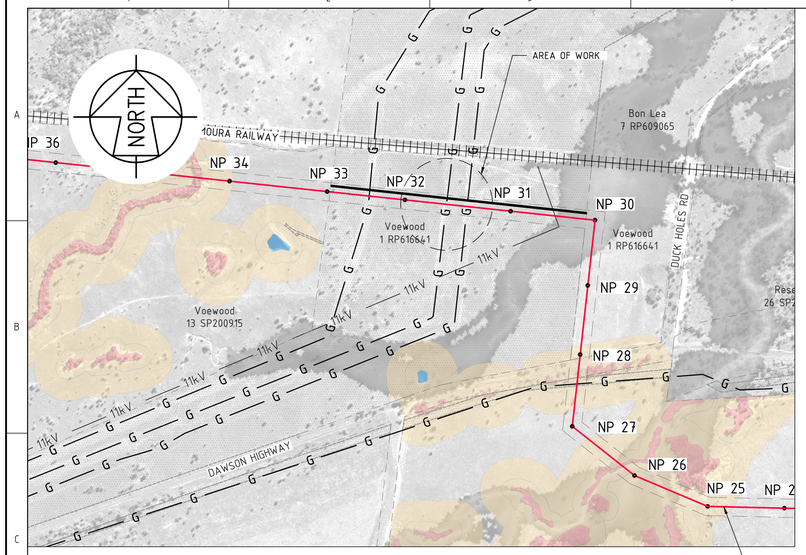
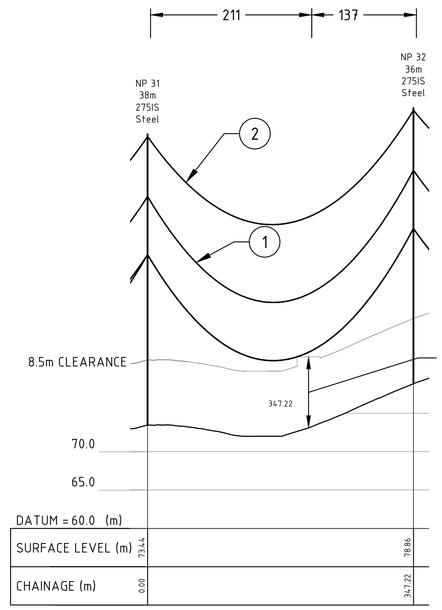


LOCALITY PLAN

SCALE = 1 : 10 000



275kV CROSSING ELEVATION

SCALE: HORIZ = 1 : 4000
VERT = 1 : 400

NOTES:

1. POLE SYMBOLS ARE NOT TO SCALE. POLES ARE SHOWN AS 10m DIAMETER FOR CLARITY.
2. THE DISTANCES OF THE STRUCTURE TO THE JEMENA PIPELINE EASEMENT ARE APPROXIMATE AND BASED ON GIS DATA. THE PRECISE LOCATION OF SERVICES IS REQUIRED FOR A COMPREHENSIVE EVALUATION.
3. 275kV DESIGN HAS BEEN BASED ON RECEIVING THE FOLLOWING INFORMATION PROVIDED BY CQP.
   - LIDAR ELEVATION DATA RECEIVED ON 16/01/2025
4. POLE PLACEMENT IS SUBJECT TO AN AS4853 LEVEL 2 EPR/LFI STUDY DURING DETAILED DESIGN.

LINE PLAN LEGEND

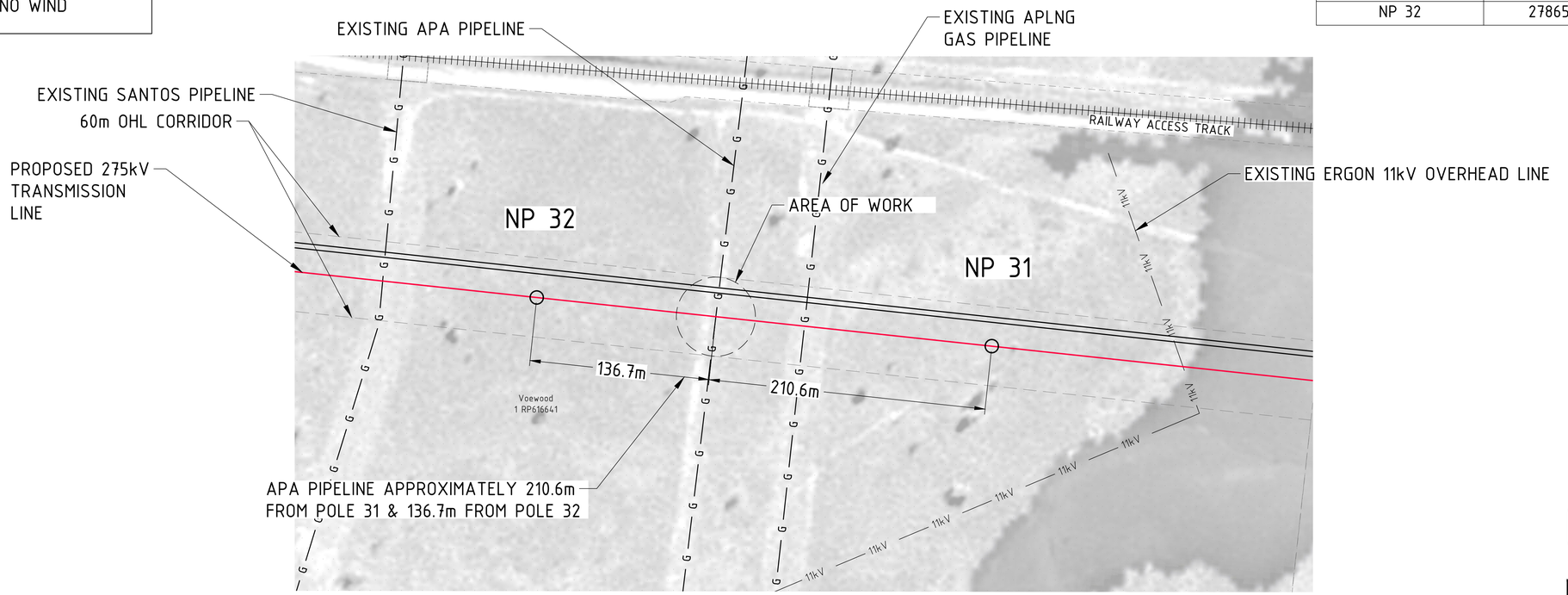
- PROPOSED 275kV TRANSMISSION LINE
- PROPOSED 275kV TRANSMISSION LINE EASEMENT (60m)
- POLE - PROPOSED
- 11kV — 11kV LINE - EXISTING
- 275kV — 275kV LINE - EXISTING
- G — EXISTING GAS PIPELINE
- BOUNDARY - RP
- BOUNDARY - EASEMENT
- FLOOD MODELING (1p AEP)
- ECOLOGY - BREEDING ZONE
- ECOLOGY - DISPERSAL
- ECOLOGY - FORAGING
- ECOLOGY - POTENTIAL WATER SOURCE

LINE PROFILE LEGEND

1	275kV CONDUCTOR - TWIN SULPHUR DISPLAYED @ 75°C, NO WIND
2	OPGW - 17.1mm ZTT OPGW DISPLAYED @ 5°C, NO WIND

STRUCTURE COORDINATE TABLE

STRUCTURE	EASTING	NORTHING
NP 31	278998.537	7334085.999
NP 32	278653.286	7334122.890



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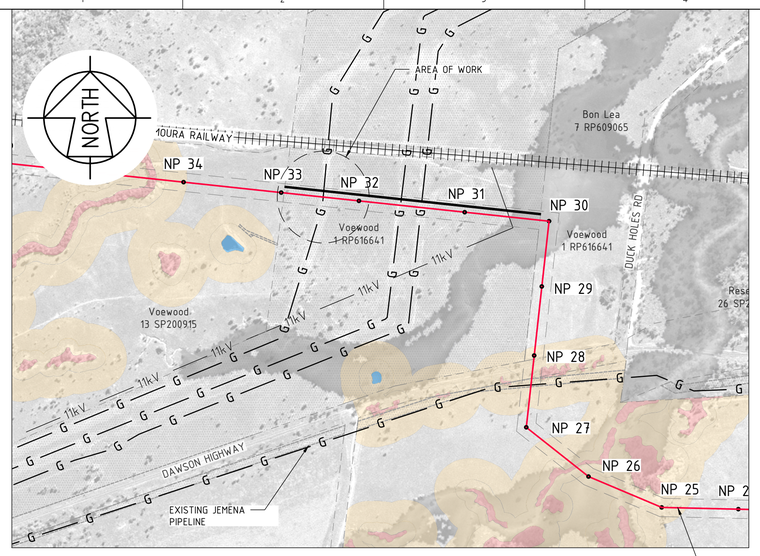
CQP CENTRAL QUEENSLAND POWER

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REVIEWED	B. LATHOURAS
APPROVED	B. LATHOURAS

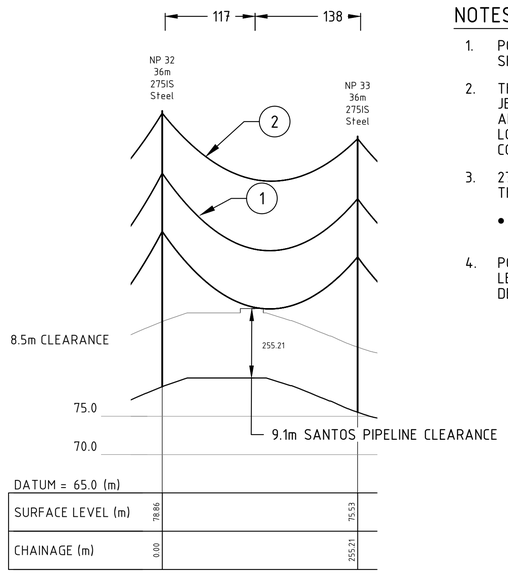
CENTRAL QUEENSLAND POWER (CQP)
275kV TRANSMISSION LINE
WOODERSON SOLAR FARM
APA PIPELINE CROSSING
-

PROJECT No.: 30247470
DRAWING NUMBER
30247470-16
SHEET 1 OF 1 REVISION A
SCALE : AS SHOWN A1



LOCALITY PLAN

SCALE = 1 : 10 000



275kV CROSSING ELEVATION

SCALE: HORIZ = 1 : 4000
VERT = 1 : 400

NOTES:

1. POLE SYMBOLS ARE NOT TO SCALE. POLES ARE SHOWN AS 10m DIAMETER FOR CLARITY.
2. THE DISTANCES OF THE STRUCTURE TO THE JEMENA PIPELINE EASEMENT ARE APPROXIMATE AND BASED ON GIS DATA. THE PRECISE LOCATION OF SERVICES IS REQUIRED FOR A COMPREHENSIVE EVALUATION.
3. 275kV DESIGN HAS BEEN BASED ON RECEIVING THE FOLLOWING INFORMATION PROVIDED BY CQP.
   - LIDAR ELEVATION DATA RECEIVED ON 16/01/2025
4. POLE PLACEMENT IS SUBJECT TO AN AS4853 LEVEL 2 EPR/LFI STUDY DURING DETAILED DESIGN.

LINE PLAN LEGEND

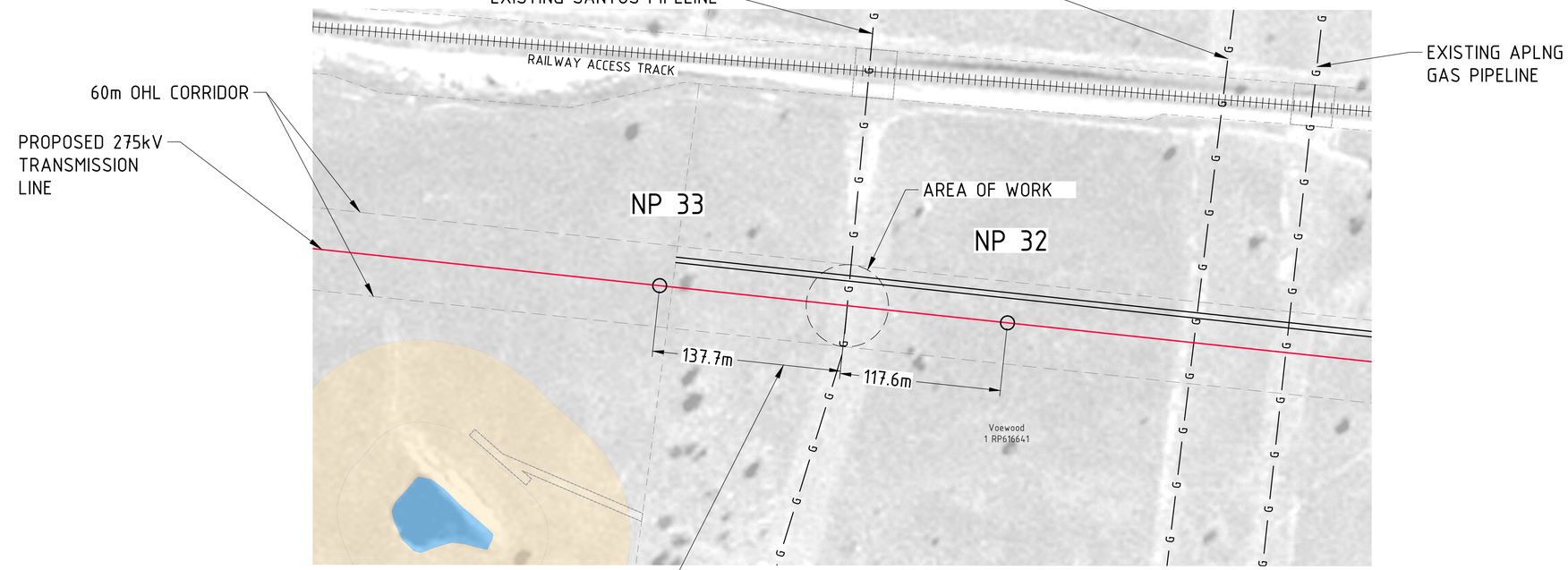
- PROPOSED 275kV TRANSMISSION LINE
- PROPOSED 275kV TRANSMISSION LINE EASEMENT (60m)
- POLE - PROPOSED
- 11kV LINE - EXISTING
- 275kV LINE - EXISTING
- G EXISTING GAS PIPELINE
- INDICATIVE GAS PIPELINE - NOT CONSTRUCTED
- BOUNDARY - RP
- BOUNDARY - EASEMENT
- FLOOD MODELING (1p AEP)
- ECOLOGY - BREEDING ZONE
- ECOLOGY - DISPERSAL
- ECOLOGY - FORAGING
- ECOLOGY - POTENTIAL WATER SOURCE

LINE PROFILE LEGEND

1. 275kV CONDUCTOR - TWIN SULPHUR DISPLAYED @ 75°C, NO WIND
2. OPGW - 17.1mm ZTT OPGW DISPLAYED @ 5°C, NO WIND

STRUCTURE COORDINATE TABLE

STRUCTURE	EASTING	NORTHING
NP 32	278653.286	7334122.890
NP 33	278399.517	7334150.007



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A	14-03-25	ISSUED FOR APPROVAL	YM	MCW	BLA		

CENTRAL QUEENSLAND POWER

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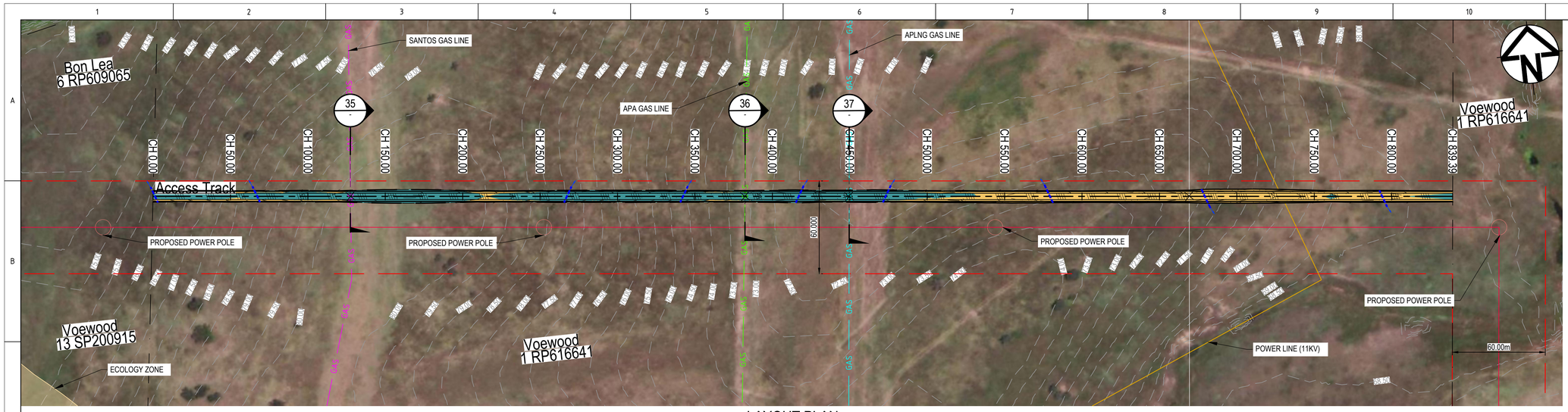
DESIGNED	Y. MADER
DRAWN	Y. MADER
CHECKED	M. WILLETTS
REVIEWED	B. LATHOURAS
APPROVED	B. LATHOURAS

CENTRAL QUEENSLAND POWER (CQP)
275kV TRANSMISSION LINE
WOODERSON SOLAR FARM

SANTOS PIPELINE CROSSING

-

PROJECT No.: 30247470
DRAWING NUMBER
30247470-17
SHEET 1 OF 1 REVISION A
SCALE : AS SHOWN A1



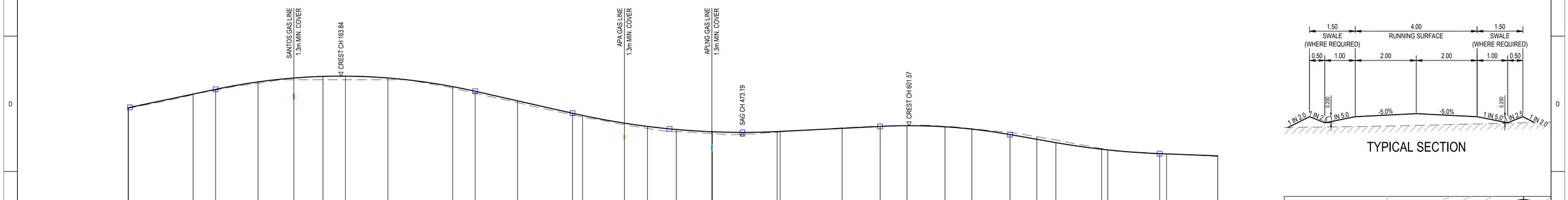
LAYOUT PLAN

SCALE 1:1500

LEGEND

- DESIGN SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- EASEMENT
- PROPOSED POWER LINE
- POWER LINE (11KV)
- EDGE OF BITUMEN
- GAS — SANTOS GAS LINE
- GAS — APA GAS LINE
- GAS — APLNG GAS LINE
- WHOA BOY
- SWALE LINE
- PROPOSED POWER POLE
- ECOLOGY ZONE

Elevations Table	Color	Volume
Cut		614 m³
Fill		571 m³



TYPICAL SECTION

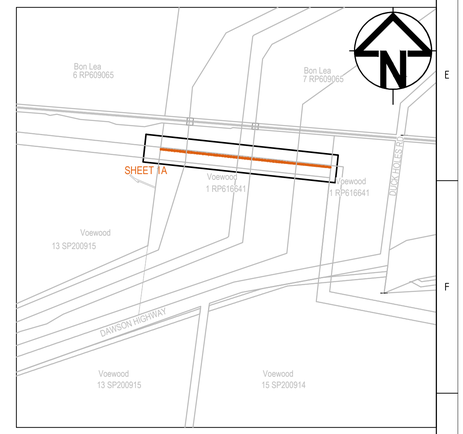
Vertical Curve Length (m)	200.00 VC / 160.00 VC / 100.00 VC / 80.00 VC
Vertical Curve Radius (m)	R 2298.85 / R 2909.09 / R 2222.22 / R 2909.09
IP RL	82.722m / 71.247m / 73.318m / 68.931m
Vertical Grade (%)	4.2% / -4.5% / 1.0% / -3.5% / -0.8%
Vertical Grade (1 in ...)	1:23.8 / -1:22.2 / 1:100.0 / -1:28.6 / -1:133.3
Horizontal Curve Radius	

DATUM RL 30.0

CHAINAGE	PROPOSED LEVEL	EXISTING LEVEL	CUT / FILL DEPTH
0.000	75.695	75.595	0.100
50.000	77.795	77.715	0.080
67.293	78.522	78.399	0.122
100.000	79.663	79.453	0.210
127.556	80.263	80.000	80.000
150.000	80.508	80.000	0.508
167.293	80.547	80.000	0.547
200.000	80.265	80.000	0.265
250.000	78.935	78.707	0.228
267.293	78.222	77.966	0.255
300.000	76.750	76.480	0.270
342.278	74.847	74.601	0.246
350.000	74.510	74.264	0.246
382.293	73.322	73.066	73.066
400.000	72.822	72.515	0.308
422.278	72.347	72.000	0.347
449.610	71.997	71.712	71.712
450.000	71.994	71.707	0.288
500.000	72.025	71.933	0.093
502.278	72.047	71.971	0.076
550.000	72.525	72.611	-0.087
579.344	72.818	72.864	-0.047
600.000	72.929	72.952	-0.023
629.344	72.755	72.819	-0.063
650.000	72.401	72.477	-0.076
679.344	71.568	71.915	-0.348
700.000	70.845	71.234	-0.389
714.680	70.331	70.745	-0.413
750.000	69.309	69.414	-0.105
754.680	69.206	69.238	-0.032
794.680	68.631	68.680	-0.049
800.000	68.591	68.622	-0.031
839.388	68.296	68.196	0.100

ACCESS TRACK LONGITUDINAL SECTION

SCALE 1:1500 HORI.
1:300 VERT.



KEY PLAN

N.T.S.

0 30 60 90 120 150m

1 : 1500

0 5 10 20 30m

1 : 300

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A	14-03-25	ISSUED FOR APPROVAL	J.DIWA	C.QUE	E.CHAU		

CENTRAL QUEENSLAND POWER

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DRAWN	J.DIWA
CHECKED	C.QUE
REVIEWED	F.VANEGAS
APPROVED	E.CHAU

CENTRAL QUEENSLAND POWER (CQP)
275kV TRANSMISSION LINE
WOODERSON SOLAR FARM

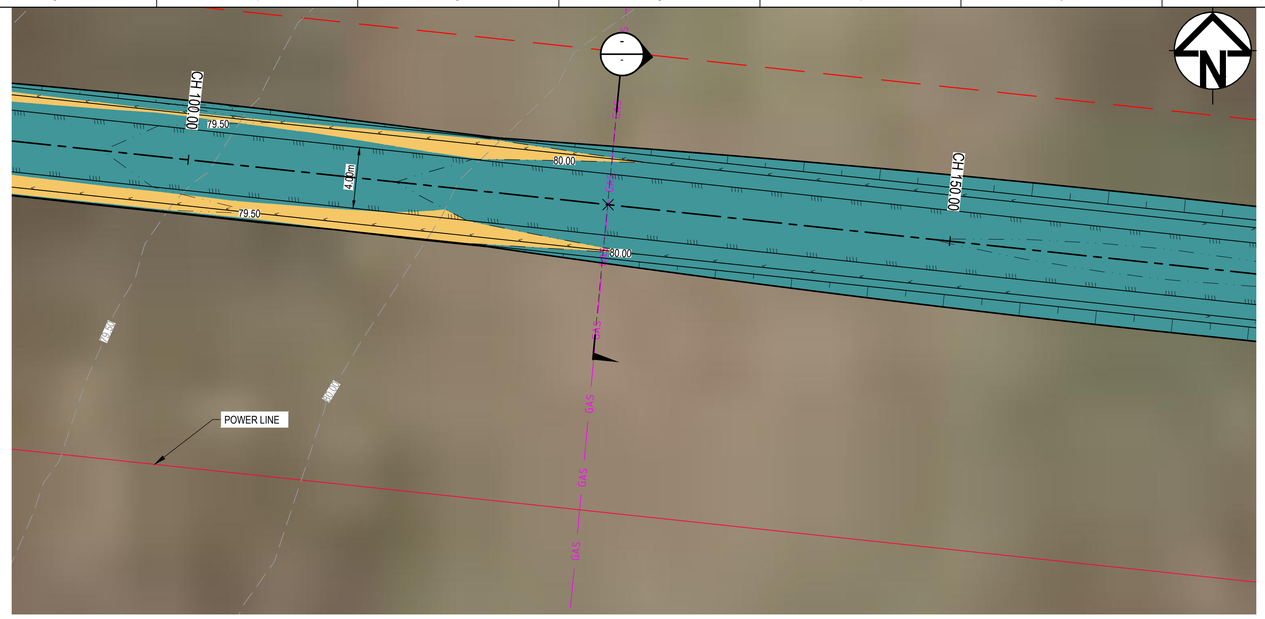
ACCESS TRACK LAYOUT
AND LONGITUDINAL SECTION

PROJECT No: 30247470

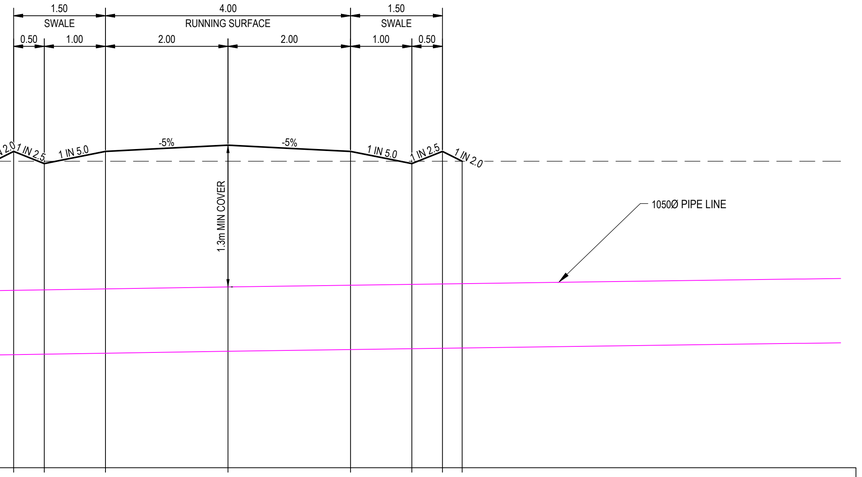
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SHEET 1 OF 1 REVISION A

SCALE : AS SHOWN A1



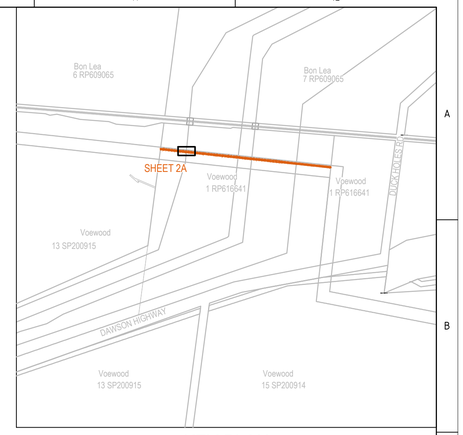
SANTOS GAS LINE CROSSING LAYOUT PLAN
SCALE 1:200



DATUM RL 75.00

PROPOSED LEVEL	80.000	80.161	79.961	80.161	80.263	80.161	79.961	80.161	80.000
EXISTING LEVEL	80.000	80.000	80.000	80.000	80.000	80.000	80.000	80.000	80.000
OFFSET	-3.823	-3.500	-3.000	-2.000	0.000	2.000	3.000	3.500	3.823

CH 127.556
SANTOS GAS LINE CROSSING CROSS SECTION
SCALE 1:50



KEY PLAN
N.T.S.

