COUNCIL SUPPLEMENTARY ASSESSMENT REPORT

WESTERN REGIONAL PLANNING PANEL

PANEL REFERENCE & DA NUMBER	PPSWES-123 – DA170/2022
PROPOSAL	5MW Electricity Generating Works and Associated Infrastructure
ADDRESS	Lot 286 DP756894, Lot 90 and 91 DP756897 33 Blain Road, CAERLEON
APPLICANT/OWNER	Simon Jones C/-Mid-Western Regional Council Owner: Mid-Western Regional Council
DATE OF LODGEMENT	11 November 2021
APPPLICATION TYPE	Development Application
REGIONALLY SIGNIFICANT CRITERIA	Clause 3, Schedule 6 of *State Environmental Planning Policy (Planning Systems) 2021:* *Council development with a capital investment value exceeding $5,000,000.*
CIV	$6,810,900 (excluding GST)
CLAUSE 4.6 REQUESTS	Not applicable
KEY SEPP/LEP	• State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Planning Systems) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Transport and Infrastructure) 2021 • Mid Western Regional Local Environmental Plan 2012
TOTAL & UNIQUE SUBMISSIONS	One (1) submission of objection
DOCUMENTS SUBMITTED FOR CONSIDERATION (SUPPLEMENTARY REPORT)	• Civil Construction Plans (proposed access road) • Equans 'Civil Scope of Works' – R3 4/7/2022 • Letter of Clarification re: Blain Road Solar Project Landform alteration – 16 June 2022 • Landscape Plans – Issue C, 20/6/2022 • Mudgee Solar Farm - Glare Analysis
RECOMMENDATION	Approval
SUPPLEMENTARY REPORT PREPARED BY	Kayla Robson
REPORT DATE	16 August 2022

SUPPLEMENTARY ASSESSMENT

The Western Regional Planning Panel (WRPP) deferred determination of DA0170/2022 pending the provision of the following information:

- *the extent and nature of the earthworks required to accommodate the Proposal, its construction and operation, particularly given the existing undulating topography and assessment considerations;*
- *additional information on the visual interference of the Proposal (inclusive of the reduced side boundary setback) to the future (zoned) residential land; and*
- *provision of a glint and glare assessment as it relates to the future development of adjoining (zoned) residential land.*

As a result of the above, the following additional information was requested with Council comments provided

1. *Applicant to confirm the final agreed access location that satisfies Transgrid requirements and ensure that is consistently reflected in all Proposal Plans together with typical sections of the access;*

Comment: The applicant has confirmed that the access location is to the north of the site towards the Waste Facility and the Sewer Treatment Plant (also north of the Trangrid Easement). This is referenced in the updated documents and is consistent with the original proposal (with the removal of the alternate route). Transgrid have provided consent for this access location (see docs 04.05.22 Approval Letter.pdf and 38519-C00-C05_c.pdf) and this does not preclude construction traffic crossing the easement, subject to conditions.

Figure 1 – Proposed Access Road

2. *Applicant to provide concept earthworks plan/s that illustrate the footprint, location and nature of earthworks proposed, including overall earthworks strategy, the approximate location of cut and fill areas (with approximate depths) compared to existing natural ground (and including existing contour level and interval information and location of swales).*

   The concept earthworks plans are to capture the full extent of concept works including for access (including to satisfy Transgrid and other authority requirements for access to and within the solar farm), concept stormwater footprints (swales and ponds) and any earthworks to accommodate the solar arrays and their operations.

   Where the Proposal limits the extent of earthworks through variation in the solar array design, as indicated by the Applicant during the briefing, the Applicant is to identify the location and nature of those variations (and any anticipated operational limitations, if any) compared to the typical elevations provided.

Comment: The application has provided updated information in relation to the earthworks proposed, including the solar array design and access road provision. (see docs MWRC Solar Farm Landscape Plan 210622.pdf, 230549 0 RFP Civil R4.pdf and 38519-C00-C05_c.pdf in Attachment 2). The documentation states that no benching is required to accommodate the proposal as the intention is for the piles to follow the natural topography of the site.

3. *Provide an updated visual impact assessment reflecting the concept earthworks and Panel arrays (including their heights above existing natural ground level) from Item 2 above as it relates to the adjoining future (zoned) residential land.*

   Consideration is to be given to extension of landscaping and/or regeneration that may further aid the visual break up (not complete screening) of the Proposal from future (zoned) residential land (whether in a buffer to the existing Treatment Plant or not), including pockets of zoned land that are likely to look across or up towards the Proposal based on existing topography and visual exposure.

   If additional mitigation is identified, provide an updated Landscape Plan that outlines the nature of those works, and also more clearly allocates the locations of the different types of landscaping buffers proposed (for example, to reflect the intent identified by the Applicant during the briefing that not all buffers were intended to accommodate the full tree species selection nominated).

Comment: The applicant has provided updated information in relation to the earthworks proposed, including the extent and type of landscaping to be provided as part of the development, and the buffer to the neighbouring residential zoned land which has been extended to the south eastern corner (see docs MWRC Solar Farm Landscape Plan 210622.pdf, 230549 0 RFP Civil R4.pdf and 38519-C00-C05_c.pdf in Attachment 2).

4. *A glint and glare assessment is to be prepared as required under Part 6.5 Solar Energy Farms of the Mid-Western Regional Development Control Plan 2013. This is to address potential impact on existing and future (zoned) residential and rural residential land adjacent to the site.*

Comment: The applicant has provided an analysis which has included many assumptions based on various observer points and roads for the 'future' development of the Caerleon Estate along with five (5) 'backtracking' configurations for the development, as this has not been determined at this stage.

The summary below is provided for each backtracking configuration option and the potential receptor locations (table 4 and figure 7 from the report). It is important to note that these findings are based on existing conditions of the site and do not accommodate any proposed landscaping treatment.

Table 4 Glare summary

Backtracking configuration	*Glare summary*
none	No green or yellow glare experienced for any receptor
shade-slope:	No green or yellow glare experienced for any receptor
Shade	Yellow glare (potential for temporary after-image) predicted on several observation point receptors (houses). Most significant impacts were observed on OP 5, OP 6 and OP 14. The most yellow glare predicted is 18.6 hours annually. Routes 1 and 2 experience the most yellow glare. (Less than 16 hours annually)
interval	Yellow glare (potential for temporary after-image) predicted on several observation point receptors (houses), but less significant than the Shade backtracking configuration. Most significant impact is 11.3 hours of yellow glare annually predicted for OP 6.

Backtracking configuration	*Glare summary*
instant	This configuration predicts the most significant yellow glare impacts with several Ops (houses) predicted to experience between 30-60 hours of annual yellow glare. Figure 7 shows the houses with more than 40 hours of predicted annual yellow glare (yellow circles). The roads with more than 40 hours predicted annual yellow glare are identified by label.

Figure 2 – Glare Summary

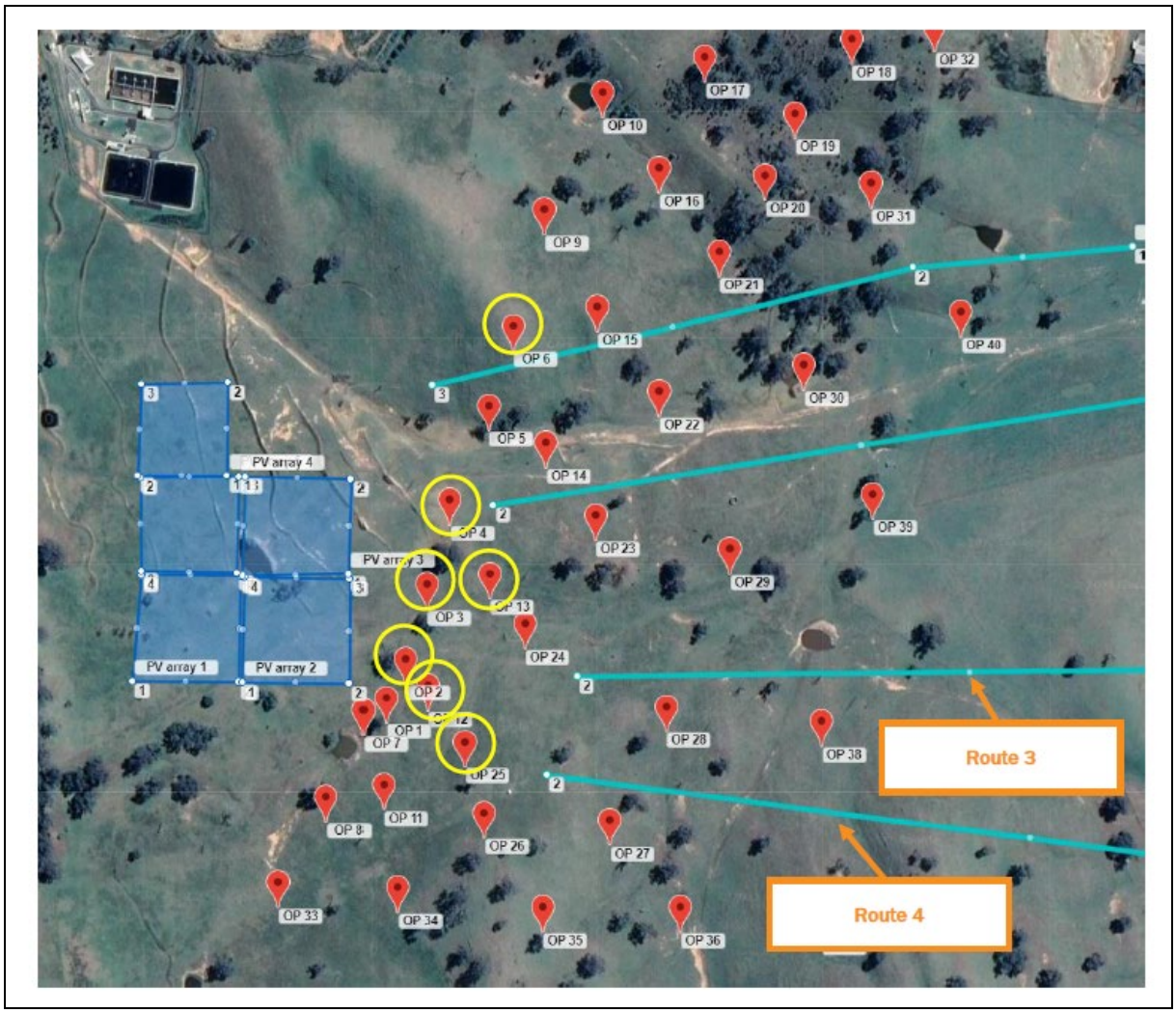


Figure 3 – Observer Points

A summary of the assessment found:

1. *Some observation points (houses) and roads in the proposed residential development may experience yellow glare, depending on the backtracking configuration used.*
2. *It is understood the backtracking configuration for the single-axis tracking system is still under review, subject to the actual operating characteristics of the facility being confirmed. Selection of nil backtracking will result in no glare experienced for any receptor included in the analysis. The backtracking systems designed to optimise the efficiency of the system create the most predicted 'yellow' glare to nearby receptors, however this is still considered low to negligible.*
3. *The FAA recently updated the aviation policy for solar glare to remove the requirement to test the impact of 'yellow' glare on aircraft flight paths in recognition that the glare impacts to pilots would be no greater than reflection off water bodies and windows. The worst-case predicted glare result for the Mudgee solar farm (using the instant backtracking configuration) is for approximately 1 hour of yellow glare per week for certain receptors, based on the assumption of clear, sunny skies all year round and an average reflectance of 10% applied to PV panels for the analysis. Actual glare outcomes are predicted to be much less than the conservative outcome(s) established in the analysis.*
4. *The solar array may result in fleeting, minor inconvenience for nearby residents, equivalent to sunlight reflecting off a car window, pool or roof and*

could be readily mitigated through sunglasses, gardens or curtains. The implementation of screening vegetation, anti-glare coating and artificial and natural obstructions between the solar farm and residential development will act to reduce glare even further.

5. *The NSW Government guideline for large-scale solar energy projects does not specifically address glare impacts for residential dwellings and there is no reference to the ocular impact of solar glare as defined in the ForgeSolar analysis tool and applied in the aviation context.*

Further to the above, the assessment does not accommodate the existing sewerage treatment buffer that extends over the majority of the observer points selected in the assessment. Clause 6.12 of the Mid Western Regional Local Environmental Plan results in the need to protect the sewerage treatment plant operations located on the northern portion of the solar farm site and would ultimately constrain the future development of this area of Caerleon Estate for residential purposes – see Figure 4 below.

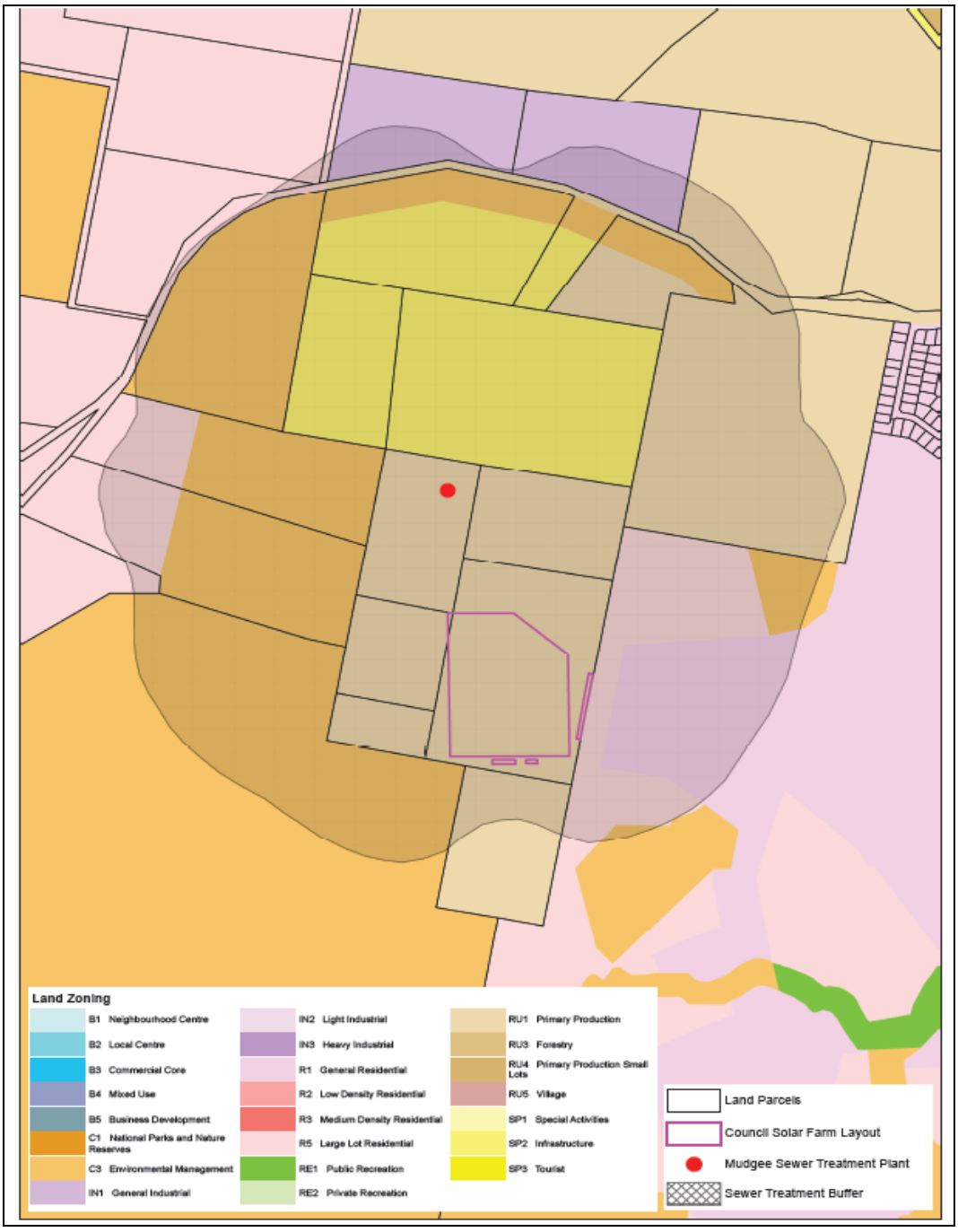


Figure 4 – Site Location Map including Sewer Treatment Buffer

Refer to Attachment 2 for the full report (*105501-01_Mudgee_Solar_Farm_Glare_Analysis_v0.2_220809).*

Recommendation

That the Development Application DA No 0170/2022 for a 5MW Electricity Generating Works and associated infrastructure at 33 Blain Road, CAERLEON be APPROVED pursuant to Section 4.16(1)(a) of the *Environmental Planning and Assessment Act 1979* subject to the revised draft conditions of consent attached to this supplementary report.

Draft Conditions of Consent

Draft conditions of consent have been provided as Attachment 2 which has updated the landscape plans accordingly.

Attachment 1: Additional Information Supplied by Applicant

ABN 70 250 995 390

Sydney West
200 Old Wallgrove Road
PO Box 87 Horsley Park
NSW 2175 Australia
T (02) 9620 0777
F (02) 9620 0384

Wednesday, 4 May 2022

Kayla Robson
Planning Coordinator
Mid-Western Regional Council
PO Box 156 Mudgee NSW 2850

Dear Kayla,

Transgrid reference number: 2021-651

Proposal: Solar installation at waste water plant

Location: 33 Blain road Caerleon

Transgrid: Transmission Line 94M Crudine Ridge – Beryl 132kV

Thank you for requesting Transgrid's permission to carry out the **Solar installation at waste water plant** described in **220221 - RE Response to concerns raised by Transgrid – DA0170-2022 - Solar installation – 33 Blain Road Mudgee.pdf** at **33 Blain road Caerleon** within TransGrid easement **Transmission Line 94M Crudine Ridge – Beryl 132kV** (TransGrid ID: 2021-651)

Please be advised that after reviewing your proposal, Transgrid **gives its permission subject to the following conditions:**

1. GENERAL CONDITIONS:

All works must be carried out as per **220221 - RE Response to concerns raised by Transgrid – DA0170-2022 - Solar installation – 33 Blain Road Mudgee.pdf**

i.
ii. TransGrid shall be notified of any amendments / modifications to the proposal which may change distances to Transgrid structures or conductors
iii. All works must be carried out in accordance with NSW WorkCover 'Working near overhead powerlines' Code of Practice 2006
iv. All fencing (including temporary fencing) must comply with Transgrid's Fencing Guidelines, including earthing and/or isolation requirements.
v. If fence heights are not stipulated on the plans, then approval is based on the assumption that all fences will be no higher than 2.5m. If fences are planned taller than 2.5m then full details must be provided
vi. No metallic structures or infrastructure shall be installed unless they form part of the approved plans.
vii. Any works proposed **MUST NOT** reduce clearance to conductors below that required in AS7000
viii. Where transmission lines are 132kV and below activities/development/structures must be located at least 20 metres away from any part of a transmission structure or supporting guy wire, or for metallic structures, be located at least 22 metres away from any part of a transmission structure or supporting guy wire and be located at least 10 metres from the centre of the transmission line
ix. Where transmission lines are 220kV and above activities/development/structures must be located at least 30 metres away from any part of a Transmission structure or supporting guy wire, and be located at least 17 metres from the centre of the transmission line
x. Precautions must be in place to prevent damage to transmission line structures and guys. Any damage due to construction activities to be reported immediately to Transgrid

2.TECHNICAL CONDITIONS:

Summary of Findings:

i. This is the 2nd check. The proponent has revised the design as per last Transgrid's comments.
ii. Only one new access road to the solar farm, and it is outside the Transgrid easement.
iii. No excavation work within the easement.
iv. No sewer line is proposed

Works Acceptable:

i. Yes

Notes:

i. If construction plants cross Transgrid easement, they are must be not greater than 4.3m in height, and at least 22m away from Transmission Line structures or supporting guys.

