A)
 - Noise Contour Level 60 dB(A)
 - Noise Contour Level 65 dB(A)
 - Noise Contour Level 70 dB(A)
 - Noise Contour Level 75 dB(A)

FIGURE B1.3

**Construction Scenario 3
 Predicted Noise Levels Under Enhanced
 Meteorological Conditions, LAeq(15 min) dB(A)**



E:\UMWELT (AUSTRALIA) PTY LTD\21139 - 0358\VF - R26\21139 - R26 B104 CONSTRUCTIONSCENARIOS.MXD 5/14/2024 11:50:42 AM

Scale 1:40000 at A4

6425000

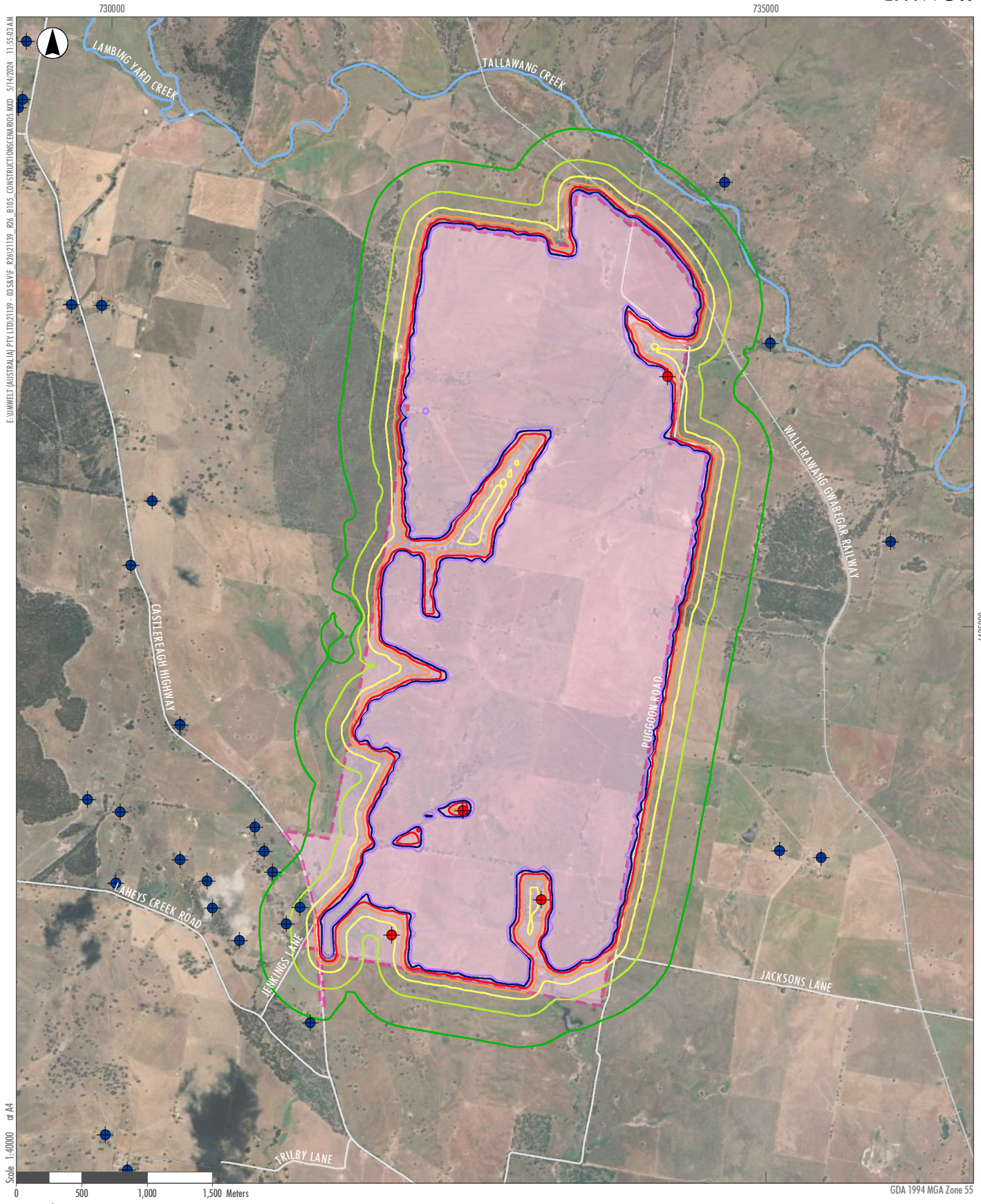
GDA 1994 MGA Zone 55

Legend

- Tallowang Solar Farm Project Area
- Non-associated Dwelling
- Involved Landholder Dwelling
- Road
- Railway
- Watercourse

- Predicted Noise Levels**
- Noise Contour Level 45 dB(A)
 - Noise Contour Level 50 dB(A)
 - Noise Contour Level 55 dB(A)
 - Noise Contour Level 60 dB(A)
 - Noise Contour Level 65 dB(A)
 - Noise Contour Level 70 dB(A)
 - Noise Contour Level 75 dB(A)

FIGURE B1.4
Construction Scenario 4
Predicted Noise Levels Under Enhanced
Meteorological Conditions, LAeq(15 min) dB(A)