LEGEND

- DESIGN SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- EASEMENT
- POWER LINE
- GAS — SANTOS GAS LINE
- GAS — APA GAS LINE
- GAS — APLNG GAS LINE
- SANTOS GAS LINE SECTION
- APA GAS LINE SECTION
- APLNG GAS LINE SECTION
- SWALE LINE
- WHOA BOY

Elevations Table

	Color	Volume
Cut		614 m³
Fill		571 m³

0 5 10 15 20m
1 : 200

0 0.5 1 2 3 4 5m
1 : 50

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DATE: 14-03-2025

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A	14-03-25	ISSUED FOR APPROVAL	J.DIWA	C.QUE	E.CHAU		

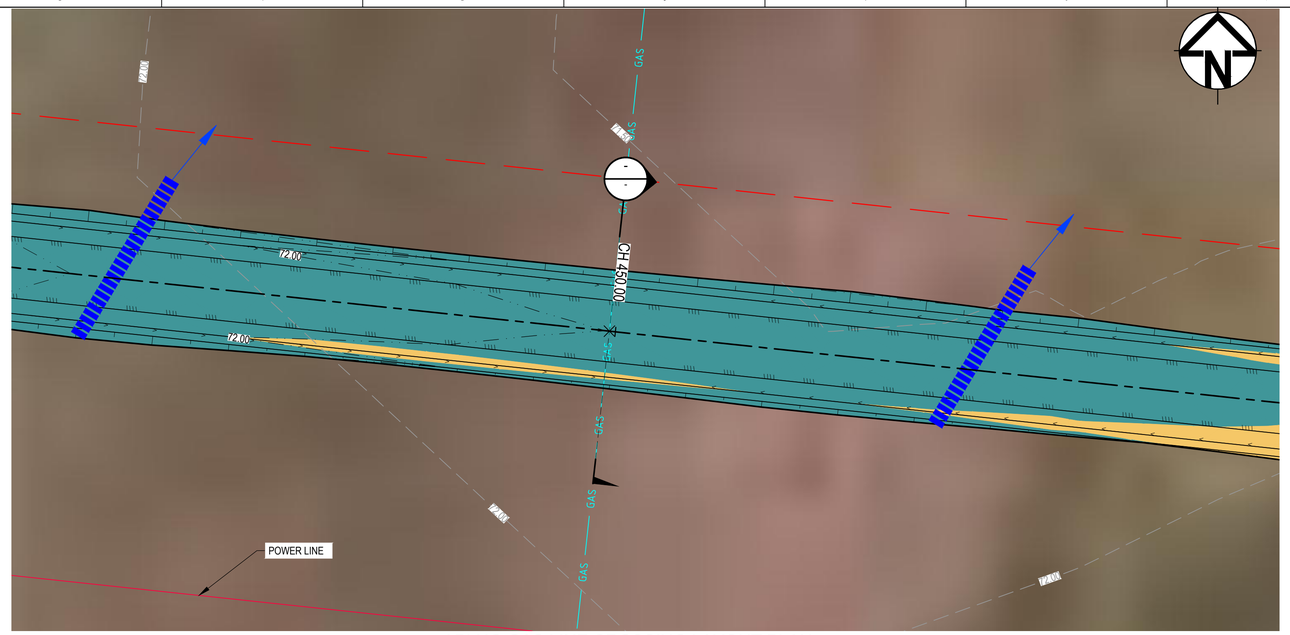
CENTRAL QUEENSLAND POWER

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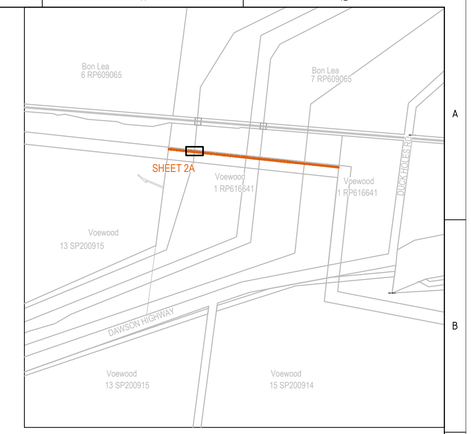
DESIGNED	S.SEM
DRAWN	J.DIWA
CHECKED	C.QUE
REVIEWED	F.VANEGAS
APPROVED	E.CHAU

CENTRAL QUEENSLAND POWER (CQP)
275kV TRANSMISSION LINE
WOODERSON SOLAR FARM
ACCESS TRACK PLAN
AND CROSS SECTION SHEET 1

PROJECT No.: 30247470
DRAWING NUMBER
30247470-35
SHEET 1 OF 3 REVISION A
SCALE : AS SHOWN A1



APLNG GAS LINE CROSSING LAYOUT PLAN
SCALE 1:200

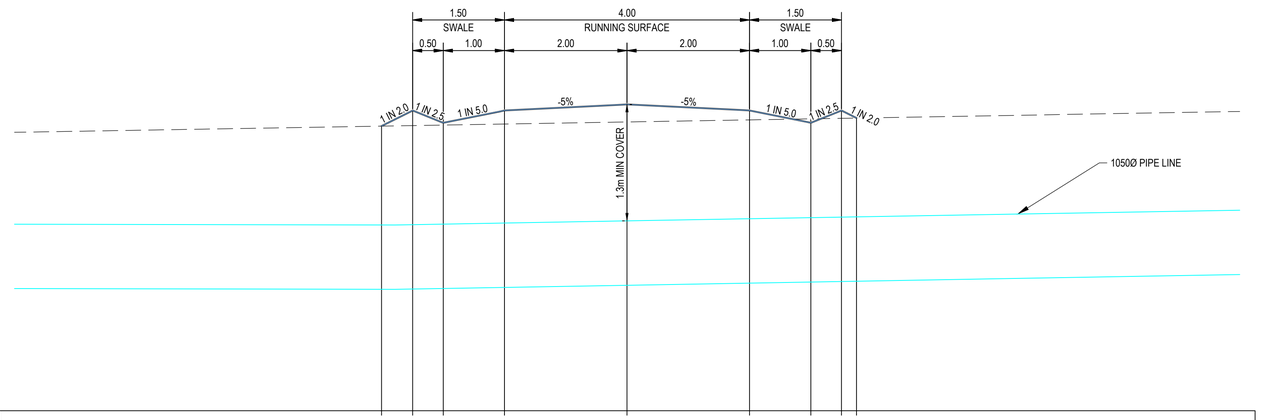


KEY PLAN
N.T.S.

LEGEND

- DESIGN SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- EASEMENT
- POWER LINE
- GAS — SANTOS GAS LINE
- GAS — APA GAS LINE
- GAS — APLNG GAS LINE
- SANTOS GAS LINE SECTION
- APA GAS LINE SECTION
- APLNG GAS LINE SECTION
- SWALE LINE
- WHOA BOY

Elevations Table	Color	Volume
Cut		614 m³
Fill		571 m³



DATUM RL 67.00

PROPOSED LEVEL	71.644	71.898	71.698	71.898	71.998	71.898	71.698	71.898	71.775
EXISTING LEVEL	71.644	71.652	71.661	71.678	71.712	71.746	71.762	71.771	71.775
OFFSET	-4.008	-3.500	-3.000	-2.000	0.000	2.000	3.000	3.500	3.745

CH 449.610
APLNG GAS LINE CROSSING CROSS SECTION
SCALE 1:50

0 5 10 15 20m
1 : 200
0 0.5 1 2 3 4 5m
1 : 50

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ISSUED FOR APPROVAL
DATE: 14-03-2025

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A	14-03-25	ISSUED FOR APPROVAL	J.DIWA	C.QUE	E.CHAU		

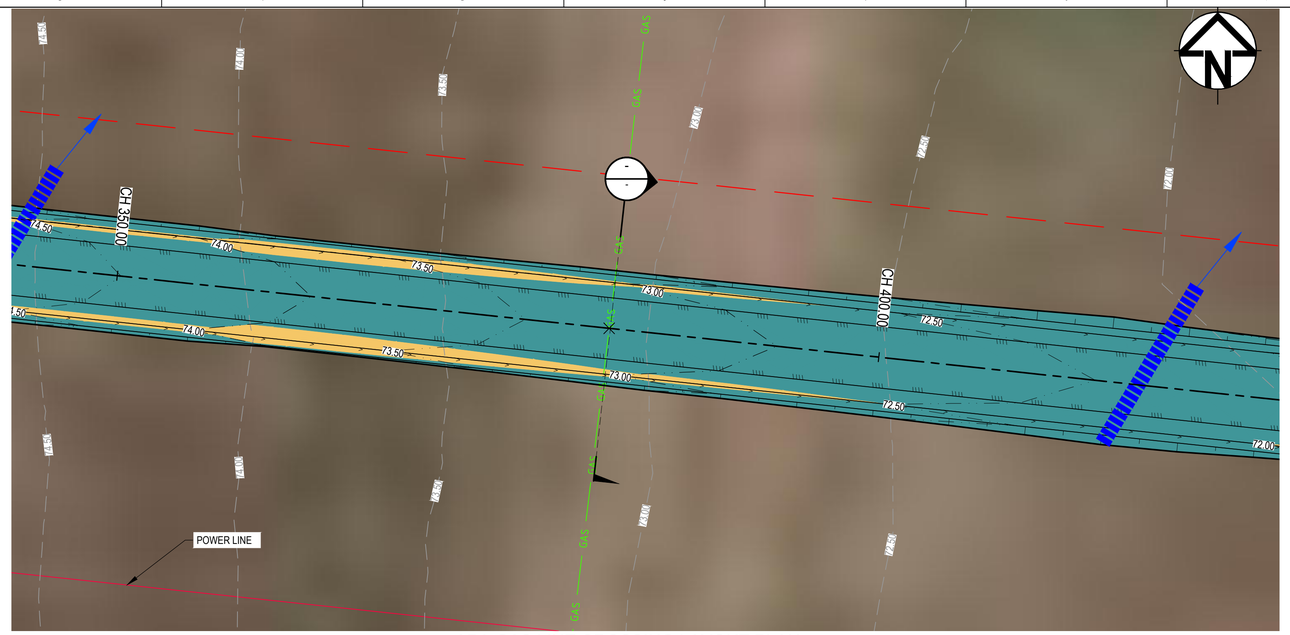
CQP CENTRAL QUEENSLAND POWER

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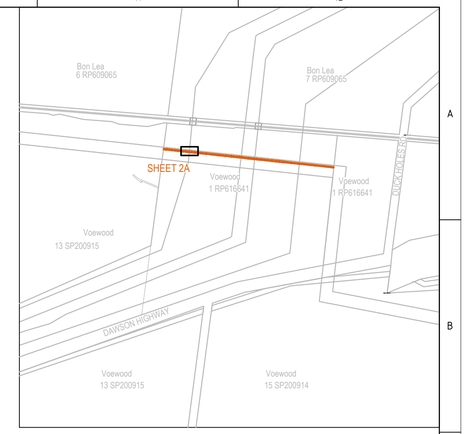
DESIGNED	S.SEM
DRAWN	J.DIWA
CHECKED	C.QUE
REVIEWED	F.VANEGAS
APPROVED	E.CHAU

CENTRAL QUEENSLAND POWER (CQP)
275kV TRANSMISSION LINE
WOODERSON SOLAR FARM
ACCESS TRACK PLAN
AND CROSS SECTION SHEET 3

PROJECT No.: 30247470
DRAWING NUMBER
30247470-37
SHEET 3 OF 3 REVISION A
SCALE : AS SHOWN A1



APA GAS LINE CROSSING LAYOUT PLAN
SCALE 1:200



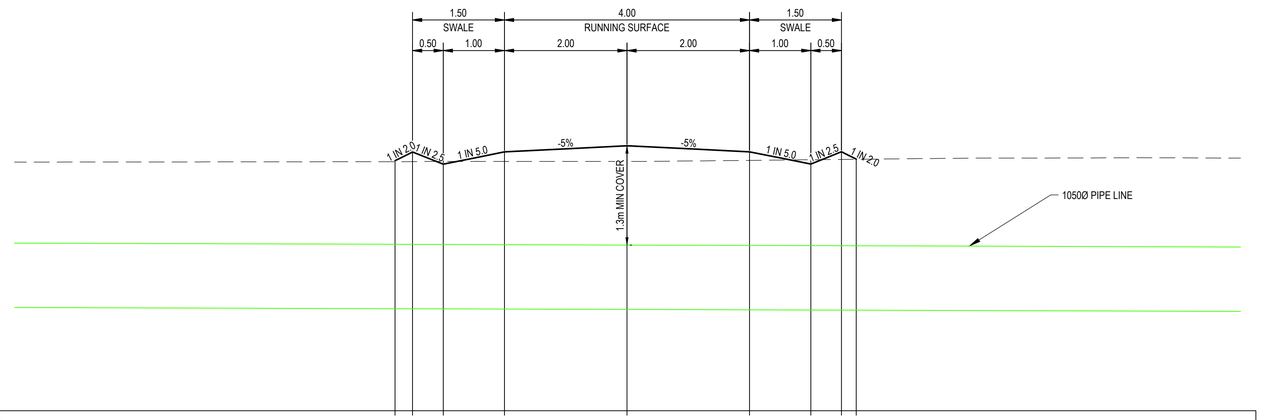
KEY PLAN
N.T.S.

LEGEND

- DESIGN SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- EASEMENT
- POWER LINE
- GAS — SANTOS GAS LINE
- GAS — APA GAS LINE
- GAS — APLNG GAS LINE
- SANTOS GAS LINE SECTION
- APA GAS LINE SECTION
- APLNG GAS LINE SECTION
- SWALE LINE
- WHOA BOY

Elevations Table

	Color	Volume
Cut		614 m³
Fill		571 m³



DATUM RL 69.00

PROPOSED LEVEL	73.078	73.221	73.022	73.222	73.323	73.224	73.024	73.224	73.104
EXISTING LEVEL	73.064	73.066	73.068	73.067	73.066	73.083	73.093	73.097	73.100
OFFSET	-3.787	-3.500	-3.000	-2.000	0.000	2.000	3.000	3.500	3.741

CH 382.293
APA GAS LINE CROSSING CROSS SECTION
SCALE 1:50

0 5 10 15 20m
1 : 200
0 0.5 1 2 3 4 5m
1 : 50

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DATE: 14-03-2025

REV	DATE	DETAILS	DRAWN	CHECKD	APPRVD	DRAWING No.	REFERENCE DRAWING TITLE
A	14-03-25	ISSUED FOR APPROVAL	J.DIWA	C.QUE	E.CHAU		

CQP CENTRAL QUEENSLAND POWER

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DESIGNED	S.SEM
DRAWN	J.DIWA
CHECKED	C.QUE
REVIEWED	F.VANEGAS
APPROVED	E.CHAU

CENTRAL QUEENSLAND POWER (CQP)
275kV TRANSMISSION LINE
WOODERSON SOLAR FARM
ACCESS TRACK PLAN
AND CROSS SECTION SHEET 2

PROJECT No.: 30247470
DRAWING NUMBER
30247470-36
SHEET 2 OF 3 REVISION A
SCALE : AS SHOWN
A1

Appendix E

State Development Provisions Assessment

State code 1: Development in a state-controlled road environment

State Development Assessment Provisions guideline - State Code 1: Development in a state-controlled road environment. This guideline provides direction on how to address State Code 1.

Table 1.1 Development in general

Performance outcomes	Acceptable outcomes	Response
Buildings, structures, infrastructure, services and utilities		
PO1 The location of the development does not create a safety hazard for users of the **state-controlled road.**	**AO1.1** Development is not located in a **state-controlled road**. AND **AO1.2** Development can be maintained without requiring access to a **state-controlled road**.	**Complies** The DA3 OHTL is not located within 25 m of the Dawson Highway and is sited approximately 0.5 km from the Dawson Highway. and no new access are being proposed from the Dawson Highway as part of DA3. Access to the DA3 Project Area will be via Duck Holes Road and the DA2 Project Area.
PO2 The design and construction of the development does not adversely impact the **structural integrity** or physical condition of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies** A TIA has been prepared for the Project which has included a preliminary desktop pavement impact assessment. The TIA has been included in the Planning Assessment Report Appendix N and has sought to demonstrate that the construction of the Project will not impact on the state-controlled road. In summary the TIA concluded that the Project's construction phase was the most critical in terms of traffic impact. The proposed peak construction works were conservatively forecast to lead to varying increases in traffic volumes on the sections of the external road network relevant to the Project. Ongoing operations phase of the Project was identified to only generate periodic (i.e. not daily) movements on

General - Internal

Performance outcomes	Acceptable outcomes	Response
		the external road network associated with scheduled inspection and maintenance works. The TIA has recommended upgrade and treatments to mitigate the impacts of the increases in traffic during construction and operations phases of the Project which will form part of DA2. These upgrade works are not discussed herein as they are outside the DA3 Project Area, and can be referred to in Appendix N. It is acknowledged that the traffic impact both during construction and operation for the two monopoles and access tracks would be minimal for DA3.
PO3 The location of the development does not obstruct **road transport infrastructure** or adversely impact the operating performance of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies** The DA3 Project Disturbance Footprint is not located within 25 m of the Dawson Highway and no new access are being proposed from the Dawson Highway as part of DA3.
PO4 The location, placement, design and operation of advertising devices, visible from the **state-controlled road**, do not create a safety hazard for users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any advertising devices.
PO5 The design and construction of buildings and **structures** does not create a safety hazard by distracting users of the **state-controlled road**.	**AO5.1** Facades of buildings and **structures** fronting the **state-controlled road** are made of non-reflective materials. AND **AO5.2** Facades of buildings and **structures** do not direct or reflect point light sources into the face of oncoming traffic on the **state-controlled road**.	**Complies** The DA3 Project Disturbance Footprint is not located within 25 m of the Dawson Highway and no new access are being proposed from the Dawson Highway as part of DA3.

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Performance outcomes	Acceptable outcomes	Response
	AND **AO5.3** External lighting of buildings and **structures** is not directed into the face of oncoming traffic on the **state-controlled road**. AND **AO5.4** External lighting of buildings and **structures** does not involve flashing or laser lights.	
PO6 Road, pedestrian and bikeway bridges over a **state-controlled road** are designed and constructed to prevent projectiles from being thrown onto the **state-controlled road**.	**AO6.1** Road, pedestrian and bikeway bridges over the **state-controlled road** include throw protection screens in accordance with section 4.11 of the Design Criteria for Bridges and Other Structures Manual, Department of Transport and Main Roads, 2020.	**Not Applicable** The Project is not proposing any roads, pedestrian or bikeway bridges over a state-controlled road.
Landscaping		
PO7 The location of landscaping does not create a safety hazard for users of the **state-controlled road**.	**AO7.1** Landscaping is not located in a **state-controlled road**. AND **AO7.2** Landscaping can be maintained without requiring access to a **state-controlled road**. AND **AO7.3** Landscaping does not block or obscure the sight lines for vehicular access to a **state-controlled road**.	**Not Applicable** The Project is not proposing any landscaping.
Stormwater and overland flow		

General - Internal

Performance outcomes	Acceptable outcomes	Response
PO8 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies** A FASMP has been prepared for DA3 and is located in Appendix K of the Planning Assessment Report. The assessment concluded that the Project will only result in a minor increase in surface runoff generated by the monopoles and access tracks. These impacts are considered negligible given the small contribution in impervious areas and the dispersed nature of the infrastructure relative to the size of the broader catchment. Therefore, it is considered that the Project does not create or exacerbate a safety hazard for users of the state-controlled road.
PO9 Stormwater run-off or overland flow from the development site does not result in a material worsening of the operating performance of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies** A FASMP has been prepared for DA3 and is located in Appendix K of the Planning Assessment Report. The assessment concluded that the Project will only result in a minor increase in surface runoff generated by the monopoles and access tracks. These impacts are considered negligible given the small contribution in impervious areas and the dispersed nature of the infrastructure relative to the size of the broader catchment. Therefore, it is considered that the Project does not result in a material worsening of the operating performance of the state-controlled road.
PO10 Stormwater run-off or overland flow from the development site does not adversely impact the **structural integrity** or physical condition of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies** A FASMP has been prepared for DA3 and is located in Appendix K of the Planning Assessment Report. The assessment concluded that the Project will only result in a minor increase in surface runoff generated by the monopoles and access tracks. These impacts are considered negligible given the small contribution in impervious areas and the dispersed nature of the infrastructure relative to the size of the broader catchment. Therefore, it is considered that the Project

Performance outcomes	Acceptable outcomes	Response
		does not adversely impact the structural integrity or physical condition of the state-controlled road.
PO11 Development ensures that stormwater is lawfully discharged.	**AO11.1** Development does not create any new points of discharge to a **state-controlled road.** AND **AO11.2** Development does not concentrate flows to a **state-controlled road**. AND **AO11.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO11.4** Development does not worsen the condition of an existing **lawful point of discharge** to the **state-controlled road**.	**Complies** A FASMP has been prepared for DA3 and is located in Appendix K of the Planning Assessment Report. The following response is provided to the AOs: **AO11.1** there are no new points of discharge proposed as part of the Project. **Complies** **AO11.2** the Project does not concentrate flows to the Dawson Highway due to the minimal impervious area proposed as part of the Project. **Not Applicable** **AO11.3** The Project is not proposing a lawful point of discharge. **Not Applicable** **AO11.4** The Project is not proposing a lawful point of discharge nor will the Project impact on any existing lawful point of discharge.
Flooding		
PO12 Development does not result in a material worsening of flooding impacts within a **state-controlled road**.	**AO12.1** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (within +/- 10mm) to existing flood levels within a **state-controlled road**. AND	**Complies** A FASMP has been prepared for DA3 and is located in Appendix K of the Planning Assessment Report. The assessment concluded: • That no monopoles are located within the 1% AEP for DA3. • The Project does not result in worsening of the flooding impacts within the state-controlled road

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Performance outcomes	Acceptable outcomes	Response
	AO12.2 For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to existing peak velocities within a **state-controlled road**. AND **AO12.3** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to existing time of submergence of a **state-controlled road**.	and mitigation measures will be designed during detailed design phase to ensure compliance.
Drainage Infrastructure		
PO13 Drainage infrastructure does not create a safety hazard for users in the **state-controlled road**.	**AO13.1** Drainage infrastructure is wholly contained within the development site, except at the **lawful point of discharge**. AND **AO13.2** Drainage infrastructure can be maintained without requiring access to a **state-controlled road**.	**Not Applicable** The Project is not proposing any drainage infrastructure that will create a safety hazard for users in the state-controlled road network.
PO14 Drainage infrastructure associated with, or within, a **state-controlled road** is constructed, and designed to ensure the **structural integrity** and physical condition of existing drainage infrastructure and the surrounding drainage network.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any drainage infrastructure that will create a safety hazard for users in the state-controlled road network.

Table 1.2 Vehicular access, road layout and local roads

Performance outcomes	Acceptable outcomes	Response
Vehicular access to a state-controlled road or within 100 metres of a state-controlled road intersection		
PO15 The location, design and operation of a **new or changed access** to a **state-controlled road** does not compromise the safety of users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any new or changed access to a state-controlled road.
PO16 The location, design and operation of a **new or changed access** does not adversely impact the **functional requirements** of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any new or changed access to a state-controlled road.
PO17 The location, design and operation of a **new or changed access** is consistent with the **future intent** of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any new or changed access to a state-controlled road.
PO18 New or changed access is consistent with the access for the relevant **limited access road policy**: 1. **LAR 1** where direct access is prohibited; or 2. **LAR 2** where access may be permitted, subject to assessment.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any new or changed access to a state-controlled road.
PO19 New or changed access to a **local road** within 100 metres of an intersection with a **state-controlled road** does not compromise the safety of users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any new or changed access to a state-controlled road.
PO20 New or changed access to a **local road** within 100 metres of an intersection with a **state-controlled road** does not adversely impact on the operating performance of the intersection.	No acceptable outcome is prescribed.	**Not Applicable** The Project is not proposing any new or changed access to a state-controlled road.
Public passenger transport and active transport		
PO21 Development does not compromise the safety of users of **public passenger transport infrastructure**, **public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The Project does not adjoin a public passenger transport facility.
PO22 Development maintains the ability for people to access **public passenger transport**	No acceptable outcome is prescribed.	**Not Applicable**

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Performance outcomes	Acceptable outcomes	Response
infrastructure, public passenger services and **active transport infrastructure**.		The Project does not adjoin a public passenger transport facility.
PO23 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The Project does not adjoin a public passenger transport facility.
PO24 Development does not adversely impact the **structural integrity** or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The Project does not adjoin a public passenger transport facility.

Table 1.3 Network impacts

Performance outcomes	Acceptable outcomes	Response
PO25 Development does not compromise the safety of users of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies** DA3 is not proposing any operational works or any new proposed direct accesses from the Dawson Highway as part of this DA. Operational Works will form part of secondary approvals where required. The desktop pavement impact assessment concluded that the no pavement mitigation works or contributions are requirement from the Project to offset the increase in pavement loading during construction. The Project is not considered to compromise the safety of users of the state-controlled road network.
PO26 Development ensures **no net worsening** of the operating performance of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies** A TIA undertaken assessed the relevant intersections on the road network and were identified to work within acceptable limits of operation for all Project scenarios, with negligible impact to their operations.

Performance outcomes	Acceptable outcomes	Response
		While the Project was noted to lead to increases in daily traffic of >5% on sections of the state-controlled road network during its construction phase the majority of this impact will be related to DA2 as DA3 is only proposing two monopoles and access tracks. All calculated peak construction (with Project) volumes were well within the capacity of all state-controlled roads.
PO27 Traffic movements are not directed onto a **state-controlled road** where they can be accommodated on the **local road** network.	No acceptable outcome is prescribed.	**Complies** The section of Dawson Highway between Taragoola Road and Duck Holes Road have been identified to have higher increases in traffic during construction due to transportation of road gravel and concrete transport the majority of this impact will be related to DA2 as DA3 is only proposing two monopoles and access tracks. It is considered that traffic is where possible shared between state and local roads.
PO28 Development involving haulage exceeding 10,000 tonnes per year does not adversely impact the pavement of a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies** Once the temporary construction phase is completed, the ongoing operations phase of the Project will generate limited traffic volumes and therefore have a negligible impact to the road pavements on the state-controlled road network.
PO29 Development does not impede delivery of **planned upgrades** of **state-controlled roads**.	No acceptable outcome is prescribed.	**Not Applicable** The Project does not adjoin or impede any planned upgrades within the state-controlled road network.
PO30 Development does not impede delivery of **corridor improvements** located entirely within the **state-controlled road corridor**.	No acceptable outcome is prescribed.	**Complies** The Project will not impact or impede delivery of any future state-controlled road upgrades.

Table 1.4 Filling, excavation, building foundations and retaining structures

Performance outcomes	Acceptable outcomes	Response
PO31 Development does not create a safety hazard for users of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 does not result in any filling, excavation, building foundations or retaining structures within the state-controlled road corridor. Operational works will be subject to secondary approvals. Therefore, DA3 is not considered to create a safety hazard for users of the state-controlled road.
PO32 Development does not adversely impact the operating performance of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 does not result in any filling, excavation, building foundations or retaining structures within the state-controlled road corridor. Operational works will be subject to secondary approvals. Therefore, DA3 is not considered to adversely impact the operating performance of the state-controlled road.
PO33 Development does not undermine, damage or cause subsidence of a **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 does not result in any filling, excavation, building foundations or retaining structures within the state-controlled road corridor. Operational works will be subject to secondary approvals. Therefore, DA3 is not considered to undermine, damage or cause subsidence of the state-controlled road.
PO34 Development does not cause ground water disturbance in a **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 does not result in any filling, excavation, building foundations or retaining structures within the state-controlled road corridor. Operational works will be subject to secondary approvals. Therefore, DA3 is not considered to cause ground water disturbance in a state-controlled road.
PO35 Excavation, boring, piling, blasting and fill compaction do not adversely impact the physical	No acceptable outcome is prescribed.	**Not Applicable**

Performance outcomes	Acceptable outcomes	Response
condition or **structural integrity** of a **state-controlled road** or **road transport infrastructure**.		DA3 does not result in any filling, excavation, building foundations or retaining structures within the state-controlled road corridor. Operational works will be subject to secondary approvals. Therefore, DA3 is not considered to adversely impact the physical condition or structural integrity of a state-controlled road.
PO36 Filling and excavation associated with the construction of **new or changed access** do not compromise the operation or capacity of existing drainage infrastructure for a **state-controlled road.**	No acceptable outcome is prescribed.	**Not Applicable** DA3 does not result in any filling, excavation, building foundations or retaining structures for the purposes of a new or changed access to the state-controlled road corridor.

Table 1.5 Environmental emissions

Statutory note: Where a **state-controlled road** is co-located in the same transport corridor as a railway, the development should instead comply with Environmental emissions in State code 2: Development in a railway environment.

Performance outcomes	Acceptable outcomes	Response
Reconfiguring a lot		
Involving the creation of 5 or fewer new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		
PO37 Development minimises free field noise intrusion from a **state-controlled road.**	**AO37.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	**Not Applicable** The Project does not involve a reconfiguration of a lot.