3.ACCESS AND MAINTENANCE CONDITIONS:

i. N/A

4. **EARTHWORKS CONDITIONS:**

i. No mounds of earth or other materials may be left on the easement during and after earthworks, as this creates a hazard by reducing the vertical clearances to transmission lines.
ii. Excavations deeper than 2m such as trenches and pits need individual assessment to ensure there are no adverse impacts, particularly to Transgrid structures and earth straps
iii. Any cut operations as part of bulk earthworks are generally not a concern, provided they do not adversely impact access or encroach within 30m of a structure
iv. Any earthworks involving fill need to be assessed to determine impacts on conductor height clearances. This will require provision of a 3D DXF or otherwise detailed survey plans with before and after RLs to enable a height clearance check to be undertaken. Minor resurfacing works which do not increase ground levels by more than 100mm can be excluded provided this is clearly stated on the plans

.

5. CONSTRUCTION CONDITIONS:

i. Any construction work within the easement shall maintain safety clearances to the exposed conductors in accordance with NSW WorkCover 'Working near overhead powerlines' Code of Practice 2006 (Transgrid may provide preferred crane locations, for the purpose reducing static induction)
ii. During construction phase Transgrid access is to be maintained 24/7. Transgrid to provide suitable padlock/s for any gates

iii. The works shall not impede or restrict Transgrid from undertaking normal maintenance and inspection activities and, at completion of works, access to Transmission Lines and structures shall always be available for Transgrid plant and personnel for future TransGrid maintenance activities

iv. Dust: Works must not create excessive quantities of dust and proponent must employ dust suppression. A dust management plan is not expected to be provided to Transgrid, but provision must be made for such a plan to avoid causing damage to the transmission line such as dust pollution on insulators
v. The easement area shall not be used for temporary storage of construction spoil, topsoil, gravel or any other construction materials
vi. Vehicles or equipment having a height exceeding of 4.3m when fully extended may traverse the easement if stowed and locked for travel. Operation within the easement must be done in accordance with NSW WorkCover Working near overhead powerlines' Code of Practice 2006
vii. Consideration is to be given in the design works for any proposed access ways/roads over Transgrid's easement to cater for the weight and size of Transgrid's maintenance vehicles - to withstand the 40 tonne load capacity of maintenance trucks.
viii. For where travel is required by Transgrid's maintenance vehicles, Batter slope is to be no steeper than 1 in 6.
ix. Traffic control: During construction, traffic control measures need to be implemented to prevent vehicles colliding with Transgrid's transmission towers.
x. Where temporary vehicular access for parking during the construction period is within 17m of transmission line structure, adequate precautions shall be taken to protect the structure from accidental damage

Please note, this is Transgrid's permission as easement holder only, and it does not constitute planning approval under the Environmental Planning and Assessment Act 1979.

If you have any questions, please do not hesitate to contact Transgrid's Easements & Development Team at Easements&Development@transgrid.com.au.

Please see link to Transgrid online guidelines : https://www.transgrid.com.au/being-responsible/public-safety/Living-and-working-with-electricity-transmission-lines/Pages/default.aspx

Please see link to the PDF version: https://www.transgrid.com.au/being-responsible/public-safety/Living-and-working-with-electricity-transmission-lines/Documents/Easement%20Guidelines.pdf

Yours faithfully

Easements & Development Team

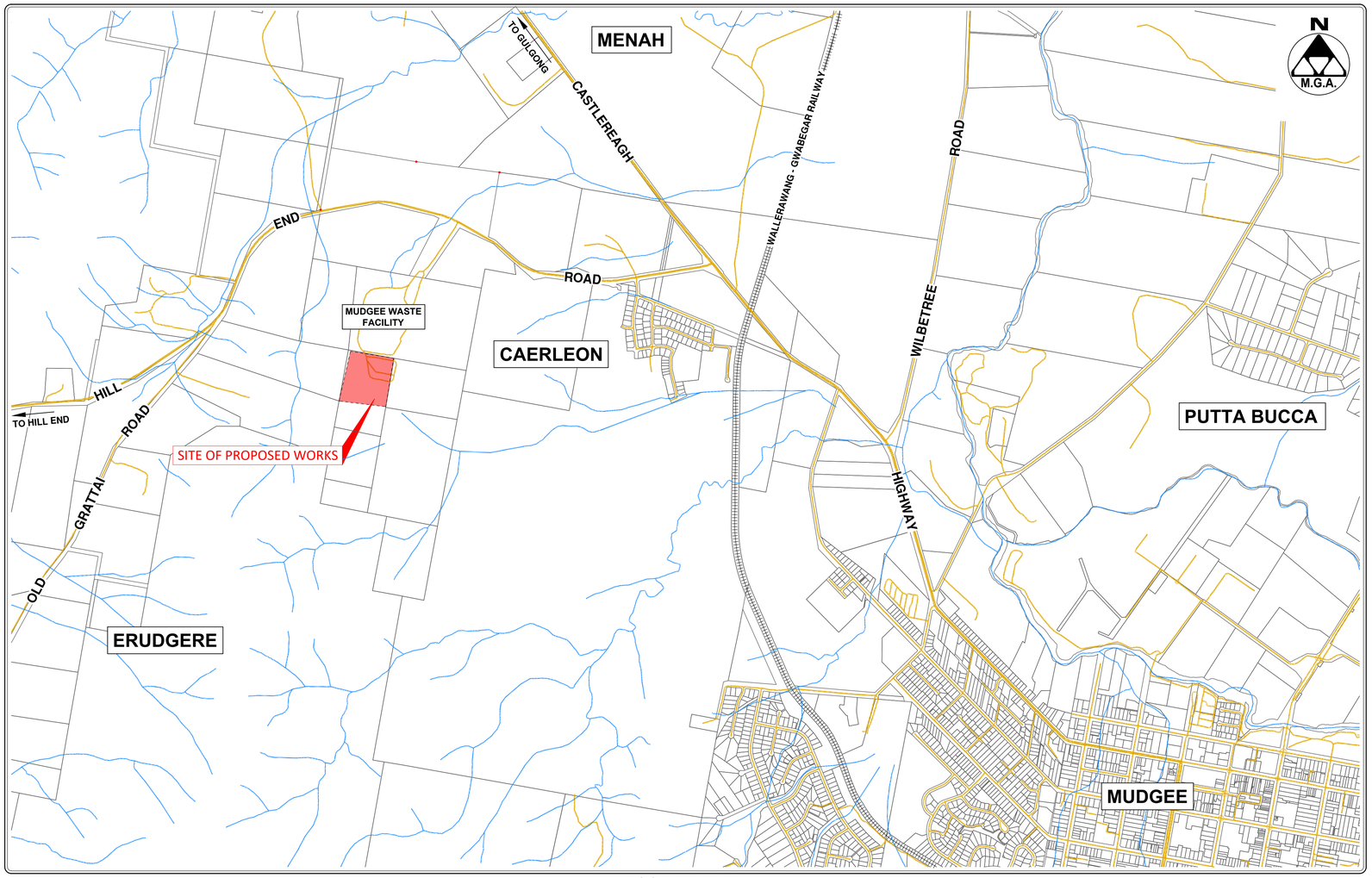
Transgrid

Civil Construction Documentation

Proposed ACCESS ROAD
FOR SOLAR FARM

HILL End Road, Caerleon NSW 2850

DRAWING SCHEDULE	
DWG NUMBER	DESCRIPTION
38519-C00	COVER SHEET AND DRAWING SCHEDULE
38519-C01	EXISTING SITE PLAN
38519-C02	PROPOSED SITE PLAN
38519-C03	PROPOSED PART SITE PLAN
38519-C04	PROPOSED ROAD SPECIFICATION PLAN
38519-C05	PROPOSED ROAD LONGSECTION



LOCALITY PLAN
REDUCTION RATIO 1:12500 @ A1

ISSUED FOR APPROVAL

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e generalenquiry@barnson.com.au
w www.barnson.com.au
Bathurst | Dubbo | Mudgee | Sydney | Tamworth

Client: Mid-Western Regional Council
Project: PROPOSED ACCESS ROAD FOR SOLAR FARM HILL END ROAD, CAERLEON NSW 2850
Drawing Title: COVER SHEET AND DRAWING SCHEDULE

Rev	Date	Amendment
A	07/07/2022	SUBMISSION FOR APPROVAL

Design LM
Drawn JC
Check LM
Original Sheet Size = A1
Certification
Drawing Number 38519 - C00
Revision 2

EXISTING SITE PLAN

REDUCTION RATIO 1:2500 @ A1
1:5000 @ A3

SCALE 1:2500(A1)

0 50 100 150 200 250

0 50 100 150 200 250

SCALE 1:5000(A3)

LEGEND (EXISTING)

- EXISTING CADASTRAL BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING FENCE LINE
- SW EXISTING STORMWATER PIPE/CULVERT
- OE EXISTING OVERHEAD POWER LINES
- PP EXISTING POWER POLE
- GEO EXISTING GEOTECHNICAL BOREHOLE
- TMP EXISTING TELECOMMUNICATIONS MARKER POST
- TPIL EXISTING TELECOMMUNICATIONS PILLAR
- TPIT EXISTING TELECOMMUNICATIONS PIT
- EJ EXISTING TELECOMMUNICATIONS ELEVATED JOINT
- RSIGN EXISTING ROAD SIGN
- EXISTING TREE - SIZE IS INDICATIVE OF APPROX. SPREAD

MGA

ISSUED FOR APPROVAL

barnson
DESIGN . PLAN . MANAGE

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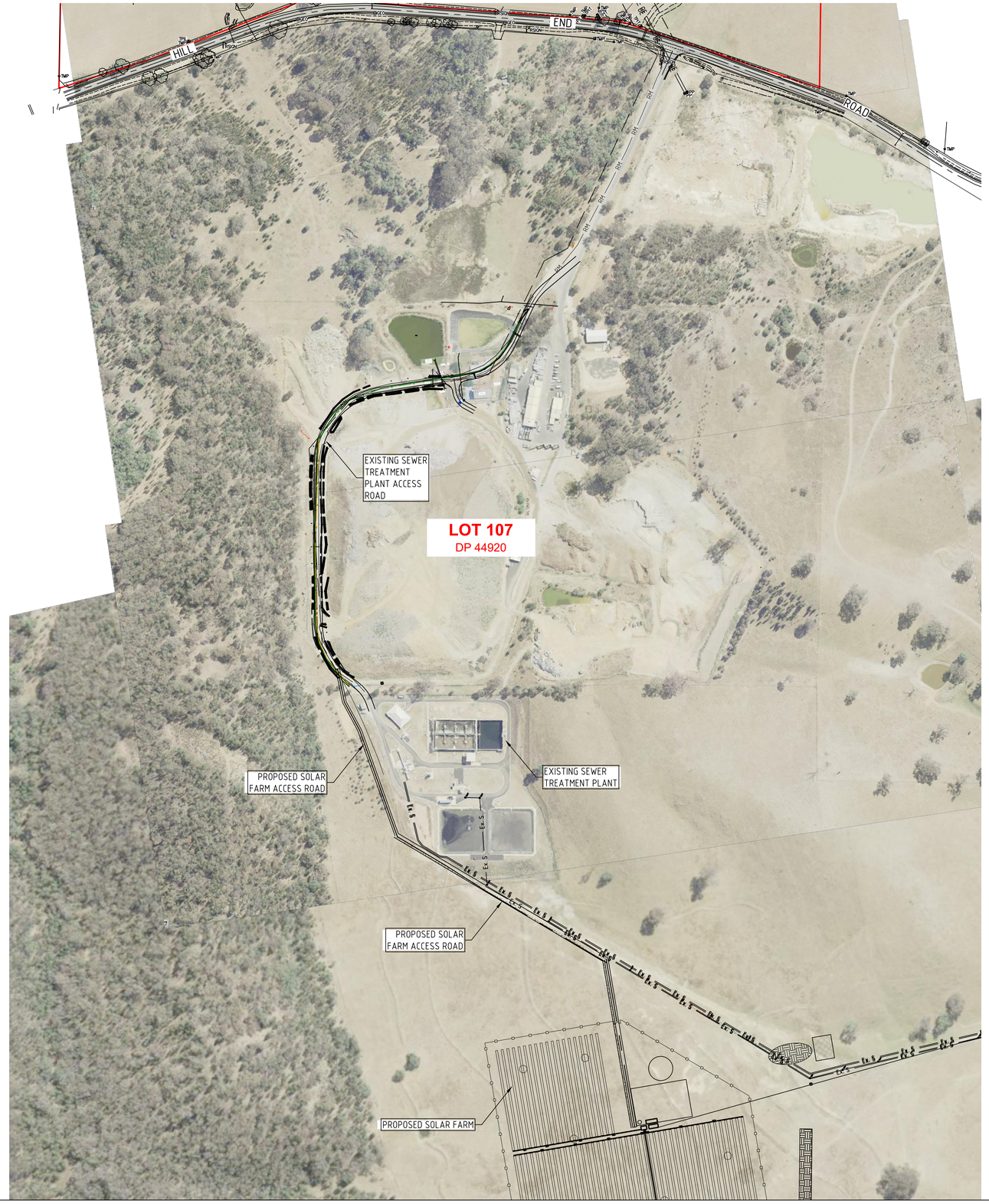
Bathurst | Dubbo | Mudgee | Sydney | Tamworth

Client: Mid-Western Regional Council
Project: PROPOSED ACCESS ROAD FOR SOLAR FARM
HILL END ROAD, CAERLEON NSW 2850
Drawing Title: EXISTING SITE PLAN

Rev	Date	Amendment
0	07/07/2022	SUBMISSION FOR APPROVAL
1	21/07/2022	EXISTING SEWER ADDED

Design LM
Drawn JC
Check LM
Certification
Drawing Number 38519 - C01
Revision 1
Original Sheet Size = A1



PROPOSED SITE PLAN

REDUCTION RATIO 1:2500 @ A1
1:5000 @ A3

SCALE 1:2500(A1)

0 50 100 150 200 250

0 50 100 150 200 250

SCALE 1:5000(A3)

LEGEND (EXISTING)

- EXISTING CADASTRAL BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING FENCE LINE
- SW EXISTING STORMWATER PIPE/CULVERT
- OE EXISTING OVERHEAD POWER LINES
- PP EXISTING POWER POLE
- GEO EXISTING GEOTECHNICAL BOREHOLE
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- TPIL EXISTING TELECOMMUNICATIONS PILLAR
- TPIT EXISTING TELECOMMUNICATIONS PIT
- EJ EXISTING TELECOMMUNICATIONS ELEVATED JOINT
- RSIGN EXISTING ROAD SIGN
- EXISTING TREE - SIZE IS INDICATIVE OF APPROX. SPREAD

LEGEND (PROPOSED)

- PROPOSED BOUNDARY
- PROPOSED EASEMENT BOUNDARY
- PROPOSED ROAD CENTRELINE
- RM PROPOSED SEWER RISING MAIN
- PROPOSED PAVEMENT

ISSUED FOR APPROVAL

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Client: Mid-Western Regional Council
Project: PROPOSED ACCESS ROAD FOR SOLAR FARM
HILL END ROAD, CAERLEON NSW 2850
Drawing Title: PROPOSED SITE PLAN

Rev	Date	Amendment
0	07/07/2022	SUBMISSION FOR APPROVAL
1	21/07/2022	EXISTING SEWER ADDED
2	29/07/2022	ROAD CL RELOCATED

Design LM Certification
Drawn JC
Check LM
Original Sheet Size = A1
Drawing Number 38519 - C02
Revision 2

PROPOSED PART SITE PLAN

REDUCTION RATIO 1:1250 @ A1
1:2500 @ A3

SCALE 1:1250(A1)

0 25 50 75 100 125

0 25 50 75 100 125

SCALE 1:2500(A3)

LEGEND (EXISTING)

- EXISTING CADASTRAL BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING FENCE LINE
- SW EXISTING STORMWATER PIPE/CULVERT
- OE EXISTING OVERHEAD POWER LINES
- PP EXISTING POWER POLE
- GEO EXISTING GEOTECHNICAL BOREHOLE
- TMP EXISTING TELECOMMUNICATIONS MARKER POST
- TPIL EXISTING TELECOMMUNICATIONS PILLAR
- TPIT EXISTING TELECOMMUNICATIONS PIT
- EJ EXISTING TELECOMMUNICATIONS ELEVATED JOINT
- RSIGN EXISTING ROAD SIGN
- EXISTING TREE - SIZE IS INDICATIVE OF APPROX. SPREAD

LEGEND (PROPOSED)

- PROPOSED BOUNDARY
- PROPOSED EASEMENT BOUNDARY
- PROPOSED ROAD CENTRELINE
- RM PROPOSED SEWER RISING MAIN
- PROPOSED PAVEMENT

MGA

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Client: Mid-Western Regional Council
Project: PROPOSED ACCESS ROAD FOR SOLAR FARM
HILL END ROAD, CAERLEON NSW 2850
Drawing Title: PROPOSED PART SITE PLAN

Rev	Date	Amendment
0	07/07/2022	SUBMISSION FOR APPROVAL
1	21/07/2022	EXISTING SEWER ADDED
2	29/07/2022	ROAD CL RELOCATED

Design LM Certification
Drawn JC
Check LM
Original Sheet Size = A1
Drawing Number 38519 - C03
Revision 2

SITEWORKS NOTES

1. ORIGIN OF LEVELS :- AHD.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
3. ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS, THE SPECIFICATIONS AND THE DIRECTIONS OF THE SUPERINTENDENT.
4. EXISTING SERVICES HAVE BEEN OBTAINED FROM SURFACE INSPECTION ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPER-INTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
5. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A QUALIFIED SURVEYOR.
7. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER TELECOM OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
8. ON COMPLETION OF CONSTRUCTION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS.
9. MAKE SMOOTH TRANSITION TO EXISTING SURFACES.
10. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY DIVERSION DRAINS AND MOUNDS TO ENSURE THAT AT ALL TIMES EXPOSED SURFACES ARE FREE DRAINING AND WHERE NECESSARY EXCAVATE SUMPS AND PROVIDE PUMPING EQUIPMENT TO DRAIN EXPOSED AREAS. ALL WORK TO BE UNDERTAKEN WITH ADHERENCE TO THE REQUIREMENTS OF THE SOIL AND WATER MANAGEMENT PLAN.
11. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS.

SUBGRADE COMPACTION NOTES

1. STRIP TOPSOIL TO EXPOSE NATURALLY OCCURRING MATERIAL.
2. WHERE FILLING IS REQUIRED TO ACHIEVE DESIGN SUBGRADE PROOF ROLL EXPOSED NATURAL SURFACE WITH A MINIMUM OF TEN PASSES OF A VIBRATING ROLLER (MINIMUM STATIC WEIGHT OF 10 TONNES) IN THE PRESENCE OF THE SUPERINTENDENT.
3. ALL SOFT, WET OR UNSUITABLE MATERIAL TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW.
4. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING :
   a) FREE FROM ORGANIC AND PERISHABLE MATTER
   b) MAXIMUM PARTICLE SIZE 75mm
   c) PLASTICITY INDEX BETWEEN 2% AND 15%.
5. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200mm THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR – 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS 1289 E3.1 OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITIES IN ACCORDANCE WITH AS 1289 E1.1:

LOCATION	STANDARD DRY DENSITY
ROADS	100% STD MDD

6. THE CONTRACTOR SHALL PROGRAMME THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED BY THE CONTRACTOR AT THEIR COST.
7. TESTING OF THE SUBGRADE SHALL BE CARRIED OUT BY AN APPROVED NATA REGISTERED LABORATORY AT THE CONTRACTORS EXPENSE.