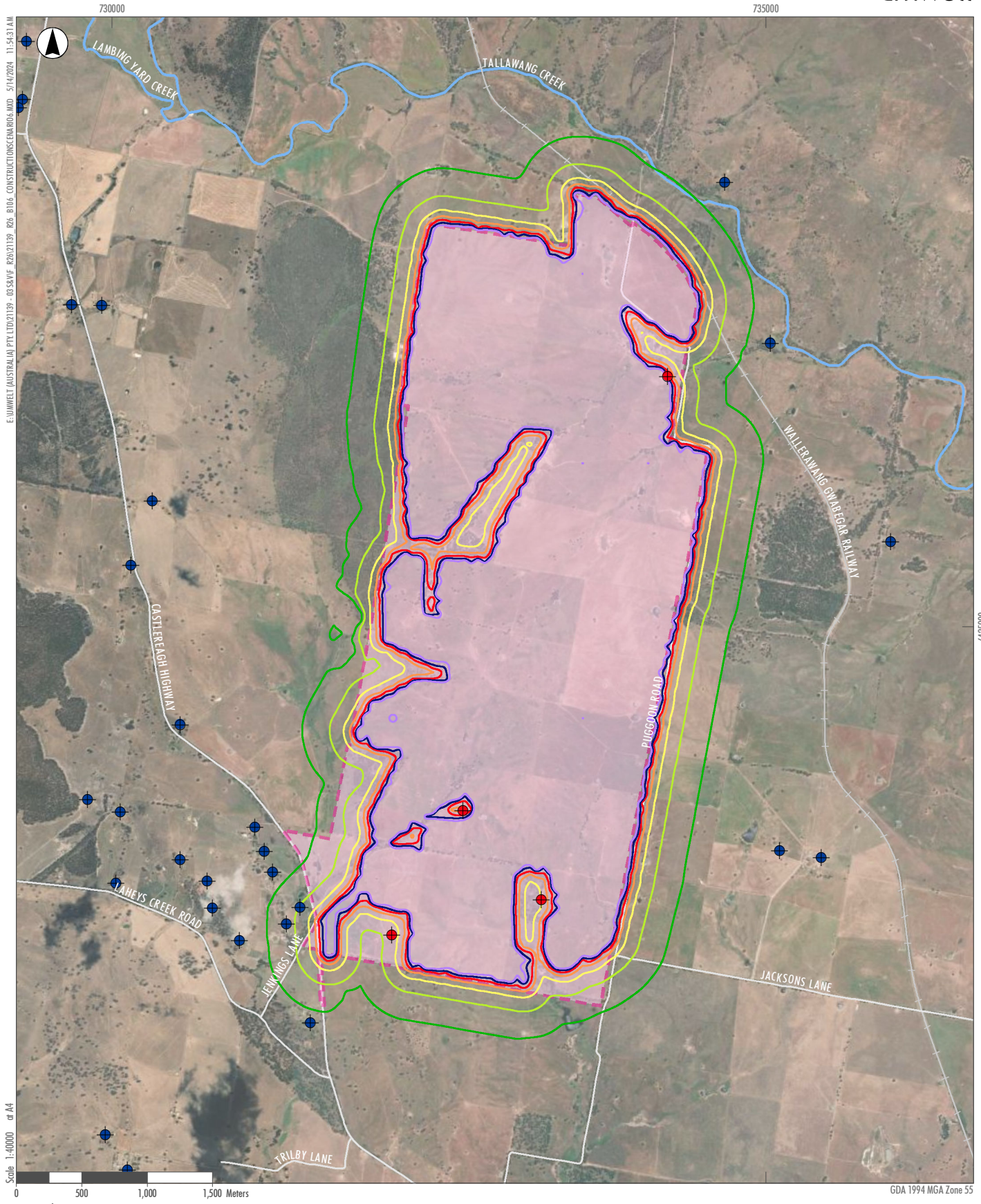


E:\UMWELT (AUSTRALIA) PTY LTD\21139 - 0358\VF - R26\21139 - R26 B105 CONSTRUCTION SCENARIOS.MXD 5/14/2024 11:55:03 AM
 Scale 1:40000 at A4

Legend

- | | |
|-----------------------------------|-------------------------------|
| Tallowang Solar Farm Project Area | Predicted Noise Levels |
| Non-associated Dwelling | Noise Contour Level 45 dB(A) |
| Involved Landholder Dwelling | Noise Contour Level 50 dB(A) |
| Road | Noise Contour Level 55 dB(A) |
| Railway | Noise Contour Level 60 dB(A) |
| Watercourse | Noise Contour Level 65 dB(A) |
| | Noise Contour Level 70 dB(A) |
| | Noise Contour Level 75 dB(A) |

FIGURE B1.5
Construction Scenario 5
Predicted Noise Levels Under Enhanced
Meteorological Conditions, LAeq(15 min) dB(A)