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Performance outcomes	Acceptable outcomes	Response
	c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO37.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. OR **AO37.3** Development provides a **solid gap-free fence** or other **solid gap-free structure** along the full extent of the boundary closest to the **state-controlled road**.	
Involving the creation of 6 or more new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		
PO38 Reconfiguring a lot minimises free field noise intrusion from a **state-controlled road.**	**AO38.1** Development provides noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	**Not Applicable** The Project does not involve a reconfiguration of a lot

Performance outcomes	Acceptable outcomes	Response
	c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO38.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
Material change of use (accommodation activity)		
Ground floor level requirements adjacent to a state-controlled road or type 1 multi-modal corridor		
PO39 Development minimises noise intrusion from a **state-controlled road** in **private open space**.	**AO39.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for **private open space** at the ground floor level; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR	**Not Applicable** The Project does not involve an accommodation activity.

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Performance outcomes	Acceptable outcomes	Response
	AO39.2 Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for **private open space** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
PO40 Development (excluding a **relevant residential building** or **relocated building)** minimises noise intrusion from a **state-controlled road** in **habitable rooms** at the facade.	**AO40.1** Development (excluding a **relevant residential building** or **relocated building**) provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms**; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO40.2** Development (excluding a **relevant residential building** or **relocated building**) achieves the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	**Not Applicable** The Project does not involve an accommodation activity.

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Performance outcomes	Acceptable outcomes	Response
PO41 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**Not Applicable** The Project does not involve an accommodation activity.
Above ground floor level requirements (accommodation activity) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO42 Balconies, podiums, and roof decks include: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums, and roof decks.	No acceptable outcome is provided.	**Not Applicable** The Project does not involve an accommodation activity.
PO43 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**Not Applicable** The Project does not involve an accommodation activity.
Material change of use (other uses)		
Ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO44 Development: 1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas**; b. in accordance with: i. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise),	No acceptable outcome is provided.	**Not Applicable** The Project does not involve a childcare centre, educational establishment or hospital.

Performance outcomes	Acceptable outcomes	Response
Department of Transport and Main Roads, 2013; ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 2. achieves the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO45 Development involving a **childcare centre** or **educational establishment**: 1. provides a noise barrier or earth mound that is designed, sited and constructed: 2. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); 3. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 4. achieves the maximum building facade acoustic level in reference table 1 (item	No acceptable outcome is provided.	**Not Applicable** The Project does not involve a childcare centre, educational establishment or hospital.

Performance outcomes	Acceptable outcomes	Response
1.2) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO46 Development involving: 1. **indoor education areas** and **indoor play areas**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** achieves the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is provided.	**Not Applicable** The Project does not involve a childcare centre, educational establishment or hospital.
Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO47 Development involving a **childcare centre** or **educational establishment** which have balconies, podiums or elevated **outdoor play areas** predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from a **state-controlled road** are provided with: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies or elevated **outdoor play areas**.	No acceptable outcome is provided.	**Not Applicable** The Project does not involve a childcare centre, educational establishment or hospital.

Performance outcomes	Acceptable outcomes	Response
PO48 Development including: 1. **indoor education areas** and **indoor play areas** in a **childcare centre** or **educational establishment**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is provided.	**Not Applicable** The Project does not involve a childcare centre, educational establishment or hospital.
Air, light and vibration		
PO49 Private open space, **outdoor education areas** and **outdoor play areas** are protected from air quality impacts from a **state-controlled road**.	**AO49.1** Each dwelling or unit has access to a **private open space** which is shielded from a **state-controlled road** by a building, **solid gap-free fence**, or other **solid gap-free structure**. OR **AO49.2** Each **outdoor education area** and **outdoor play area** is shielded from a **state-controlled road** by a building, **solid gap-free fence,** or other **solid gap-free structure**.	**Not Applicable** The Project does not involve a private open space, outdoor education or outdoor play areas.
PO50 Patient care areas within **hospitals** are protected from vibration impacts from a **state-controlled road** or **type 1 multi-modal corridor**.	**AO50.1 Hospitals** are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of $0.1m/s^{1.75}$. AND **AO50.2 Hospitals** are designed and constructed to ensure vibration in the ward of a **patient care**	**Not Applicable** The Project does not involve a patient care area.

Performance outcomes	Acceptable outcomes	Response
	area does not exceed a vibration dose value of $0.4m/s^{1.75}$.	
PO51 Development is designed and sited to ensure light from infrastructure within, and from users of, a **state-controlled road** or **type 1 multi-modal corridor**, does not: 1. intrude into buildings during night hours (10pm to 6am); 2. create unreasonable disturbance during evening hours (6pm to 10pm).	No acceptable outcomes are prescribed.	**Complies** It is understood that minimal permanent Project lighting is proposed, only where required for security and safety. At the perimeter of the Project, motion and/or manually activated surprise lighting may be installed. This would only be installed in certain locations to deter intruders, and would be used instead of permanent perimeter lighting. Within the DA3 Project Area, potential lighting is limited in extent and potential duration of use and is only proposed for the purposes of safety and security, meaning it would not intrude into buildings during night hours or create unreasonable disturbance during evening hours.

Table 1.6: Development in a future state-controlled road environment

Performance outcomes	Acceptable outcomes	Response
PO52 Development does not impede delivery of a **future state-controlled road**.	**AO52.1** Development is not located in a **future state-controlled road**. OR ALL OF THE FOLLOWING APPLY:	**Not Applicable** The Project does not adjoin a future planned state-controlled road environment.

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Performance outcomes	Acceptable outcomes	Response
	AO52.2 Development does not involve filling and excavation of, or material changes to, a **future state-controlled road**. AND **AO52.3** The intensification of lots does not occur within a **future state-controlled road**. AND **AO52.4** Development does not result in the landlocking of parcels once a **future state-controlled road** is delivered.	
PO53 The location and design of **new or changed access** does not create a safety hazard for users of a **future state-controlled road**.	**AO53.1** Development does not include **new or changed access** to a **future state-controlled road**.	**Not Applicable** The Project does not adjoin a future planned state-controlled road environment.
PO54 Filling, excavation, building foundations and **retaining structures** do not undermine, damage or cause subsidence of a **future state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable** The Project does not adjoin a future planned state-controlled road environment.
PO55 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a **future state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The Project does not adjoin a future planned state-controlled road environment.
PO56 Development ensures that stormwater is lawfully discharged.	**AO56.1** Development does not create any new points of discharge to a **future state-controlled road**. AND	**Not Applicable** The Project does not adjoin a future planned state-controlled road environment.

Performance outcomes	Acceptable outcomes	Response
	AO56.2 Development does not concentrate flows to a **future state-controlled road**. AND **AO56.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO56.4** Development does not worsen the condition of an existing **lawful point of discharge** to the **future state-controlled road**.	

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State code 2: Development in a railway environment

Guide to Development in a Transport Environment: Rail which provides direction on how to address this code.

Table 2.1 Development in general

Performance outcomes	Acceptable outcomes	Response
Building, structures, infrastructure, services and utilities		
PO1 Development does not create a safety hazard within the **railway corridor**.	No acceptable outcome is prescribed.	**Complies** No works are proposed within the railway corridor. DA3 Project Disturbance Footprint is setback a minimum of approximately 80 m – 105 m from the railway corridor, therefore, the Project is not considered to create a safety hazard. Construction impacts on the railway corridor will be considered as part of a CEMP to ensure compliance. An EMI assessment has been undertaken (Appendix I) a summary has been provided in Section 5.3 of the Planning Assessment Report. Mitigation measures have been proposed to ensure that the Project does not create a safety hazard within the railway corridor. The Proponent intends to continue engaging with Aurizon during the detailed design phase to identify and implement suitable mitigation strategies if interference is confirmed based on the Project's detailed design. Therefore, the Project is considered to not create a safety hazard in the railway corridor.
PO2 Development does not cause damage to the **railway corridor, rail transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	**Complies** No works are proposed within the railway corridor. Construction impacts on the railway corridor will be considered as part of a CEMP to ensure compliance.

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Performance outcomes	Acceptable outcomes	Response
PO3 Development does not interfere with, or obstruct, the **rail transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	**Complies** No works are proposed within the railway corridor. Construction impacts on the railway corridor will be considered as part of a CEMP to ensure compliance.
PO4 Development does not adversely impact the **structural integrity** or physical condition of the **railway**, **other rail infrastructure** or the **railway corridor** by adding or removing **loading**.	No acceptable outcome is prescribed.	**Complies** No works are proposed within the railway corridor. DA3 Project Disturbance Footprint is setback a minimum of approximately 80 m – 105 m from the railway corridor. The implementation of a CEMP will ensure that construction will not impact the structural integrity or physical condition of the railway.
PO5 Development above a **railway** is designed to enable natural ventilation and smoke dispersion in the event of a fire emergency.	No acceptable outcome is prescribed.	**Not Applicable** No works are proposed within or above the railway corridor.
PO6 Development does not adversely impact the operating performance of the **railway corridor**.	No acceptable outcome is prescribed.	**Complies** No works are proposed within the railway corridor. Construction impacts on the railway corridor will be considered as part of a CEMP to ensure compliance. An EMI assessment has been undertaken (Appendix I) a summary has been provided in Section 5.3 of the Planning Assessment Report. Mitigation measures have been proposed to ensure that the Project does not create a safety hazard within the railway corridor. The Proponent intends to continue engaging with Aurizon during the detailed design phase to identify and implement suitable mitigation strategies if interference is confirmed based on the Project's detailed design. Therefore, it is considered that the Project will not adversely impact the operating performance of the railway corridor.
PO7 Buildings and **structures** in a **railway corridor** are designed and constructed to protect persons in the event of a derailed train.	No acceptable outcome is prescribed.	**Complies** No works are proposed within the railway corridor. Construction impacts on the railway corridor will be

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Performance outcomes	Acceptable outcomes	Response
		considered as part of a CEMP to ensure compliance. The Project however will not increase persons working in proximity to the corridor.
PO8 Buildings and **structures** in **high risk locations** and where also located within 10 metres of the centreline of the nearest **railway** track are design and constructed to protect persons in the event of a derailed train.	**AO8.1** Buildings and **structures**, in a **railway corridor**, including foundations, retaining and other support elements, are designed and constructed in accordance with Civil Engineering Technical Requirement CIVIL-SR-012 Collision protection of supporting elements adjacent to **railways**, Queensland Rail, 2011, AS5100 Bridge design, and AS1170 Structural design actions.	**Not Applicable** Proposed infrastructure is not located within 10 metres of the railway corridor.
PO9 Buildings and **structures** are designed and constructed to protect people from electrocution.	**AO9.1** The outermost projection of development is set back horizontally a minimum of 3 metres from the outermost projection of **overhead line equipment**.	**Complies** No works are proposed within the railway corridor. Construction impacts on the railway corridor will be considered as part of a CEMP to ensure compliance. The Project however will not increase persons working in proximity to the corridor. The switchyard will be designed to protect people from electrocution.
PO10 Development in the **railway corridor** is designed and constructed to prevent projectiles being thrown onto the **railway**.	No acceptable outcome is prescribed.	**Complies** No works are proposed within the railway corridor. Workers on site post construction would be limited to those required for maintenance of the Project, and it is unlikely that projectiles will be thrown onto the railway during or post construction.
PO11 Buildings, and **structures** with publicly accessible or communal areas within 20 metres from the centreline of the nearest **railway** track are designed and constructed to prevent projectiles from being thrown onto a **railway**.	**AO11.1** Publicly accessible areas located within 20 metre from the centreline of the nearest **railway** do not overlook a **railway**. OR **AO11.2** Buildings and **structures** are designed to ensure publicly accessible areas located within 20 metres from the centreline of the nearest **railway**	**Not Applicable** The Project does not propose any buildings or structures with publicly accessible or communal areas in proximity to the corridor.

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Performance outcomes	Acceptable outcomes	Response
	track and that overlook the **railway** may include throw protection screens in accordance with the relevant provisions of the Civil Engineering Technical Requirement – CIVIL-SR005 Design of buildings over or near **railways**, Queensland Rail, 2011, and the Civil Engineering Technical Requirement – CIVIL-SR008 Protection screens, Queensland Rail.	
Stormwater and overland flow		
PO12 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard in a **railway corridor**.	No acceptable outcome is prescribed.	**Complies** A FASMP has been prepared and included in Appendix K of the Planning Assessment Report. The assessment concluded that a minor increase in surface runoff generated by the monopoles and access tracks is considered negligible given the small contribution in impervious areas and the dispersed nature of the infrastructure relative to the size of the broader catchment. On the basis of the assessment, impacts to the railway corridor would be minimal. Therefore, it is considered that the Project does not create or exacerbate a safety hazard.
PO13 Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of the **railway corridor**, **rail transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	**Complies** A FASMP has been prepared and included in Appendix K of the Planning Assessment Report. The assessment concluded that a minor increase in surface runoff generated by the monopoles and access tracks is considered negligible given the small contribution in impervious areas and the dispersed nature of the infrastructure relative to the size of the broader catchment. On the basis of the assessment, impacts to the railway corridor would be minimal. Therefore, it is

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Performance outcomes	Acceptable outcomes	Response
		considered that the Project does not result in material worsening of operating performance of the railway corridor.
PO14 Stormwater run-off or overland flow from the development site does not interfere with the **structural integrity** or physical condition of the **railway corridor, rail transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	**Complies** A FASMP has been prepared and included in Appendix K of the Planning Assessment Report. The assessment concluded that a minor increase in surface runoff generated by the monopoles and access tracks is considered negligible given the small contribution in impervious areas and the dispersed nature of the infrastructure relative to the size of the broader catchment. On the basis of the assessment, impacts to the railway corridor would be minimal. Therefore, it is considered that the Project does not interfere with the structural integrity or physical condition of the railway corridor.
Flooding		
PO15 Development does not result in a material worsening of flooding impacts within a **railway corridor**.	No acceptable outcome is prescribed.	**Complies** A FASMP has been prepared and included in Appendix K of the Planning Assessment Report. The monopoles NP31 and NP32 will be situated outside of the floodplains, 1% Annual Exceedance Probability (AEP) and 0.2% AEP.
Drainage Infrastructure		
PO16 Drainage infrastructure does not create a safety hazard in a **railway corridor**.	**AO16.1** Drainage infrastructure is wholly contained within the development site. AND	**Not Applicable** Drainage infrastructure is not being proposed as part of DA3.

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Performance outcomes	Acceptable outcomes	Response
	AO16.2 Drainage infrastructure can be maintained without requiring access to a **railway corridor**.	
Construction Impacts		
PO17 Construction activities do not cause ground movement or vibration impacts in a **railway corridor**.	No acceptable outcome is prescribed.	**Complies** A CEMP will be developed to ensure that the construction activities do not cause ground movement or vibration impacts on the railway corridor.
Access		
PO18 Development prevents unauthorised access to the **railway corridor**.	**AO18.1** Development abutting the **railway corridor** incorporates fencing along the property boundary with the **railway corridor** in accordance with the **railway manager's** standards. AND **AO18.2** A road barrier designed in accordance with Queensland Rail Civil Engineering Technical Requirement CIVIL-SR-007 – Design Criteria for Road Rail Barriers. AND **AO18.3** Vehicle manoeuvring areas, driveways, **loading** areas and carparks abutting the **railway corridor** incorporate **rail interface barriers** along the boundary to the **railway corridor**.	**Complies** The Project has not proposed any publicly accessible areas and will not allow access to the railway corridor.
PO19 Development maintains existing maintenance and authorised access to the **railway corridor**.	**AO19.1** Development does not obstruct existing authorised access points and access routes for maintenance and emergency works to the **railway corridor** at all times.	**Complies** The Project will not impact on maintenance or authorise access. Works are not proposed within the railway corridor.
PO20 Development does not impede the maintenance of a **railway bridge** or authorised access to a **railway bridge**.	**AO20.1** Buildings and other **structures** are set back horizontally a minimum of 3 metres from a **railway bridge**.	**Not Applicable** The Project does not abut a railway bridge.

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Performance outcomes	Acceptable outcomes	Response
	AND **AO20.2** Permanent **structures** are not located below or abutting a **railway bridge**. AND **AO20.3** Temporary activities below or abutting a **railway bridge** do not impede access to a **railway corridor**.	
Public passenger transport and active transport		
PO21 Development does not compromise the safety of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The DA3 Project Area does not adjoin public passenger transport infrastructure or active transport infrastructure.
PO22 Development maintains pedestrian and cycle access to a **railway** station or other **public passenger transport infrastructure** and **active transport infrastructure** associated with the **railway**.	No acceptable outcome is prescribed.	**Not Applicable** The DA3 Project Area does not adjoin public passenger transport infrastructure or active transport infrastructure.
PO23 Development does not adversely impact the **structural integrity** or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The DA3 Project Area does not adjoin public passenger transport infrastructure or active transport infrastructure.
PO24 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The DA3 Project Area does not adjoin public passenger transport infrastructure or active transport infrastructure.
Planned upgrades		
PO25 Development does not impede delivery of **planned upgrades** of **rail transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** The DA3 Project Area does not adjoin planned upgrades of rail transport infrastructure.
Network safety		

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Performance outcomes	Acceptable outcomes	Response
PO26 Development involving **dangerous goods** does not adversely impact on the safety or operations of the **railway** and **rail transport infrastructure**.	**AO26.1** Development does not involve handling or storage of hazardous chemicals above the threshold quantities listed in table 5.2 of the Model Planning Scheme Development Code for Hazardous Industries and Chemicals, Office of Industrial Relations, Department of Justice and Attorney-General, 2016.	**Not Applicable** The Project does not involve dangerous goods.

Table 2.2 Filling, excavation, building foundations and retaining structures

Performance outcomes	Acceptable outcomes	Response
PO27 Development does not create a safety hazard for users of the **railway** or **other rail infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor. Earthworks will be subject to secondary approvals.
PO28 Development does not adversely impact on the operating performance of the **railway** or **other rail infrastructure** within the **railway corridor**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor. Earthworks will be subject to secondary approvals.
PO29 Development does not undermine, damage, or cause subsidence of, the **railway corridor**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor. Earthworks will be subject to secondary approvals.
PO30 Development does not adversely impact the **structural integrity** or physical condition of the **railway**, **other rail infrastructure** or the **railway corridor** by adding or removing **loading**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor. Earthworks will be subject to secondary approvals.
PO31 Development does not cause ground water disturbance in the **railway corridor**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor.

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		Groundwater impacts will be considered as part of secondary approvals.
PO32 Development does not adversely impact the **railway** or **other rail infrastructure** within the **railway corridor**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor. Earthworks will be subject to secondary approvals.
PO33 Excavation, boring, piling, blasting, drilling, fill compaction or similar activities does not adversely impact the operating performance of the **railway** or **other rail infrastructure** within the **railway corridor**.	No acceptable outcome is prescribed.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor. Earthworks will be subject to secondary approvals.
PO34 Filling and excavation material does not cause an obstruction or nuisance in the **railway corridor**.	**AO34.1** Fill, spoil or any other material is not stored in, or adjacent to, the **railway corridor**.	**Not Applicable** DA3 is not proposing filling, excavation, building foundations or retaining structures within or immediately adjoining the railway corridor. Earthworks will be subject to secondary approvals.

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Table 2.3 Railway crossings

Performance outcomes	Acceptable outcomes	Response
PO35 Development does not require a new level **railway crossing**.	No acceptable outcome is prescribed.	**Not Applicable** Railway crossings are not being proposed.
PO36 Development does not adversely impact on the operating performance of an existing **railway crossing**.	No acceptable outcome is prescribed.	**Not Applicable** Railway crossings are not being proposed.
PO37 Development does not adversely impact on the safety of an existing **railway crossing**.	No acceptable outcome is prescribed.	**Not Applicable** Railway crossings are not being proposed.
PO38 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a **railway crossing**.	No acceptable outcome is prescribed.	**Not Applicable** Railway crossings are not being proposed.

Table 2.4 Environmental emissions

Statutory note: Where development is adjacent to a **railway** with 15 or fewer passing trains per day, compliance with table 2.4 is not required.

Performance outcomes	Acceptable outcomes	Response
Reconfiguring a Lot		
Involving the creation of 5 or fewer new residential lots adjacent to a railway or type 2 multi-modal corridor		
PO39 Development minimises free field noise intrusion from a **railway**.	**AO39.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR	**Not applicable** The Project is not proposing a reconfiguration of a lot.

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Performance outcomes	Acceptable outcomes	Response
	AO39.2 Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. OR **AO39.3** Development provides a **solid gap-free fence** or other **solid gap-free structure** along the full extent of the boundary closest to a **railway**.	
Involving the creation of 6 or more new residential lots adjacent to a railway or type 2 multi-modal corridor		
PO40 Reconfiguring a lot minimises free field noise intrusion from a **railway**.	**AO40.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO40.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	**Not applicable** The Project is not proposing a reconfiguration of a lot.
Material change of use (accommodation activity)		
Ground floor level requirements adjacent to a railway or type 2 multi-modal corridor		

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Performance outcomes	Acceptable outcomes	Response
PO41 Development minimises noise intrusion from a **railway** in **private open space** at the ground floor.	**AO41.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for **private open space** at the ground floor level; 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO41.2** Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for **private open space** at the ground floor level by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	**Not applicable** The Project is not proposing an accommodation activity.
PO42 Development (excluding a **relevant residential building** or **relocated building)** minimises noise intrusion from the **railway** in **habitable rooms** at the facade of the ground floor level.	**AO42.1** Development (excluding a **relevant residential building** or **relocated building**) provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum building facade acoustic level in reference table 1 (item 1.1) for **habitable rooms** at the ground floor level; 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and	**Not applicable** The Project is not proposing an accommodation activity.

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Performance outcomes	Acceptable outcomes	Response
	Construction of Noise Fences/Barriers, Queensland Rail, 2018; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;. c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO42.2** Development (excluding a **relevant residential building** or **relocated building**) achieves the maximum building facade acoustic level in reference table 1 (item 1.1) for **habitable rooms** at the ground floor level by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
PO43 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in Table 3 (item 3.1).	No acceptable outcome is prescribed.	**Not applicable** The Project is not proposing an accommodation activity.
Above ground floor level requirements (accommodation activity) adjacent to a railway or type 2 multi-modal corridor		
PO44 Balconies, podiums and roof decks include: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums and roof decks	No acceptable outcome is prescribed.	**Not applicable** The Project is not proposing an accommodation activity.

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Performance outcomes	Acceptable outcomes	Response
PO45 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is prescribed.	**Not applicable** The Project is not proposing an accommodation activity.
Material change of use (other uses)		
Ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a railway or type 2 multi-modal corridor		
PO46 Development: 1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas**; b. in accordance with: i. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 2. achieves the maximum free field acoustic level in reference table (item 2.3) for all **outdoor education areas** and **outdoor play areas** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	No acceptable outcome is prescribed.	**Not applicable** The Project is not proposing a childcare centre, educational establishment and hospital.
PO47 Development involving a **childcare centre** or **educational establishment**:	No acceptable outcome is prescribed.	**Not applicable** The Project is not proposing a childcare centre, educational establishment and hospital.

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Performance outcomes	Acceptable outcomes	Response
1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); b. in accordance with: i. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; or 2. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO48 Development involving: 1. **indoor education areas** and **indoor play areas**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital**; achieves the maximum internal acoustic level in reference table 3 (items 3.2, 3.3 and 3.4).	No acceptable outcome is prescribed.	**Not applicable** The Project is not proposing a childcare centre, educational establishment and hospital.
Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a railway or **type 2 multi-modal corridor**		
PO49 Development involving a **childcare centre**; or **educational establishment** which have balconies, podiums or elevated **outdoor play areas** predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from the **railway** are provided with: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); and	No acceptable outcome is prescribed.	**Not applicable** The Project is not proposing a childcare centre, educational establishment and hospital.

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Performance outcomes	Acceptable outcomes	Response
2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums and elevated **outdoor play areas**.		
PO50 Development including: 1. **indoor education areas** and **indoor play areas** in a **childcare centre** or **educational establishment**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is prescribed.	
Air, light and vibration		
PO51 Private open space, **outdoor education areas** and **outdoor play areas** are protected from air quality impacts from a **railway**.	**AO51.1** Each dwelling or unit has access to a **private open space** which is shielded from a **railway** by a building, noise barrier, **solid gap-free fence**, or other **solid gap-free structure**. OR **AO51.2** Each **outdoor education area** and **outdoor play area** is shielded from a **railway** by a building, noise barrier, **solid gap-free fence,** or other **solid gap-free structure**.	**Not applicable** The Project is not proposing a private open space, outdoor education or outdoor play areas.
PO52 Patient care areas within **hospitals** are protected from vibration impacts from a **railway**.	**AO52.1 Hospitals** are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of $0.1m/s^{1.75}$. AND **AO52.2 Hospitals** are designed and constructed to ensure vibration in the ward of a **patient care area** does not exceed a vibration dose value of $0.4m/s^{1.75}$.	**Not applicable** The Project is not proposing a patient care area.
PO53 Development is designed and sited to ensure light from infrastructure within, and use of, a **railway** does not:	No acceptable outcomes are prescribed.	**Complies** It is understood that minimal permanent Project lighting is proposed, only where required for

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Performance outcomes	Acceptable outcomes	Response
1. intrude into buildings during night hours (10pm to 6am); and 2. create unreasonable disturbance during evening hours (6pm to 10pm).		security and safety. At the perimeter of the Project, motion and/or manually activated surprise lighting may be installed. This would only be installed in certain locations to deter intruders, and would be used instead o permanent perimeter lighting. Within the DA3 Project Area, potential lighting is limited in extent and potential duration of use and is only proposed for the purposes of safety and security, meaning it would not intrude into buildings during night hours or create unreasonable disturbance during evening hours.

Table 2.5 Development in a future railway corridor

Performance outcomes	Acceptable outcomes	Response
PO54 Development does not impede the planning, design and delivery of **rail transport infrastructure** in a **future railway corridor**.	**AO54.1** Development is not located in a **future railway corridor**. OR both of the following acceptable outcomes apply: **AO54.2** The intensification of lots does not occur within a **future railway corridor**. AND **AO54.3** Development does not result in the landlocking of parcels once a **future railway corridor** is delivered.	**Not applicable** The Project is not adjoining a future railway corridor.
PO55 Development, including filling, excavation, building foundations and **retaining structures** do not undermine or cause subsidence of a **future railway corridor**.	No acceptable outcome is prescribed.	**Not applicable** The Project is not adjoining a future railway corridor.
PO56 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a **future railway corridor**.	No acceptable outcome is prescribed.	**Not applicable** The Project is not adjoining a future railway corridor.

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Appendix F

State Planning Policy assessment

State Planning Policy and Assessment Benchmarks

The State Planning Policy (Appendix F) discusses the State Interest Policies and Assessment Benchmarks. The following contains an assessment of the Project against the range of State interests contained within the SPP. The Project is compliant with the intent of the State Planning Policy, noting the following:

Table E1 - SPP Assessment

Policy	Mapping	Policy Applicability	Assessment Benchmarks Applicability
Planning for liveable communities and housing			
Housing supply and diversity.	No mapping associated with this interest.	**Not Applicable: No Conflict** The development is non-residential in nature and is located on land identified for infrastructure in the Development Scheme.	**Not Applicable** No assessment benchmarks associated with this interest.
Liveable communities.	No mapping associated with this interest.	**Not Applicable: No Conflict** The development is non-residential in nature and is located on rural land.	**Not Applicable** Assessment benchmarks are not applicable as the Project does not involve a premises accessed via a common private title.
Planning for economic growth			
Agriculture.	The Project is not within any of the following: • Important agricultural area (IAA). • Agricultural land classification (ALC) – class A and B. • Stock route network.	**Not Applicable: No Conflict** A DALA has been provided in Appendix G, the assessment confirmed: • The Project is not located in an IAA, ALC (class A or B). • The Project is unlikely to have a significant impact on the productivity of agricultural land availability or use once constructed, as cattle grazing can continue post construction. • Potential agricultural impacts of the Project can be adequately managed and is unlikely to have a risk of significant or permanent impact to agricultural activities at the site or surrounding properties.	**Not Applicable** No assessment benchmarks associated with this interest.