ROADWORKS NOTES

1 ALL BASECOURSE AND SUB-BASECOURSE MATERIALS SHALL CONFORM WITH AUSPEC SPECIFICATION FOR THE CONSTRUCTION OF NATURAL GRAVEL OR CRUSHED ROCK ROAD PAVEMENT AND AUSPSEC SPECIFICATION FOR THE SUPPLY AND DELIVERY OF BASE AND SUB-BASE MATERIALS FOR SURFACED ROAD PAVEMENTS.

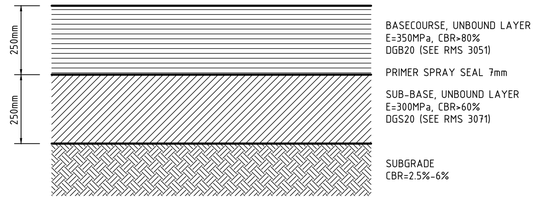
2. ALL BASECOURSE AND SUB-BASE MATERIALS SHALL BE COMPACTED TO ACHIEVE A MINIMUM OF 100% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OF +OR- 2% IN ACCORDANCE WITH AS1289 E1.1
3. ALL WEARING SURFACES SHALL BE 40mm ASPHALTIC CONCRETE (AC) LAID UPON A SPRAYED BITUMINOUS PRIME COAT, DESIGNED IN ACCORDANCE WITH THE RTA PUBLICATION "SPRAYED SEALING GUIDE".

INSPECTION HOLD POINTS

1. INSTALLATION OF SEDIMENT & EROSION CONTROL MEASURES.
2. WATER & SEWER LINE INSTALLATION PRIOR TO BACKFILL.
3. ESTABLISHMENT OF LINE & LEVEL FOR KERB & GUTTER PLACEMENT.
4. ROAD PAVEMENT CONSTRUCTION.
5. ROAD PAVEMENT SURFACING.
6. PRACTICAL COMPLETION.

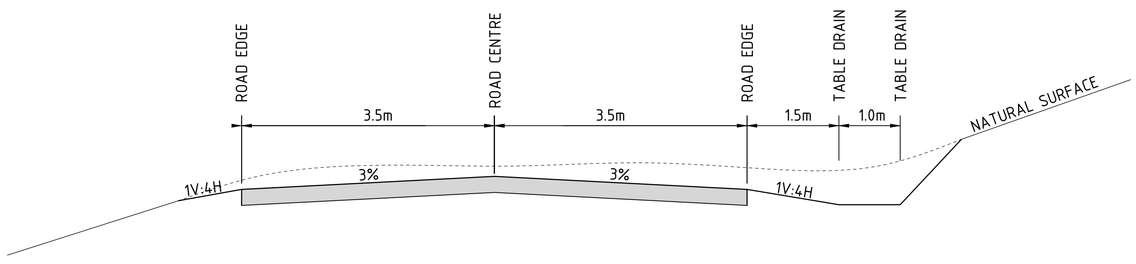
SERVICES INSTALLATION

1. INSTALLATION OF ALL UUNDERGROUND PIPES BE INSTALLED PRIOR TO INSTALLATION OF ROAD PAVEMENT.



PAVEMENT SECTION - ROADS

SCALE 1:10 (A1), 1:20 (A3)



INTERNAL ROADS - TYPICAL SECTION

NOT TO SCALE

ISSUED FOR APPROVAL

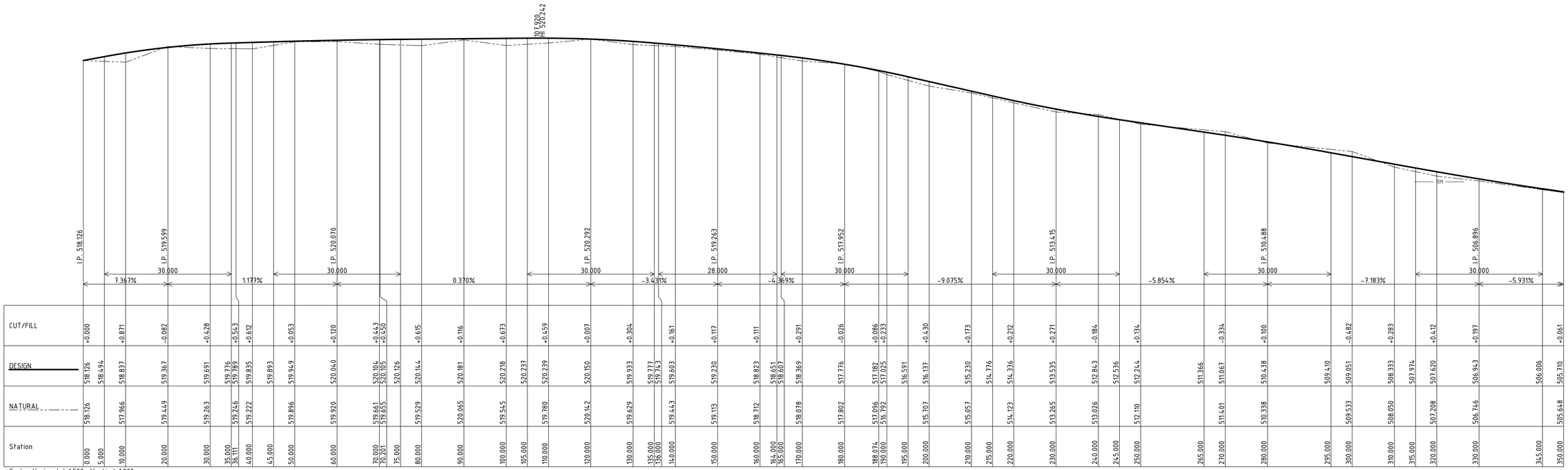
barnson
DESIGN.PLAN.MANAGE

BARNSON PTY LTD
t 1300 BARNSON (1300 227 676)
e generalenquiry@barnson.com.au
w www.barnson.com.au
Bathurst | Dubbo | Mudgee | Sydney | Tamworth

Client: Mid-Western Regional Council
Project: PROPOSED ACCESS ROAD FOR SOLAR FARM HILL END ROAD, CAERLEON NSW 2850
Drawing Title: PROPOSED ROAD SPECIFICATION PLAN

Rev	Date	Amendment
A	07/07/2022	SUBMISSION FOR APPROVAL

Design LM
Drawn JC
Check LM
Original Sheet Size = A1
Certification
Drawing Number 38519 - C04
Revision 1



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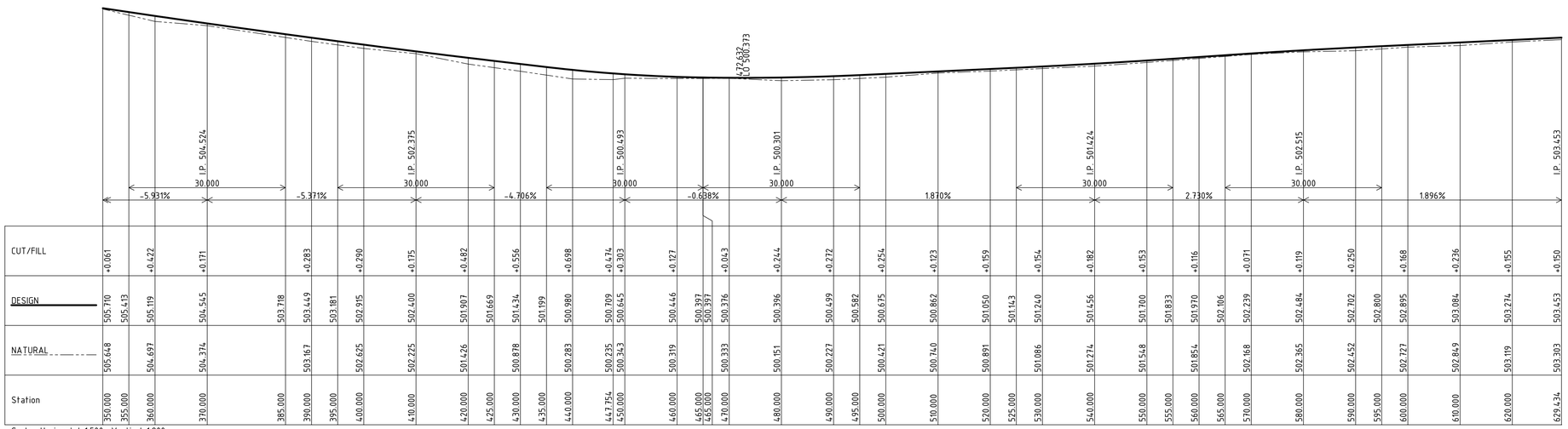

Scale Horizontal 1:500 Vertical 1:200

PROPOSED ROAD 1
LONGITUDINAL SECTION

REDUCTION RATIO H 1:500 @ A1
V 1:100 @ A1

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Bathurst | Dubbo | Mudgee | Sydney | Tamworth

Client: Mid-Western Regional Council
Project: PROPOSED ACCESS ROAD
FOR SOLAR FARM
HILL END ROAD, CAERLEON NSW 2850
Drawing Title: PROPOSED ROAD LONGSECTION

Rev	Date	Amendment
A	07/07/2022	SUBMISSION FOR APPROVAL

Design LM
Drawn JC
Check LM
Original Sheet Size = A1
Certification
Drawing Number 38519 - C05
Revision A

CONSTRUCTIVE
ENERGY

Simon Jones

Director Community
86 Market Street | PO Box 156
Mudgee NSW 2850

16th June 2022

Re: Letter of clarification re Blain Rd Solar Project Landform alteration for the Planning Assessment Panel

Dear Simon,

Pursuant to our conversation with the Planning Assessment Panel I have engaged with the design team and suppliers to provide clarification around the degree of landform change anticipated as a result of constructing and operating the tracking solar array. Central to this clarification is the desire not to leave behind a highly modified landscape unfit for agriculture if or when the solar array is decommissioned.

In short, I can reaffirm that the intent is to minimise cut and fill and maintain a smooth landform with no benching. Where cut and fill are to occur is chiefly in response to reducing the amplitude of the previously constructed erosion control contours, filling in the agricultural dam and reducing the severity of a gulley in the south-west corner of the array. Naturally the scope for the civil contractor will include the requirement to pre-strip topsoil at the location of any cut and fill to maintain a functional A and B horizon in the soil profile.

Work by the design team indicates that raising the height of the tracker by a maximum of 170mm in some locations further reduces the need for land disturbance.

Tracker Height

In the option we are considering, the maximum tracker height is 2m (this is the height of the torque tube of the tracker from the ground. This is just the maximum height as indicated in the table below and difference in volume of earth moved between a max height of 1.83m and 2.0m is relatively minor.

TRACKER HEIGHT DISTRIBUTION

1.22m	38.20%
1.22m to 1.436m	33.30%
1.436m to 1.650m	9.30%
1.650m to 1.864m	5.60%
1.864m to 2.00m	13.60%
	100.00%

CONSTRUCTIVE
ENERGY

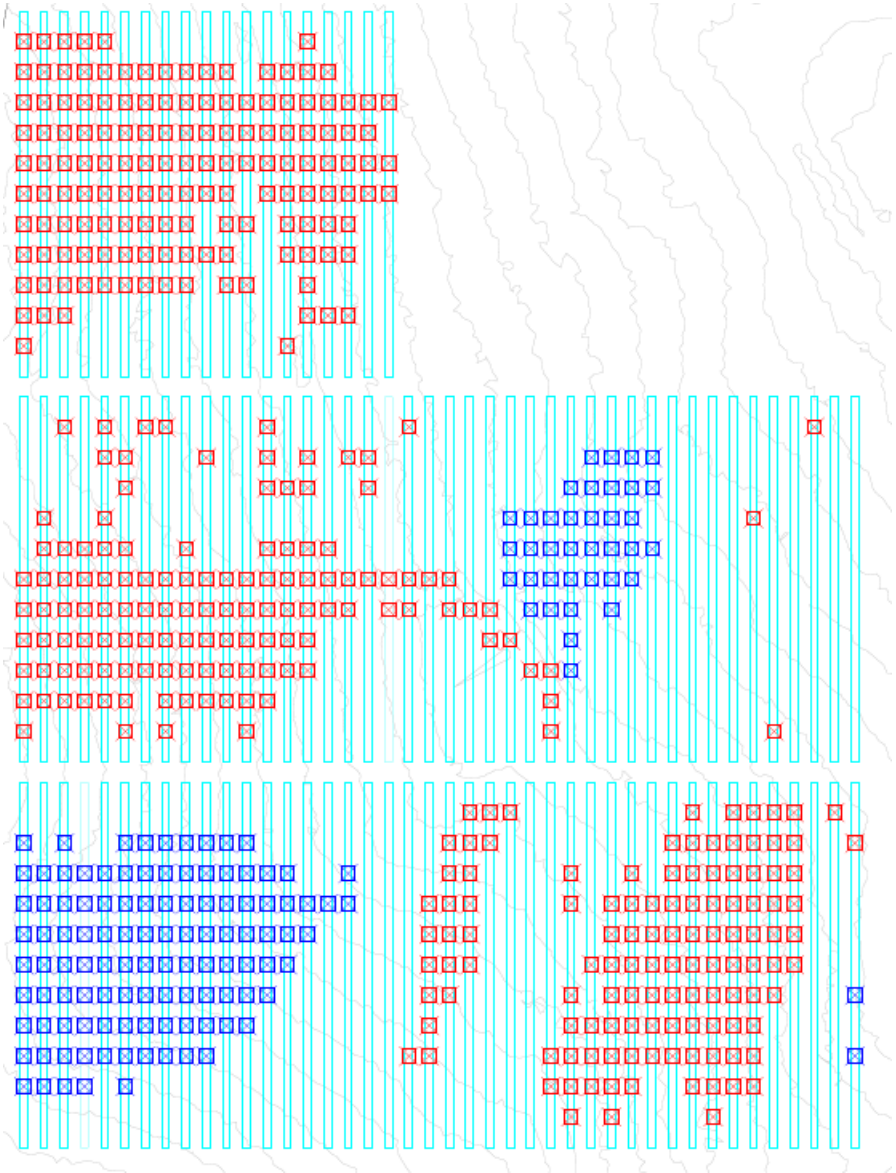
Cut and Fill Locations

The drawing below shows in red the areas required to be cut and in blue the areas required to be filled as part of the general smoothing of the site.

This is a preliminary assessment only based on the layout, topography file and tracker heights required.

The process from here to determine the final civil For Construction drawings would be:

- Finalise module selection and electrical design
- Finalise tracker design and engage Array Technologies (ATI)
- ATI produce detailed pile design and pile reveal analysis
- Civil contractor uses pile reveal analysis to determine final cut and fill methodology and For Construction drawings



Benching

The array design option we are proposing requires the least amount of earthworks and reflects the desire of all stakeholders to ensure that impact to site topography is very minimal.

ATI have indicated, based on the minimal earthworks required, the logical solution would be to follow the existing terrain and not do any benching, which would be unnecessary and expensive. This is to be discussed with the civil contractor and included in their package scope – attached.

The Panel may be assured that as well as being responsible in the lens of intergenerational land use, the most cost-effective solution right now would have very minimal impact on the hillside.

I trust this is of assistance in helping the panel in their determinations.

Thanks and regards,

Ashley Bland

Managing Director

EQUANS
Mudgee Solar Farm 5MWp

Civil scope of works

CONFIDENTIAL

This document, including any attachments, is confidential and is provided solely for the purpose of the RFP process. This document and the information therein must not be used, printed, distributed, copied, or disclosed to anyone except as necessary for this purpose.

Project Ref: 230549

28/03/2022

Latest Revision: R3 (04/07/2022)

EQUANS Electrical and Communications
AN ENGIE COMPANY

171 Grange Road, Fairfield VIC 3078, Australia
PO Box 120, Fairfield VIC 3078, Australia
equans.com.au

ENGIE Electrical and Communications Pty Ltd trading as EQUANS Electrical and Communications · ABN 51 007 066 855 · REC 9060

Dear Respondent,

Equans, on behalf of the Mid-Western Regional Council, is pleased to invite you to submit a response to this Request for Proposal (RFP) for the civil scope for Mudgee Solar Farm (5MWp).

Equans wish to understand your capability and costing to carry out the following scope of works:

Design & Documentation

- Provide detailed For Construction and As Built drawings for all works described below
- The Contractor will be responsible for ensuring that the design and construction of this scope comply with all relevant Australian and international Standards.

Civil works

- Land clearing and grubbing of solar farm area (approx. 7.75Ha) to install mechanical system including removing 10 trees.
- Cut 5,283 m3 and fill 4,660 m3 (assume cut land can be used for the fill and any extra m3 can be disposed to surrounding area) in accordance with specification from tracker manufacturer and based on final Pile Reveal Analysis supplied by tracker manufacturer. Maximum efforts must be made to maintain site topography and follow existing terrain undulation in order to minimise impact on existing land. Benching is not permitted. Topsoil must be pre-stripped and replaced to maintain seed bank and fertility.
- Draining and filling of agricultural dam/basin in centre of array area and partial reduction of contour embankments, refer to civils drawing.
- Excavation of detention basin (to become constructed wetland) (approx. 200m3).
- Installation of multiple, minor flow control structures (rock weirs and drop control structures) associated with the access road and rehabilitation of the northern gully (see civils drawing) in reference to the Stormwater Management Plan.
- Creation of new 200m Eastern and 200m Southern Vegetation Corridor (refer to Landscape plan). Vegetation Corridor to be 20m wide (min. 10m and max. 30m), planted with three rows of trees, four rows of shrubs and scattered groundcover – refer Landscape Plan
- Access road (620m long, 4m wide – sufficient for construction traffic and O&M traffic, property access roads are two-wheel drive, all weather roads. The capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles).
- Laydown area (60m x 40m – basic hardstand class 3 FCR, roll and level).
- Inverter + transformer skid foundation (3m x 7m slab).
- RMU foundation (2.5m x 1.5m slab).
- Removal/relocation of existing fence along southern boundary.
- Installation of perimeter fence (approx. 1.2km x 2m high with barbed wire) and 1x double security gate
- Trenching – approx. 650m of 600W x 700D, 150m of 900W x 700D, 5m of 1500W x 700D Including thermal back fill (thermal resistivity <1.2 K.m/W) to half depth, common fill for rest
- Site clean up
- Include equipment hire, mob/demob, accommodation and LAFHA as required

Please keep trenching as a distinct cost line.

Please price as though this is the only package that you will deliver, but if combining with a response to the civils, electrical or any other package, clearly identify the scope and discount that would apply by being awarding more scopes.