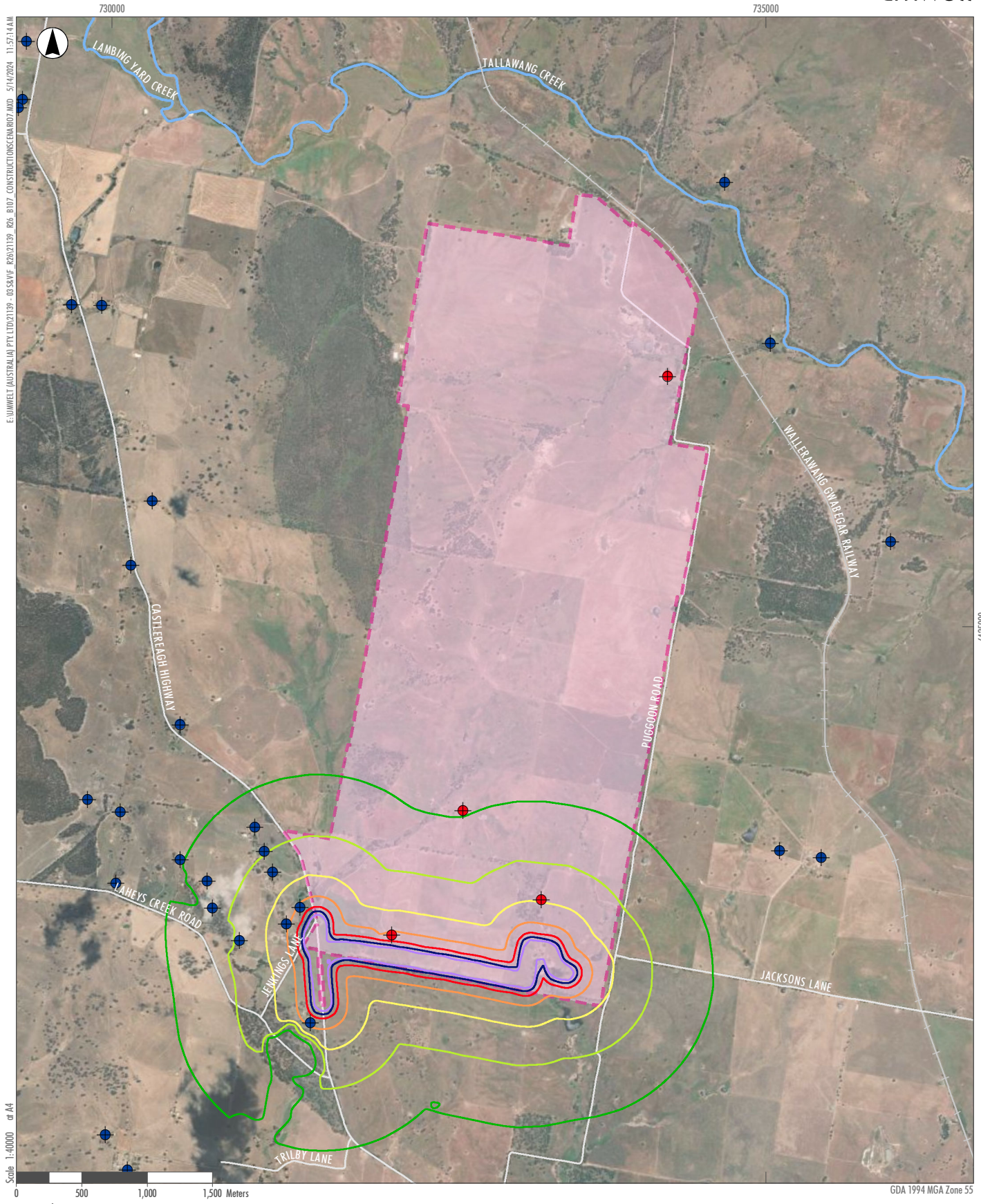


E:\UMWELT (AUSTRALIA) PTY LTD\21139 - 0358\VF - R26\21139 - R26 B106 CONSTRUCTIONSCENARIOS.MXD 5/14/2024 11:54:31 AM
 Scale 1:40000 at A4

Legend

- | | |
|-----------------------------------|-------------------------------|
| Tallowang Solar Farm Project Area | Predicted Noise Levels |
| Non-associated Dwelling | Noise Contour Level 45 dB(A) |
| Involved Landholder Dwelling | Noise Contour Level 50 dB(A) |
| Road | Noise Contour Level 55 dB(A) |
| Railway | Noise Contour Level 60 dB(A) |
| Watercourse | Noise Contour Level 65 dB(A) |
| | Noise Contour Level 70 dB(A) |
| | Noise Contour Level 75 dB(A) |

FIGURE B1.6
Construction Scenario 6
Predicted Noise Levels Under Enhanced
Meteorological Conditions, LAeq(15 min) dB(A)