Policy	Mapping	Policy Applicability	Assessment Benchmarks Applicability
Development and construction.	The Project is within a State Development Area.	**Applicable: No Conflict** The Project represents the appropriate delivery of infrastructure within an SDA. The Project is consistent with the Objectives of the Development Scheme which has been discussed in Section 4.2.4 of the Planning Assessment Report.	**Not Applicable** No assessment benchmarks associated with this interest.
Mining and extractive resources.	The Project is not within a key resource area (KRA) – resource/processing area, separation area, transport route, transport route separation area.	**Not Applicable: No Conflict** The Project is not within a KRA or associated separation areas and transport routes. The Project will not affect the operation of KRAs in the surrounding region.	**Not Applicable** Assessment benchmarks are not applicable as the Project is not within a KRA or associated separation areas and transport routes.
Tourism.	No mapping associated with this interest.	**Not Applicable: No Conflict** The Project is located within the Callide Infrastructure Corridor SDA which was established as an area for infrastructure development.	**Not Applicable** No assessment benchmarks associated with this interest.
Planning for the environment and heritage			
Biodiversity	The site is subject to the following: • MSES – Regulated vegetation (category R) • MSES – Regulated vegetation (intersecting a watercourse)	**Applicable: No Conflict** • The Project will involve the clearing of native vegetation which will be undertaken in accordance with the Accepted Development Requirements for Clearing Infrastructure. This has been further discussed in Section 3.2.4 of the Planning Report. • The Project will require access tracks at waterway crossings that require culvert installations. These will be constructed in accordance with the Accepted Development Requirements for operational works that is	**Not Applicable** Assessment benchmarks are not applicable with this interest. SDAP Assessment and referral to SARA is not required for native vegetation clearing or waterway barrier works.

Policy	Mapping	Policy Applicability	Assessment Benchmarks Applicability
		constructing or raising waterway barrier works (September 2025, or as amended) or secondary approvals if compliance with the Accepted Development Requirements cannot be achieved.	
Coastal environment.	The Project is not subject to the Coastal Management District.	**Not Applicable: No Conflict** The Project is not subject to the Coastal Management District.	**Not Applicable** Assessment benchmarks are not applicable with this interest.
Cultural heritage.	The Project is not within a national heritage place or state heritage place.	**Not Applicable: No Conflict** The Proponent is committed to ongoing with the traditional owners, the First Nations Balai, Gurang, Gooreng Gooreng and Taribelang Bunda Peoples and considers that the formation of a strong and sustainable relationship with the FNBGGGTB Peoples is central to the Project's success.	**Not Applicable** No assessment benchmarks associated with this interest.
Water quality.	The Project is within a water resource catchment.	**Applicable: No Conflict** The Project is within a water resource catchment. A FASMP has been undertaken and is included in Appendix K. Monopoles NP31 and NP32 are located outside the 1% AEP flood extent and proposed access tracks are to be designed with appropriate cross-drainage measures to ensure that there are no or minor adverse impacts on flood behaviour.	**Not Applicable** Assessment benchmarks are not applicable with this interest.
Planning for safety and resilience to hazards			
Emissions and hazardous activities.	The Project traverses high pressure gas pipelines.	**Applicable: No Conflict** The Project traverses underground pressure gas pipelines within the SDA.	**Applicable** The intent of the assessment benchmarks associated with this interest are included in the Objectives of the Development Scheme. A

Policy	Mapping	Policy Applicability	Assessment Benchmarks Applicability
		The Project has been assessed against the Objectives of the Development Scheme and an EHHSA (Appendix L) has been undertaken to assess the Projects hazards risk related to the existing built environment, natural environment and construction activities. The EHHSA concluded that the proposed design can be constructed and operated safely and complies with the Objectives of the Development Scheme provided that recommended mitigation measures and established construction management practices are implemented. Stakeholder communication will be essential throughout the Project lifecycle to manage emergent risks effectively.	comprehensive assessment has been undertaken and is located in Section 4.2.4 of the Planning Assessment Report.
Natural hazards, risk and resilience.	The Project is within the following: • Flood hazard area (local government flood mapping area).	**Applicable: No Conflict** A FASMP has been undertaken and included in Appendix K. Monopoles NP31 and NP32 are located outside the 1% AEP flood extent and proposed access tracks are to be designed with appropriate cross-drainage measures to ensure that there are no or minor adverse impacts on flood behaviour.	**Applicable** Assessment benchmarks are applicable – refer to Table E3 for further detail.
Planning for infrastructure			
Energy and water supply.	The Project is not mapped under the energy and water supply SPP maps.	**Not Applicable** The site has not been identified within the Mapping.	**Not Applicable** No assessment benchmarks associated with this interest.
Infrastructure integration.	No mapping associated with this interest.	**Applicable: No Conflict** The Project traverses underground pressure gas pipelines within the SDA.	**Not Applicable** No assessment benchmarks associated with this interest.

Policy	Mapping	Policy Applicability	Assessment Benchmarks Applicability
		The Project has been assessed against the Objectives of the Development Scheme and no conflicts have been identified.	
Transport infrastructure.	The Project is mapped adjoining the Railway Corridor and State Controlled Road (Dawson Highway).	**Applicable: No Conflict** A TIA has been prepared for the Project (Appendix N). The TIA concluded that the Project's construction phase was the most critical in terms of traffic impact. The proposed peak construction works were conservatively forecast to lead to varying increases in traffic volumes on the sections of the external road network relevant to the Project. Ongoing operations phase of the Project was identified to only generate periodic (i.e. not daily) movements on the external road network associated with scheduled inspection and maintenance works. The TIA has recommended upgrade and treatments to mitigate the impacts of the increases in traffic during construction and operations phases of the Project which will form part of DA2. These upgrade works are not discussed herein as they are not applicable to DA3 Project Area, as they are outside the DA3 Project Area, and these can be referred to in Appendix N.	**Not Applicable** No assessment benchmarks associated with this interest.
Strategic airports and aviation facilities.	The Project is subject to the following: • Aviation Facility.	**Applicable: No Conflict** The Project will not affect the ongoing safe operation of Gladstone Airport or Thangool Airport which has been confirmed in the submitted Aviation Impact Assessment (Appendix H).	**Not Applicable** Assessment benchmarks are not applicable – none of the works or infrastructure associated with the proposed use will intrude into the OLS contour for the Gladstone Airport or Thangool Airport.

Policy	Mapping	Policy Applicability	Assessment Benchmarks Applicability
		The Project is located outside the horizontal extent of the obstacle limitation surfaces of any certified airport.	
Strategic ports.	The Project is not within a strategic port and is located with a priority port.	**Not Applicable: No Conflict** The Project will not affect the ongoing operation of the Port of Gladstone.	**Not Applicable** No assessment benchmarks associated with this interest.

Table E3 Assessment benchmarks – natural hazards, risk and resilience

Assessment Benchmark	Commentary
Bushfire, flood, landslide, storm tide inundation, and erosion prone areas outside the coastal management district:	
1. Development other than that assessed against (1) above, avoids natural hazard areas, or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level.	**Complies** A FASMP was undertaken for the Project by AECOM. The assessment is provided in Appendix K. Monopoles NP31 and NP32 are located outside the 1% AEP flood extent and proposed access tracks are to be designed with appropriate cross-drainage measures to ensure that there are no or minor adverse impacts on flood behaviour. The DA3 Project Disturbance Footprint and DA3 Project Area is not located within mapped areas of bushfire hazard under the SPP.
All natural hazard areas	
2. Development supports and does not hinder disaster management response or recovery capacity and capabilities.	**Complies** The Project will not hinder disaster management response or recovery capacity and capability by virtue of not increasing the severity of existing hazards or significantly increasing the workforce within the hazard area.
3. Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties.	**Complies** A FASMP was undertaken for the Project by AECOM. The assessment is provided in Appendix K. The assessment concluded that the development has suitably avoided flood impact with monopoles NP31 and NP32 being designed outside the 1% AEP flood extent.
4. Risks to public safety and the environment from the location of hazardous materials and the release of these materials as a result of a natural hazard are avoided.	**Complies** The Project is not proposing to store hazardous materials.
5. The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced.	**Complies** An EAR was undertaken for the Project (Appendix I). The assessment concluded that approximately 0.5 ha of Category R and 10.8 ha of Category X vegetation clearing is proposed as part of the Project. Vegetation clearing has been limited to the DA3 Vegetation Clearance Footprint for the purposes of temporary and permanent infrastructure. No asset protection zones were considered required as part of the BMP (Appendix O) for DA3.

Appendix G

Desktop Agricultural Land assessment

Desktop Agricultural Land Assessment

Wooderson Solar Farm – Overhead Transmission Line and Switchyard

Prepared for AECOM Australia Pty Ltd on behalf of Wooderson Solar Development Co Pty Ltd

25 March 2026
FINAL

GTenvironmental

File name:	Wooderson OHTL – Desktop Agricultural Land Assessment
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1 INTRODUCTION

The proposed Wooderson Solar Farm is located approximately 40 kilometres (km) south-west of Gladstone in Central Queensland, within the Gladstone Regional Council (GRC) Local Government Area (LGA). The Proponent is Wooderson Solar Development Co Pty Ltd a wholly owned subsidiary of Central Queensland Power Development Co Pty Ltd (CQP), which is a joint venture between RES Australia Pty Ltd (RES) and Energy Estate (CQP) Holdings Pty Ltd as trustee for Energy Estate (CQP) Holdings Trust (Energy Estate). The solar farm is proposed to have a generating capacity of up to 450-megawatts (MW) with a 450 MW direct current (DC) coupled battery energy storage system (BESS) with storage capacity of up to 3,600 megawatt-hours (MWh). This will be connected to the National Electricity Market (NEM) through a new overhead transmission line (OHTL) and will also include construction of associated infrastructure including access tracks, fencing and operations and maintenance facilities.

The solar farm, BESS and their associated infrastructures will be assessed in a Development Application (DA) by the State Assessment and Referral Agency (SARA), identified as Development Application 1 (DA1) and does not form part of this assessment.

The works outlined in this assessment include connection to the NEM through a 275 kilovolt (kV) OHTL, switchyard and associated ancillary infrastructure for these elements only (the Project). A total of approximately 11 km of OHTL supported by approximately 45 monopoles is proposed from the solar farm substation (assessed in DA1) to the new switchyard for connection to Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.

The Project extends over 7 allotments (refer Figure 1), within the GRC LGA, 7 of which (including part Lot 1 on RP616641) of which are subject to assessment under the *Gladstone Regional Council Planning Scheme 2017* (*Version 2*) (Planning Scheme) and one allotment (part Lot 1 on RP616641) requiring assessment under the *Callide Infrastructure Corridor State Development Area* (SDA) subject to the *Callide Infrastructure Corridor State Development Area Development Scheme* (*September 2012*) (Development Scheme).

As the OHTL extends across 2 planning instruments (refer Figure 1), the assessment provided within this report will support 2 separate DAs:

- Development Application 2 (DA2) – Transmission Corridor and Switchyard within the GRC LGA to be assessed by GRC with referral to concurrence and advice agencies.
- Development Application 3 (DA3) – Transmission Corridor within the Callide Infrastructure Corridor SDA to be assessed by the Office of the Coordinator General (OCG).

GTE Environmental (GTE) was commissioned by AECOM Australia Pty Ltd (AECOM) on behalf of the Proponent to provide consultancy services relating to, and to conduct, a Desktop Agricultural Land Assessment (DALA) for the Project.

A proposed new direct access from the Dawson Highway is not proposed as part of DA2 and DA3, however direct assess has been proposed as part of DA1.

DA2 and DA3 will utilise the proposed new access from the Dawson Highway and will provide construction and maintenance access to the southern Project Area.

To limit disturbance, internal access within the southern section of the Project Area will use the proposed access tracks as part of DA1, with the exception of some additional sections that will provide specific access to the OHTL. These additional access tracks will be up to 7 m wide and are shown on Figure 3.

Access to the Project Area to the north of the Dawson Highway will be via Duck Holes Road and predominantly within the 60 m wide easement. Some sections are located outside the easement to provide access to switchyard Option A and Option B Construction Compound Area and switchyard Option A and Option B Temporary Laydown Area.

Access to the switchyard will be via Duck Holes Road and either via the same track within the OHTL easement, or via a second track immediately adjacent to the OHTL easement. This will be confirmed with Powerlink during detailed design.

For the purposes of this application, the following has been used to define the Project to delineate between permanent impact areas and temporary impact areas and are defined as follows (refer Figure 1):

1.1 Project Area

The Project infrastructure and vehicular access will be situated within the bounds of the 'Project Area' which comprises of freehold allotments, Dawson Highway Road Reserve, Duck Holes Road Reserve and 2 unnamed road reserves. The Project Area has a total area of 2675.91 hectares (ha).

1.2 Project Disturbance Footprint

The Project Disturbance Footprint is estimated to be 209.619 ha and is defined as including permanent and temporary components for construction:

Permanent components include the following:

- Approximately 11 km of 275 kV OHTL, contained within a 60 m wide easement.
- Approximately 45 monopoles, contained within the 60 m wide easement.
- New switchyard (either Option A or Option B).
- Access tracks located within the 60 m wide easement that will be used for ongoing maintenance.
- Access tracks (where located outside the easement) that will be used for ongoing maintenance.
- Vegetation clearing.

- Security fencing.

Temporary components include the following:

- Option A and Option B switchyard construction compound area.
- Option A and Option B switchyard temporary laydown area.
- Vegetation clearing.

The DALA covers the Project Disturbance Footprint, includes a buffer around the proposed infrastructure to allow for design refinement during detailed design consisting of the proposed OHTL alignment (including a 60 m easement), switchyard and ancillary infrastructure, as shown in Figures 1, 2, 3, 4, 5, 6 and 7.

1.2.1 Overhead Transmission Line

The proposed OHTL extends approximately 11 km from the solar farm substation, traverses west to the proposed new switchyard and connects into the Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.

The OHTL will be contained within a 60 m wide easement (refer Figure 3). The OHTL will be located with the jurisdiction of the Planning Scheme and Development Scheme (refer Figure 2). The following delineates between the infrastructure and works located each jurisdiction:

The OHTL within the Planning Scheme jurisdiction will:

- traverse 7 freehold allotments.
- comprise approximately 10 km of OHTL.
- be partly within and adjoining Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project and existing Calvale to Wurdong 275 kV Transmission Line, where the OHTL will under cross the existing and proposed transmission lines.
- travel adjacent to Option A and Option B switchyard, construction compound and construction laydown area, which also adjoins Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.
- require approximately 43 monopoles with a maximum height of 50 m. The monopoles will be constructed of either steel or concrete. Monopoles will have a foundation radius of approximately 15 m, with some monopoles (particularly corner monopoles) requiring stays. The final requirements for stays will be confirmed during detailed design. Refer to Figure 3 for indicative monopole locations.

  It is noted that these are indicative locations only and will be subject to refinement during detailed design which will take into account impact assessment findings and approval requirements.

The OHTL within the Development Scheme jurisdiction will:

- traverse one freehold allotment.

- approximately 840 m of OHTL.
- traverse an easement containing gas pipelines and located within the Development Scheme.
- require up to 2 monopoles with a maximum height of 50 m. The monopoles will be constructed of either steel or concrete. Monopoles will have a foundation radius of appropriately 15 m, some monopoles particularly corner monopoles requiring stays. The foundations of a third monopole may partially be located within the Development Scheme jurisdiction, with the centre of the pole located immediately west of the Development Scheme jurisdiction. Refer to Plates 1 and 2 depicting indicative monopoles and Plate 3 for indicative monopole locations.



Plate 1: Example 275 kV OHTL under construction (Cowell Electric, 2025)



Plate 2: Example 275 KV OHTL (Australian Power Industry Partners, 2025)



Plate 3: 275 kV Example OHTL with access track (Cowell Electric, 2025)

1.2.2 Switchyard

A new switchyard is proposed to be located at the western end of the OHTL for cut-in connection to Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project (Figure 3). The final location of this switchyard is awaiting confirmation from Powerlink, with two potential locations assessed for the purposes of this application being Option A (red) and Option B (blue) (Figure 3). Both options are proposed to be included within the Project Disturbance Footprint to allow for flexibility in the final location and allow for continued discussions with Powerlink.

The switchyard includes a cleared level platform of approximately 170 m by 80 m for connection of Wooderson Solar Farm, subject to confirmation with Powerlink. There will also be space for potential future expansion contained within a security fence. It will include switchgear to isolate circuits in an emergency, as well as devices to monitor and communicate the performance or circuits.

The Project Disturbance Footprint includes the maximum possible area required for the switchyard.

The switchyard will ultimately be transferred to the ownership of Powerlink, the Transmission Network Service Provider. This is anticipated to occur upon commissioning of the switchyard;

however, the timing is subject to confirmation with Powerlink. An example of a Powerlink switchyard shown in Plate 4 below.



Plate 4: Example Powerlink switchyard (Cowell Electric, 2025)

1.2.3 Site Access and Internal Access Tracks

A proposed new direct access from the Dawson Highway is not proposed as part of DA2 and DA3, however direct assess has been proposed as part of DA1.

DA2 and DA3 will utilise the proposed new access from the Dawson Highway and will provide construction and maintenance access to the southern Project Area.

To limit disturbance, internal access within the southern section of the Project Area will use the proposed access tracks as part of DA1, with the exception of some additional sections that will provide specific access to the OHTL. These additional access tracks will be up to 7 m wide and shown on Figure 3.

Access to the Project Area to the north of the Dawson Highway will be via Duck Holes Road and predominantly within the 60 m wide easement. Some sections are located outside the easement to provide access to switchyard Option A and Option B Construction Compound Area and switchyard Option A and Option B Temporary Laydown Area.

Access to the switchyard will be via Duck Holes Road and either via the same track within the OHTL easement, or via a second track immediately adjacent to the OHTL easement. This will be confirmed with Powerlink during detailed design.

Access tracks may cross waterways or watercourses within the Project Area. Where required, culverts will be installed. Where achievable, these will be designed in accordance with the

Accepted Development Requirements for operational work that is constructing and raising Waterway Barrier Works (dated September 2025 or as amended) or form part of secondary approvals during detailed design.

2 PROJECT OVERVIEW

The Project is for the purposes of connecting the solar farm and BESS to the NEM and comprises of the following components:

- Approximately 11 km of 275 kV OHTL, contained within a 60 m wide easement.
- New switchyard for connection to Powerlink's proposed Calvale to Calliope River Transmission Line.
- Access tracks.
- Temporary laydown and construction compound areas.

Key development details of the project are provided in Table 2-1 below. Project Infrastructure is shown in Figure 3 and impacted lot plans are shown on Figure 4.

Table 2-1: Development Details

Aspect of Development	Description
Proposed Development	Grid connection between the substation and point of connection to Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project and the Project's switchyard at the point of connection.
Location of Project	Approximately 35 km west-southwest of Calliope, and 40 km south-west of Gladstone.
LGA	Gladstone Regional Council.
Zoning	Rural.
Current Land Use	Beef Cattle Grazing.
Total Project Area	2,675.91
Total Project Disturbance Footprint	209.619 ha
Impacted lot plan and property name	7 lots (West to East), not including local road corridors: • Lot 412 CL40158 (Redshirt) • Lot 12 SP199383 (Voewood) • Lot 13 SP200915 (Voewood) • Lot 1 RP616641 (Voewood) • Lot 15 SP200914 (Voewood) • Lot 1 RP609064 (Torsdale) • Lot 481 CL40224 (Torsdale)
Project Components	• Approximately 11 km of 275 kV OHTL, contained within a 60 m wide easement. • Approximately 45 monopoles, contained within the 60 m wide easement. • New switchyard (either Option A or Option B). • Access tracks located within and adjoining the 60 m wide easement that will be used for construction and ongoing maintenance. • Upgrades to Duck Holes Road. • Temporary laydown and construction compound areas. • Vegetation clearing. • Security fencing.

3 SCOPE OF WORKS

A DALA of available soil and land resources information was undertaken to collate available information and make an assessment of the Agricultural Land Class (ALC) of the Project Disturbance Footprint.

The scope of works for the assessment included a review of the following:

- Review of the proposed development and compliance with respect to the Planning Scheme and Development Scheme.
- Review of relevant reporting and mapping data for the Project Disturbance Footprint and surrounds in relation but not limited to:
    - Historical aerial imagery
    - Topographic data
    - Soil and Land Information (SALI) database
    - Land Resource mapping
    - Soil mapping
    - Queensland land use mapping
    - Regional Planning Interests (RPI) mapping
    - QLD Agricultural Land Audit data
    - Existing relevant report, including soil sampling, developed as part of DA1; Agricultural Land Assessment, Wooderson Solar Farm (Spies, 2026).

The findings of this DALA will provide an assessment of the agricultural land activities at the Project Disturbance Footprint and economic value to the region.

4 REVIEW OF AVAILABLE SITE DATA

4.1 Topography

The Project Disturbance Footprint was assessed reviewing available contour mapping in Queensland Globe (2025) and site elevation profiling in Google Earth (Google, 2025).

Contour mapping indicates the Project Disturbance Footprint lays between 110 m to 60 m Australian Height Datum (AHD) in transect west to east indicating a slope of between 0.50 to 1.00 percent (%).

Project Disturbance Footprint elevation profiling indicated the following:

- Transect west to east of the Project Disturbance Footprint (approximately centre), elevation range of maximum and minimum of 111 m and 64 m respectively with an average slope of 1.5%.
- Transect perpendicular north to south across the western edge (approximately) of the Project Disturbance Footprint elevation range of maximum and minimum of 109 m and 99 m respectively with an average slope of 1.8%.
- Transect perpendicular north to south across the centre (approximately) of the Project Disturbance Footprint , elevation range of maximum and minimum of 80 m and 70 m respectively with an average slope of 1.5%.
- Transect perpendicular north to south across the eastern edge (approximately) of the Project Disturbance Footprint , elevation range of maximum and minimum of 68 m and 66 m respectively with an average slope of 1.9%.

4.2 Watercourses

A review of the watercourses either through or adjacent to the Project Disturbance Footprint was undertaken by reviewing available data. The following creek and drainage lines were observed intercepting and transecting through the Project Disturbance Footprint:

- Running Creek and 7 tributaries.
- Doubtful Creek and 4 tributaries.
- Duck Holes Creek and 8 tributaries.
- Lost Spring Creek and 2 tributaries.
- Maxwellton Creek.

These creeks and tributaries are associated with the Calliope River, situated to the north, approximately 1.4 km at its closest point.

4.3 Vegetation

A review of vegetation was undertaken by reviewing vegetation management data, available land system data and Spies (2026).

- The Project Area is predominantly mapped as Category X vegetation, but also includes:
    - 18.7 ha of Category C vegetation, with none occurring within the Project Disturbance Footprint.
    - 256.6 ha of Category R vegetation, with 18.2 ha within the DA2 Project Disturbance Footprint and 0.5 ha in the DA3 Project Disturbance Footprint.

The majority of the Project Disturbance Footprint is covered by Category X, while watercourses intercepting the Project are Category R.

Vegetation as defined within the land systems data of the *Land Systems of the Capricornia Coast, Map 3 Calliope Area* (B.A. Forster and A.L. Barton,. Resource Management, Central Region, Department of Primary Industries, 1995) is summarised in Section 4.5. Additional vegetation observations are presented in Section 4.6, existing soil sites and reports.

4.4 Geology

A review of surface geology was undertaken by reviewing available 1:100,000 scale detailed surface geology data. The Project Disturbance Footprint consists of 3 major geology areas, Bocoolima Granodiorite (PRgab), Rocky Point Granodiorite (PRgar) and Qa-QLD.

The majority of the Project Area is mapped as PRgab, a grey to pinkish grey medium-grained biotite-hornblende granodiorite, locally with poikilitic K feldspar, an Intrusive Unit of the Late Permian, Early Triassic age.

The western portion of the Project Disturbance Footprint is mapped as PRgar, a deeply weathered grey medium-grained biotite-hornblende granodiorite. It is also an Intrusive Unit of the Late Permian, Early Triassic age.

The watercourses and tributaries are mapped as Qa-QLD, clay, silt, sand and gravel; flood-plain alluvium. It is a stratified unit, including volcanic and metamorphic rock types from the Quaternary age.

4.5 Land Resource Systems and Soils

The *Land Systems of the Capricornia Coast, Map 3 Calliope Area* consisting of 3 land systems maps describing the land systems of the Capricornia Coast region of Central Queensland. This has been conducted on a broad scale (1:250,000) showing landforms, geological, major soils and remnant vegetation communities.

The Project Disturbance Footprint is located within the following land systems and their concepts (west to east):

- Redshirt (Rs).
    - Undulating rises on granitic rocks, with shallow, red texture contrast soils and silver-leaved ironbark (*Eucalptus melanophloia)* and gum-topped bloodwood (*Corymbia erythrophloia*) woodland.

- Galloway (Gw).
    - Gently undulating rises and plains, isolated low hills and local alluvial flats on granitic rocks with shallow, brown texture contrast soils and silver-leaved ironbark, gum-topped bloodwood woodland, and with bleached sandy surface, sodic texture contrast soils and poplar box (*Eucalyptus populnea*) woodland.
- Calliope (Cp).
    - Broad level alluvial plains with clay loamy surface, black and brown texture contrast soils and grey or brown cracking clays and blue gum (*Eucalyptus tereticornis)* woodland.

Gw covers the majority of the Project Disturbance Footprint , within the centre with Rs covering the western portion and Cp the eastern portion, refer to Figure 7.

4.5.1 Review of Land Systems

Review of the associated soil types with these 3 land systems in further detail with preliminary assessment provided below.

Redshirt (Rs)

Based on the description and experience with similar soil types, it is likely these types of soils (pending depth) have a low plant available water content or physical barriers restricting root development and are more suited to sustaining native vegetation and agricultural activities such as cattle grazing on native pastures than cropping land uses.

Rs soil types include the following key attributes:

- Loamy surface, red duplex soils.
- These soils fit the land system description that shallow duplex soils may be situated on undulating rises.
- Australian Soil Classification (ASC) includes Chromosol.

Galloway (Gw)

Based on the description and experience with similar soil types, it is likely these types of soils (pending depth) have a low plant available water content due to soil texture or physical and/or chemical barriers such as sodic subsoils restricting root development and may either be suited to sustaining native vegetation and agricultural activities such as beef cattle grazing on either potentially sown pastures or native pastures than cropping land uses.

Gw soil types include the following key attributes:

- Sandy and loamy surface, brown and black duplex soils.
- Bleached sandy and loamy surface, brown and grey alkaline duplex soils.
- These soils fit the land system description that deeper, texture contrast soils are present on gently undulating plains (1-3% slope) that may include shallow or sodic soils.
- ASC includes Chromosol.

Calliope (Cp)

Based on the description and experience with similar soil types, it is likely these types of soils (pending depth) have a low plant available water content due to soil texture or physical and/or chemical barriers such as sodic subsoils, specifically in areas where gilgai may be present. This can restrict root development and may be suited to sustaining native vegetation and agricultural activities such as beef cattle grazing on either potentially sown pastures or native pastures than cropping land uses.

Cp soil types include the following key attributes:

- Clay loamy surface, black and brown duplex soils.
- Black and grey alkaline cracking clay with moderate gilgai.
- These soils fit the land system description that deeper, texture contrast soils are present on gently undulating plains near alluvial and/or drainage lines.
- ASC includes Chromosol.

Further assessment of these soil types in relation to the Project Area consists of reviewing the ASC and existing soil sites within or adjacent to the Project, as shown in Section 4.6.

4.6 Existing Soil Sites and Reports

A review of existing soil sites was undertaken using data available from Queensland Globe (2025) and Spies (2026). A summary of this information is provided below in Tables 4-1 and 4-2 with existing soil sites presented in Figure 7.

4.6.1 Existing Soil Sites (Queensland Globe, 2025).

The 5 existing soil sites observed within the Project Area, surrounding the Project Disturbance Footprint are associated with the Land Resources and Evaluation of the Capricornia Coastal Lands, Broadshire, Queensland.