Project Details

- PV module: Longi/Jinko/JA 540W (All modules here have same physical size)
- Racking system: ATI
- No. of modules: 9270
- Modules per string: 30
- No. of tables/trackers: 103
- Timeframe for construction: Approx. Q1 2023

Returnable Schedules

Equans requests that the respondents provide the following information to help us assess their suitability for this project:

- RS1 – Capability statement
- RS2 – Australian project references (preferably NSW)
- RS3 – WHS management plan
- RS4 – Quality Assurance plan
- RS5 – Insurances
- RS6 – Estimated program of works

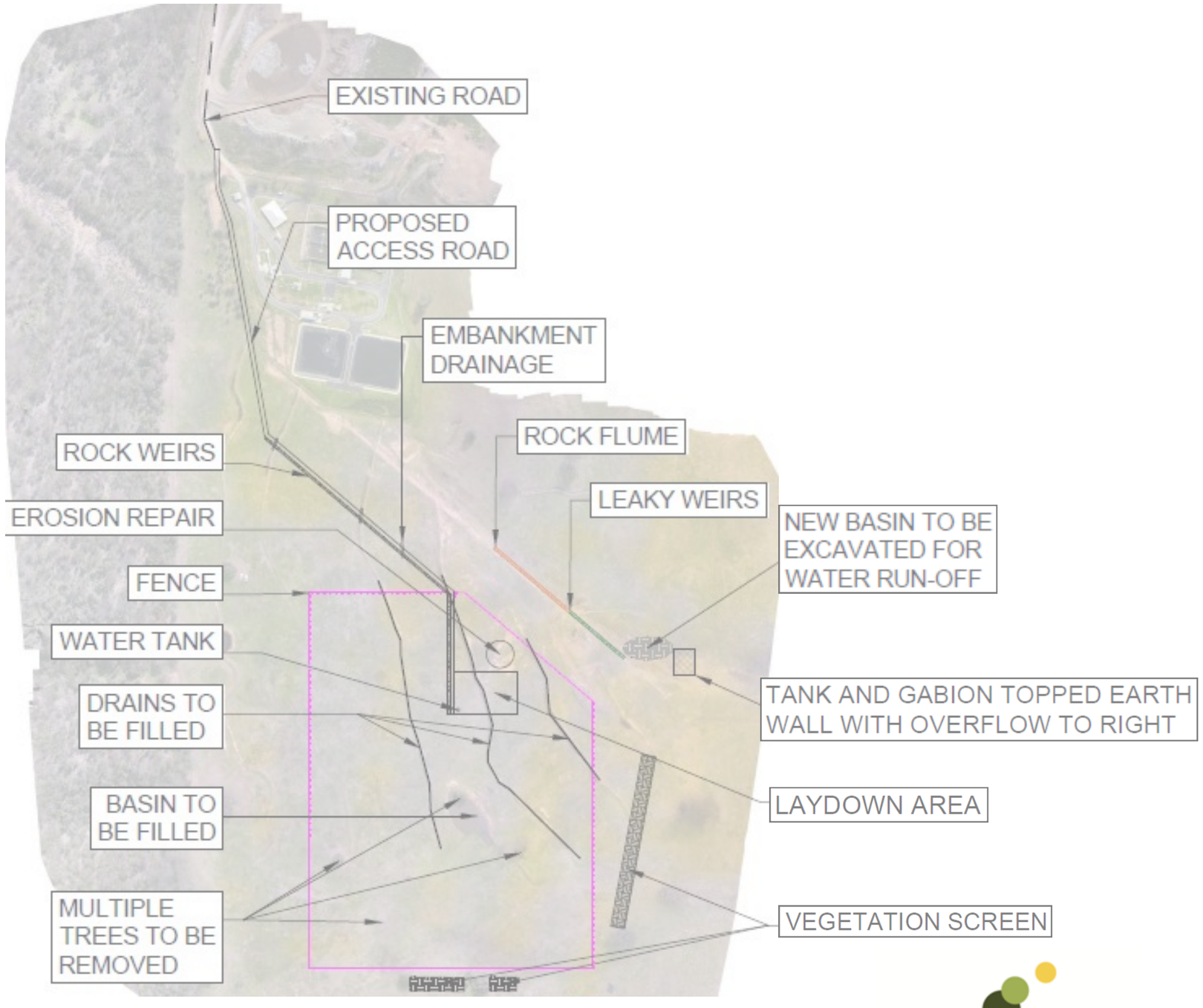
Attachements

- A1 – PV layout
- A2 – Geotech report
- A3 – Design pack ATI
- A4-6 – Module datasheets
- A7 – Pile testing report
- A8 – Flood Study – Stormwater Management Plan
- A9 – Civil scope of work drawing
- A10 – Landscape plan

Further Details of Project

DC capacity	5MWp (approx.)
AC capacity	4.4-4.6MVA (TBC)
Site coordinates	-32.577073, 149.543447
Contestable design	Approx. 8-9km of conductor upgrades
DNSP	Essential Energy

We thank you in advance for your response and look forward to hearing from you.

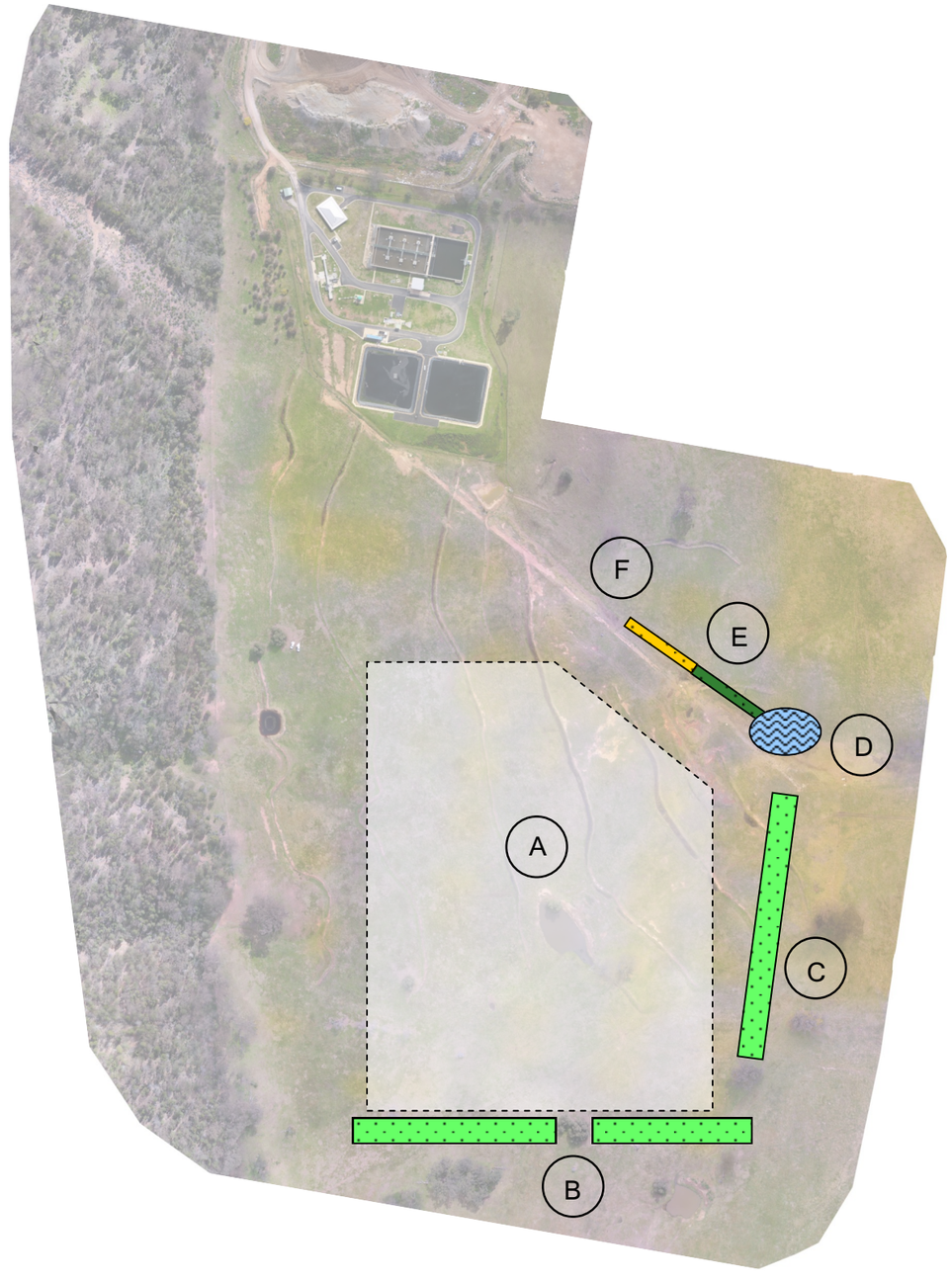


MUDGEE SOLAR FARM LANDSCAPE PLAN

CONSTRUCTIVE ENERGY

Ecostaff

THIS LANDSCAPE PLAN HAS BEEN DRAFTED WITH REFERENCE TO THE LAND AND WATER MANAGMENT PLAN BY CONSTRUCTIVE ENERGY.



LANDSCAPE SITE FUNCTION

DETAIL

A - Area of Solar Farm Civil Works

B - Southern Vegetation Corridor

C - Eastern Vegetation Corridor

D - Sediment Basin Wetland

E - Bio-swale Leaky Weirs

F - Rock Armoured Channel

ISSUE	DATE	NOTE
A	11/04/2022	Draft for Review
B	13/04/2022	Final for Approval
C	20/06/2022	Final Amendment

0 100 200m

DATE
JUNE 2022

PAGE
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Site Function

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SITE ADDRESS
Blain Road
CAERLEON
NSW 2850

SCALE
@A3

MWRC
SOLAR FARM
LANDSCAPE
PLAN

Ecostaff

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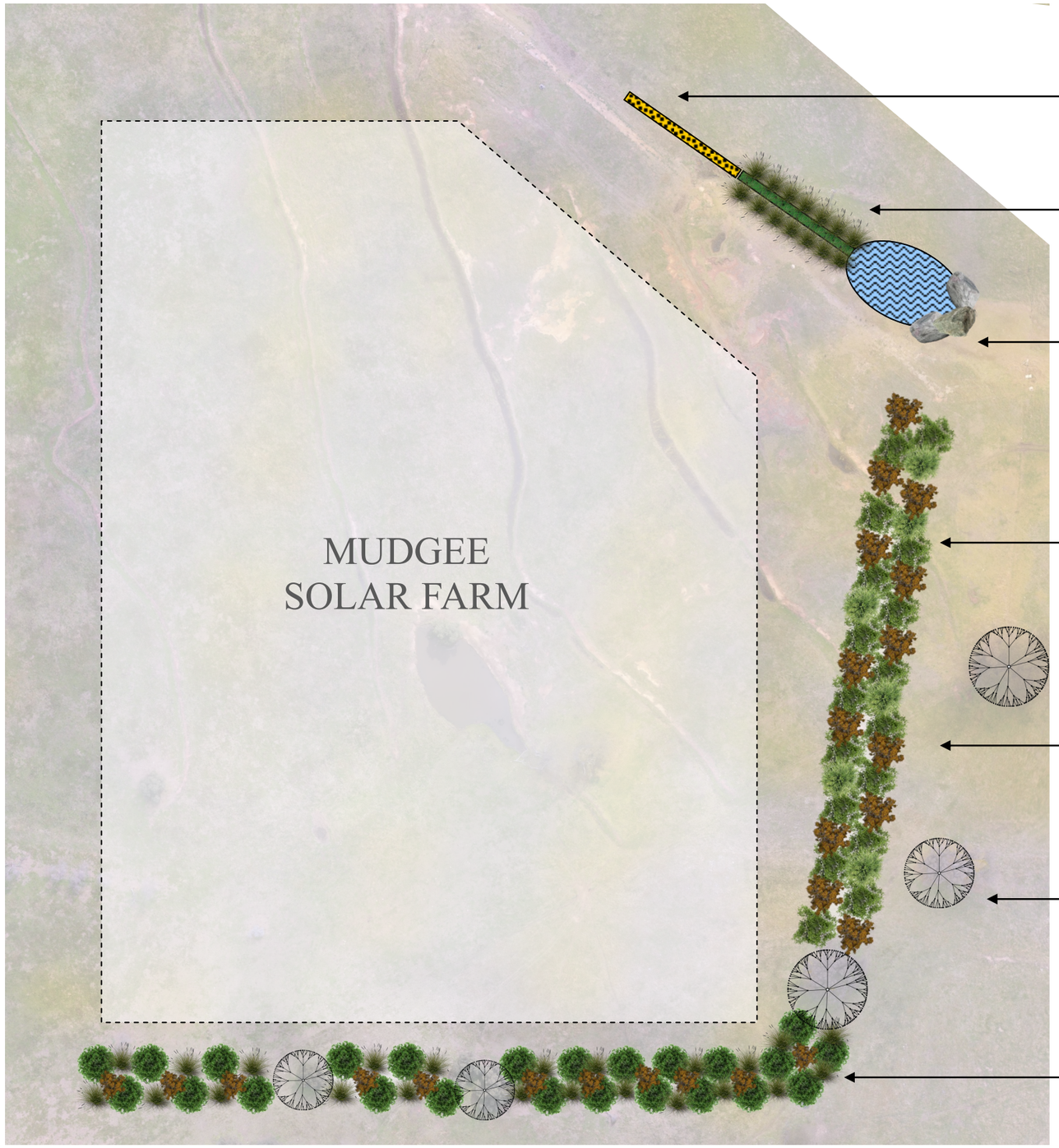

ROCK ARMOURED DRAINAGE CHANNEL WILL DIRECT SURFACE WATER INTO WEIRS AND SEDIMENT BASIN AND REDUCE EROSION AND SEDIMENTATION.

LEAKY WEIR BIO-SWALE WILL SLOW WATER USING CONTOUR AND VEGETATION TO IMPROVE WATER QUALITY.

SEDIMENT BASIN WILL BE RETAINED AND CONVERTED INTO A WETLAND AFTER THE CONSTRUCTION STAGE OF THE PROJECT IS COMPLETE.

EASTERN VEGETATION CORRIDOR IS APPROXIMATELY 200M LONG AND WILL BE PLANTED WITH NATIVE TREES, SHRUBS AND GROUNDCOVER TO CREATE HABITAT AND A VISUAL SCREEN.

VEGETATION CORRIDORS ARE 20M WIDE WITH VARYING SPACINGS FOR PLANT TYPE. CORRIDORS HAVE THREE ROWS OF TREES AND FOUR ROWS OF SHRUBS WITH SCATTERED GROUNDCOVER.

REMNANT TREES TO BE RETAINED AND ENHANCED WITH NATIVE SCREEN PLANTING.

SOUTHERN VEGETATION CORRIDOR IS APPROXIMATELY 200M LONG AND WILL BE PLANTED WITH NATIVE TREES, SHRUBS AND GROUNDCOVER TO CREATE HABITAT AND A VISUAL SCREEN .

LANDSCAPE CONCEPT PLAN

ISSUE	DATE	NOTE
A	11/04/2022	Draft for Review
B	13/04/2022	Final for Approval
C	20/06/2022	Final Amendment

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DATE JUNE 2022

PAGE 3

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SITE ADDRESS Blain Road CAERLEON NSW 2850

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MWRC SOLAR FARM LANDSCAPE PLAN

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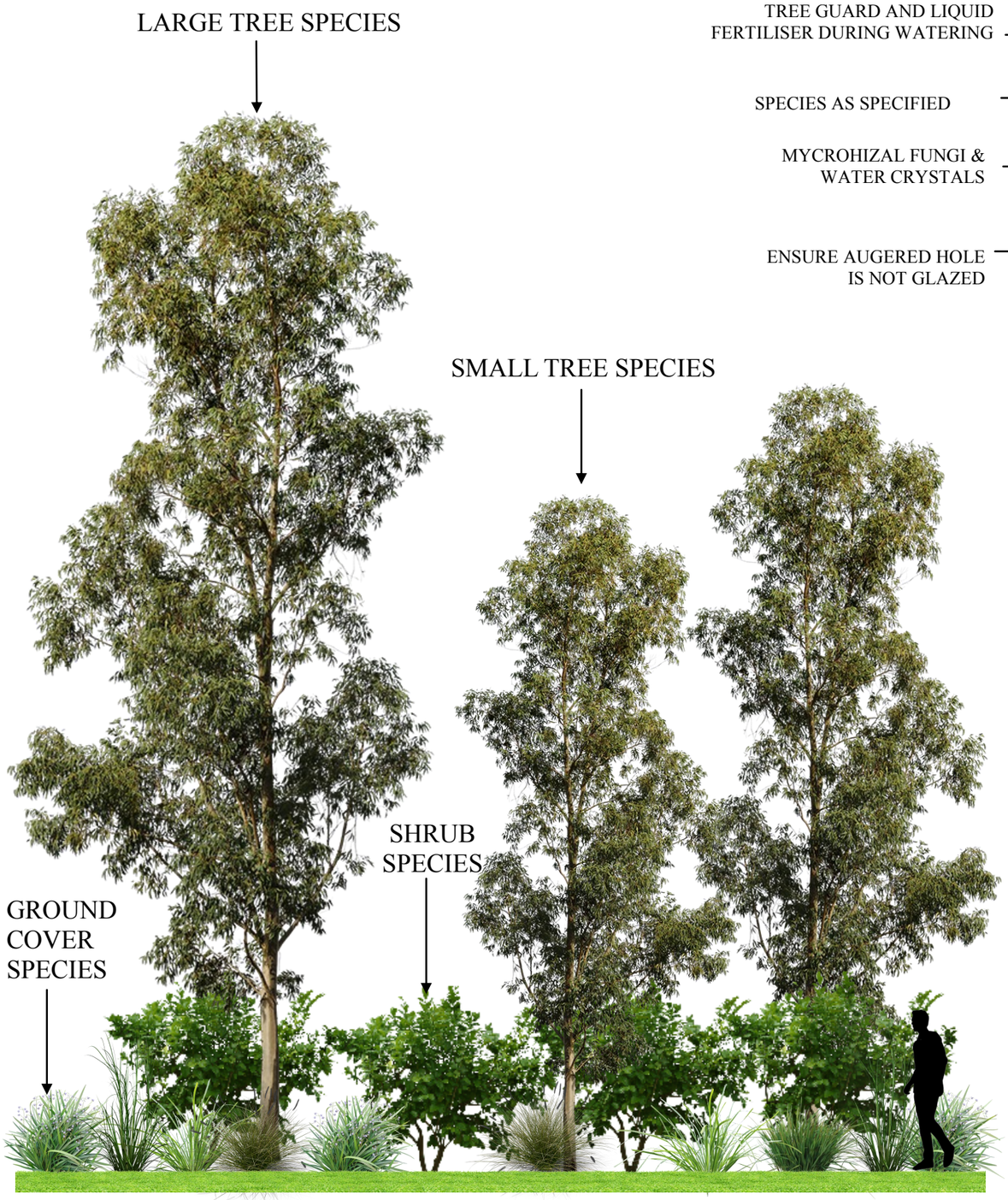

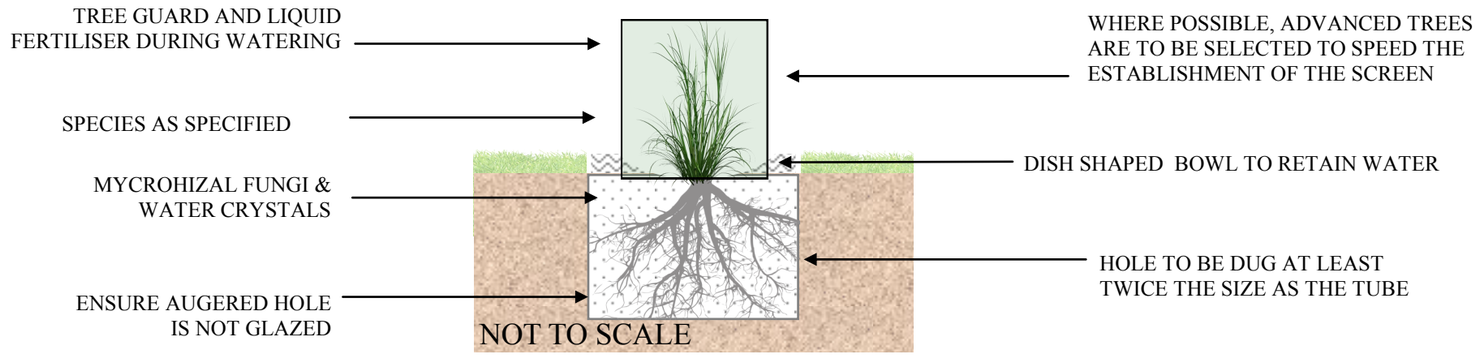

SPECIES	TYPE	HEIGHT	SPACING	# Tubes
Eucalyptus albens	Large Tree	30m	5m	30
Eucalyptus sideroxylon	Large Tree	35m	5m	30
Eucalyptus dalrympleana	Large Tree	40m	5m	30
Eucalyptus punctata	Large Tree	35m	5m	30
Callitris endlicheri	Small Tree	15m	5m	30
Brachychiton populneus	Small Tree	20m	5m	30
Callitris glaucophylla	Small Tree	20m	5m	30
Eucalyptus tenella	Small Tree	15m	5m	30
Acacia implexa	Shrub	12m	5m	60
Acacia decora	Shrub	4m	5m	60
Acacia buxifolia	Shrub	4m	5m	60
Acacia vestita	Shrub	4m	5m	60
Olearia elliptica	Shrub	2m	5m	60
Allocasuarina venticillata	Shrub	10m	5m	60
Mircolaena stipoides	Ground	1m	2m	90
Poa sieberiana	Ground	1m	2m	90
Dianella revoluta	Ground	1m	2m	90
Lomandra longifolia	Ground	1m	2m	90
Rhytidosperma sp.	Ground	1m	2m	90
Austrostipa scabra	Ground	1m	2m	90
Swainsona galegifolia	Ground	1m	2m	90
Cymbopogon refractus	Ground	1m	2m	90

If species aren't available refer to Watershed Landcare species list in MWRC Solar Farm Land and Water Management Plan.