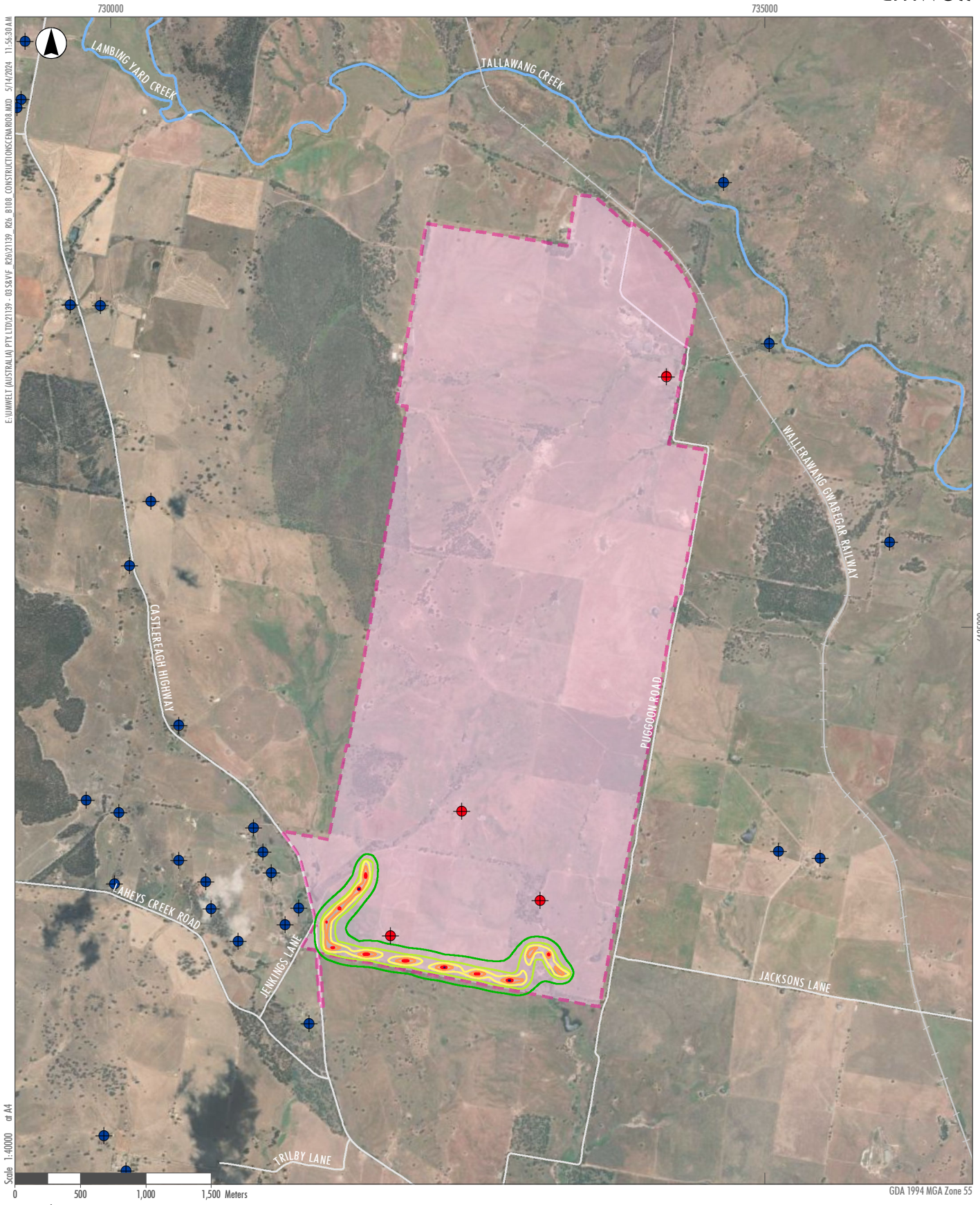


Legend

- | | |
|-----------------------------------|-------------------------------|
| Tallowang Solar Farm Project Area | Predicted Noise Levels |
| Non-associated Dwelling | Noise Contour Level 45 dB(A) |
| Involved Landholder Dwelling | Noise Contour Level 50 dB(A) |
| Road | Noise Contour Level 55 dB(A) |
| Railway | Noise Contour Level 60 dB(A) |
| Watercourse | Noise Contour Level 65 dB(A) |
| | Noise Contour Level 70 dB(A) |
| | Noise Contour Level 75 dB(A) |

FIGURE B1.7

Construction Scenario 7
Predicted Noise Levels Under Enhanced
Meteorological Conditions, LAeq(15 min) dB(A)