Table 4-1: Existing Soil Sites (Queensland Globe, 2025) - Adjacent and within Project Disturbance Footprint

Soil Site	Project Reference	Site Type / Observation Class	ASC	Landform	Vegetation	Laboratory Data	GTE Comments
CCL291	Land Resources and Evaluation of the Capricornia Coastal Lands, Broadshire, Queensland (LRCC)	Free Survey Site / Class I	Sodosol Black Mesonatric Eutrophic	Plain on Alluvial Plain	Black spear grass (*Heteropogon contortus*), Golden beard grass (*Chrysopogon fallax*)	No	Complete clearing - pasture - but never cultivated
CCL343	LRCC	Free Survey Site / Class III	Haplic, Eutrophic, Red Chromosol	5% slope on rise	Black spear grass, Golden beard grass	Yes	Complete clearing - pasture - but never cultivated

Soil Site	Project Reference	Site Type / Observation Class	ASC	Landform	Vegetation	Laboratory Data	GTE Comments
CCL344	LRCC	Free Survey Site / Class I	Sodosol Black Mottled-Hypernatric Calcic	Drainage Depression on Rises	Black spear grass, small Chloris (*Chloris truncata R.Br*)	No	Complete clearing - pasture - but never cultivated
CCL305	LRCC	Free Survey Site / Class IV(a)	Sodosol Brown Mesonatric Eutrophic	Plain on Rise	Poplar box, Silver-leaved ironbark, Moreton bay ash (*Corymbia tessellaris*)	No	Extensive clearing
CCL314	LRCC	Free Survey Site / Class I	Sodosol Brown Subnatric Eutrophic	Plain on Alluvial Plain	Narrow-leaved ironbark, Silver-leaved ironbark, Moreton bay ash, Corkwood wattle (*Vachellia bidwillii)*	No	Complete clearing - pasture - but never cultivated

A review of the locations of the existing soil sites (Queensland Globe, 2025) presents a spread of the 5 soil sites east to west across the Project Area within the surrounding areas adjacent the Project Disturbance Footprint (refer to Figure 5). Based on the locations, it provides a baseline data set of the soils and/or ASC to be encountered across the Project Disturbance Footprint.

Data from existing soil sites from the Land Resources and Evaluation of the Capricornia Coastal Lands, Broadshire, Queensland indicates that land within and adjacent the Project Area does not include any current cropping land activities and observations onsite indicate land has been cleared with no cultivation.

4.6.2 Existing Report and Soil Sites (Spies, 2026).

An Agricultural Land Assessment (ALA) was undertaken for the Wooderson Solar Farm (Study Area) commissioned by Umwelt (Australia) Pty Ltd on behalf of Wooderson Solar Development Co Pt Ltd by Peter Spies (2026) of Pinnacle Pocket Consulting.

The study area assessed was 4,426 ha (within the eastern portion of the Project Area) with an ALA being undertaken through desktop and field assessments. The field assessment included visiting the study area and undertaking observations of the landscape and soil surface as well as topsoil and subsoil sample collection for laboratory analysis. The current land use was identified as extensive cattle grazing with several soil types and/or ASCs identified.

An ALC assessment was undertaken using desktop and field data collected with the overall study area assessed as not suited for cropping, while assessed as Class C2, grazing land. The summary of the ALA indicated that the study area would have negligible impact on the grazing productivity of the land

The 13 selected soil sites associated with Spies (2026) are within the DA1 Project Area.

The 13 sites are located within the eastern portion of the Project Area, adjacent in surrounding areas of the Project Disturbance Footprint and provide data of the current state of the soils and agricultural land activities. The soil sites are presented below in Table 4-2 and in Figure 5.

Table 4-2: Existing Soil Sites (Spies, 2026) - Adjacent and within the Project Disturbance Footprint

Soil Site	Site Type / Observation Class	ASC	Landform	Vegetation	Laboratory Data	GTE Comments
C	Free Survey Site / Class IV(a)[1]	n/a	n/a	Very sparse Ironbark, open woodland	n/a	Site is a shallow soil exposure profile. No cropping observed No soil profile observed.
D	Free Survey Site / Class IV(b)[1]	n/a	1-2% slope	Sparse woodland, Poplar box, Moreton bay ash	Sample 0.00-0.10 m	No cropping observed. No soil profile observed.
E	Free Survey Site / Class IV(b)[1]	Brown Dermosol	2% slope	Sparse open wood land, Moreton bay ash, Whitewood (*Atalaya hemiglauca*)	Sample 0.00-0.10 m	No cropping observed. No soil profile observed.
F	Free Survey Site / Class IV(b)[1]	Brown Sodosol	n/a	Sparse open woodland, Moreton bay ash	Sample 0.00-0.10 m	No cropping observed. No soil profile observed.
G	Free Survey Site / Class IV(b)[1]	n/a	Undulating country 0-4% slope	Moreton bay ash	Sample 0.00-0.40 m Sodic (ESP 7-9)	No cropping observed. No soil profile observed.
H	Free Survey Site / Class IV(a)[1]	n/a	Alluvial flat near creek	Moreton bay ash, weeping tea-tree (*Melaleuca leucodendra*), paper-barked tea tree (*Melaleuca Quinquenervia*), Black tea-tree (*Melaleuca bracteate)*, River she-oak (*Allocasuarina cunninghamiana*)	Sample 0.00-0.40 m	No cropping observed. No soil profile observed.

Soil Site	Site Type / Observation Class	ASC	Landform	Vegetation	Laboratory Data	GTE Comments
I	Free Survey Site / Class IV(b)[1]	n/a	Gently undulating plain (review of photo)	Poplar box, Blackspear grass, Pitted bluegrass (*Bothriochloa decipiens*), Twirly windmill grass *(Enteropogon ramosus)*	n/a	No cropping observed. No soil profile observed. Notes include sodic and sheet erosion.
J	Free Survey Site / Class IV(b)[1]	Brown Dermosol	Undulating plains (Slope >3%, review of photo)	Poplar box, Myrtle	Sample 0.00-0.10 m	No cropping observed. No soil profile observed.
K	Free Survey Site / Class IV(b)[1]	n/a	Gently undulating plain (Slope 2%, review of photo)	Moreton bay ash	Sample 0.00-0.10 m	No cropping observed. No soil profile observed. Surface is brownish loam.
L	Free Survey Site / Class IV(b)[1]	Brown Dermosol	Gently undulating plain (Slope 3%, review of photo)	Moreton bay ash, Clarkson bloodwood (*Corymbia clarksoniana*)	Sample 0.00-0.10 m	No cropping observed. No soil profile observed.
U	Free Survey Site / Class IV(b)[1]	n/a	Gently undulating plain (Review of photo)	Gum-topped box, grassland with emergent trees	n/a	No cropping observed. No soil profile observed. Photos indicate beef cattle grazing.
Z	Free Survey Site / Class IV(b)[1]	Brown Dermosol	Undulating plains (Slope 3-4%, review of photo)	Clarkson bloodwood	Sample 0.00-0.20 m	No cropping observed. No soil profile observed.
AG	Free Survey Site / Class IV(b)[1]	n/a	Gently undulating plain (Slope 3%, review of photo)	Clarkson bloodwood, Dead finish (*Acacia tetragonophylla*)	Sample 0.00-0.10 m	No cropping observed. No soil profile observed.

1- GTE Assessment of the observation class undertaken for each soil site

The Project Area does not include any current cropping land activities. Site observations, including available photos, indicate land has either been limited or extensively cleared with no cultivation. Photographs at site U show active beef cattle grazing. Existing sites descriptions and photographs are presented in Spies (2026), Section 3 and Appendix A.

4.6.3 Australian Soil Classification Assessment

Review of the ASC within Queensland Globe (2025), as outlined in Section 4.5, indicates Chromosols across the Project Area. Review of existing soils data (Section 4.6) indicates that other ASC such as Dermosols and Sodosols are present.

4.7 Existing Agricultural Land Classes

Agricultural land classification in Queensland is based on a hierarchical scheme where land is assessed into 5 major codes of agricultural land use. This scheme as outlined within the Guideline for Agricultural Land Evaluation in Queensland, 2nd edition (Department of Science, Information Technology and Innovation [DSITI] and the Department of Natural Resources and Mines [DNRM]. 2015).

The DSITI & DNRM (2015) outlines the land evaluation systems, method of land suitability in Queensland, land limitations and the ALC for land planning in Queensland.

The Regional Land Suitability Frameworks for Queensland (Department of Natural Resources and Mines and the Department of Science, Information Technology, Innovation and the Arts [DNRM & DSITIA], 2013) details specific suitability frameworks and land limitation criteria for 13 areas within Queensland.

These 2 guidelines are utilised with suitable data to evaluate the ALC of a Project Disturbance Footprint. This review assesses the existing data available in which these 2 guidelines are assumed to be used.

There are 4 ALCs with up to 5 subclasses, which may apply when assessing a site. Review of existing data indicates there are 2 ALCs mapped within the Project Disturbance Footprint (Figure 6). A description of each ALC within the Project Disturbance Footprint and ALC area is shown at Table 4-3.

Table 4-3: Mapped ALC Classes within the study area

ALC	Description	ALC within the Project Disturbance Footprint	
		ALC (ha) (DA2 / DA3)	% of Project Disturbance Footprint
A	Crop land Land that is suitable for a wide range of current and potential crops with nil to moderate limitations to production.	0	0
A1	Suitable for a wide range of current and potential broadacre and horticultural crops.	0	0
A2	Suitable for a wide range of current and potential horticultural crops only.	0	0
B	Limited crop land Land that is suitable for a narrow range of crops. The land is suitable for sown pastures and may be suitable for a wider range of crops with changes to knowledge, economics or technology.	0	0
C	Pasture land Land that is suitable only for improved or native pastures due to limitations that preclude continuous cultivation for crop production. Some areas may tolerate a short period of ground disturbance for pasture establishment.	0	0

ALC	Description	ALC within the Project Disturbance Footprint	
		ALC (ha) (DA2 / DA3)	% of Project Disturbance Footprint
C1	Suitable for grazing sown pastures requiring ground disturbance for establishment; or native pastures on higher fertility soils.	DA2: 95.61 DA3: 0.00 Total: 95.61	45.6
C2	Suitable for grazing native pastures, with or without the introduction of pasture species, and with lower fertility soils than C1.	DA2: 102.41 DA3:11.60 Total: 114.01	54.4
C3	Suitable for light grazing of native pastures in accessible areas, and includes steep land more suited to forestry or catchment protection	0	0
D	Non-agricultural land Land not suitable for agricultural use, including land alienated from agricultural use.	0	0

1- Data reviewed based on Queensland Globe (2025).

Figure 6 shows the ALC covering the proposed Project spatial data, as presented in Queensland Globe (2025) is covered by pasture land with no crop or limited cropping land present. The ALC classification indicates Class C2 is the majority ALC with 54.7% coverage of native pastures, specifically within the centre of the Project. Class C1, which is suitable for sown pasture has 45.3 % coverage, covering the west and eastern portions of the Project Area.

Review of other available ALC data including Spies (2026) indicates that the site and soils assessment (on review by GTE, limited with respect to Plant Available Water Content ([PAWC]), presents the eastern area of the Project Disturbance Footprint as containing ALC Class C land. This coincides with the report as a whole, but as noted, the data collection with respect to soil profile horizon identification (ALC), laboratory sampling depth and PAWC assessment is limited.

4.7.1 Strategic Cropping Land Assessment

Review of the Strategic Cropping Land (SCL) within Queensland Globe (2026) indicates that the Project Area is located within the Coastal Queensland Zone of the SCL trigger map. Review of mapped strategic cropping areas (as shown on the SCL Trigger Map) indicates that no SCL is mapped within the Project Disturbance Footprint .

It is noted that mapped strategic cropping areas are located to the north-west of the Project Disturbance Footprint, approximately 1.3 km from the Project Disturbance Footprint boundary.

4.7.2 Priority Agricultural Area Assessment

Review of the Priority Agricultural Area (PAA) within Queensland Globe (2025) indicates that the Project Area contains no PAAs.

4.8 Review of Historical Imagery

An analysis of historical aerial imagery (available via QImagery, 2025) was undertaken to assist with better understanding the Project Disturbance Footprint history. A summary of the available data is presented in Table 4-4, with figure summaries provided in Appendix A.

Table 4-4: Historical Imagery Review and Summary

Date	Reference	Observations within Project Disturbance Footprint
01/07/2017 – 30/09/2017	Queensland Satellite Data – QSAT 2017 240 centimetre (cm) Planet Q3	No cropping activities observed. Area appears to be cleared.
15/06/2004 – 08/06/2004	Biloela 2004	No cropping activities observed. Area appears to be cleared.
02/08/1996	Biloela 1996	No cropping activities observed. Area appears to be cleared.
10/04/1994	Biloela 1994	No cropping activities observed. Area appears to be cleared.
20/06/1984 – 23/06/1984	Biloela 1984	No cropping activities observed. Area appears to be cleared.
26/06/1977 – 12/09/1977	Biloela 1977	No cropping activities observed. Area appears to be cleared.
01/01/1965	Dumgree 1965	No cropping activities observed. Area appears to be cleared.
01/01/1959	Dumgree 1959	No cropping activities observed. Area appears to be cleared.

Available historical aerial imagery shows the Project Disturbance Footprint has remained largely unchanged since at least January 1959. No cropping activities can be seen within the Project Disturbance Footprint, however the cleared land indicates that it may be appropriate for beef cattle grazing.

4.8.1 Evidence from Landowners

Project landowners use the land for beef cattle grazing, which falls in line with the review of historical imagery (Appendix A). In addition, there are no fences excluding access of cattle including the land within the Development Scheme.

4.9 Review of Queensland Agricultural Land Audit

A review of the Queensland Agricultural Land Audit, Central Queensland, Chapter 10 (Department of Agriculture and Fisheries, 2013) outlines that the Central Queensland region is an important agricultural production area dominated by beef cattle grazing.

Grazing accounts for nearly 75% (8.7 million ha) of the current land use when compared to all other Queensland Land Uses (Queensland Land Use Mapping Program, 2009). This includes the producing of yearling or weaner steers, breeding and finishing of cattle and stud breeding farms. This is due to the strengths of the region and suitability of this agricultural land use.

4.10 Compliance Review of the Planning Schemes for DA2 and DA3

The following subsections assess the Project Disturbance Footprint against the Planning Scheme for DA2 and Development Scheme for DA3.

4.10.1 GRC Planning Scheme Compliance Review for DA2

The Project Disturbance Footprint is located within the Rural Zone pursuant to the Planning Scheme. The Project Disturbance Footprint, that consists of an OHTL, switchyard and associated ancillary infrastructure, under Table 5.5.16 for Rural Zone will be defined as Major Electricity Infrastructure and Substation and trigger Impact Assessment.

Section 6.2.22.2 of the Planning Scheme outlines the purpose of the Rural Zone Code. Review of the purposes indicate the following applicable sections:

- *1 (b) Provide opportunities for non–rural uses that are compatible with agricultural and rural activities, and the landscape character of the rural area where they do not compromise the long–term use of the land for rural purposes.*
- *1 (c) Protect or manage significant natural features, resources, and processes, including the capacity for primary production and extractive industry in designated areas.*
- *1 (d) Ensure rural uses are not adversely impacted by inappropriate land uses and development.*
- *1 (e) Ensure areas of Agricultural Land Classification Class A and B agricultural land are protected for agricultural uses and from fragmentation, alienation or diminished agricultural productivity.*
- *1 (f) The potential for conflict between agricultural and other uses on Agricultural Land Classification Class A and B are minimised.*
- *1 (g) Classification Class A and B agricultural land from further fragmentation.*

The following states the purposes outlined above, will be achieved through the following:

- *2 (e) Development does not result in the fragmentation of Agricultural Land Classification Class A and B agricultural land. This applies to reconfiguring a lot except where it has been assessed that there is an overriding need in the public interest for a related material change of use and the reconfiguring of a lot is consistent with the material change of use.*

Based on the review of available information in Sections 4.1 to 4.9 of this DALA, none of the Project Disturbance Footprint is considered ALC Class A or B Agricultural Land. As a result of this DALA, there would be no diminishment in the capacity of the soil resource, or the capacity of the agricultural activities through the ongoing stages of the Project Disturbance Footprint. As there is no ALC Class A or B within or adjacent to the Project Disturbance Footprint, no fragmentation, alienation or diminished agricultural productivity would occur.

Any planned or potential land use conflicts will be manageable through review of Project Disturbance Footprint placement and relevant management plans.

This DALA presents that the Project Disturbance Footprint and surrounding Project Area comply with the relevant aspects of the Rural Zon Code of the Planning Scheme.

4.10.2 Development Scheme Compliance Review for DA3

The Development Scheme is for the purpose of a dedicated infrastructure corridor between Callide and the Gladstone State Development Area (GSDA). The purpose is to enable the state to facilitate and manage the planned development of co-locate pipelines and associated infrastructure in a contained area which would minimise disruption to landowners and the region.

The Project Area and Project Disturbance Footprint intersect the Development Scheme and therefore is subject to a material change in use of the premises, with approval of the OCG.

There are no applicable assessment benchmarks for agricultural land pursuant to the Development Scheme, however, Objective 6 of the Development Scheme seeks to ensure the physical characteristics of land are considered when determining the suitability of land uses. Therefore, a review of the State Planning Policy mapping has confirmed that the Project Disturbance Footprint where located in DA3 is not located within Agricultural Land Classification A or B, or Important Agricultural Areas. As such, no fragmentation, alienation or diminished agricultural productivity would occur, and no conflict with the Development Scheme has been identified.

5 POTENTIAL AGRICULTURAL IMPACTS AND MITIGATION MEASURES

The Project has the potential to reduce the availability of land for agricultural land uses. Based on the assessment outlined in Section 4, the Project Disturbance Footprint land is not considered to constitute high quality agricultural land with 45.3 % Class C1 and 54.7 % of Class C2 pasture land. Therefore the economic value of the proposed Project may outweigh the current land uses, for the land area it will occupy.

Potential impacts from the proposed Project's construction, operations and decommissioning are unlikely to result in significant impacts to agricultural values. These values can be managed throughout the life of the Project by the implementation of impact management measures, as outlined in Table 5-1.

Table 5-1: Proposed Project Disturbance Footprint Potential Impacts and Mitigation measures

Potential Agricultural Impact	Description of Impact	Impact mitigation measures
Reduced cattle production and available grazing land.	It is predicted that the Project Disturbance Footprint will have little impact on cattle production. This is assessed based on areas surrounding the Project Disturbance Footprint, designated as Project Area. These areas may be impacted initially during the construction stage with temporary access limitations. However, during the operational stage, it is considered to have a negligible impact on the grazing productivity as this may continue in and around the Project Disturbance Footprint.	Grazing shall be allowed to continue within the Project Area, with the potential exception during construction with temporary fencing and access as needed to sectioned off agricultural areas from construction activities. These construction activities will be reviewed with access to areas made to ensure a negligible impact on the grazing productivity during the construction phase. It is unlikely that the Project Disturbance Footprint will have a significant impact to or on the surrounding cattle grazing industry during construction stage. The Project Disturbance Footprint will not inhibit the future use of the land for agricultural land use (such as beef cattle grazing) during the operational stage.
Vegetation clearing and introduction and establishment of new and/or existing weed and pests.	During the construction and ongoing operational stages of the Project, vegetation clearing would occur during the construction stage. The vegetation clearing would be only within the Project Disturbance Footprint. Vehicle movements on site may introduce new weed species or proliferate existing weeds. The introduction or infestation of existing weeds is known to have an adverse impact and/or impede agricultural land uses and production.	The implementation of weed and pest management measures during all stages of the Project will be adequate for managing biosecurity risks associated with the Project. Clearing of vegetation will be undertaken based on the requirement to support the Project's construction and operational phases. No additional clearing is to be undertaken. To meet the General Biosecurity Obligation (GBO) under the *Biosecurity Act 2014*, it is

Potential Agricultural Impact	Description of Impact	Impact mitigation measures
		recommended that weed and pest control measures be outlined in the following documents to be prepared for the proposal by the Proponent: • CEMP. • OEMP. • Rehabilitation Management (RM) Plan for decommissioning of the Project. No significant impacts in relation to biosecurity are anticipated with the implementation of industry best practice weed and pest management measures.
Impacts to soil and established native or sown pastures.	The construction and ongoing operational stages of the Project have the potential to impact soil and pasture resources due to soil erosion, soil compaction, inversion of soil profiles in pits and changes to pasture composition from existing surface disturbance such as access tracks, from exclusion of grazing. The Project is expected to require only minor earthworks for the building of the OTHL, switchyard, and associated infrastructure including storage pads and access tracks.	The implementation of soil and pasture management measures will be adequate for managing potential impacts. - An Erosion and Sediment Control Plan (ESCP) should be prepared in accordance with the Best Practice Erosion and Sediment Control (Aust IECA, 2008) guideline for the construction and ongoing stages of the Project to minimise soil erosion. - The CEMP should include soil management measures to preserve topsoil resources at the Project Disturbance Footprint and minimise impacts to soil resources. - Pasture within the Project should be managed as required to simulate grazing pressure. This should be incorporated into the OEMP. It is expected with the measure above, no significant impacts in relation to soil and pastures are anticipated.

The potential agricultural impacts of the proposed Project can be adequately managed and is unlikely to result in significant or permanent impacts to agricultural activities at the Project Disturbance Footprint or surrounding area.

6 CONCLUSION

This DALA was undertaken using information available through desktop assessments, which including adjacent field and laboratory assessments. A summary of the DALA is presented below.

- The landscape is relatively flat, generally limited to areas extensively cleared of vegetation with several creeks and associated tributaries crossing the Project Disturbance Footprint.
- Soils across the Project Disturbance Footprint are likely ASC categories of dermosols, chromosols and sodosols. Soils such as these are typical of beef cattle grazing agricultural land uses in Queensland.
- The proposed Project Disturbance Footprint across the impacted lot plans contain pasture land, specifically ALC C1 (sown pastures or native with high fertility) and C2 (native pastures).
- No Regional Planning Interest areas such as SCL or PAA are present across the Project Area.
- A review of historical imagery across the Project Disturbance Footprint shows no significant changes have been made since 1956, indicating that the land has only been used for cattle grazing activities.
- The Project will comprise of above ground monopoles, switchyard and associated infrastructure including access tracks and laydown areas with minimal surface impact.
- The Project is unlikely to have any significant impact on the productivity of agricultural land availability or use. Cattle grazing may continue in and around the Project Disturbance Footprint during construction and ongoing stages. It is expected, however, that there may be limitations to the area available for cattle grazing during the construction stage of the Project. However is considered to have a negligible impact on the grazing productivity.
- The implementation of soil and pasture management measures during the construction and ongoing stages of the Project will be adequate for managing potential impacts to soil, land and existing pasture resources.
- The implementation of weed and pest management measures during the construction and ongoing stages of the Project will be adequate for managing biosecurity risks.
- The Project does not contravene with the Rural Zone Code of the Planning Scheme or the Development Scheme.

7 REFERENCES

B.A. Forster and A.L. Barton (1995), Resource Management, Central Region, Department of Primary Industries, Land Systems of the Capricornia Coast Map 3 Calliope Area, Brisbane

Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines 2015, Guidelines for agricultural land evaluation in Queensland (2nd edn). Queensland Government Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines), Brisbane.

Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines 2013, Regional Land Suitability Frameworks for Queensland. Queensland Government Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines, Brisbane.

DSDMIP (2019), Regional Planning Interests Act Statutory Guideline 08/14: How to demonstrate that land in the strategic cropping area does not meet the criteria for strategic cropping land. Queensland Government (Department of State Development, Manufacturing, Infrastructure and Planning), Brisbane, Queensland.

Google Earth (2025), Airbus Image, 7333362 mS 282741 mE (GDA2020 Zone 56), Accessed December 2025, <http://www.google.com/earth/index.html>.

Queensland Globe, Viewed December 2025, https://qldglobe.information.qld.gov.au.

Queensland Imagery, Viewed December 2025, https://qimagery.information.qld.gov.au/

Spies, P. (2026), Agricultural Land Assessment, Wooderson Solar Farm, 2026. Pinnacle Pocket Cattle and Consulting, Malanda, Queensland.

8 FIGURES

Figure 1 Wooderson Solar Farm Overhead Transmission Line Location

Figure 2 Wooderson Solar Farm Overhead Transmission Line Approvals Context

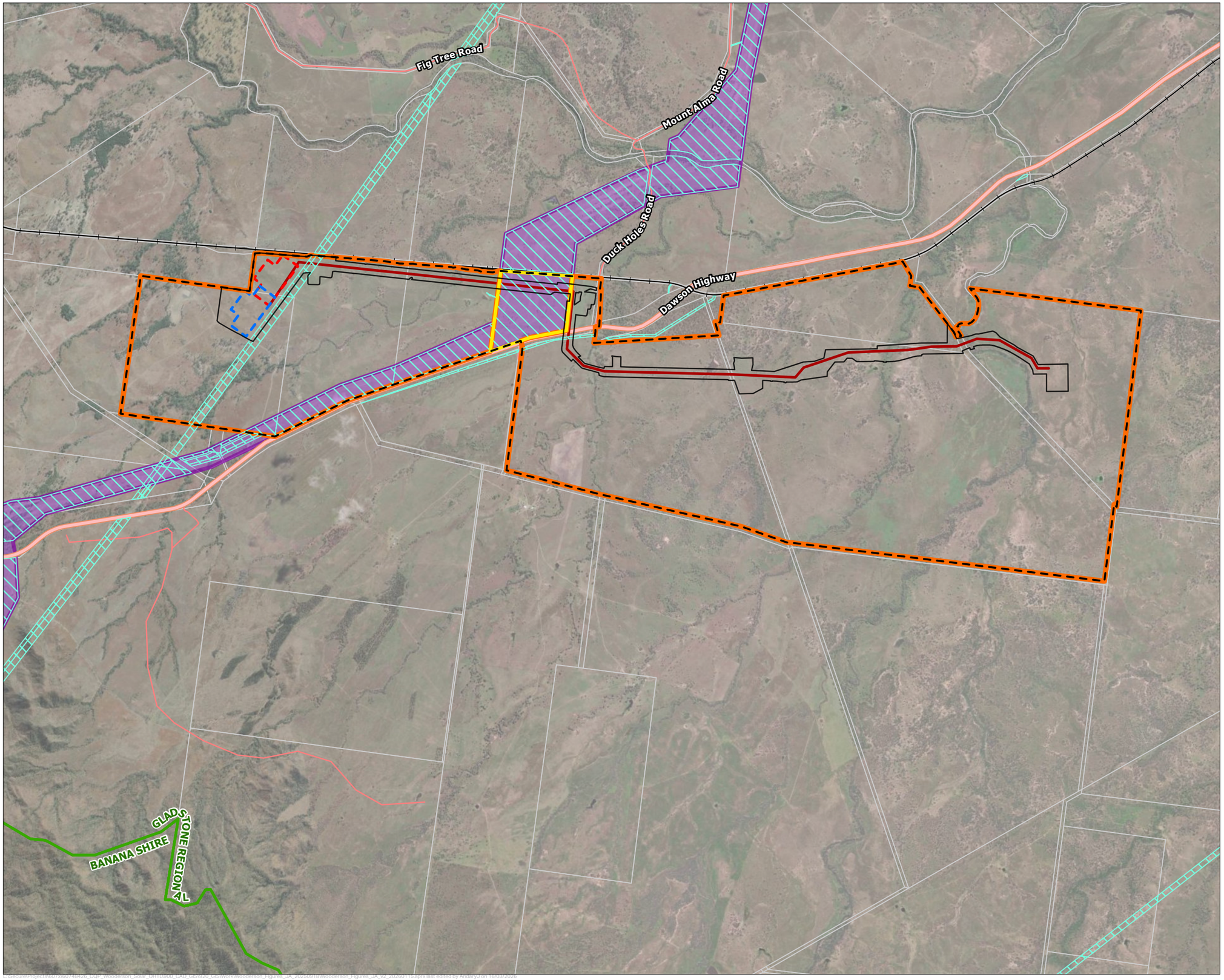
Figure 3 Proposal Plan

Figure 4 Impacted Lot Plans

Figure 5 Existing Soil Sites

Figure 6 Agricultural Land Classes

Figure 7 Land Systems of the Capricornia Coast



AECOM

N

0 500 1,000 Meters

Legend

- State Controlled Road
- Road
- Rail network
- Callide Infrastructure Corridor State Development Area
- Local Government Areas
- Easements
- Land Parcels
- Project Area
- DA2 Project Area (GRC)
- DA3 Project Area (OCG)
- Project Disturbance Footprint
- Indicative Overhead Transmission Line Route
- Option A - Switchyard
- Option B - Switchyard