VEGETATION CORRIDOR SPECIFICATION

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A	11/04/2022	Draft for Review
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Blain Road
CAERLEON
NSW 2850

SCALE
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MWRC SOLAR FARM LANDSCAPE PLAN

CONSTRUCTIVE ENERGY

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METHODOLOGY – VEGETATION SCREENING

MWRC have adopted the revegetation approach promoted by local group Watershed Landcare who have developed a Native Species Revegetation Guide. The guide lists Suggested species for a range of situations, the most relevant to this project being “Trees and Shrubs suitable for Flats and Lower Slopes areas in the MWRC” Ref.

Where shading of the solar array is likely to be problematic, species selected are limited to 15 m, otherwise all species are eligible for inclusion. Select grasses and forbs from the table below will also be included. While these are low growing plants and not valuable from a screening perspective, they will provide aesthetic and biodiversity value to the plantings.

Plants are to be planted using best practice revegetation techniques such as inclusion of micro-nutrients and growth stimulants, water crystals, mulching, core-flute guards and follow-up watering and maintenance. Pre-ripping and weed control are required prior to planting.

In order to create an effective screen and also to optimise biodiversity outcomes, the planting zone will be a minimum of 10 – to a maximum of 30m wide where possible. To avoid the appearance of a vegetation wall, plantings will be structured to create a mixed profile as per the image below.

In section view, the vegetation will be planted with taller trees in the centre tapering out to shrubs and bushes on the outside. This creates both a stronger barrier to wind and a more dense visual screen but also diversifies the potential for feed and habitat.

Where possible, advanced trees are to be selected to speed the establishment of the screen.

METHODOLOGY – EROSION CONTROL AND WATERWAY STABILISATION

A ‘soft engineering’ approach will be taken to erosion control and waterway stabilisation, preferencing natural materials and the establishment of vegetation to de-energise water rather than engineered solutions like concrete, geo-textiles or plastic piping.

Geofabrics may be an important part of maintaining structural integrity in the first 2 years as silt and vegetation naturally stabilise structures. Simple, well placed leaky weirs constructed of stone and or logs/branches will regularly intersect all draining lines but particularly the main waterway at the north of site.

The detention basin is designed to consist of a deeper tank (creating a permanent source of water in drought) and shallows that allow reeds and sedges to flourish. A rock flume stabilises the overflow as indicated in the drawing below.

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A	11/04/2022	Draft for Review
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DATE
JUNE 2022

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LANDSCAPE METHOD

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SITE ADDRESS
Blain Road
CAERLEON
NSW 2850

SCALE
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MWRC
SOLAR FARM
LANDSCAPE
PLAN

CONSTRUCTIVE ENERGY

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LANDSCAPE METHODOLOGY

Mr Simon Jones
Director, Community
Mid-Western Regional Council
PO Box 156
Mudgee NSW 2850

By email: simon.jones@midwestern.nsw.gov.au

Our ref: 105501-01

Dear Simon

Re: Mudgee Solar Farm – Solar Glare Analysis

Please find in this correspondence the results of a solar glare analysis in relation to the development of the Mudgee Solar Farm (the Project) located in the vicinity of Mudgee aerodrome, as well as potential glare impact by the Project relating to the future development of adjoining (zoned) residential land.

1.1. Project background

Constructive Energy Pty Ltd are developing the Mudgee Solar Farm, to be located approximately 2 km northwest from the outskirts of the town of Mudgee, in the Mid-Western Regional Council local government area.

The Project is proposed to consist of a PV solar installation comprised of a single-axis tracking system with its axis orientated north-south.

It is understood the applicable Planning Assessment Panel has given a 2–4-week deferral period for the proponent to conduct a glint and glare assessment relating primarily to the future development of adjoining (zoned) residential land, to be located immediately east of the Project area.

1.2. Scope of Works

The following items form the scope of works:

1. outline the planning context (both from an aviation perspective and in relation to residential land)
2. conduct an assessment of the solar panel layout using the ForgeSolar Solar Glare Hazard Analysis Tool (SGHAT) in relation to non-aviation receptors in the future residential development including houses and roads, and the existing aircraft approach paths at Mudgee aerodrome; and
3. provide a written letter report that documents the findings of the analysis.

1.3. Methodology

The engagement was delivered as outlined below:

1. review client material
2. review and outline the planning context
3. prepare a solar glare analysis using the ForgeSolar software
4. prepare a final letter report for client acceptance.

1.4. References

References used or consulted in the preparation of this report include:

- Airservices Australia, Aeronautical Information Package; including AIP Book, Departure and Approach Procedures, and En Route Supplement Australia effective 16 June 2022
- Civil Aviation Safety Authority, Part 139 (Aerodromes) Manual of Standards 2019, dated 5 September 2019
- Civil Aviation Safety Authority, *Civil Aviation Safety Regulations 1998* (CASR)
- Department of Infrastructure and Regional Development, Australian Government, National Airport Safeguarding Framework, Guideline E *Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*
- Federal Aviation Administration, Interim Policy, *FAA Review of Solar Energy System Projects on Federally Obligated Airports* 78 FR 63276, Federal Register, vol. 78, No. 205, dated October 2013
- Federal Aviation Administration, Final Policy, *FAA Review of Solar Energy System Projects on Federally Obligated Airport, 14 CFR Part 77,* dated 11 May 2021
- NSW Government – Large-Scale Solar Energy Guideline December 2018
- State Environmental Planning Policy (Infrastructure) 2007 (version 22 January 2021)
- *Mudgee Regional Airport Master Plan 2015,* prepared by Rehbein Airport Consulting
- Mid-Western Regional Council, Environmental Regional Environment Plan 2012, 30 June 2022

1.5. Client material

Constructive Energy Pty Ltd provided the following materials for the purposes of this assessment:

- Drawing No. 920.4 Rev 2 – FUTURE DEVELOPMENT OVERLAY, received 21 July 2022
- Drawing CAERLEON STAGE 14_PRE-LODGEMENT DA, received 21 July 2022
- PV module Datasheet, JKM530-550M-72HL4-(V)-F1-EN, received 21 July 2022
- Project area, Mudgee Solar Farm, kml, received 21 July 2022

1.6. Site overview

The solar farm is located approximately 2 km northwest from the outskirts of the town of Mudgee and 2.2 km west of Castlereagh highway. Mudgee aerodrome (YMDG) is located approximately 6.5 km northeast of the solar farm, to the aerodrome reference point.

Future development of adjoining (zoned) residential land will result in the development of housing less than 100 m to the east of the perimeter of the solar farm.

Figure 1 shows an overview of the Project area in relation to the town of Mudgee and Mudgee aerodrome. (Source, Constructive Energy, Google Earth)

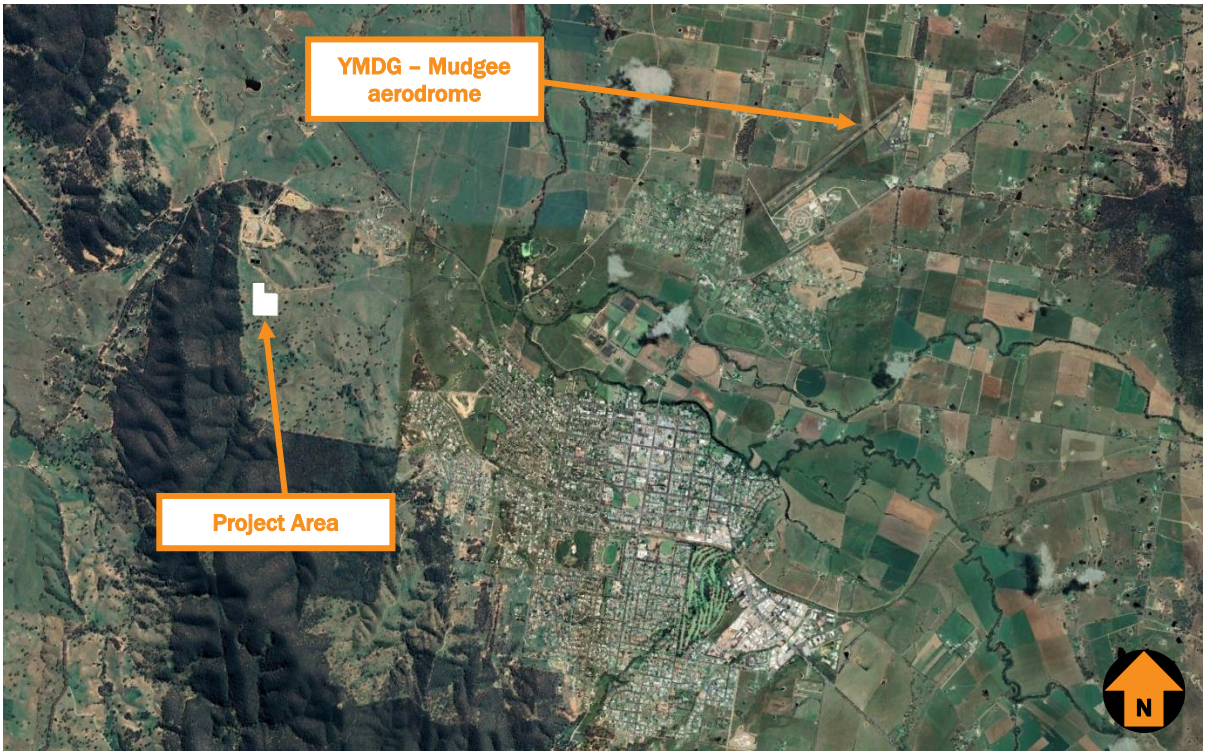

Figure 1 Project area overview

Figure 2 provides an excerpt of the *Future Development Overlay* plan (Drawing No. 920.4) showing the location of the solar farm in relation to the future development of residential areas. (Source, Constructive Energy).

The location of the solar farm in relation to an indicative overview of planned future development of residential areas is shown further in Figure 3. (Source, Constructive Energy, Google Earth)

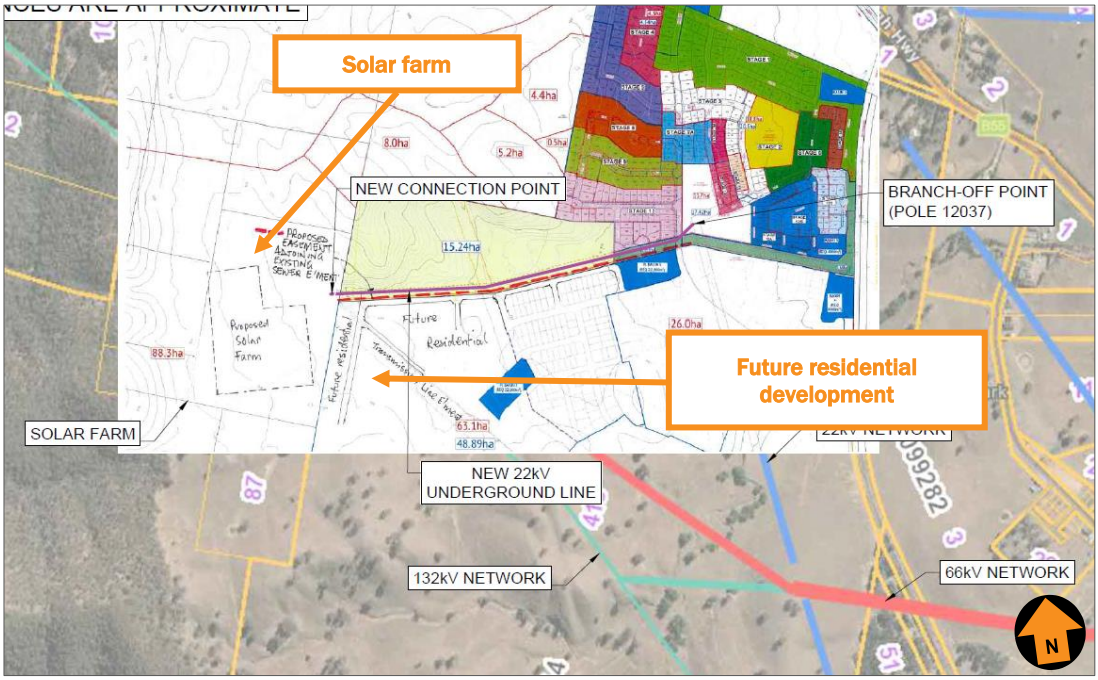

Figure 2 Solar farm in relation to future residential development

Figure 3 Solar farm in relation to future residential development

1.7. NSW Government – Large-Scale Solar Energy Guideline December 2018

The NSW Government has developed the Large-Scale Solar Energy Guideline for guidance on the planning framework for large scale solar developments under the Environmental Planning and Assessment Act 1979 (EP&A Act).

The guideline was prepared to provide guidance for applications for development consent for solar energy projects deemed as State significant development (as defined).

The planning framework applicable to the Project is not reviewed in detail as part of this assessment, except for the application of any prescribed glint and glare impacts to aviation and non-aviation receptors contained in the guideline.

Key site constraints are listed in the guideline in Section 4.2 which provides certain issues which may arise from development in relation to the following constraints:

- Visibility and topography
- Biodiversity
- Residences
- Natural hazards
- Resources
- Crown Lands

Visual impact is identified as a potential issue in the guideline which relates to:

> *The impacts on landscape character and values and the visual amenity of landholders and communities.*

Traffic and transport issues are also identified, relating to:

> *consideration of whether the local and classified road network can accommodate the traffic generated by the construction of the solar project, and the need for any road upgrades and ongoing maintenance, having regard to any advice from relevant road authorities.*

There is no specific reference to glint and glare impacts or ocular affect arising from solar installations specified in the NSW Government Large-Scale Solar Energy Guideline December 2018.

1.8. Mid-Western Regional Council

The Mid-Western Regional Council has established the Environmental Regional Environment Plan 2012 under the EP&A Act. The plan aims to make local environmental planning provisions for land in Mid-Western Regional in accordance with the relevant standard environmental planning instrument under section 33A of the Act, including to:

protect the settings of Mudgee, Gulgong, Kandos and Rylstone by:

> *(i) managing the urban and rural interface, and*
>
> *(ii) preserving land that has been identified for future long term urban development, and*

(iii) promoting urban and rural uses that minimise land use conflict and adverse impacts on amenity

The current version dated 01 December 2021 includes the protection of airspace operations at Mudgee Airport in Section 6.8 Airspace operations—Mudgee Airport:

(1) The objectives of this clause are as follows:

(a) to provide for the effective and ongoing operation of the Mudgee Airport by ensuring that such operation is not compromised by proposed development that penetrates the Limitation or Operations Surface for that airport,

(b) to protect the community from undue risk from that operation.

(2) If a development application is received and the consent authority is satisfied that the proposed development will penetrate the Limitation or Operations Surface, the consent authority must not grant development consent unless it has consulted with the relevant Commonwealth body about the application

(3) The consent authority may grant development consent for the development if the relevant Commonwealth body advises that:

(a) the development will penetrate the Limitation or Operations Surface but it has no objection to its construction, or

(b) the development will not penetrate the Limitation or Operations Surface.

(4) The consent authority must not grant development consent for the development if the relevant Commonwealth body advises that the development will penetrate the Limitation or Operations Surface and should not be constructed.

The Project will not impact the Limitation or Operations Surfaces of Mudgee Airport.

1.9. Mudgee Airport Master Plan

The *Mudgee Regional Airport Master Plan 2015* was prepared by Rehbein Airport Consulting in February 2015. The master plan was finalised in August 2015 and adopted by Mid-Western Regional Council 21 October 2015.

The Master Plan sets out short, medium and long-term proposals for aeronautical and non-aeronautical development within the airport land and identifies opportunities for adjacent airport related development consistent with the Mid-Western Local Environmental Plan (LEP) 2012.

Three primary development objectives were identified in the master plan, including to *Protect the airport and its operation from incompatible development and activities external to the airport.*

Section 4 of the master plan identifies economic and business development opportunities that were considered in estimating potential future aviation activity at the airport as well as in the land use planning to ensure aviation-related opportunities can be accommodated. Aviation opportunities included:

- Passenger services, including potential for triangulated RPT services with Dubbo or other centres further west of Mudgee
- Commercial flight training

- Private flight training
- Recreational flying
- Tourism related aviation, including itinerant aircraft visitation, fixed base operators, charter and pleasure flights and skydiving
- Aircraft maintenance, repair and overhaul, and
- Residential airpark development.

The master plan does not propose any upgrades or extensions to the existing runway and runway strip geometry and characteristics, except for safeguarding for a future increase in runway strip width for Runway 04/22. Four proposed development areas are identified in Section 5.3.2, which are the Terminal precinct, Northern, Southeast and Southwest development zones.

Section 7.6.1 *Obstacle Limitation Surfaces* states that *The Master Plan does not propose any changes to either of the runways, therefore the existing OLS will remain relevant.*

The Project is located outside of the OLS associated with current and future Mudgee Airport operations and will not impact proposed airport development.

1.10. Aviation Planning context summary – glare analysis (Federal Aviation Administration)

Solar photovoltaic (PV) panels can produce glint (a momentary flash of bright light) and glare (a continuous source of bright light), which could result in an ocular impact to pilots or air traffic controllers.