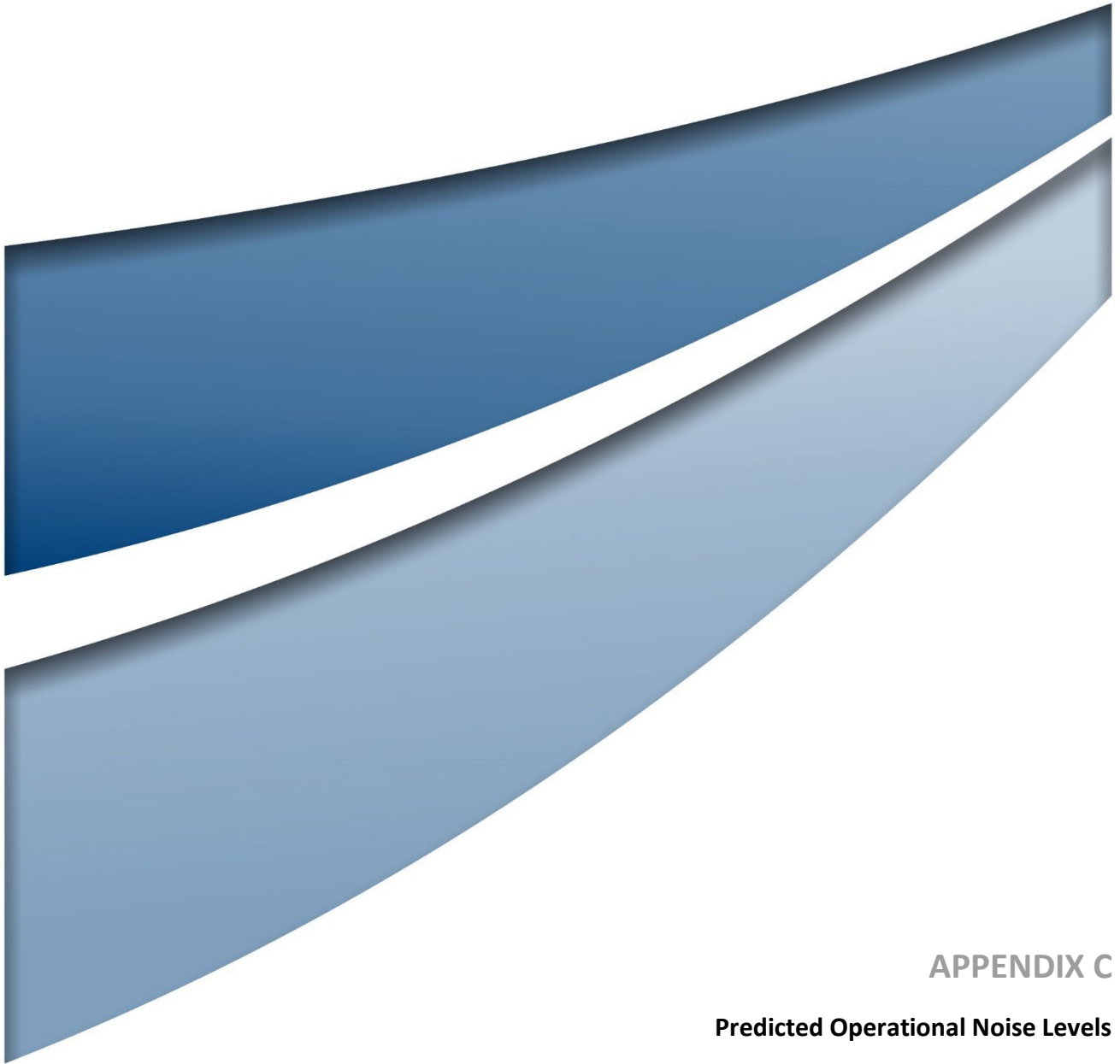
E:\UMWELT (AUSTRALIA) PTY LTD\21139 - 03.58.VF - R26\21139 - R26 B08 CONSTRUCTIONSCENARIOS.MXD 5/14/2024 11:56:30 AM
 Scale 1:40000 at A4

6425000

GDA 1994 MGA Zone 55

- Legend**
- Tallawang Solar Farm Project Area
 - Non-associated Dwelling
 - Involved Landholder Dwelling
 - Road
 - Railway
 - Watercourse
- Predicted Noise Levels**
- Noise Contour Level 45 dB(A)
 - Noise Contour Level 50 dB(A)
 - Noise Contour Level 55 dB(A)
 - Noise Contour Level 60 dB(A)
 - Noise Contour Level 65 dB(A)
 - Noise Contour Level 70 dB(A)
 - Noise Contour Level 75 dB(A)