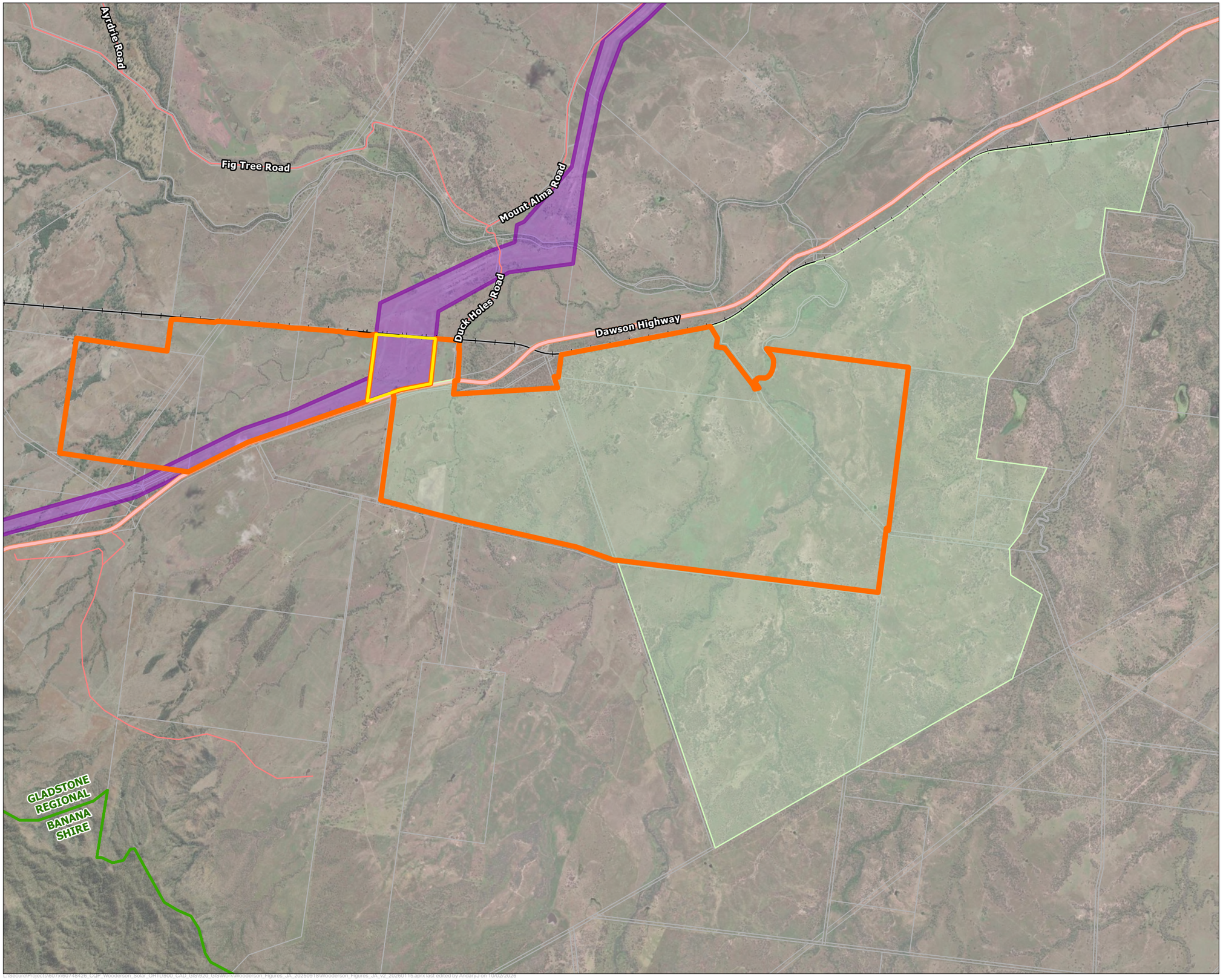


Figure 1: Wooderson Solar Farm Overhead Transmission Line Location

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AECOM

N

0 1 2 km

Legend

- State Controlled Road
- Road
- Rail network
- Local Government Areas
- Callide Infrastructure Corridor State Development Area
- Land Parcels
- DA1 Project Area (SARA)
- DA2 Project Area (GRC)
- DA3 Project Area (OCG)

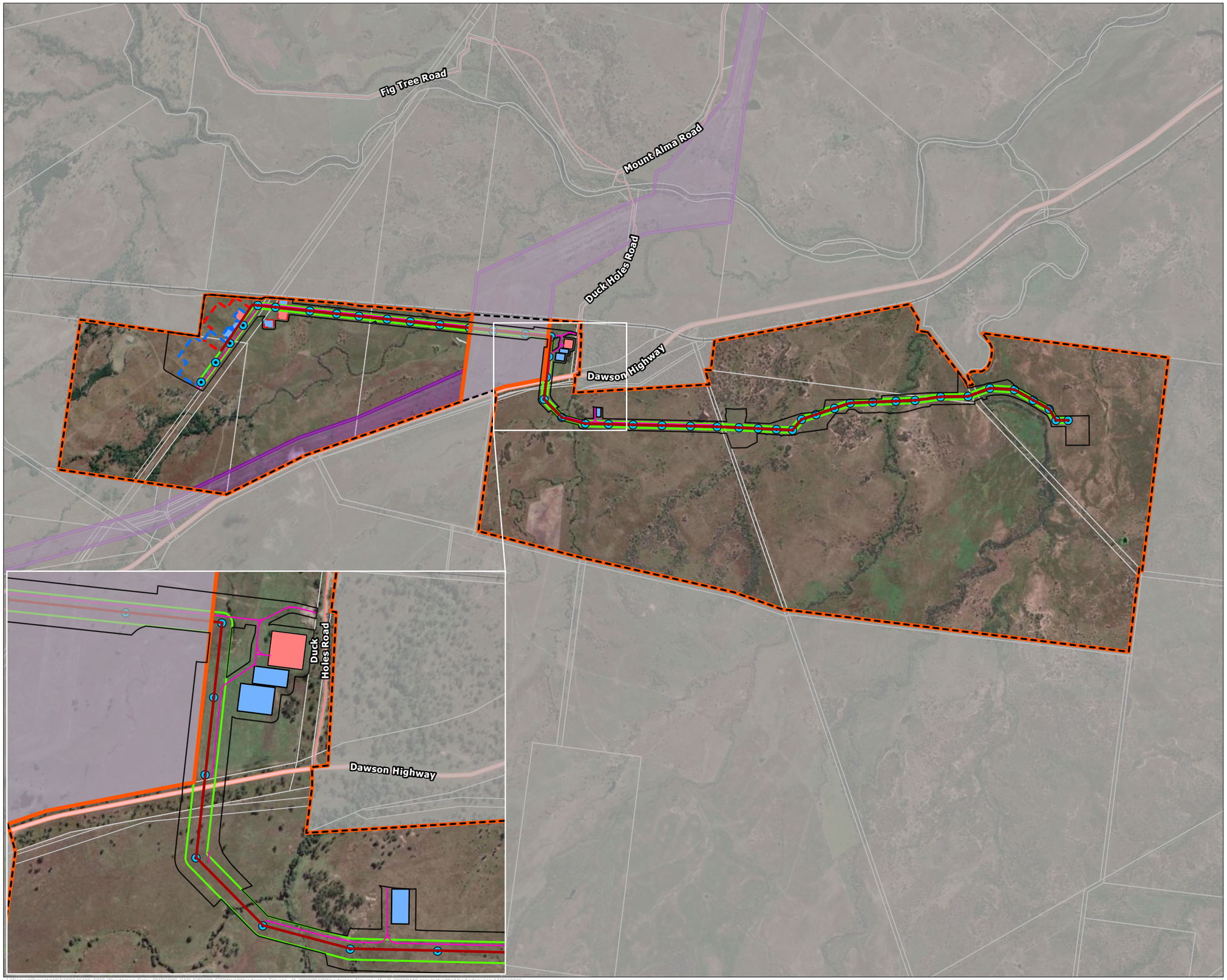


Figure 2: Wooderson Solar Farm Overhead Transmission Line Approvals Context

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AECOM

N

0 660 1,320 m

Legend

- State Controlled Road
- Road
- Rail network
- Local Government Areas
- Callide Infrastructure Corridor State Development Area
- Land Parcels
- Project Area
- DA2 Project Area (GRC)
- Project Disturbance Footprint

Proposed Infrastructure

- Indicative Overhead Transmission Line Route
- Indicative Proposed Transmission Line Easement
- Indicative Monopole Locations
- Access Tracks
- Switchyard Option A
- Switchyard Option B
- Construction Compound Area A & B
- Temporary Laydown Area A & B
- Construction Compound Area Option A
- Temporary Laydown Area Option A
- Construction Compound Area Option B
- Temporary Laydown Area Option B



Figure 3a: Proposal Plan

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AECOM

N

0 130 260 m

Legend

- State Controlled Road
- Road
- Rail network
- Petroleum pipeline licence (PPL) centreline
- Local Government Areas
- Callide Infrastructure Corridor State Development Area
- Land Parcels
- Project Area
- DA3 Project Area (OCG)
- Project Disturbance Footprint

Proposed Infrastructure

- Indicative Overhead Transmission Line Route
- Indicative Proposed Transmission Line Easement
- Indicative Monopole Locations
- Access Tracks

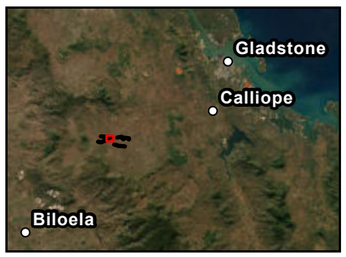


Figure 3b: Proposal Plan

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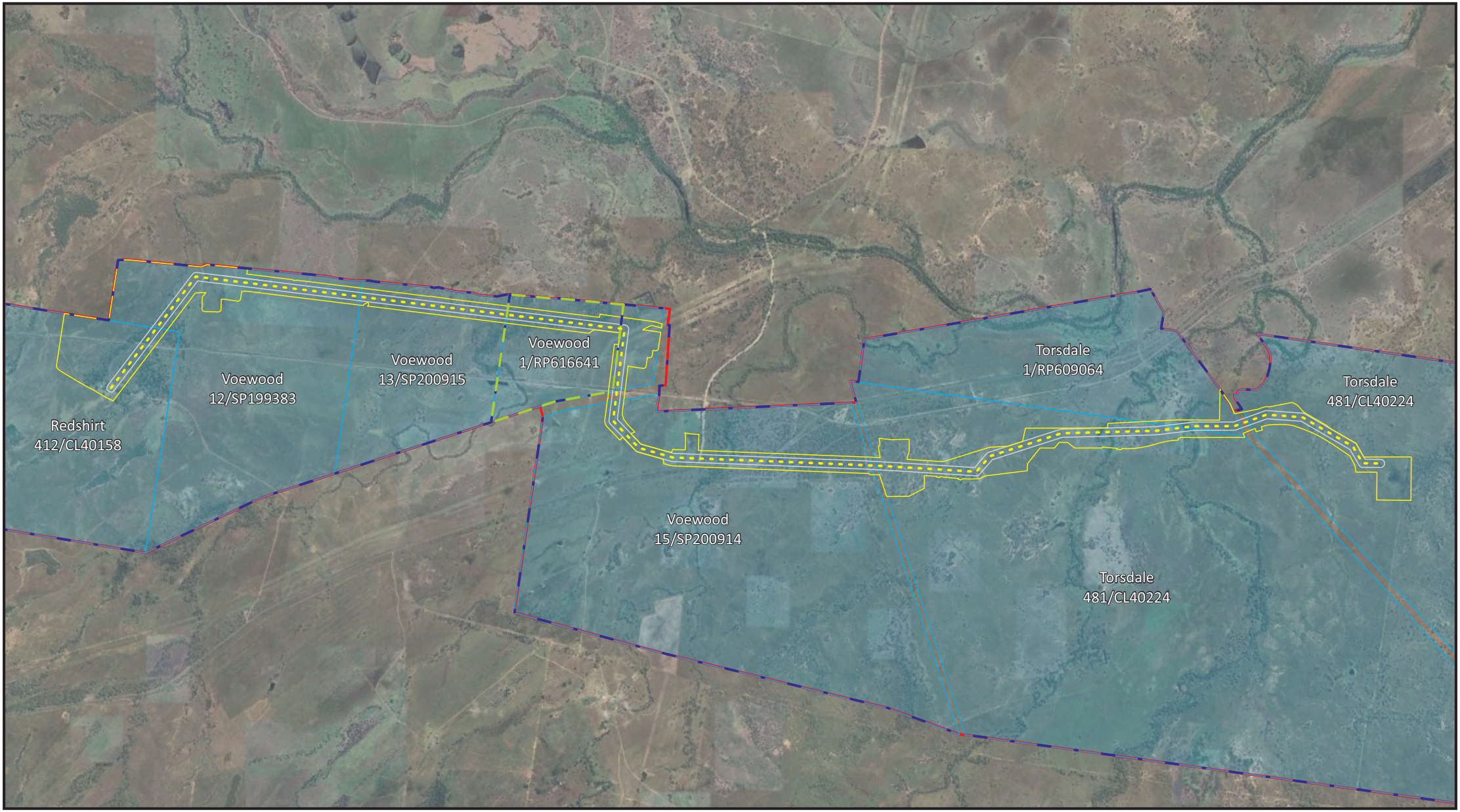


Figure 4: Impacted Lot Plans

Version 3 18/03/2026 Page size: A4

Desktop Agricultural Land Assessment
Overhead Transmission Line and Switchyard
WOODERSON SOLAR FARM

0 1000
Metres

Legend

- Overhead Transmission Line route
- Project Disturbance Footprint
- Overhead Transmission Line - 60 metre easement
- Project Area
- Development Application 2
- Development Application 3
- Lot plan / Property

GTenvironmental

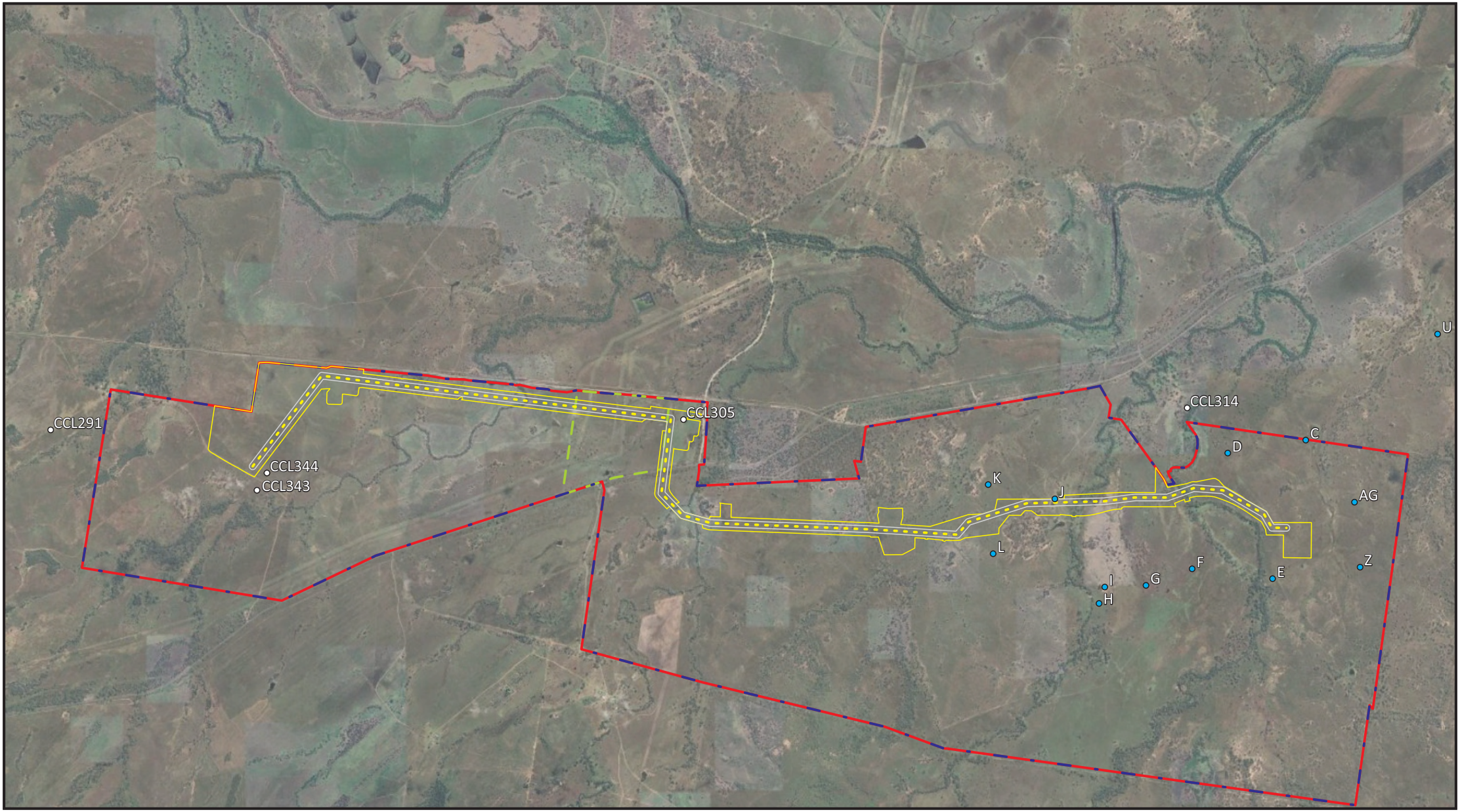


Figure 5: Existing Soil Sites

Version 3 18/03/2026 Page size: A4

Desktop Agricultural Land Assessment
Overhead Transmission Line and Switchyard
WOODERSON SOLAR FARM

0 1000
Metres

Legend

- Overhead Transmission Line route
- Project Disturbance Footprint
- Overhead Transmission Line - 60 metre easement
- Project Area
- Development Application 2
- Development Application 3
- Existing soil sites (Queensland Globe, 2025)
- Existing soil sites (Spies, 2026)

GTenvironmental

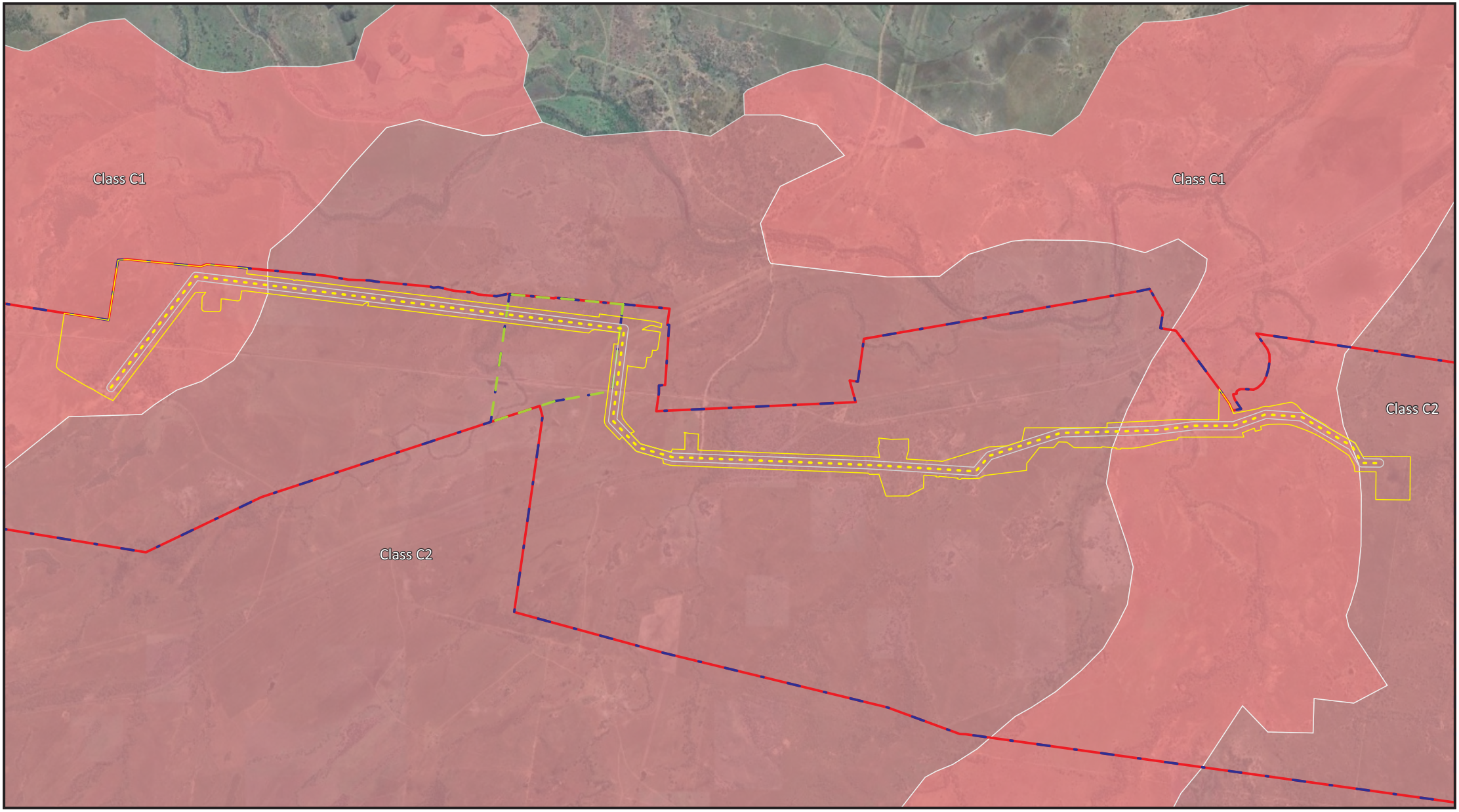


Figure 6: Agricultural Land Classes

Version 3 18/03/2026 Page size: A4

Desktop Agricultural Land Assessment
Overhead Transmission Line and Switchyard
WOODERSON SOLAR FARM

0 1000
Metres

Legend

- Overhead Transmission Line route
- Project Disturbance Footprint
- Overhead Transmission Line - 60 metre easement
- Project Area
- Development Application 2
- Development Application 3
- Class C1
- Class C2

GTenvironmental

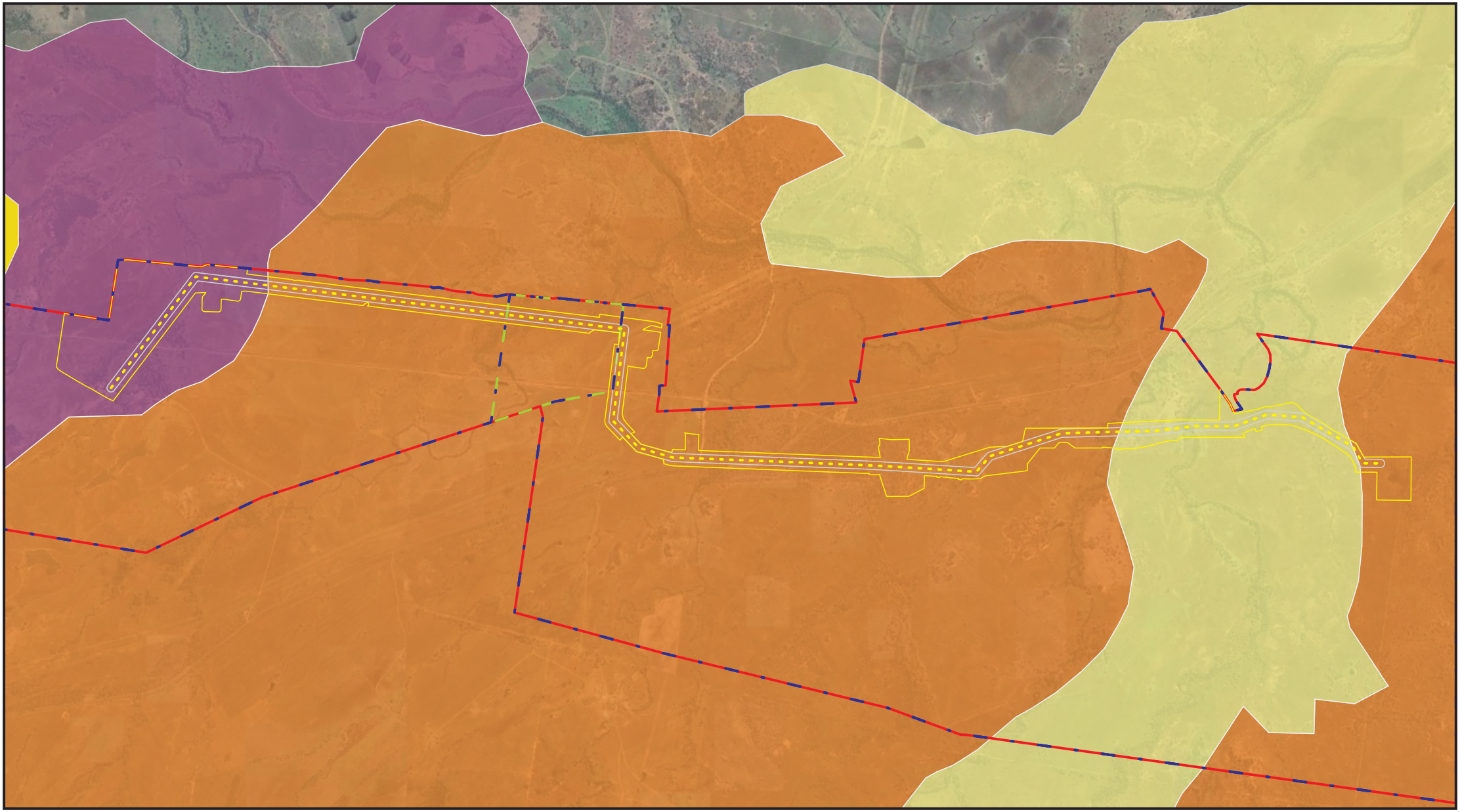


Figure 7: Land Systems of the Capricornia Coast

Version 3 18/03/2026 Page size: A4

Desktop Agricultural Land Assessment
Overhead Transmission Line and Switchyard
WOODERSON SOLAR FARM

0 1000
Metres

Legend

- Overhead Transmission Line route
- Project Disturbance Footprint
- Overhead Transmission Line - 60 metre easement
- Project Area
- Development Application 2
- Development Application 3
- Redshirt Land System - Undulating rises on granitic rocks, with shallow, red texture contrast soils and silver-leaved ironbark and gum-topped bloodwood woodland.
- Galloway Land System - Gently undulating rises and plains, isolated low hills and local alluvial flats on granitic rocks with shallow, brown texture contrast soils and silver-leaved ironbark, gum-topped bloodwood woodland, and with bleached sandy surface, sodic texture contrast soils and poplar box woodland.
- Calliope Land System - Broad level alluvial plains with clay loamy surface, black and brown texture contrast soils and grey or brown cracking clays and blue gum woodland.