The Federal Aviation Administration (FAA) provided a free tool called So*lar Glare Hazard Analysis Tool* (SGHAT) and supporting Interim Policy 78 FR 63276 for the assessment of solar glare.

The assessment requirement specified:

> *No potential for glare or "low potential for after-image" along the final approach path for any existing landing threshold or future landing thresholds (including any planned interim phases of the landing thresholds). The final approach path is defined as two (2) miles from fifty (50) feet above the landing threshold using a standard three (3) degree glidepath.*

SGHAT was withdrawn from public access in 2017. The ForgeSolar glare analysis tool is recommended instead for non-military/government users and is used for the analysis of the Mudgee solar farm.

The analysis should determine the level of adherence to the FAA policy for these components:

1. Analysis time interval and eye characteristics used are acceptable
2. No glare of any kind for Air Traffic Control Tower(s) (ATCT) at cab height
3. Flight path receptor(s) do not receive yellow glare.

FAA Final Policy - In May 2021, the FAA released the final policy: *Review of Solar Energy System Projects on Federally Obligated Airports.* This policy replaces the interim policy which had until May 2021 been the basis for reviewing solar projects in relation to aviation impacts in the USA, and broadly accepted internationally as the preferred standard for the review of solar impacts for aviation.

The final policy only applies to Federally obligated airports in the USA and is primarily interested in the potential impact of solar glare on air traffic control tower personnel. (The interim policy required federally obligated airports to conduct an ocular analysis of potential glint and glare effects to pilots on final approach and air traffic control tower (ATCT) cabs before construction begins.) Initially, the FAA believed that solar energy systems could introduce a novel glint and glare effect to pilots on final approach. FAA has subsequently concluded that in most cases, the glint and glare from solar energy systems to pilots on final approach is similar to glint and glare pilots routinely experience from water bodies, glass facade buildings, parking lots, and similar features.

There is no air traffic control tower at Mudgee airport, and the FAA Final policy would generally not apply to solar farm development near the aerodrome. For this assessment, 2-mile flight paths for both runways at Mudgee airport will be assessed despite the change in FAA policy.

1.11. Civil Aviation Safety Authority – Aerodromes

The Civil Aviation Safety Authority (CASA) regulates aviation activities in Australia. Standards for certified aerodromes are established in Part 139 MOS 2019. Chapter 9.143 of Part 139 MOS (Other lighting on the aerodrome) states in section (8) and (9):

> *(8) An aerodrome operator must immediately notify CASA in writing of any proposals for equipment or lighting installation within the aerodrome boundary which would reflect sunlight, including solar panels, mirrors or reflective building cladding,* and
>
> *(9) An aerodrome operator must not proceed with any proposal mentioned in subsection (8) unless CASA has determined, in writing, that it will not cause a hazard to aircraft operations.*

The proposed Mudgee solar farm is not located within the boundary of Mudgee aerodrome and is therefor not subject to the requirements of Part 139 MOS 2019.

1.12. National Airport Safeguarding Framework Guideline

The National Airport Safeguarding Framework Guideline E *Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports* provides guidance on the potential risk of distractions to pilots of aircraft from lighting and light fixtures near airports but does not specifically address solar glare.

NASF Guideline E provides advice for situations where lights are to be installed within a 6 km radius of a known aerodrome.

The proposed solar farm is located within 6 km of Mudgee aerodrome, however due to solar glare not being specifically addressed in NASG Guideline E, and Part 139 MOS 2019 not applying to solar installations beyond an aerodrome boundary, the NASF context is not considered applicable to the Mudgee solar farm.

1.13. ForgeSolar analysis

ForgeSolar employs an interactive Google map where the user can quickly locate a site, draw an outline of the proposed PV array(s), and specify observer locations or paths. Latitude, longitude, and elevation are automatically queried from Google, providing necessary information for sun position and vector calculations. Additional information regarding the orientation and tilt of the PV panels, reflectance, environment, and ocular factors are entered by the user.

The ocular impact of solar glare is quantified into three categories:

- Green - low potential to cause after-image (flash blindness)
- Yellow - potential to cause temporary after-image
- Red - potential to cause retinal burn (permanent eye damage)

A glare analysis was prepared using the ForgeSolar application for the proposed Project layout with settings as per details provided in Table 1. Five separate PV arrays were established for the solar farm footprint.

Table 1 Solar glare analysis settings

Parameter	*Setting*
Axis tracking	Single
Tracking Axis orientation	0°
Maximum tracking angle	52°
Backtracking	Various – analysis performed for all configurations (Refer Section x)
Panel material	Smooth glass with AR coating
Reflectivity	Vary with sun
Slope error	Correlate with material

Table 2 provides a description of the receptors established for the solar glare analysis.

Table 2 Receptor description

Receptor(s)	*Comment*
Aviation: 2-mile flight paths	Established for all 4 runway ends at Mudgee aerodrome: • RWY 16 & 34 • RWY 04 & 22
Observation point receptors	Observation points (houses) simulates an observer at a single, discrete location, defined by a latitude, longitude, elevation, and height above ground. 40 locations have been selected as observation point receptors in a representative location for future residential development immediately east of the Project area.
Route receptors (roads)	The route receptor is a generic multi-line representation which can simulate observers traveling along continuous paths such as roads. 7 route receptors (roads) were established for existing nearby roads and representative roads for the future development of adjoining (zoned) residential land.

The non-aviation receptors utilised for the solar glare analysis are demonstrated in Figure 4 (source: ForgeSolar analysis 05 August 2022).

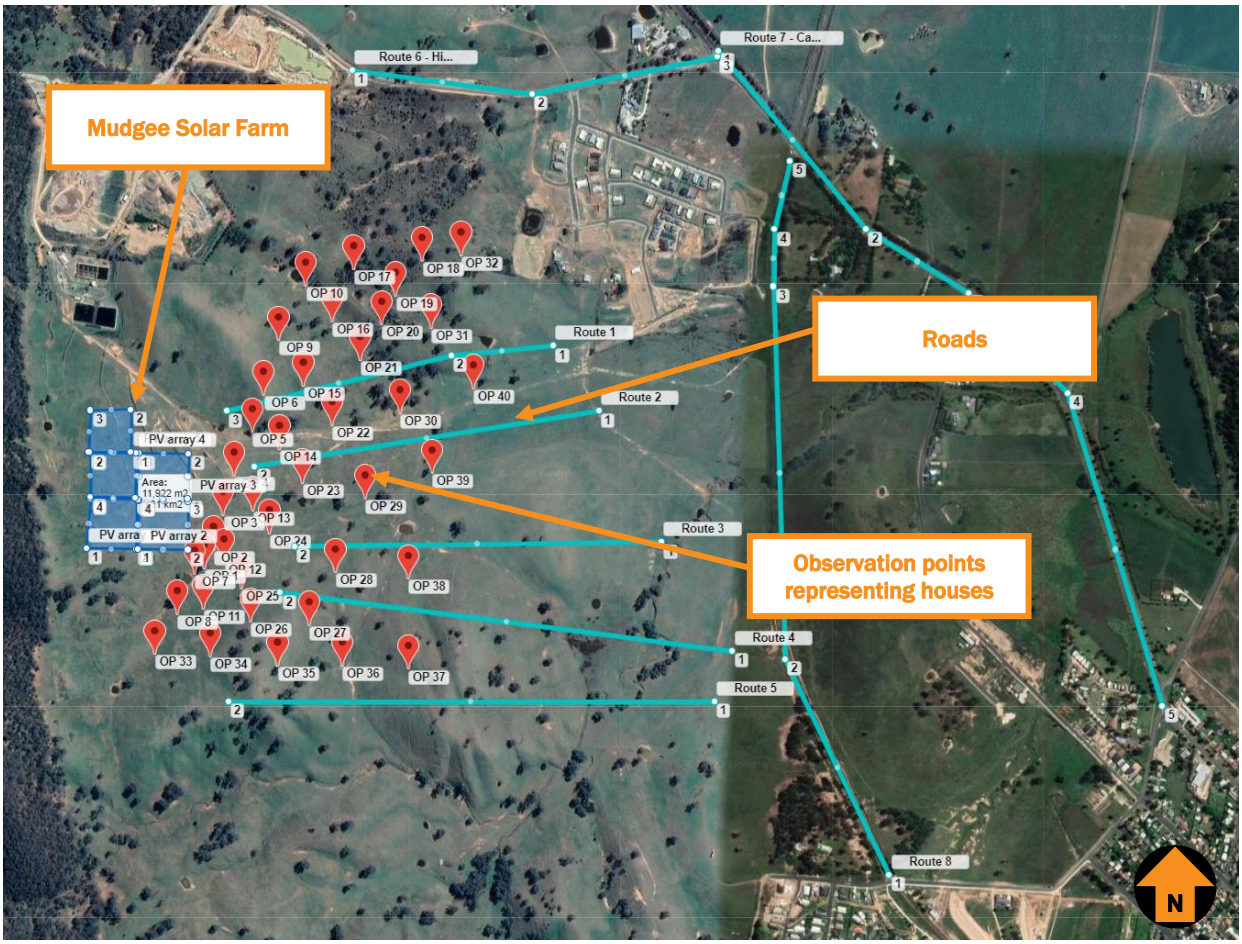

Figure 4 non-aviation receptor configuration

The aviation configuration (2-mile flight path receptors for Mudgee aerodrome) is shown in Figure 5. (source: ForgeSolar analysis 05 August 2022).

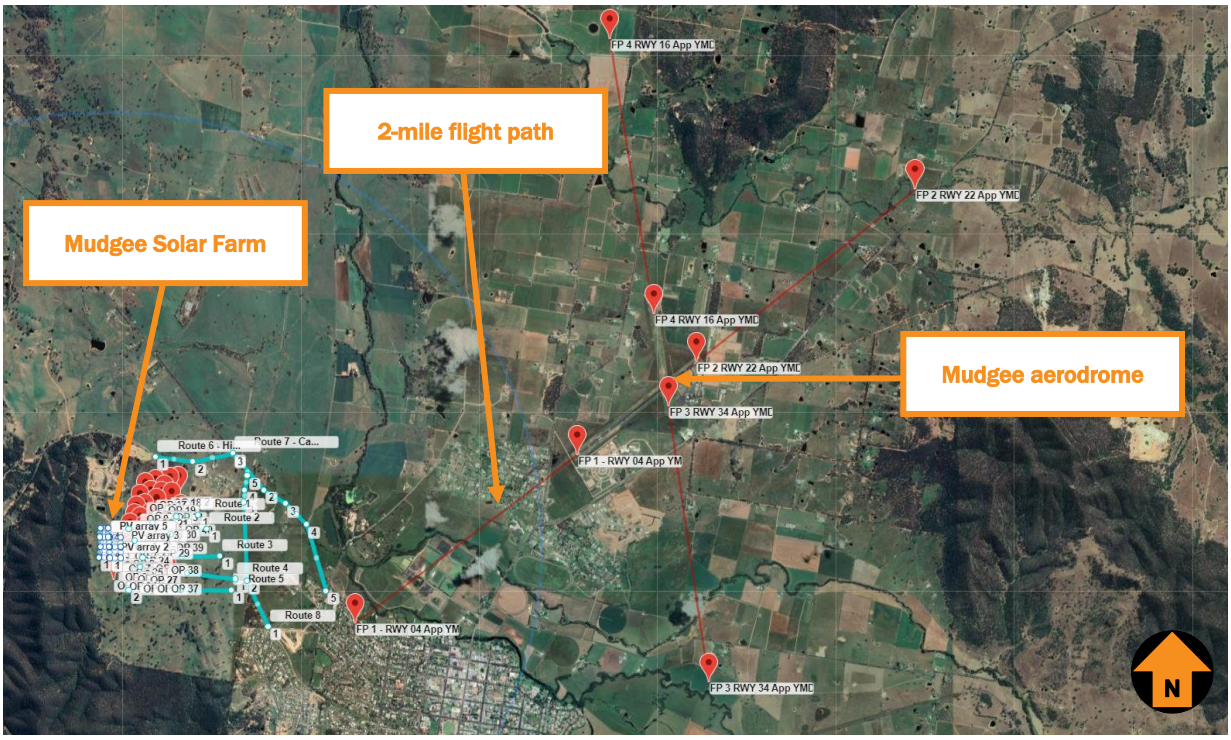

Figure 5 Mudgee aerodrome 2-mile flight path configuration

Backtracking configuration

The backtracking PV parameter can be used to simulate various strategies that rotate the modules away from the sun to reduce shading. These strategies typically take effect when the sun's position lies outside the range of rotation defined by the maximum tracking angle of the PV panels, or when substantial shading occurs, depending on the strategy selected.

Solar glare analysis has been undertaken for the Mudgee solar farm using all 5 backtracking configurations, with results presented in separate glare analysis reports. A system with no backtracking functionality means the PV modules rotate to track the sun through the range of rotation (determined by the proposed maximum tracking angle 52°) and will not backtrack to avoid shading.

A system with backtracking functionality would normally result in glare to nearby receptors when the PV panels are parallel with the ground when the sun is close to ground to avoid shading, theoretically causing the light to be reflected off the panels on to receptors directly behind the array

Table 3 explains the backtracking configuration available for analysis of single-axis tracking PV installations. (Source, ForgeSolar)

Table 3 Backtracking configuration explanation

Configuration	*Explanation*
none	PV modules rotate to track the sun through the range of rotation determined by the (+/-) maximum tracking angle. The modules will not rotate beyond this limit and will not backtrack. This option effectively disables backtracking for single-axis tracking systems
shade-slope:	non-slope-aware temporal strategy that assumes panels are on flat ground. This option may lose accuracy for systems built on a slope (i.e., with vertical offsets between rows.)
Shade	non-slope-aware temporal strategy that assumes panels are on flat ground
interval	step-based method that discretely backtracks the PV modules over time
instant	PV modules immediately revert to the rest position, defined by the rest angle input, whenever the sun is outside the range of rotation.

Figure 6 provides a description of the effect of the backtracking configuration for a single-axis system (source, ForgeSolar)

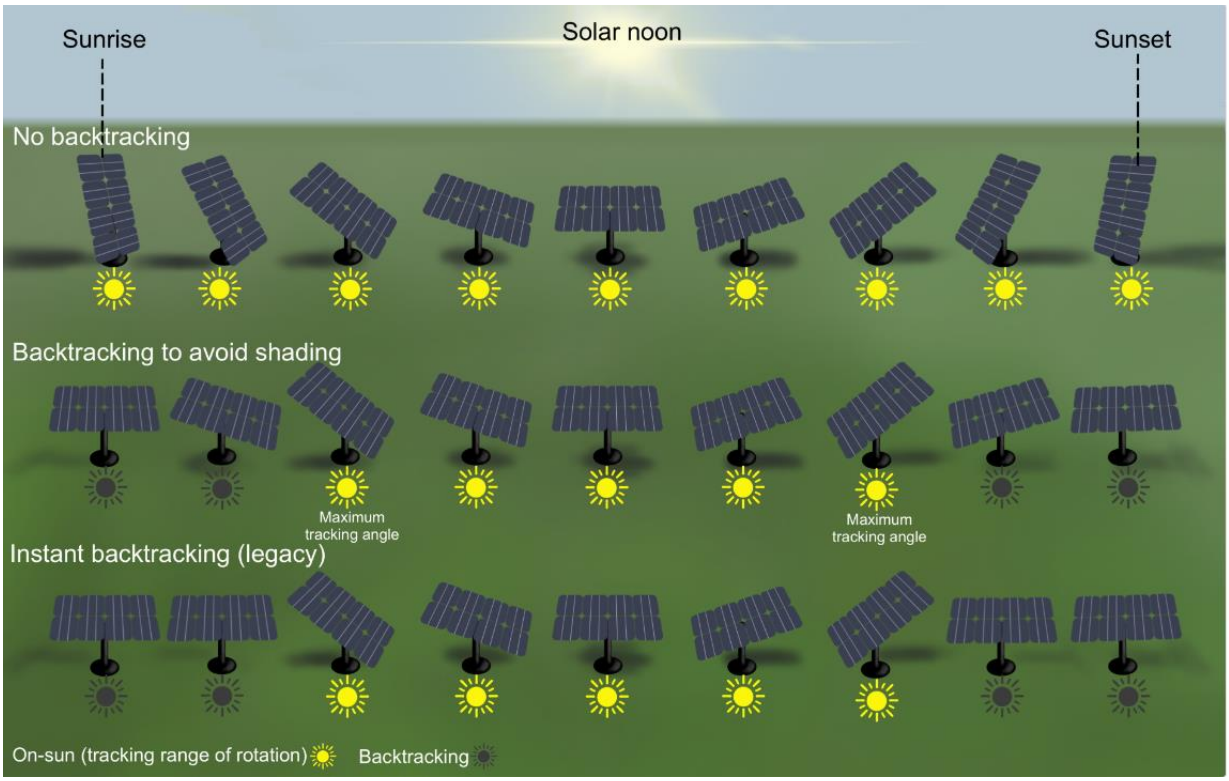

Figure 6 backtracking configuration illustration

1.14. Solar glare analysis results

A summary of the predicted glare for each backtracking configuration is provided in Table 4. A solar glare analysis report is provided in the Annexures of this report for each configuration.

Table 4 Glare summary

Backtracking configuration	*Glare summary*
none	No green or yellow glare experienced for any receptor
shade-slope:	No green or yellow glare experienced for any receptor
Shade	Yellow glare (potential for temporary after-image) predicted on several observation point receptors (houses). Most significant impacts were observed on OP 5, OP 6 and OP 14. The most yellow glare predicted is 18.6 hours annually. Routes 1 and 2 experience the most yellow glare. (Less than 16 hours annually)
interval	Yellow glare (potential for temporary after-image) predicted on several observation point receptors (houses), but less significant than the Shade backtracking configuration. Most significant impact is 11.3 hours of yellow glare annually predicted for OP 6.

Backtracking configuration	*Glare summary*
instant	This configuration predicts the most significant yellow glare impacts with several Ops (houses) predicted to experience between 30-60 hours of annual yellow glare. Figure 7 shows the houses with more than 40 hours of predicted annual yellow glare (yellow circles). The roads with more than 40 hours predicted annual yellow glare are identified by label.