FIGURE B1.8
Construction Scenario 8
Predicted Noise Levels Under Enhanced
Meteorological Conditions, LAeq(15 min) dB(A)



APPENDIX C

Predicted Operational Noise Levels

Table C.1 Predicted Operational Noise Levels (where >20dB(A)), LAeq(15min) dB(A)

RecID ¹	Easting	Northing	Lot/plan	Day Period		Evening and Night Period	
				Calm	Enhanced	Calm	Enhanced
R001	735105	6423288	Lot4/DP1078822	32	35	30	33
R002 (involved)	732684	6423592	Lot113/DP750762	51	52	48	50
R007	735956	6425650	Lot92/DP750762	29	32	27	30
R011	730309	6425962	Lot1/DP815009	20	22	20	20
R014	737556	6426750	Lot41/DP750765	21	23	20	21
R016 (involved)	734249	6426916	Lot1/DP332044	43	46	41	44
R018	735034	6427170	Lot194/DP750762	34	37	32	35
R019	738063	6427187	Lot110/DP750765	20	21	20	20
R020	729923	6427457	Lot207/DP750762	22	25	20	23
R021	729693	6427462	Lot53/DP750762	21	24	20	22
R024	734688	6428398	Lot179/DP44925	32	35	30	33
R027	729285	6428970	Lot4/DP248183	20	21	20	20
R029	729317	6429031	Lot3/DP248183	20	21	20	20
R040	731877	6430541	Lot11/DP750767	21	23	20	21
R192	730145	6425470	Lot7/DP1043594	20	24	20	21
R194 (involved)	732142	6422641	Lot112/DP750762	41	44	39	42
R195 (involved)	733284	6422912	Lot114/DP750762	46	48	44	46
R196	735270	6423170	Lot4/DP1078822	30	34	28	32
R197	730522	6424253	Lot131/DP750762	28	31	26	29
R198	729814	6423678	Lot4/DP1043594	24	27	22	25
R199	730728	6423051	Lot7/DP255140	28	32	26	30
R200	731440	6422851	Lot2/DP255140	33	36	31	34
R201	730032	6423036	Lot10/DP255140	24	28	22	25
R202	731093	6423464	Lot5/DP255140	31	35	29	33
R203	731165	6423282	Lot4/DP255140	32	35	30	33
R204	731230	6423122	Lot3/DP255140	32	35	30	33
R205	731334	6422726	Lot1/DP255140	31	35	30	33
R206	730521	6423219	Lot8/DP255140	27	30	25	28
R207	730065	6423581	Lot11/DP255140	25	28	23	26
R208	730769	6422847	Lot6/DP255140	28	31	26	29
R209	730977	6422599	Lot145/DP750762	29	32	27	30
R210	734857	6420346	Lot64/DP750762	21	24	20	21
R211	730120	6420846	Lot70/DP750762	20	22	20	20
R212	729949	6421114	Lot143/DP750762	20	23	20	21
R213	731518	6421970	Lot1/DP1012925	29	33	27	31

Notes: ¹ Receivers R002, R016, R194 and R195 are involved in the project and therefore are not considered sensitive.

Table C.2 Predicted One-Third Octave Band Operational Noise Levels at Sensitive Receiver R18 dB(Z)

Rec	Z-weighted One-Third Octave Band Center Frequency, Hz								
	25 Hz	50 Hz	100 Hz	200 Hz	400 Hz	800 Hz	1.6 kHz	3.15 kHz	6.3 kHz
	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
	40 Hz	80 Hz	160 Hz	315 Hz	630 Hz	1.25 kHz	2.5 kHz	5 kHz	10 kHz
R18 – Day	38	41	36	31	32	28	22	9	-20
	34	40	34	31	32	30	20	4	-26
	37	39	33	34	28	26	12	-6	-65
R18 – Evening and Night	38	36	36	30	30	26	21	7	-23
	34	36	32	32	30	28	19	3	-27
	37	38	32	27	26	25	11	-9	-72