GTenvironmental

9 APPENDICES

Appendix A Historical Imagery

Appendix A - Historical Imagery

Project Area

Plate 1 - Historical Imagery 1959 (Queensland Imagery, 2025)

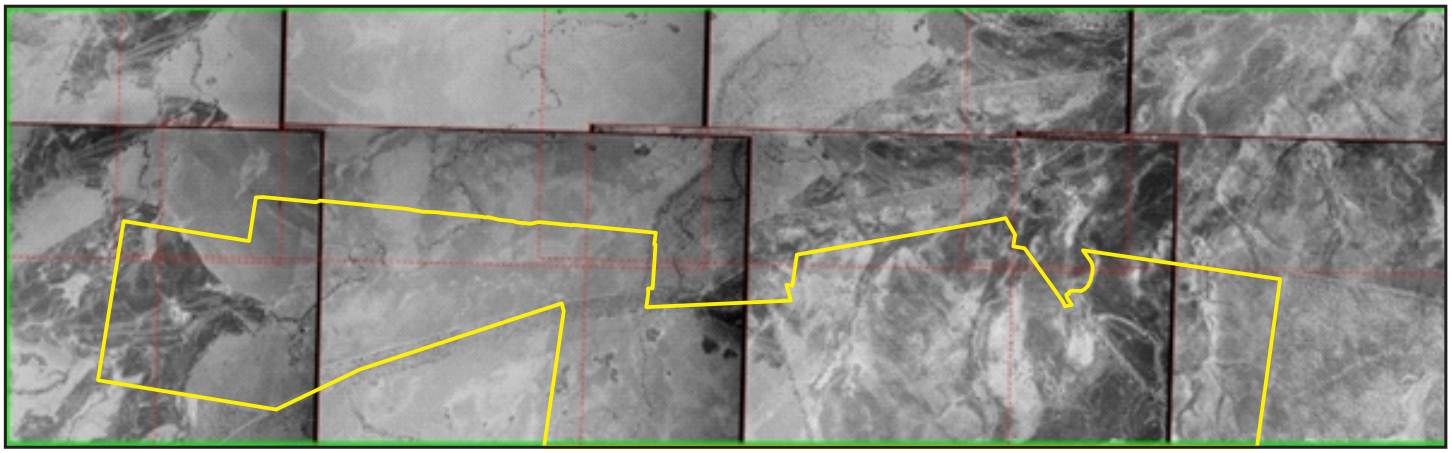


Plate 2 - Historical Imagery 1965 (Queensland Imagery, 2025)

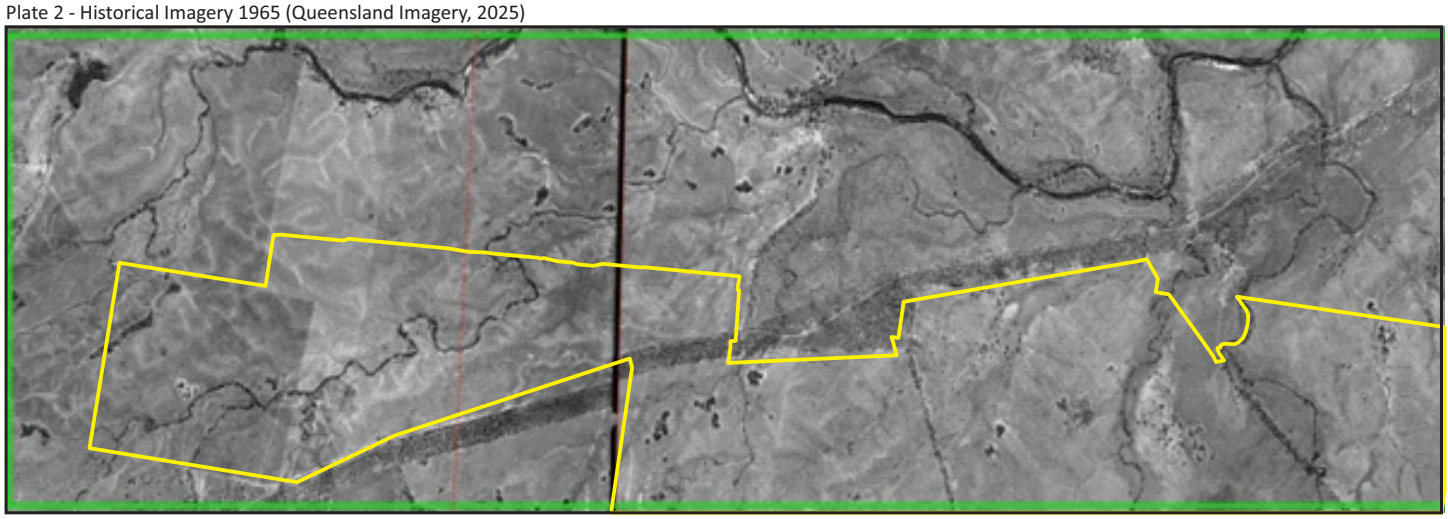


Plate 3 - Historical Imagery 1977 (Queensland Imagery, 2025)

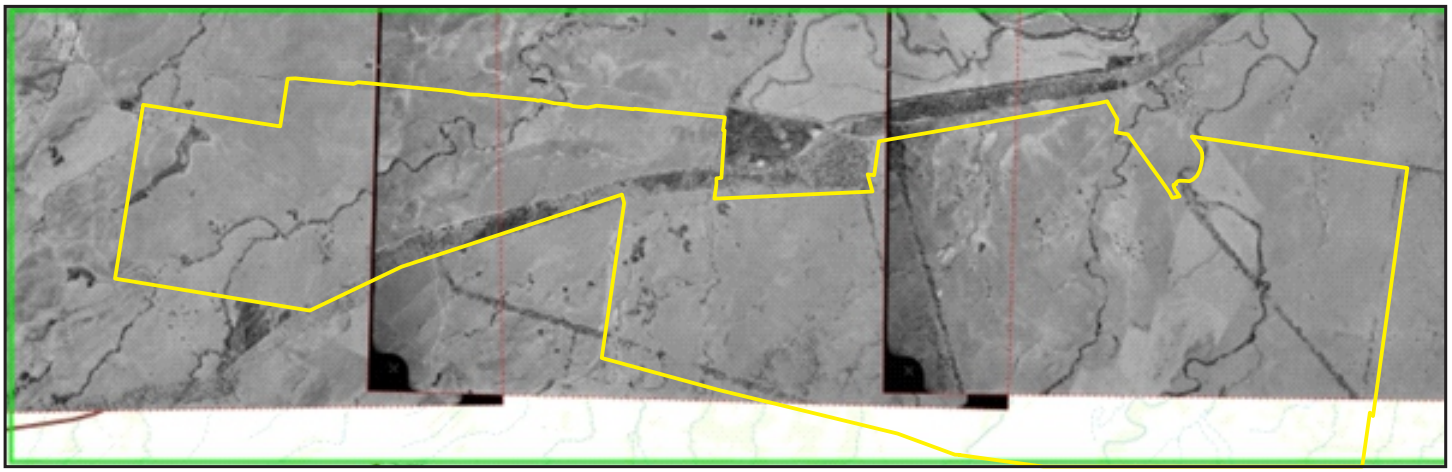
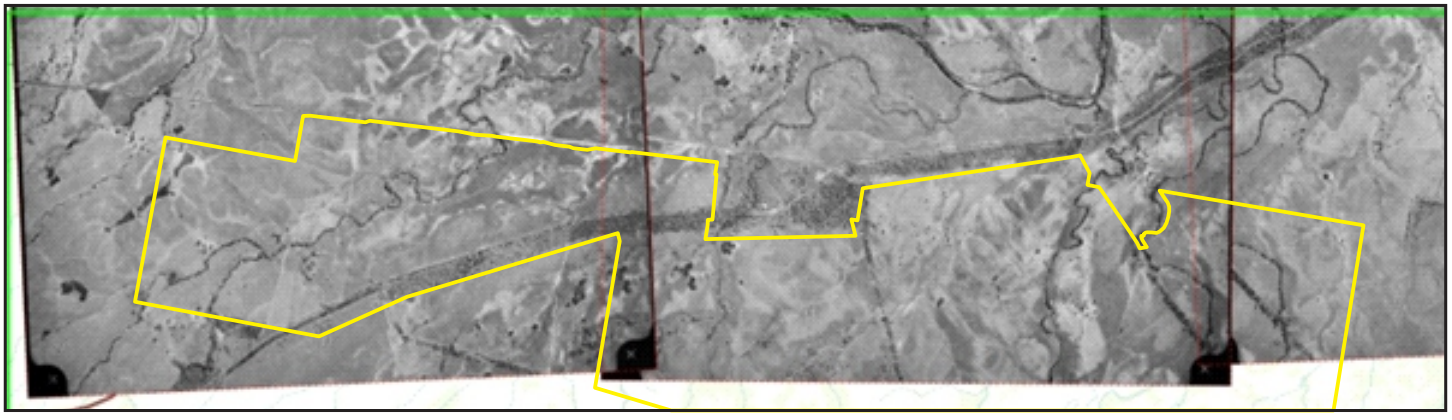


Plate 4 - Historical Imagery 1984 (Queensland Imagery, 2025)



Appendix A - Historical Imagery

Project Area

Plate 5 - Historical Imagery 1994 (Queensland Imagery, 2025)

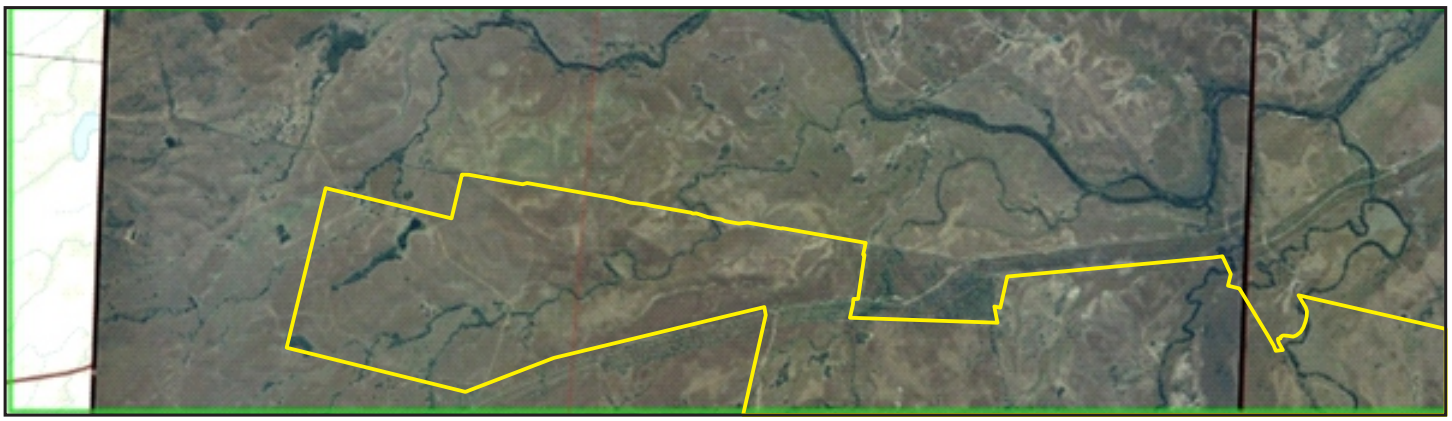


Plate 6 - Historical Imagery 1996 (Queensland Imagery, 2025)

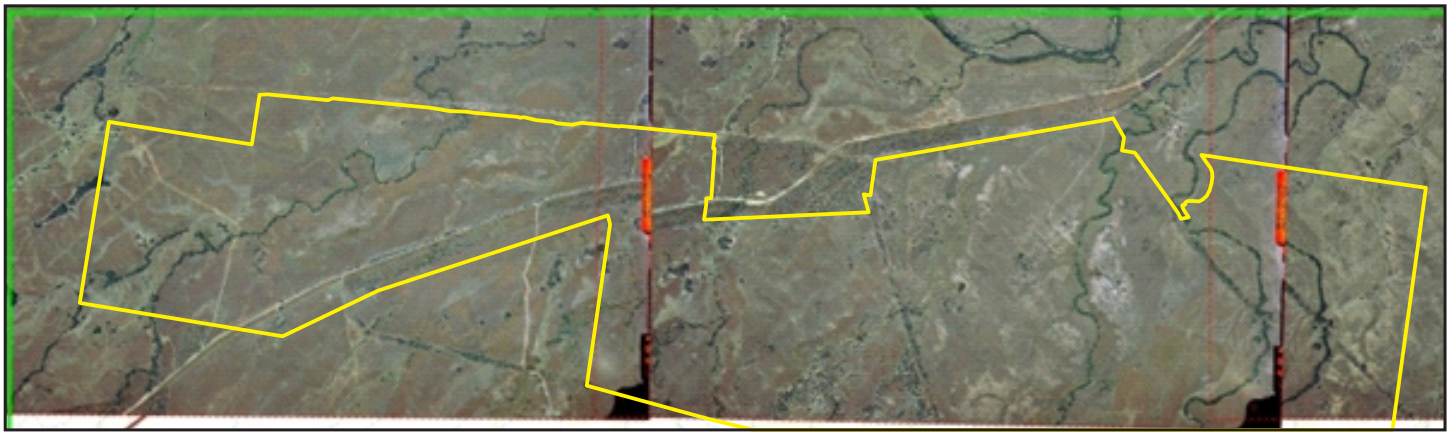


Plate 7 - Historical Imagery 2004 (Queensland Imagery, 2025)

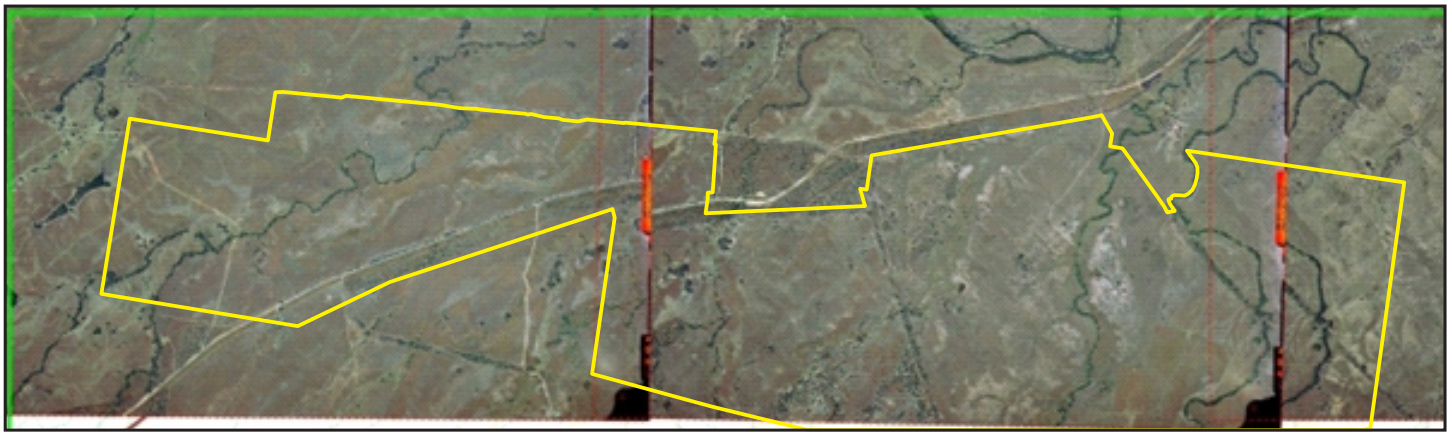


Plate 8 - Historical Imagery 2017 (Queensland Imagery, 2025)



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Appendix H

Aviation Impact Assessment

AVIATION PROJECTS

April 2026

AVIATION IMPACT ASSESSMENT

WOODERSON SOLAR FARM OVERHEAD TRANSMISSION LINE AND SWITCHYARD PROJECT

Prepared for AECOM

AVIATION PROJECTS

DOCUMENT CONTROL

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ACRONYMS

AAAA	Aerial Application Association of Australia
AC	Advisory Circular
AFAC	Australian and New Zealand Council for fire and emergency services
AGL	Above Ground Level
AHD	Australian Height Datum
AIA	Aviation Impact Assessment
AIP	Aeronautical Information Package
AIS	Aviation Impact Statement
AMSL	Above Mean Sea Level
ANEF	Australian Noise Exposure Forecast
ARP	Aerodrome Reference Point
AS	Australian Standards
ATC	Air Traffic Control
ATSB	Australian Transport Safety Bureau
CAR	Civil Aviation Regulation (1988)
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation (1998)
CNS	Communications, Navigation and Surveillance
DAH	Designated Airspace Handbook
EIS	Environmental Impact Statement
ERC-H	En-route Chart High
ERC-L	En-route Chart Low
ERSA	En Route Supplement Australia
GFA	Gross Floor Area
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
LGA	Local Government Area
LSALT	Lowest Safe Altitude
LSA	Light Sport Aircraft
MOC	Minimum Obstacle Clearance

MOS	Manual of Standards
MSA	Minimum Sector Altitude
MTOW	Maximum Take-off Weight
NASAG	National Airports Safeguarding Advisory Group
NASF	National Airports Safeguarding Framework
NOTAM	Notice to Airmen
OHTL	Overhead Transmission Line
OLS	Obstacle Limitation Surface
PANS-OPS	Procedures for Air Navigation Services - Aircraft Operations
PSR	Primary Surveillance Radar
RAAF	Royal Australian Air Force
RFDS	Royal Flying Doctor Service
RSR	En-route Surveillance Radar
SSR	Secondary Surveillance Radar
VFR	Visual Flight Rules

UNITS OF MEASUREMENT

ft	feet	(1 ft = 0.3048 m)
km	kilometres	(1 km = 0.5399 nm)
m	metres	(1 m = 3.281 ft)
nm	nautical miles	(1 nm = 1.852 km)
kg	kilograms	

DEFINITIONS

Definitions of key aviation terms are included in **Annexure 2**

EXECUTIVE SUMMARY

Introduction

The proposed Wooderson Solar Farm is located approximately 40 kilometres (km) south-west of Gladstone in Central Queensland, within the Gladstone Regional Council (GRC) Local Government Area (LGA). The Proponent is Wooderson Solar Development Co Pty Ltd, a wholly owned subsidiary of Central Queensland Power Development Co Pty Ltd (CQP), which is a joint venture between RES Australia Pty Ltd (RES) and Energy Estate (CQP) Holdings Pty Ltd as trustee for Energy Estate (CQP) Holdings Trust (Energy Estate).

The solar farm is proposed to have a generating capacity of up to 450-megawatts (MW) with a 450 MW direct current (DC) coupled battery energy storage system (BESS) with storage capacity of up to 3,600 megawatt-hours (MWh). This will be connected to the National Electricity Market (NEM) through a new overhead transmission line and will also include construction of associated infrastructure including access tracks, fencing and operations and maintenance facilities.

The solar farm, BESS and associated infrastructure will be assessed in a Development Application (DA) by the State Assessment and Referral Agency (SARA), identified as Development Application 1 (DA1) and does not form part of this assessment.

The works outlined in this assessment include connection to the NEM through a 275 kilovolt (kV) overhead transmission line (OHTL), switchyard and associated ancillary infrastructure for these elements only (the Project). A total of approximately 11 km of OHTL supported by approximately 45 monopoles is proposed from the solar farm substation (assessed in DA1) to the new switchyard for connection to Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.

The Project extends over 7 allotments (refer Figure 1), within the GRC LGA, 7 of which (including part Lot 1 on RP616641) are subject to assessment under the *Gladstone Regional Council Planning Scheme 2017 (Version 2)* (Planning Scheme) and one allotment (part Lot 1 on RP616641) requiring assessment under the *Callide Infrastructure Corridor State Development Area* (SDA) subject to the *Callide Infrastructure Corridor State Development Area Development Scheme (September 2012)* (Development Scheme).

As the OHTL extends across 2 planning instruments (refer Figure 2), the assessment provided within this report will support 2 separate DAs:

- Development Application 2 (DA2) – Transmission Corridor and Switchyard within the GRC LGA to be assessed by GRC with referral to concurrence and advice agencies.
- Development Application 3 (DA3) – Transmission Corridor within the Callide Infrastructure Corridor SDA to be assessed by the Office of the Coordinator General (OCG).

This Aviation Impact Assessment (AIA) assesses the potential aviation impacts, provides aviation safety advice regarding relevant requirements of air safety regulations and procedures, and informs and documents consultation with relevant aviation agencies.

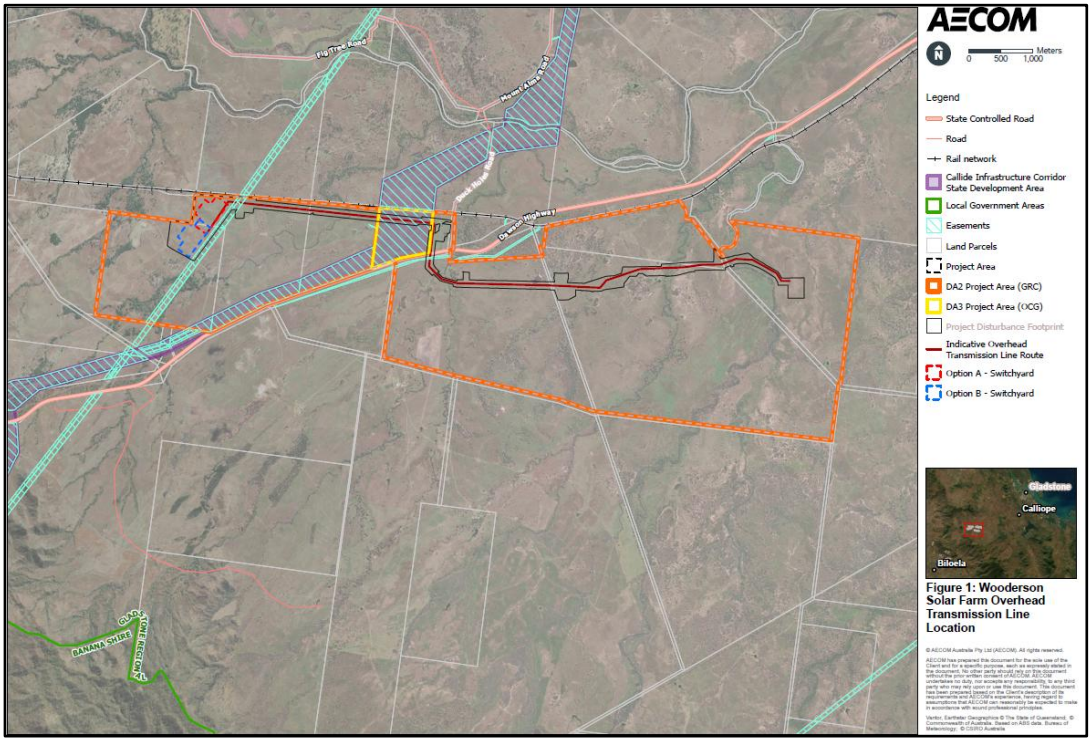


Figure 1: Wooderson Solar Farm Overhead Transmission Line Location

Figure 1 Wooderson Solar Farm Overhead Transmission Line Location

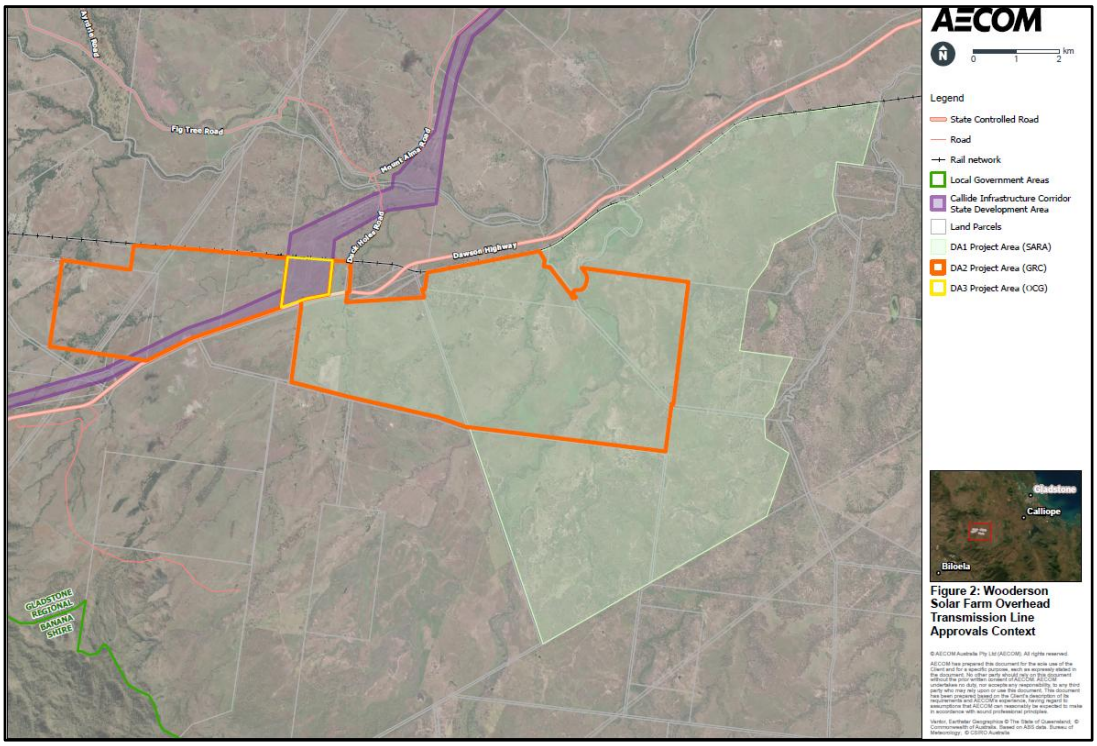


Figure 2: Wooderson Solar Farm Overhead Transmission Line Approvals Context

Figure 2 Wooderson Solar Farm Overhead Transmission Line Approvals Context

Project description

The proposed OHTL extends approximately 11 km from the solar farm substation, traverses west to the proposed new switchyard and connects into the Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.

The OHTL will be contained within a 60 m wide easement (refer Figure 3). The OHTL will be located with the jurisdiction of the Planning Scheme and Development Scheme (refer Figure 2). The following delineates between the infrastructure and works located each jurisdiction:

The OHTL within the Planning Scheme jurisdiction will:

- Traverse 7 freehold allotments
- Comprise approximately 10 km of OHTL
- Be partly within and adjoining Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project and existing Calvale to Wurdong 275kV Transmission Line, where the OHTL will under cross the existing and proposed transmission lines.
- Travel adjacent to Option A and Option B switchyard, construction compound and construction laydown area, which also adjoins Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.
- Require approximately 43 monopoles with a maximum height of 50 m. The monopoles will be constructed of either steel or concrete. Monopoles will have a foundation radius of approximately 15 m, with some monopoles (particularly corner monopoles) requiring stays. The final requirements for stays will be confirmed during detailed design. Refer to Figure 4 to Figure 6 depicting indicative monopoles and Figure 3 for indicative monopole locations.

It is noted that these are indicative locations only and will be subject to refinement during detailed design which will take into account impact assessment findings and approval requirements.

The Project within the Development Scheme jurisdiction will:

- Traverse 1 freehold allotment
- Approximately 840 m of OHTL
- Traverse an easement containing gas pipelines located within the Development Scheme

Require up to 2 monopoles with a maximum height of 50 m. The monopoles will be constructed of either steel or concrete. Monopoles will have a foundation radius of appropriately 15 m, some monopoles particularly corner monopoles requiring stays. The foundations of a third monopole may partially be located within the Development Scheme jurisdiction, with the centre of the pole located immediately west of the Development Scheme jurisdiction. Refer to Figure 4 to Figure 6 depicting indicative monopoles and Figure 5 for indicative monopole locations.

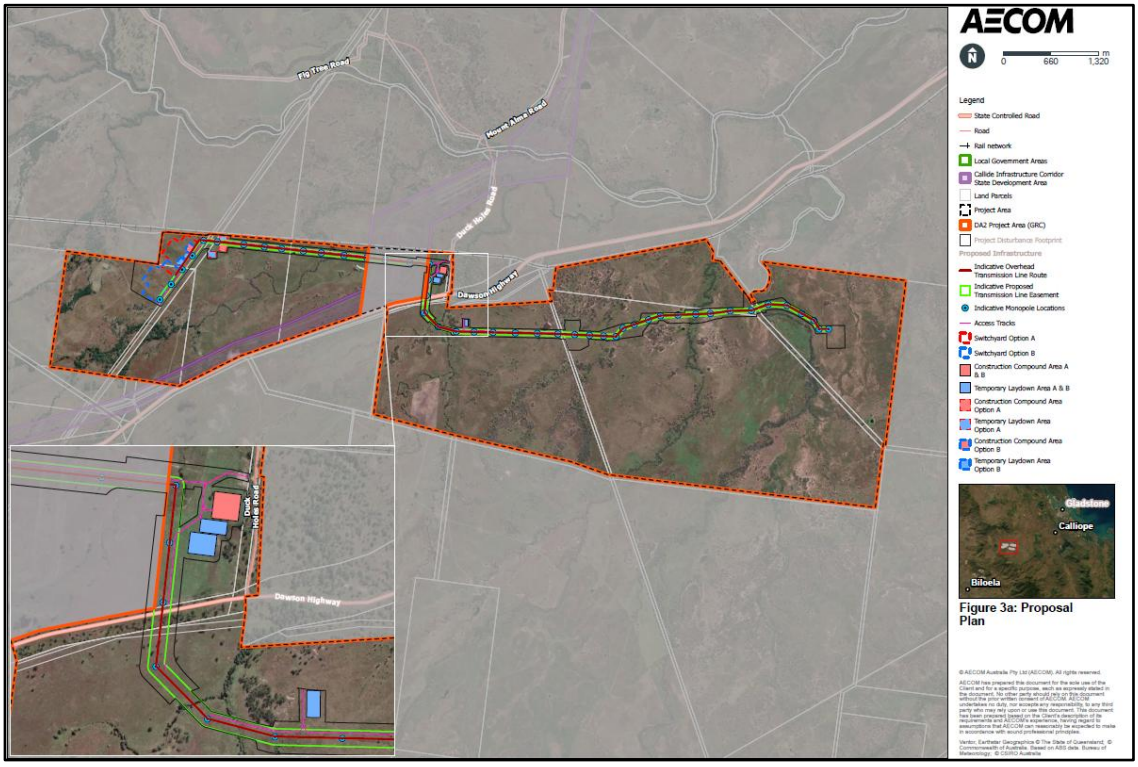


Figure 3a: Proposal Plan

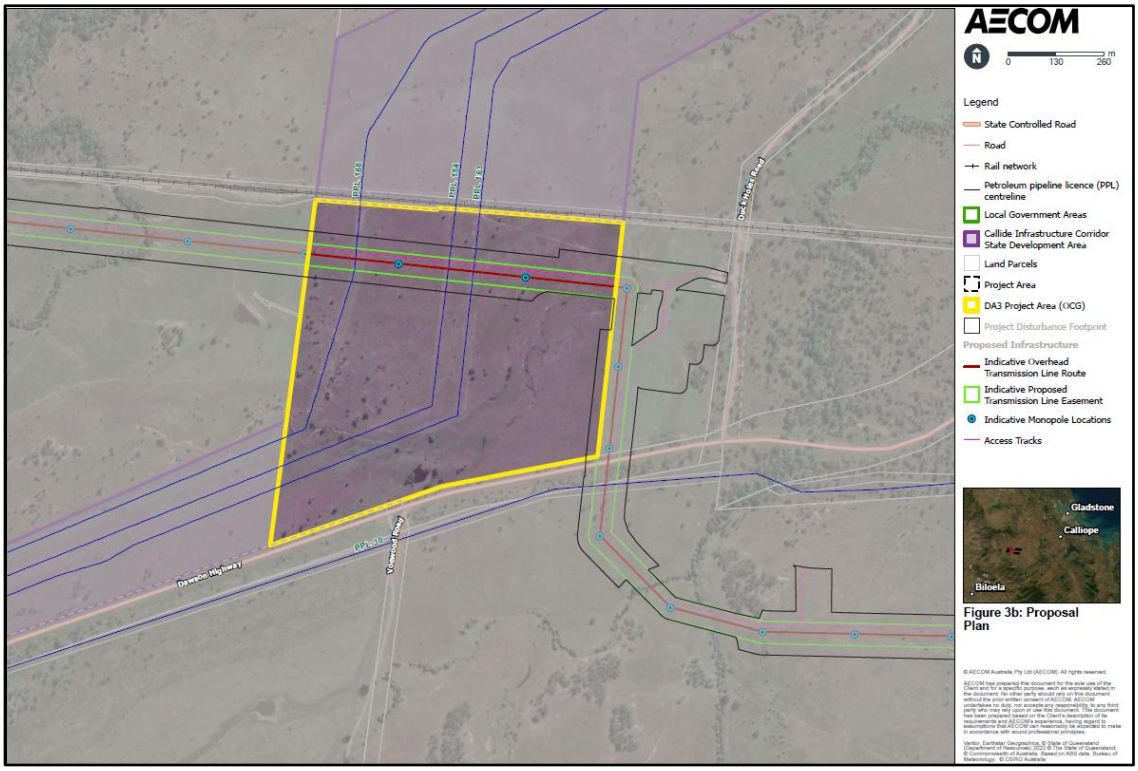


Figure 3b: Proposal Plan

Figure 3 Proposal Plan



Figure 4 Example 275 kV OHTL under construction (Cowell Electric, 2025)



Figure 5 Example 275 KV OHTL (Australian Power Industry Partners, 2025



Figure 6 275 kV Example OHTL with access track (Cowell Electric, 2025)

Conclusions

Based on a comprehensive analysis and assessment detailed in this report, the following conclusions were made:

Planning considerations

- The Project, as proposed, satisfies the planning provisions of the Planning Scheme Section 6.2.2 and Development Scheme. The Project will not create incompatible intrusions or compromise the safety of existing airports and associated navigation and communication facilities.