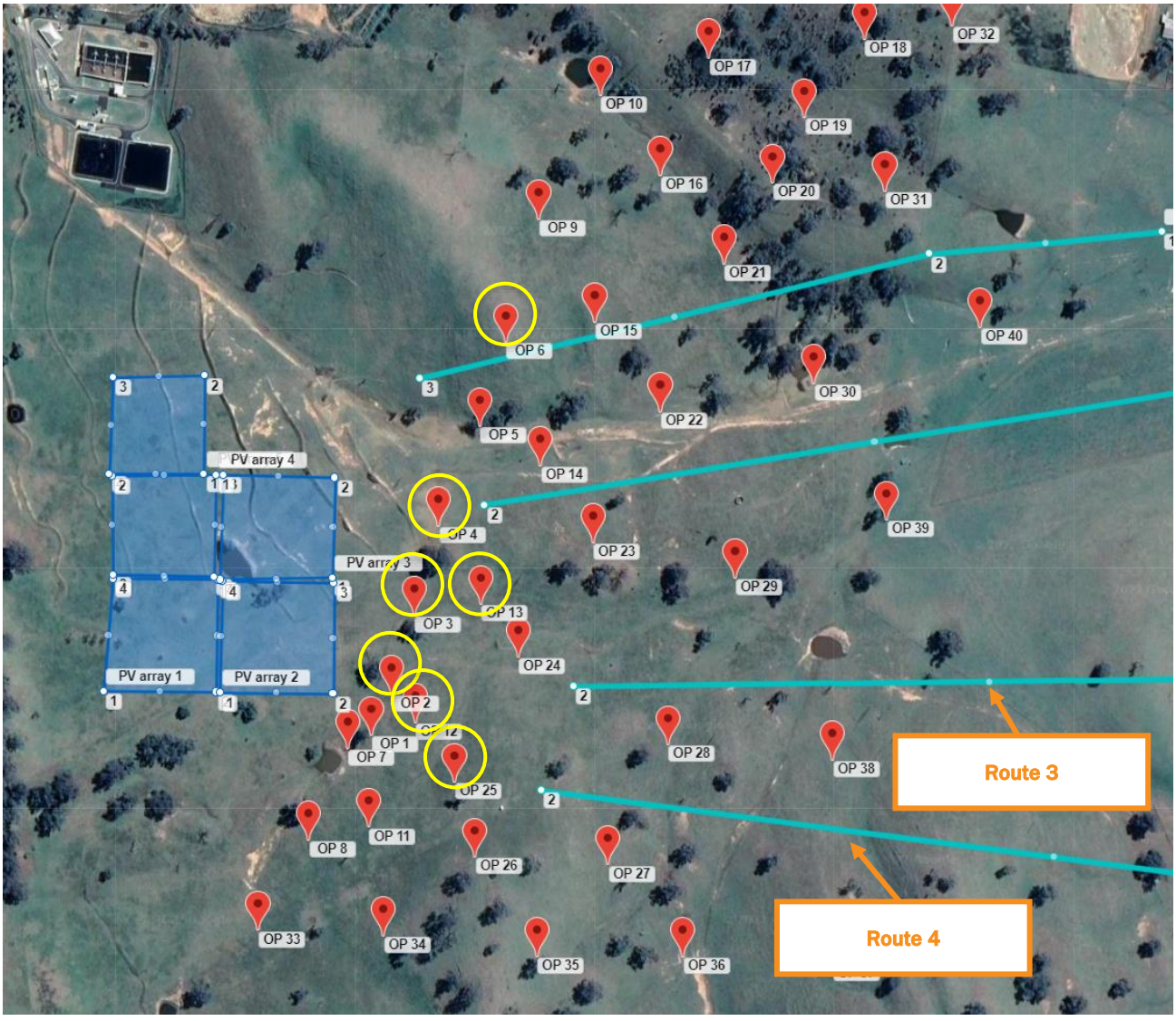

Figure 7 Receptors with more than 40 hours of predicted annual yellow glare (instant backtracking configuration)

1.15. ForgeSolar Assumptions and Limitations

The ForgeSolar analysis tool provides an explanation of the assumptions and limitations that may affect the results of the solar glare analysis, including the following pertinent points:

- an average reflectance of 10% is provided as a default value (considered to be as low as 1.2% reflectance for PV modules with antireflective coating)
- The algorithm does not consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
- The system output calculation is a Direct Normal Irradiance (DNI)-based approximation that assumes clear, sunny skies year-round

1.16. Summary

Aviation Projects has conducted the solar glare analysis utilizing the ForgeSolar application tool and in terms of adherence to the FAA (aviation) policy, it was found that each component of the analysis accorded with the applicable policy aspect:

1. Analysis time interval and eye characteristics used are acceptable
2. Flight path receptor(s) are not exposed to any glare

Some observation points (houses) and roads in the proposed residential development may experience yellow glare, depending on the backtracking configuration used.

It is understood the backtracking configuration for the single-axis tracking system is still under review, subject to the actual operating characteristics of the facility being confirmed. Selection of nil backtracking will result in no glare experienced for any receptor included in the analysis. The backtracking systems designed to optimise the efficiency of the system create the most predicted 'yellow' glare to nearby receptors, however this is still considered low to negligible.

The FAA recently updated the aviation policy for solar glare to remove the requirement to test the impact of 'yellow' glare on aircraft flight paths in recognition that the glare impacts to pilots would be no greater than reflection off water bodies and windows. The worst-case predicted glare result for the Mudgee solar farm (using the instant backtracking configuration) is for approximately 1 hour of yellow glare per week for certain receptors, based on the assumption of clear, sunny skies all year round and an average reflectance of 10% applied to PV panels for the analysis. Actual glare outcomes are predicted to be much less than the conservative outcome(s) established in the analysis.

The solar array may result in fleeting, minor inconvenience for nearby residents, equivalent to sunlight reflecting off a car window, pool or roof and could be readily mitigated through sunglasses, gardens or curtains. The implementation of screening vegetation, anti-glare coating and artificial and natural obstructions between the solar farm and residential development will act to reduce glare even further.

The NSW Government guideline for large-scale solar energy projects does not specifically address glare impacts for residential dwellings and there is no reference to the ocular impact of solar glare as defined in the ForgeSolar analysis tool and applied in the aviation context.

If you wish to clarify or discuss the contents of this correspondence, please contact me on 0417 862 727 or Peter White on 0424 110 501.

Kind regards

Jarrod Bell

Specialist Airport Operations Consultant

10 August 2022

Enclosures:

1. ForgeSolar-analysis-report-mudgee-220805-0306-828_Nil backtracking_v0.1
2. ForgeSolar-analysis-report-mudgee-220805-0314-421_shade slope backtracking_v0.1
3. ForgeSolar-analysis-report-mudgee-220805-0326-299_shade backtracking_v0.1
4. ForgeSolar-analysis-report-mudgee-220805-0346-036_interval backtracking_v0.1
5. ForgeSolar-analysis-report-mudgee-220805-0404-667_instant backtracking_v0.1

Attachment 2: Revised Draft Conditions of Consent

Draft Conditions

APPROVED PLANS

1. The development is to be carried out generally in accordance with the following stamped plans except where amended as required by the following conditions. Approved documentation may include any Planning or Engineering reports submitted with and in support of the Application as detailed below.

Title / Name:	Drawing No. / Document Ref. / Sheet No.:	Revision:	Date:	Prepared by:
PV Layout(2) for DA	102	6	14/02/2022	EQUANS
Civil Works	400	5	14/02/2022	EQUANS
Key Equipment Elevations	300	2	10/11/2021	EQUANS
Mudgee Solar Farm Landscape Plan	Sheets 1 - 4	C	20/06/2022	Ecostaff
Land and Water Management Plan	-	-	-	Constructive Energy

Any minor modification to the approved plans other than as required by following conditions will require the lodgement and consideration by Council of amended plans and lodgement of a Modification Application.

2. For clarity, this development consent provides approval for a 5MW electricity generating works (solar farm) with ancillary infrastructure. No battery storage or advertising signage is authorised by this development consent.

GENERAL

3. There shall be no clearing of native vegetation other than to the extent nominated within the application without the prior consent of Council.

4. In the event of any Aboriginal archaeological material being discovered during earthmoving/construction works, all work in that area shall cease immediately and the Office of Environment, Energy and Science (OESS) notified of the discovery as soon as practicable. Work shall only recommence upon the authorisation of the (OESS).

5. All earthworks, filling, building, driveways or other works, are to be designed and constructed to ensure that at no time any ponding of stormwater occurs on the subject site or adjoining land as a result of this development. Design must also ensure that no diversion of runoff onto other adjacent properties occurs.

6. The only waste derived fill material that may be received at the development site must be:

    a) Virgin excavated natural material, within the meaning of the *Protection of the Environment Operations Act 1997*; and
    b) Any other waste-derived material the subject of a resource recovery exemption

under cl.91 of the *Protection of the Environment Operations (Waste) Regulation 2014* that is permitted to be used as fill material.

7. Costs associated with all development works including any necessary alteration, relocation of services, public utility mains or installations must be met by the developer. The developer is responsible to accurately locate all existing services before any development works commence to satisfy this condition.

8. Any damage which is caused to Council's infrastructure as a result of the proposed development must be repaired immediately to Council's satisfaction and at no cost to Council.

9. Where required, all private sanitary drainage and water supply works which require Council's permit and private stormwater drainage works must be carried out in strict accordance with AS/NZS 3500, Plumbing and Drainage Act 2002 and Plumbing and Drainage Regulations to the complete satisfaction of the Plumbing and Drainage Inspector.

10. The Applicant must ensure that the development does not cause any water pollution, as defined under Section 120 of the Protection of the Environment Operations Act 1997.

11. The Applicants shall, at their own expense, engage a registered surveyor to relocate any survey mark that may be disturbed by the development or any associated work. Any information regarding relocation should be supplied to the Land Registry Services and Council.

12. To reduce the likelihood of air emissions, dust and noise impacts, the Applicant shall ensure that all the plant and equipment used at the site is:

    a) maintained in a proper and efficient condition; and,
    b) operated in a proper and efficient manner.

13. The developer and / or the landowner, as relevant, is responsible for all costs associated with construction and rehabilitation of the site.

14. The Applicant must minimise the noise generated by any construction, upgrading or decommissioning activities on site in accordance with the best practice requirements outlined in the *Interim Construction Noise Guideline* (DECC, 2009), or its latest version.

15. The Applicant must minimise the dust generated by the development at all times.

16. The Applicant must:

    a) minimise the off-site visual impacts of the development, including the potential for any glare or reflection;
    b) ensure the visual appearance of all ancillary infrastructure (including paint colours) blends in as far as possible with the surrounding landscape; and
    c) not mount any advertising signs or logos on site, except where this is required for identification or safety purposes.

17. The Applicant must:

    a) ensure the solar panels and ancillary infrastructure (including security fencing) are designed, constructed and maintained to reduce impacts on localised groundwater at the site;
    b) minimise any soil erosion associated with the construction, upgrading or

decommissioning of the development in accordance with the relevant requirements in the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) manual, or its latest version; and

c) ensure the solar panels and ancillary infrastructure are designed, constructed and maintained to avoid causing any erosion on site.

18. The Applicant must:

a) store and handle all dangerous or hazardous materials on site in accordance with AS1940-2004: The storage and handling of flammable and combustible liquids, or its latest version;
b) ensure the materials or goods stored are suitably bunded; and
c) minimise any spills of hazardous materials or hydrocarbons, and clean up any spills as soon as possible after they occur.

19. The Applicant must commission and pay the full cost of Independent Environmental Audits of the development. The audits must:

a) be led and conducted by a suitably qualified, experienced and independent team of experts;
b) be prepared, unless otherwise agreed with Council:
   i. within 3 months of commencing construction;
   ii. within 3 months of commencement of operations; and
   iii. as directed by Council;
c) be carried out in consultation with the relevant agencies;
d) assess whether the development complies with the relevant requirements in this consent, and any strategy, plan or program required under this consent; and
e) recommend appropriate measures or actions to improve the environmental performance of the development and any strategy, plan or program required under this consent.

Within 3 months of commencing an Independent Environmental Audit, or unless otherwise agreed, a copy of the audit report must be submitted to Council, and any other NSW agency that requests it, together with a response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations of the Independent Environmental Audit must be implemented to the satisfaction of Council.

20. All internal driveways and access tracks must be constructed of compacted gravel to a suitable standard to sustain all construction and future maintenance traffic requirements. Pavement must be wide enough to allow two vehicles to safety pass or with provision made for localized widening. Where necessary culverts or suitable erosion protection measures must be made for stormwater drainage.

21. Car parking areas must be provided of sufficient size to allow for one car parking space per two employees for the life of the proposal. Car parking areas must generally provide sufficient space for parking and manoeuvring as specified in AS2890.1 - Parking facilities – Part 1: Off-street car parking. Car parking and laydown areas must be constructed of compacted gravel / crushed rock / road base and maintained to the satisfaction of Council at all times. The car parking and laydown areas must also be provided with appropriate erosion and sediment controls maintained to ensure no sediment enters downstream waterways.

22. Stormwater runoff from pavement areas must be managed within the site and dispersed to landscaped areas.

23. All earthworks must ensure that the site shall be graded so as to be free draining.

24. Any permanent facilities on the site must provide for adequate treatment of waste water. No treated waste water contaminated with oil, grease or other contaminants is permitted to discharge into any natural water course or/and Council stormwater system.

25. Access driveways and pavements must be maintained to the satisfaction of Council at all times.

NSW RURAL FIRE SERVICE REQUIREMENTS

26. The Applicant must:

    a) minimise the fire risks of the development by preparing and implementing a Bush Fire Emergency Management and Operations Plan which should identify all relevant risks and mitigation measures associated with the construction and operation of the solar farm. This should include:
        - detailed measures to prevent or mitigate fires igniting;
        - work that should not be carried out during total fire bans;
        - availability of fire-suppression equipment, access and water;
        - storage and maintenance of fuels and other flammable materials;
        - notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate; and
        - appropriate bush fire emergency management planning.

    Note: It is important to be aware of operations that may be carried out on days of Total Fire Ban and any prohibited activities or exemptions that are notified by the Commissioner of the NSW RFS under the Rural Fires Act s.99.

27. Property access road must comply with the following requirements of Table 7.4a of Planning for Bush Fire Protection 2019:
    - property access roads are two-wheel drive, all weather roads with minimum 4 metre carriageway width;
    - minimum vertical clearance of 4 metre to any overhanging obstructions, including tree branches;
    - the capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles, bridges and causeways are to clearly indicate load rating;
    - hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005;
    - there is suitable access for a Category 1 fire appliance to within 4 metre of the static water supply where no reticulated supply is available;
    - property access must provide a suitable turning area in accordance with Appendix 3;
    - curves have a minimum inner radius of 6 metre and are minimal in number to allow for rapid access and egress;
    - the minimum distance between inner and outer curves is 6 metre;
    - the crossfall is not more than 10 degrees; and
    - maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.

    Note: Some short constrictions in the access may be accepted where they are not less than 3.5 metre wide, extend for no more than 30 metre and where the obstruction cannot

be reasonably avoided or removed.

28. The provision of water, electricity and gas must comply with the following in accordance with Table 7.4a of *Planning for Bush Fire Protection 2019*:
    - A 20,000 litre static water supply must be provided on site;
    - a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure;
    - 65mm Storz outlet with a ball valve is fitted to the outlet;
    - ball valve and pipes are adequate for water flow and are metal;
    - supply pipes from tank to ball valve have the same bore size to ensure flow volume;
    - underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
    - a hardened ground surface for truck access is supplied within 4 metres;
    - above-ground tanks are manufactured from concrete or metal;
    - raised tanks have their stands constructed from non combustible material or - bush fire - resisting timber (see Appendix F of *AS 3959*);
    - unobstructed access can be provided at all times;
    - underground tanks are clearly marked;
    - tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters;
    - all exposed water pipes external to the building are metal, including any fittings;
    - where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and
    - fire hose reels are constructed in accordance with *AS/NZS 1221:1997*, and installed in accordance with the relevant clauses of *AS 2441:2005*;
    - where practicable, electrical transmission lines are underground;
    - where overhead, electrical transmission lines are proposed as follows:
        - lines are installed with short pole spacing (30 metre), unless crossing gullies, gorges or riparian areas; and
        - no part of a tree is closer to a power line than the distance set out in accordance with the specifications in *ISSC3 Guideline for Managing Vegetation Near Power Lines*.
    - reticulated or bottled gas is installed and maintained in accordance with *AS/NZS 1596:2014* and the requirements of relevant authorities, and metal piping is used.

29. Landscaping within the required asset protection zone must comply with Appendix 4 of *Planning for Bush Fire Protection 2019*. In this regard, the following principles are to be incorporated:
    a) A minimum 1 metre wide area (or to the property boundary where the setbacks are less than 1 metre), suitable for pedestrian traffic, must be provided around the immediate curtilage of the building;
    b) Planting is limited in the immediate vicinity of the building;
    c) Planting does not provide a continuous canopy to the building (i.e. trees or shrubs are isolated or located in small clusters);
    d) Landscape species are chosen to ensure tree canopy cover is less than 15% (IPA), and less than 30% (OPA) at maturity and trees do no touch or overhang buildings;
    e) Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;
    f) Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;
    g) Avoid planting of deciduous species that may increase fuel at surface/ ground level (i.e. leaf litter);
    h) Avoid climbing species to walls and pergolas;
    i) Locate combustible materials such as woodchips/mulch, flammable fuel stores away from the building;

j) Locate combustible structures such as garden sheds, pergolas and materials such as timber garden furniture away from the building; and
k) Low flammability vegetation species are used.

ESSENTIAL ENERGY REQUIREMENTS

30. Any existing encumbrances in favour of Essential Energy (or its predecessors) noted on the title of the above property should be complied with.

31. Satisfactory arrangements are to be made with Essential Energy with respect to the proposed photovoltaic system which will form part of the development. It is the Applicant's responsibility to enter into the required Connection Agreement/s and any other requirements with Essential Energy for the development, which may include the payment of fees and contributions. Refer Essential Energy's Network Connections team for requirements via email networkconnections@essentialenergy.com.au.

32. Essential Energy's records indicate there is electricity infrastructure located within the property and within close proximity to the property. Any activities within these locations must be undertaken in accordance with the latest industry guideline currently known as *ISSC 20 Guideline for the Management of Activities within Electricity Easements and Close to Infrastructure*. Approval may be required from Essential Energy should activities within the property encroach on the electricity infrastructure.

33. Prior to carrying out any works, a "Dial Before You Dig" enquiry should be undertaken in accordance with the requirements of *Part 5E (Protection of Underground Electricity Power Lines)* of the *Electricity Supply Act 1995* (NSW).

34. Given there is electricity infrastructure in the area, it is the responsibility of the person/s completing any works around powerlines to understand their safety responsibilities. SafeWork NSW (www.safework.nsw.gov.au) has publications that provide guidance when working close to electricity infrastructure. These include the*Code of Practice – Work near Overhead Power Lines* and *Code of Practice – Work near Underground Assets*.

TRANSGRID REQUIREMENTS

35. TransGrid shall be notified of any amendments / modifications to the proposal which may change distances to Transgrid structures or conductors.

36. All works must be carried out in accordance with NSW WorkCover 'Working near overhead powerlines' Code of Practice 2006.

37. All fencing (including temporary fencing) must comply with Transgrid's Fencing Guidelines, including earthing and/or isolation requirements.

38. If fence heights are not stipulated on the plans, then approval is based on the assumption that all fences will be no higher than 2.5m. If fences are planned taller than 2.5m then full details must be provided.

39. No metallic structures or infrastructure shall be installed unless they form part of the approved plans.

40. Any works proposed **MUST NOT** reduce clearance to conductors below that required in AS7000.

41. Where transmission lines are 132kV and below activities/development/structures must be located at least 20 metres away from any part of a transmission structure or supporting

guy wire, or for metallic structures, be located at least 22 metres away from any part of a transmission structure or supporting guy wire and be located at least 10 metres from the centre of the transmission line.

42. Where transmission lines are 220kV and above activities/development/structures must be located at least 30 metres away from any part of a Transmission structure or supporting guy wire, and be located at least 17 metres from the centre of the transmission line.

43. Precautions must be in place to prevent damage to transmission line structures and guys. Any damage due to construction activities to be reported immediately to Transgrid.

44. No mounds of earth or other materials may be left on the easement during and after earthworks, as this creates a hazard by reducing the vertical clearances to transmission lines.

45. Excavations deeper than 2m such as trenches and pits need individual assessment to ensure there are no adverse impacts, particularly to Transgrid structures and earth straps.

46. Any cut operations as part of bulk earthworks are generally not a concern, provided they do not adversely impact access or encroach within 30m of a structure.

47. Any earthworks involving fill need to be assessed to determine impacts on conductor height clearances. This will require provision of a 3D DXF or otherwise detailed survey plans with before and after RLs to enable a height clearance check to be undertaken. Minor resurfacing works which do not increase ground levels by more than 100mm can be excluded provided this is clearly stated on the plans.

48. Any construction work within the easement shall maintain safety clearances to the exposed conductors in accordance with NSW WorkCover 'Working near overhead powerlines' Code of Practice 2006 (Transgrid may provide preferred crane locations, for the purpose reducing static induction).

49. During construction phase Transgrid access is to be maintained 24/7. Transgrid to provide suitable padlock/s for any gates.

50. The works shall not impede or restrict Transgrid from undertaking normal maintenance and inspection activities and, at completion of works, access to Transmission Lines and structures shall always be available for Transgrid plant and personnel for future TransGrid maintenance activities.

51. Dust: Works must not create excessive quantities of dust and proponent must employ dust suppression. A dust management plan is not expected to be provided to Transgrid, but provision must be made for such a plan to avoid causing damage to the transmission line such as dust pollution on insulators.

52. The easement area shall not be used for temporary storage of construction spoil, topsoil, gravel or any other construction materials.

53. Vehicles or equipment having a height exceeding of 4.3m when fully extended may traverse the easement if stowed and locked for travel. Operation within the easement must be done in accordance with NSW WorkCover Working near overhead powerlines' Code of Practice 2006.

54. Consideration is to be given in the design works for any proposed access ways/roads over Transgrid's easement to cater for the weight and size of Transgrid's maintenance vehicles - to withstand the 40 tonne load capacity of maintenance trucks.

55. For where travel is required by Transgrid's maintenance vehicles, Batter slope is to be no steeper than 1 in 6.

56. Traffic control: During construction, traffic control measures need to be implemented to prevent vehicles colliding with Transgrid's transmission towers.

57. Where temporary vehicular access for parking during the construction period is within 17m of transmission line structure, adequate precautions shall be taken to protect the structure from accidental damage.

PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE

58. Prior to issue of a Construction Certificate, amended plans / information shall be provided to the Certifying Authority detailing the following:

    a) All landscaping shrubs or trees must be mature (i.e. not seedlings / tube stock) at the time of planting;
    b) Include full details of the vegetation management for the development, with commitment to a replacement frequency over the life of the proposal to ensure mortality is kept low (a maximum of 10%), and include confirmation of a water source and minimum watering schedule to ensure survival;
    c) Provision of a minimum of 40,000L of dedicated onsite water storage, or an approved alternative water supply, for the purposes of onsite maintenance to the landscaping and panel cleaning. This supply is required in addition to dedicated firefighting water requirements.

59. Evidence shall be provided to the Certifying Authority, prior to issue of the Construction Certificate, demonstrating that the solar panels have an anti-reflective coating.

60. Prior to issue of a Construction Certificate, the developer is to prepare and submit to Council's satisfaction a comprehensive Site Environmental Management Plan that includes, but shall not be limited, to the following:

    - Management strategies to limit noise and vibration impacts during construction and operation on surrounding land;
    - Management strategies to limit traffic impacts on surrounding land;
    - Measures to reduce air emissions, including dust to surrounding land;
    - Management strategies to ensure groundwater is not contaminated;
    - Measures to conserve water during construction and operation such as during regular cleaning of the infrastructure during operation;
    - Measures to manage groundcover vegetation and reduce bushfire risks to surrounding land;
    - Management strategies to limit the spread and contamination of the site from all waste material including oil used in the integrated transformer and inverter stations along with full details of how each type of waste material will be disposed during construction and operation;
    - Measures to maintain site landscaping for the life of the operations;
    - Rehabilitation objectives and strategies for the site including timeframes for rehabilitation and decommissioning;
    - Specific measures to protect productive capacity including soil and erosion mitigation and weed management practices;
    - Topsoil management proposals to make best use of this resource and

maximise rehabilitation and revegetation success;
- Proposals to reform the landscape to blend with surrounding land and avoid land use conflicts; and,
- Complaints management procedures and contact person for the site including notification processes to be implemented when the owner and / or operator of the site changes over time.

PRIOR TO COMMENCEMENT OF WORKS

61. Prior to commencing works relating to the installation of solar panels, all landscaping is to be installed in accordance with the approved landscaping plan and is to be maintained in accordance with the conditions of this consent.

62. Prior to the commencement of any works within the site the Developer must submit a detailed Stormwater Management Plan (SMP) to Council for assessment and approval prior to commencing any works. The SMP must be supported by full and detailed calculations and must show all proposed measures to provide for the detention and discharge of stormwater runoff from the site at a rate not exceeding existing rate of runoff for the undeveloped land. Any Detention Basin or other features must be located clear of existing sewer infrastructure.

    NOTE: Where possible existing contour banks should be retained or re-located and existing dams should be retained as a permanent feature to provide for fire-fighting purposes.

63. No construction must take place until appropriate erosion control, dust control and silt collection measures are in place to the satisfaction of Council and to relevant engineering standards. Such erosion control, dust control and silt collection measures must remain onsite for the remainder of the construction period.

64. Prior to the commencement of any construction within the proposed development site the applicant must upgrade and construct the proposed access road from Blain Road. The road upgrade must incorporate any and all intersection construction requirements necessary to provide safe and convenient access at all times for other users of the road. Works must comply with all Council requirements.

65. Prior to the commencement of construction detailed design for road and intersection works must be submitted for Council approval. Design requirements to be addressed include:
    (i) All access roads must provide a sealed pavement of suitable width to provide for two-way traffic.
    (ii) Appropriate intersection treatments at all intersection with existing access roads and crossovers.
    (iii) Provision must be made for all existing and proposed services and utilities within the road corridor.
    (iv) Appropriate controls for stormwater runoff are to include appropriate measures to ensure runoff by-passes the existing landfill leachate pond an ensure no scouring or erosion of the embankment occurs.

66. Prior to the commencement of any construction within the proposed development site the applicant must submit detailed plans of the final layout of the development to Council. Details must include the siting of solar panels, the design and layout of any internal access roads and driveways (including provision for stormwater drainage and culverts where necessary), car parking and laydown areas, and the location and design of all ancillary infrastructure.

67. No work shall commence until a Construction Certificate has been issued and the Applicant has notified Council of:

a) the appointment of a Principal Certifying Authority and
b) the date on which work will commence.

Such notice shall include details of the Principal Certifying Authority and must be submitted to Council at least two (2) days before work commences.

68. Prior to commencement of solar array construction activities, landscaping of the site shall be completed in accordance with the approved landscaping plan provided to the Certifying Authority.

69. Prior to commencement of works, the Applicant must prepare a Traffic Management Plan including Driver Code of Conduct for the development which is to be submitted to Council. This plan must include:

a) details of the transport route to be used for all development-related traffic in accordance with the conditions of consent;

b) a protocol for undertaking independent dilapidation surveys to assess the existing condition of all nominated access roads prior to the commencement of construction;

c) a protocol for the repair of any public road if dilapidation surveys identify the road to be damaged during construction, upgrading or decommissioning works;

d) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:

- temporary traffic controls, including detours and signage;
- notifying the local community about project-related traffic impacts;
- procedures for receiving and addressing complaints from the community about development-related traffic;
- minimising potential for conflict with school buses, other motorists and rail services as far as practicable;
- minimising dirt tracked onto the public road network from development-related traffic;
- details of any employee shuttle bus service and measures to ensure employee use of this service;
- scheduling of haulage vehicle movements to minimise convoy length or platoons;
- responding to local climate conditions that may affect road safety such as fog, dust and wet weather;
- responding to any emergency repair or maintenance requirements; and
- a traffic management system for managing over-dimensional vehicles;

e) a driver's code of conduct that addresses:

- travelling speeds;
- driver fatigue;
- procedures to ensure that drivers adhere to the designated transport routes; and
- procedures to ensure that drivers implement safe driving practices;

f) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan;
g) A flood response plan detailing procedures and options for safe access to and from the site in the event of flooding.

Following approval, the Applicant must implement the Traffic Management Plan during construction and operation.

70. Prior to commencement of construction, a comprehensive Fire Management Plan (FMP) shall be prepared in consultation and to the satisfaction of NSW RFS District Fire Control Centre, Fire and Rescue NSW and Council. The FMP shall include:

- 24/7 contact details including alternative telephone contact;
- Site infrastructure plan;
- Firefighting water supply plan;
- Site access and internal road plan;
- Construction of asset protection zones and their continued maintenance;
- Location of hazards (Physical, Chemical and Electrical) that will impact on fire fighting operations and procedures to manage identified hazards during firefighting operations;
- Detail all site management activities including scheduling of site, infrastructure and vegetation maintenance and be consistent with the Department's *Hazardous Industry Planning Advisory Paper No. 2 'Fire Safety Study'* guideline, the NSW Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*, the Department's *Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'*;
- Include procedures that would be implemented if there is a fire on-site or in the vicinity of the site; and,
- Such additional matters as required by the NSW RFS District Office, Fire and Rescue NSW or Council.

Following approval, the Applicant must keep two copies of the plan on-site in a prominent position adjacent to the site entry points at all times and must implement the measures described in the Fire Management Plan during both construction and operations.

71. From the start of building works, the property around the proposed works must be managed as an inner protection area (IPA) for a distance of 10 metres in accordance with the requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*. When establishing and maintaining an IPA the following requirements apply:

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

72. The site shall be provided with a waste enclosure (minimum 1800mm X 1800mm X 1200mm) that has a lid or secure covering for the duration of the construction works to ensure that all wastes are contained on the site. The receptacle is to be emptied periodically to reduce the potential for rubbish to leave the site. Council encourages the separation and recycling of suitable materials.

NOTE: ALL WASTE GENERATED FROM THE CONSTRUCTION PROCESS IS TO BE CONTAINED ON-SITE.

73. A sign must be erected in a prominent position on any work site on which involved in the erection or demolition of a building is carried out;

    a) stating that unauthorised entry to the work site is prohibited, and
    b) showing the name of the person in charge of the work site and a telephone number at which that person may be contacted outside working hours.
    c) the name, address and telephone number of the principal certifying authority for the work,
    d) The sign shall be removed when the erection or demolition of the building has been completed.

74. The development site is to be managed for the entirety of work in the following manner:

    a) Erosion and sediment controls are to be implemented to prevent sediment from leaving the site. The controls are to be maintained until the development is complete and the site stabilised with permanent vegetation;
    b) Appropriate dust control measures;
    c) Construction equipment and materials shall be contained wholly within the site unless approval to use the road reserve has been obtained;
    d) Toilet facilities are to be provided on the work site at the rate of one toilet for every 20 persons or part of 20 persons employed at the site.

75. If the work involved in the erection/demolition of the building;

    a) is likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or
    b) building involves the enclosure of a public place

    A hoarding or fence must be erected between the work site and the public place. If necessary, an awning is to be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place. Any such hoarding, fence or awning is to be removed when the work has been completed.

DURING CONSTRUCTION

76. During construction, all relevant requirements of the approved Site Environmental Management Plan shall be implemented at all times.

77. All building work must be carried out in accordance with the provisions of the National Construction Code, the Environmental Planning & Assessment Act 1979 and Regulations and all relevant Australian Standards.

78. All plumbing and drainage work must be carried out by a licensed plumber and drainer and must comply with the requirements of the Plumbing & Drainage Act 2011 and the Plumbing Code of Australia.

79. Construction work noise that is audible at other premises is to be restricted to the following times:

    - Monday to Saturday - 7.00am to 5.00pm

    No construction work noise is permitted on Sundays or Public Holidays.

80. All mandatory inspections required by the Environmental Planning and Assessment Act 1979 and any other inspections deemed necessary by the Principal Certifier being carried out during the relevant stage of construction.

81. Vehicles must be clean and free of debris prior to leaving the site during construction. Deposited material may be ordered to be removed at the Applicant/operator's expense.

82. During construction the proponent must undertake measures to minimise dust and noise and ensure that the impact on neighbouring properties is minimised.

83. During construction solar panels shall not be left in a fixed position (in particular horizontal).

84. All trucks and mobile plant operating within the premises must be fitted (where there is a requirement for such devices to be fitted under the Work Health and Safety legislation) with broad-spectrum reversing alarms, subject to such alarms not causing an acoustic or amenity impact on adjoining or adjacent residents.

85. Movement of heavy vehicles associated with the development shall only occur in accordance with the approved Traffic Management Plan.

86. Any fill material that is imported to the site must be analysed and classified by an appropriately qualified and experienced environmental consultant in accordance with the relevant NSW EPA Guidelines, including the *Waste Classification Guidelines* (2014). To ensure that fill material is suitable for the proposed use, only material classified as Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) is permitted to be imported onsite.

87. If unexpected soil contaminants are discovered during works which has the potential to alter previous conclusions regarding site contamination; work must cease and Council or NSW Environmental Protection Authority must be notified immediately. The contaminates located are to be evaluated by a supervising environmental consultant and an appropriate response determined in consultation with the developer, which is agreed to by Council.

    Note – Council may also request that a NSW Environmental Protection Authority accredited site auditor is involved to assist with the assessment of the contaminated land situation and review and new contamination information. The developer must also adhere to any additional conditions which may be imposed by the accredited site auditor.

88. The Applicant must:

    a) minimise the waste generated by the development;
    b) classify all waste generated on site in accordance with the EPA's *Waste Classification Guidelines 2014* (or its latest version)*;*
    c) store and handle all waste on site in accordance with its classification;
    d) not receive or dispose of any waste on site;
    e) remove all waste from the site as soon as practicable, and ensure it is sent to an appropriately licensed waste facility for disposal, capable of receiving such waste; and
    f) must not be reliant on disposal at any of Council's waste management facilities.

PRIOR TO ISSUE OF AN OCCUPATION CERTIFICATE / COMMENCEMENT OF USE

89. Prior to the occupation of a new building, or occupation or use of an altered portion of, or

an extension to an existing building, an Occupation Certificate is to be obtained from the Principal Certifying Authority appointed for the erection of the building.

90. Prior to issue of an Occupation Certificate, all approved landscaping, stormwater, fencing, road and associated works are to be completed.

91. Council must be notified of the completion of the works and the site must be rehabilitated and stabilised. Surplus construction materials and temporary structures (other than silt fences and other erosion and sediment control devices) installed during the course of the works must be removed.

92. Prior to commencing operations, or following the upgrades of any solar panels or ancillary infrastructure, the Applicant must submit work as executed plans of the development to Council.

93. Prior to issue of an Occupation Certificate, a Rehabilitation and Decommissioning/Closure Plan must be prepared and submitted for approval by Council. The plan must include rehabilitation objectives and strategies, including:

    a) a plan for decommissioning, prepared or certified by an engineer, confirming that full remediation / restoration of the site to its former primary production use;
    b) expected timeline for the rehabilitation program;
    c) management controls regarding decommissioning and removal of all solar arrays and ancillary infrastructure, including methods, responsibilities of personnel and locations proposed for all waste disposal;
    d) a commitment to remove all solar farm infrastructure including all works installed below the surface of the site;
    e) the anticipated present value cost of decommissioning works, along with an explanation of the calculation of that cost (including a buffer for changes in market values/ inflation);
    f) commitment to a financial security to cover the cost of decommissioning
    g) Management and waste reduction initiatives proposed during all 3 phases of the development and a commitment as to where this waste will be disposed and/or recycled, without impacting on local waste facilities and in accordance with:
        - Protection of the Environment Operations Act 1997
        - Protection of the Environment Operations (Waste) Regulation 2014
        - Waste Avoidance and Resource Recovery Act 2001
        - NSW Environment Protection Authority (EPA) Waste Classification Guidelines

Note: the Rehabilitation and Decommissioning/Closure Plan should be updated every 5 – 7 years to keep up with changes.

DURING OPERATION

94. The site must be monitored and maintained to a satisfactory condition by maintenance staff, for the management of grass and weed growth including maintenance of ground cover, and any indications of erosion. Particular attention must be given to site management during the annual Bushfire Danger Period.

95. All requirements of the Site Environmental Management Plan shall be implemented onsite for the life of the development.

96. All requirements of the Fire Management Plan shall be implemented onsite for the life of the development.

97. All requirements of the Traffic Management Plan including Driver Code of Conduct shall be implemented onsite for the life of the development.

98. Should the site operator / manager change at any time over the life of the proposal, Council shall be notified immediately.

99. If any of the vegetation comprising the approved landscaping dies or is removed, it must be replaced with vegetation of the same species and the same maturity, as the vegetation that died or was removed.

100. All vehicles entering or leaving the subject property shall be driven in a forward direction.

101. The loading and unloading of all vehicles and equipment must be done entirely within the property.

102. The internal access road is to be maintained so that it is trafficable to all vehicles including fire-fighting trucks and emergency services (two-wheel drive traffic), at all times.

103. The development must ensure that the water supply is accessible and reliable for firefighting purposes for the life of operations.

104. A complaints register is to be maintained by the operator for the life of the development. Details of the date, time, complainant contact details (if offered), nature of the complaint and adopted corrective actions are to be recorded in the complaints register. A copy of the complaints register is to be given to Council upon request.

105. No materials are permitted to be disposed of or stored on roads or waterways at any time.

106. Over the life of the proposal, the Applicant may upgrade the solar panels and ancillary infrastructure on site provided these upgrades remain within the approved development footprint of the site and will not increase the height or overall size of the solar panels or ancillary infrastructure. Prior to carrying out any such upgrades, the Applicant must provide revised layout plans and project details of the development to Council incorporating the proposed upgrades. Should the upgrades change the approved development configuration, a modification application is to be submitted and approved by Council prior to upgrade works commencing onsite.

OTHER APPROVALS

N/A

ADVISORY NOTES

1. The removal of trees within any road reserve requires the separate approval of Council in accordance with the policy "Tree Removal and Pruning - Public Places".
2. Underground assets may exist in the area that is subject to the application. In the interests of health and safety and in order to protect damage to third party assets please contact Dial Before You Dig at www.1100.com.au or telephone on 1100 before excavating or erecting structures. If alterations are required to the configuration, size, form or design of the development upon contacting the Dial Before You Dig service, an amendment to the development consent (or a new development application) may be necessary.
3. Given there is electricity infrastructure in the area, it is the responsibility of the person/s completing any works around powerlines to understand their safety responsibilities. SafeWorkNSW (www.safework.nsw.gov.au) has publications that provide guidance

when working close to electricity infrastructure. These include the Code of Practice – Work near Overhead Power Lines and Underground Assets.

4. If the proposed development changes, there may be potential safety risks and it is recommended that Essential Energy is consulted for further comment.
5. The land upon which the subject building is to be constructed may be affected by restrictive covenants. This approval is issued without enquiry by Council as to whether any restrictive covenant affecting the land would be breached by the construction of the building, the subject of this approval. Persons to whom this approval is issued must rely on their own enquiries as to whether or not the building breaches any such covenant.
6. Division 8.2 of the Environmental Planning and Assessment Act (EP&A Act) gives you the ability to seek a review of the determination. This request is made to Council and must be made within 12 months after the date on which you receive this notice. The request must be made in writing and lodged with the required fee; please contact Council's Development Department for more information or advice.
7. If you are dissatisfied with this decision section 8. 7 of the EP&A Act 1979 gives you the right to appeal to the Land and Environment Court within 12 months after the date on which you receive this notice.
8. To ascertain the extent to which the consent is liable to lapse, refer to Section 4.53 of the EP&AAct.