Certified airports

- There are 2 certified airports located within 30 nautical miles (nm) (56 km) from the Project – Gladstone Airport (YGLA) and Thangool Airport (YYNG).
    - The Project would not impact any Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS) surfaces.

Obstacle Limitation Surfaces

- The Project is located outside the horizontal extent of Obstacle Limitation Surfaces (OLS) of any certified airport.

Uncertified Aerodrome

- There are no known uncertified aerodromes within 3 nm of the Project.

Air Routes and Lowest Safe Altitude (LSALT)

- The Project would not impact the Grid LSALT and any Air Route LSALT.

Airspace

- The Project is wholly contained within Class G airspace and would not impact controlled or designated airspace.

Aviation Facilities

- The Project would not penetrate any protection areas associated with aviation facilities.

Radar

- The Project Area would be within the line-of-sight range of Mt Alma Air En-Route Surveillance Radar (RSR) (Approximately 14 km south of the Mt Alma RSR). Further consultation with Airservices Australia will confirm that there is no impact.

Aviation Impact Statement

Based on the Project layout provided, with regards to YGLA and YYNG, the proposed OHTL:

- Would not impact any OLS surfaces.
- Would not impact any PANS-OPS surfaces.
- Would not impact any Grid LSALT and Air Route LSALT.
- Is wholly contained within Class G airspace and would not impact controlled or designated airspace.

- Would not impact the aviation navigation facilities of nearby certified airports.
- Would be within the line-of-sight range of Mt Alma RSR; further consultation with Airservices Australia to confirm that there is no impact.

Summary of key recommendations

Recommended actions resulting from the completion of this assessment are provided below.

Notification and reporting

- Final details of the OHTL monopole coordinates and elevation should be provided to Airservices Australia at least 2 weeks prior to construction commencing, by submitting the Vertical Obstruction Data (VOD) form to Airservices Australia.
- Any obstacles 100 m or more above ground level (AGL) (including temporary construction equipment) should be reported to the Airservices Australia Notice to Airmen (NOTAM) office until they are incorporated in published operational documents. With respect to crane operations during the construction of the Project, a notification to the NOTAM office may include, for example, the following details:
    - The planned operational timeframe and maximum height of the crane; and
    - Either the general area within which the crane will operate and/or the planned route with timelines that crane operations will follow.
- Once form the final design, details of the OHTL monopoles should be provided to local and regional aircraft operators prior to construction (RFDS, Ambulance Service, Fire and Emergency Services, or any location operator that proponent identified) in order for them to consider the potential impact of the OHTL on their operations
- To facilitate the flight planning of aerial application operators, details of the Project, including the 'as constructed' location and height information of the OHTL monopoles, should be provided to landowners so that, when asked for hazard information on their property, the landowner may provide the aerial application pilot with all relevant information.
- Marking the proposed OHTL monopoles and powerlines will be determined after receiving consultation feedback from stakeholders, but prior to commencement of construction. Further advice will be available after feedback is received, following consultation with the parties listed in Table 2.

Triggers for review

- Triggers for review of this risk assessment are provided for consideration:
    - Prior to construction to ensure the regulatory framework has not changed
    - Following any significant changes to the context in which the assessment was prepared, including the regulatory framework
    - Following any near miss, incident or accident associated with operations considered in this risk assessment.

1. INTRODUCTION

The proposed Wooderson Solar Farm is located approximately 40 kilometres (km) south-west of Gladstone in Central Queensland, within the Gladstone Regional Council (GRC) Local Government Area (LGA). The Proponent is Wooderson Solar Development Co Pty Ltd, a wholly owned subsidiary of Central Queensland Power Development Co Pty Ltd (CQP), which is a joint venture between RES Australia Pty Ltd (RES) and Energy Estate (CQP) Holdings Pty Ltd as trustee for Energy Estate (CQP) Holdings Trust (Energy Estate).

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- Development Application 3 (DA3) – Transmission Corridor within the Callide Infrastructure Corridor SDA to be assessed by the Office of the Coordinator General (OCG).

This Aviation Impact Assessment (AIA) assesses the potential aviation impacts, provides aviation safety advice regarding relevant requirements of air safety regulations and procedures, and informs and documents consultation with relevant aviation agencies.

This AIA report includes an Aviation Impact Statement (AIS) and a qualitative risk assessment to determine the need for obstacle lighting.

1.1. Purpose and Scope

The purpose of the task is to understand and explain the potential impacts of the Project upon airports, civilian and military airspace and flight operations along its route through the provision of an AIA, including an AIS for consideration by Airservices Australia.

The scope of work is to prepare an AIA report that identifies and outlines any impacts to the following elements:

- Certified aerodromes within 30 nautical miles (nm) (55.56 km) of the Project.

- Uncertified aerodromes or aircraft landing areas that exist within 3 nm (5.5 km) of the Project.
- Impacts of the OHTL on the use of any local airstrips by landowners for agricultural purposes, including safe and efficient aerial application of agricultural fertilisers and pesticides.
- Air routes
- Defence flying operations
- Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS) surfaces (approach and departure procedures)
- Obstacle Limitation Surfaces (OLS) including designated future OLS
- Air Traffic Control (ATC) surveillance radar systems
- Aviation navigation aids and communications systems
- Emergency helicopter access
- Aerial firefighting
- Requirements for the marking and/or lighting of the OHTL.

1.2. Methodology

The task is proposed to be undertaken according to the following methodology:

- Reviewed the Project and established the appropriate compliance framework.
- Conducted a desktop study to assess the OLS and/or PANS-OPS surfaces at certified aerodromes to determine if any infringements occur. If infringements occur, assess the likely impacts to the OLS and/or PANS-OPS surfaces and possible mitigations.
- Conducted a desktop study to identify uncertified aerodromes within 5.5 km/3 nm of the Project to determine likely impacts to flight operations at these aerodromes.
- Assessed the likely impacts of infringements into Air Route and Grid Lowest Safe Altitude (LSALT) protection surfaces.
- Assessed likely impacts to aeronautical navigation aids and air traffic control surveillance radar systems including mitigations to reduce or eliminate any identified impacts.
- Identified relevant civil aviation safety requirements/standards with respect to existing aerodrome conditions and whether these standards are met, particularly in relation to whether obstacle marking or lighting is required.
- Assessed low level flight operations including agricultural spraying and aerial firefighting in the area.
- Prepared a draft AIA report recording findings of the analysis for client review.
- Finalised the draft AIA following client acceptance and consult with airports and aircraft operating agencies, including:
    - Airservices Australia
    - Department of Defence (if required)
    - Royal Flying Doctor Service (RFDS).

- Prepared a final report for client acceptance.

1.3. Aviation Impact Statement (AIS)

The AIS included in this report (see Section 6) includes the following specific requirements as advised by Airservices Australia:

Aerodromes:

- Specify all certified aerodromes that are located within 30 nm (55.6 km) of the Project.
- Nominate all instrument approach and landing procedures at these aerodromes.
- Review the potential effect of Project operations on the operational airspace of the aerodrome(s).

Air Routes:

- Nominate air routes published in en-route chart low (ERC-L) & en-route chart high (ERC-H) which are located near/over the Project and review potential impacts of Project operations on aircraft using those air routes.

Airspace:

- Nominate the airspace classification – A, C, D, E, G etc where the Project is located.

Navigation/Radar:

- Nominate air traffic control radar with coverage overlapping the Project.
- Nominate aviation navigation systems in proximity to the Project.

1.4. Material reviewed

Details of the Project design are provided via email from AECOM on 8 December 2025 and 22 January 2026.

2. BACKGROUND

2.1. Site overview

Figure 7 shows the proposed alignment of the Project in relation to the GRC LGA (Source: AECOM, Google Earth). Figure 8 and Figure 9 show the proposed Project location and approvals context (Source: AECOM).

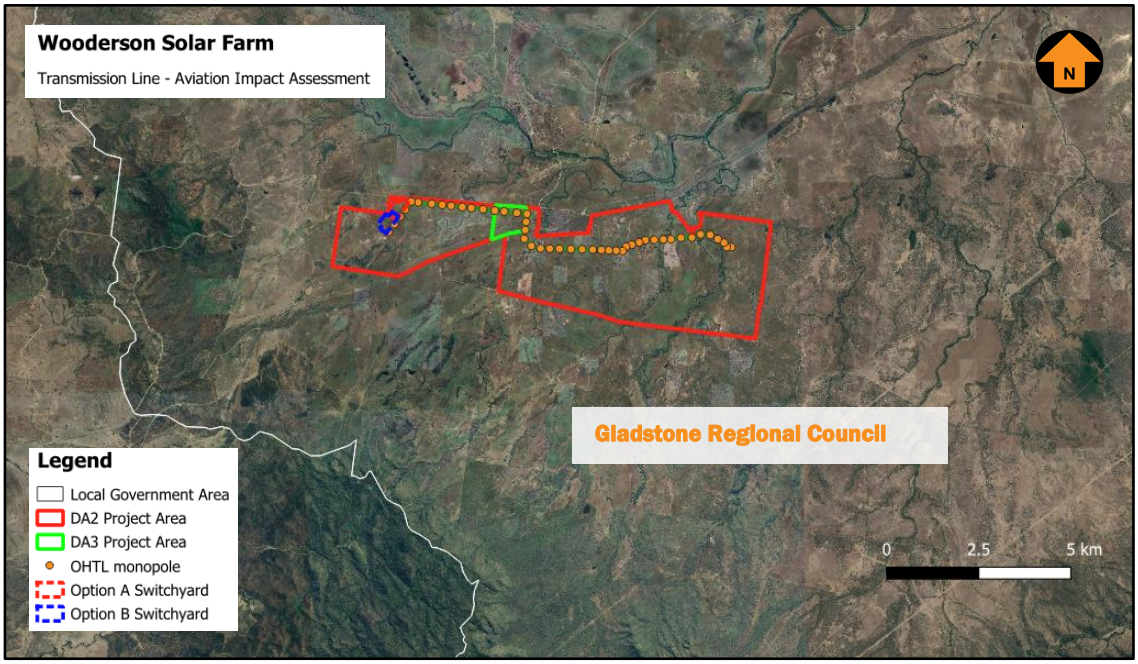


Figure 7 Project overview

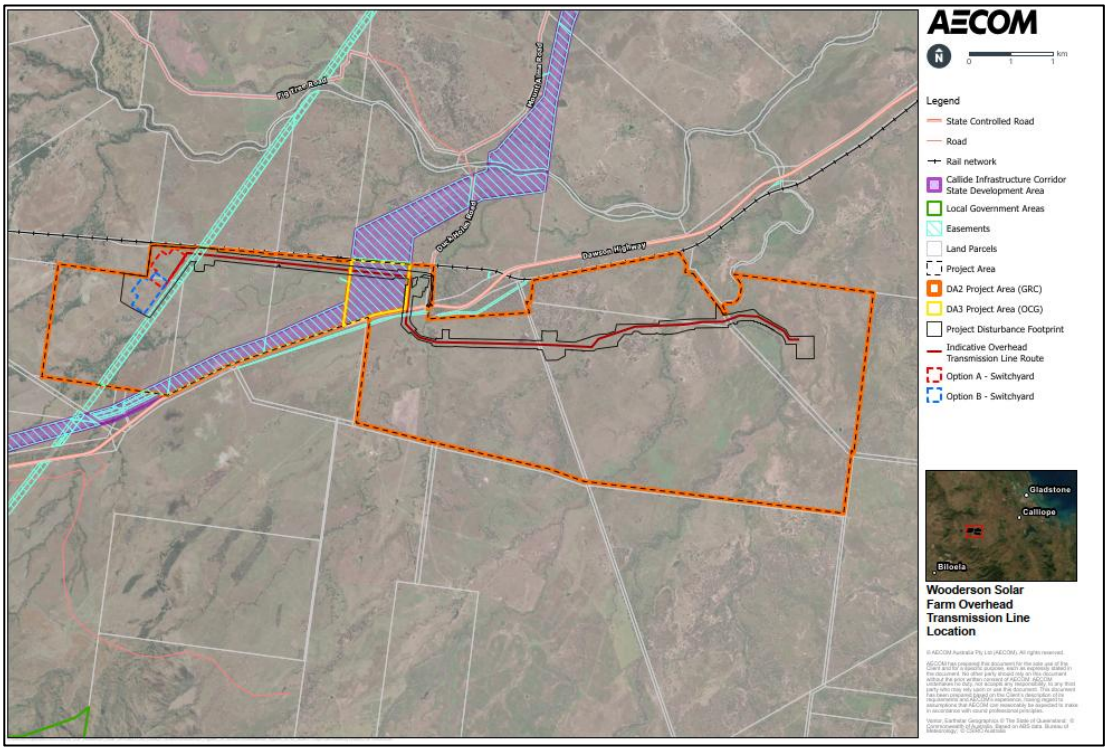


Figure 8 Wooderson Solar Farm Overhead Transmission Line Location

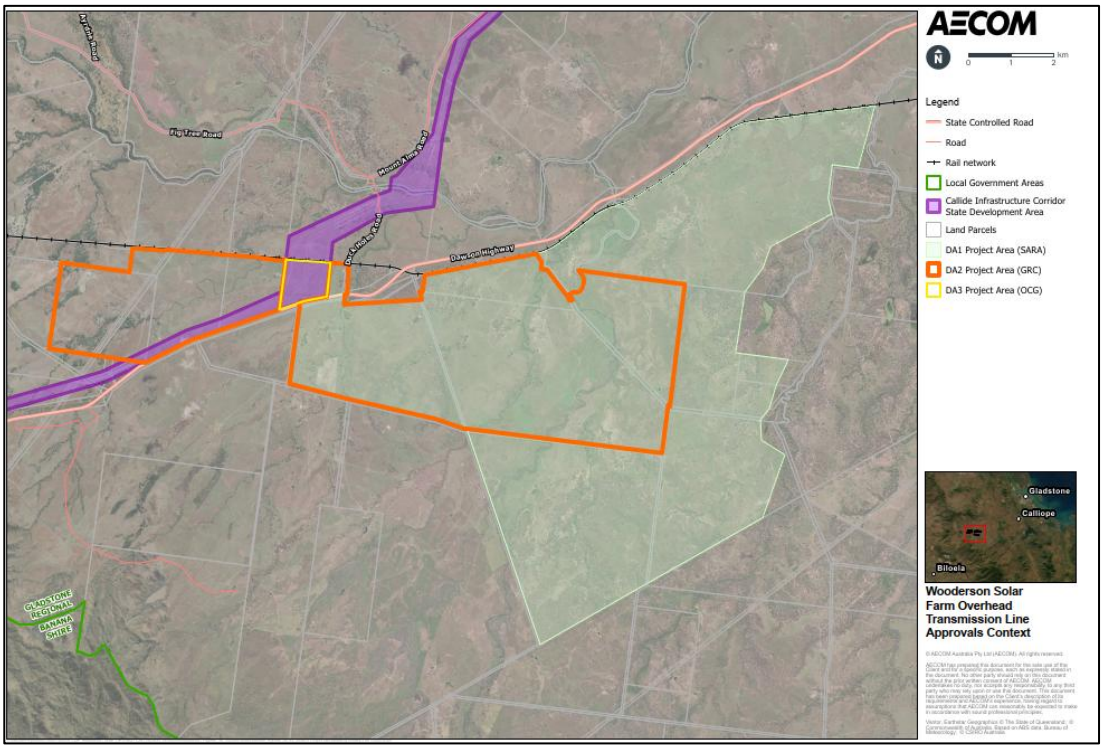


Figure 9 Wooderson Solar Farm Overhead Transmission Line Approvals Context

3. EXTERNAL CONTEXT

3.1. Gladstone Regional Council Planning Scheme 2013

GRC adopted the Gladstone Regional Planning Scheme (which commenced on 12 October 2015) (the Planning Scheme). The Planning Scheme replaces the previous Planning Schemes for Gladstone City, Calliope Shire and Miriam Vale Shires, providing a consolidated planning document for all planning and development across the region.

General requirements of the Planning Scheme related to Aviation facilities are provided in Table 1 (Planning Scheme 6.2.2 Airport environs Overlay Code). The Project has been assessed against the Airport Enviorns Overlay Code below to which the compliance has been achieved.

Table 1 Gladstone Regional Planning Scheme - 6.2.2 Airport environs Overlay Code

Performance Outcomes	*Acceptable Outcomes*	*Response based on the Project*
Obstructions and hazards		
PO1 Development (including any associated permanent or temporary structures and landscaping) does not cause a permanent or temporary physical or transient obstruction to the safe movement of aircraft within the airport's operational airspace.	AO1.1 Buildings, structures (both free standing and attached to buildings, including signs, masts or antennae) and vegetation at its mature height do not penetrate the OLS as identified on Airport Environs Overlay Map.	Complies AO1.1 The Project is located approximately 38 km away from the closest certified airport, outside OLS surfaces.
	AO1.2 Cranes and other construction equipment or activities do not penetrate the OLS as identified on Airport Environs Overlay Map.	Complies AO1.2 The Project is located approximately 38 km away from the closest certified airport, outside OLS surfaces.
	AO1.3 Transient activities associated with development such as parachuting, hot air ballooning and hang–gliding will not occur within the airport's operational airspace.	Not Applicable AO1.3 The Project is located approximately 38 km away from the closest certified airport, outside OLS surfaces. These activities are not proposed as part of the Project.
Lighting and reflective surfaces		
PO2 Development does not cause an obstruction or hazard to the safe movement of aircraft	AO2.1 Within the Approach and Departure Surfaces, Transitional Surface and Inner Horizontal Surface, outdoor lighting (including street lighting and	Complies AO2.1 The Project is located approximately 38 km away from the closest certified airport, outside OLS

Performance Outcomes	*Acceptable Outcomes*	*Response based on the Project*
within an airport's operational airspace through the installation of external lighting that could distract or interfere with a pilot's vision, or confuse the visual identification of a runway approach or navigational lighting from the air.	security lighting) does not involve any of the following: (a) straight parallel lines of lighting 500 m to 1000 m in length (b) lighting that shines, projects or reflects light above a horizontal plane (c) coloured, flashing or sodium lighting (d) flare plumes (e) buildings with reflective cladding (f) laser lights.	surfaces, with no cause for obstruction or hazard from lighting.
	A02.2 Street Lighting and Outdoor Lighting complies with AS4282–1997 Control of Obstructive effects of Outdoor Lighting.	**Complies A02.2** The Project is located approximately 38 km away from the closest certified airport, outside OLS surfaces, with no cause for obstruction or hazard from lighting.
Emissions		
P03 **Development does not significantly increase air turbulence, reduce visibility or cause an obstruction or hazard to the safe movement of aircraft within an airport's OLS (Inner and Outer), Transitional Surface or Approach and Departure Limitation Surface as identified on Airport Environs Overlay Map through the emission of particulates, gasses or other materials.**	**A03** Development does not generate: (a) gaseous plumes with a velocity exceeding 4.3 m per second (b) smoke, dust, ash or steam that will penetrate the OLS (Inner and Outer), Transitional Surface or Approach and Departure Limitation Surface as identified on Airport Environs Overlay Map, or (c) emissions with depleted oxygen content.	**Complies A03** The Project is located approximately 38 km away from the closest certified airport, outside OLS surfaces.
Wildlife hazards		
P04 **Development does not cause wildlife to create an obstruction or**	**A04.1** Development located within 3 km of the airport's runway as identified on Airport environs overlay map does not involve uses listed in column 1 of	**Complies A04.1** The Project is located approximately 38 km away from the closest certified

Performance Outcomes	*Acceptable Outcomes*	*Response based on the Project*
hazard to the safe movement of aircraft within an airport's operational airspace through the attracting of a significant number of wildlife, in particular birds and bats.	Table 8.2.2.3.2 which are associated with increases in wildlife strikes.	airport, outside wildlife hazard zone (13 km).
	AO4.2 Development located within 3 km of the airport's runway as identified on Airport environs overlay map, involving a use listed in column 2 of Table 8.2.2.3.2 include measures to reduce the potential to attract birds and bats, including covering potential food sources and bird scarers or netting (rural activities).	**Complies AO4.2** The Project is located approximately 38 km away from the closest certified airport, outside wildlife hazard zone (13 km).
	AO4.3 Development located between 3 km and 8 km of the airport's runway as identified on Airport Environs Overlay Map, involving a use in either column 1 or column 2 of Table 8.2.2.3.2 includes measures to reduce the potential to attract birds and bats, including covering potential food sources and bird scarers or netting (rural activities).	**Complies AO4.3** The Project is located approximately 38 km away from the closest certified airport, outside wildlife hazard zone (13 km).
	AO4.4 Development located between 8 km and 13 km of the airport's runway as identified on Airport Environs Overlay Map involving a use in either column 1 or column 2 of Table 8.2.2.3.2 does not increase the potential to attract birds and bats.	**Complies AO4.4** The Project is located approximately 38 km away from the closest certified airport, outside wildlife hazard zone (13 km).
PO5 **Landscaping and drainage works (including artificial water bodies) for development within the Transitional Surface as identified on Airport Environs Overlay Map are designed and located to avoid attracting birds and bats (e.g. avoidance of fruiting and/ or flowering plant species).**	No acceptable outcome is nominated.	**Complies AO5** The Project is located approximately 38 km away from the closest certified airport, outside wildlife hazard zone (13 km).
Aviation facilities		
PO6	AO6.1	Complies AO6.1 and AO6.2

Performance Outcomes	*Acceptable Outcomes*	*Response based on the Project*
Development does not interfere with the function of aviation facilities or the approach and departure surfaces.	Development located within the building restricted area for an aviation facility, an approach surface or a departure surface does not create: (a) permanent or temporary physical obstructions in the line of sight between antennas (b) permanent or temporary physical intrusion through an approach surface or departure surface (c) an electrical or electromagnetic field that will interfere with signals transmitted by: (i) the aviation facility; or (ii) an air service related device within the approach surface or departure surface (d) reflective surfaces that could deflect or interfere with signals transmitted by: (i) the aviation facility; or (ii) an air service related device within the approach surface or departure surface. OR **AO6.2** Development located within the building restricted area for an aviation facility, an approach surface or a departure surface is designed and constructed to mitigate the adverse impacts on the function of the aviation facility, the approach surface or the departure surface.	The Project is located approximately 38 km away from the closest certified airport, outside all Building restricted area of any aviation facility.
Airport public safety areas		
PO7 **Development within the public safety areas located at the end of the airport runway avoids:** **(a) a significant increase in the number of people living, working or congregating in those areas, and** **(b) the use or storage of hazardous materials.**	AO7 Development within the public safety areas, as identified on the Airport Environs Overlay Map, does not involve: (a) residential or sensitive land uses (b) any new building or increase in Gross floor area (GFA) for any existing business, industrial, community, sport and recreation uses or other non–residential use, or (c) any uses involving the production, manufacture or bulk storage of flammable or hazardous materials or goods.	**Complies AO7** The Project is located approximately 38 km away from the closest certified airport, outside public safety areas.

Performance Outcomes	*Acceptable Outcomes*	*Response based on the Project*
Noise		
PO8 Development is: (a) appropriately located and designed to prevent adverse impacts from aircraft noise (b) compatible with the forecast levels of the aircraft noise identified in Table 8.2.2.3.3 unless there: (i) is an overriding need in the public interest, and (ii) is not a reasonable alternative site available for the use, and (iii) are noise attenuation measures such as double glazing, mechanical ventilation and concrete masonry external walls. Note—Where the acceptable outcomes cannot be met, an appropriately qualified acoustic practitioner may be required to be engaged in order to demonstrate compliance with this performance outcome.	A08.1 Reconfiguring a lot does not occur within the Australian Noise Exposure Forecast (ANEF) 25 - 30 or 30 - 35 contour area as identified on the Airport Environs Overlay Map.	Complies A08.1 The Project is located approximately 38 km away from the closest certified airport, outside noise contour.
	A08.2 Within the ANEF 30 - 35 contour area, as identified on the Airport Environs Overlay Map development does not include the following uses: (a) accommodation activities (except Non–resident workforce accommodation), or (b) educational establishment, or (c) hospital, or (d) community activities, or (e) business activities (except office), or (f) recreational activities, or (g) entertainment activities.	Complies A08.2 The Project is located approximately 38 km away from the closest certified airport, outside noise contour.
	A08.3 Within the ANEF 25 - 30 contour area, as identified on the Airport Environs Overlay Map development is a minimum of 500 m from the airport's runway and must achieve compliance with the indoor design level requirements of Table 8.2.2.3.3	Complies A08.3 The Project is located approximately 38 km away from the closest certified airport, outside noise contour.

3.2. Callide Infrastructure Corridor State Development Area Development Scheme

There are no aviation-related benchmarks in the Development Scheme. Therefore, the Project is not contravening the Development Scheme.

3.3. Civil Aviation Safety Authority (CASA)

The Civil Aviation Safety Authority (CASA) provides the following guidance to inform pilots of their obligations at uncertified aerodromes.

3.3.1 Advisory Circular (AC) 91-02 V1.2, Guidelines for aeroplanes with MTOW not exceeding 5700 kg – suitable places to take off and land, dated November 2022

This Advisory Circular (AC) provides guidance for pilots of:

- Aeroplanes with maximum take-off weight (MTOW) not exceeding 5700 kilograms (kg) that are operated under Part 91 of the *Civil Aviation Safety Regulation (1998)* (CASR), including experimental aircraft, and
- Light sport aircraft (LSA) under Part 103 of CASR.

Purpose

This AC provides guidance to assist aeroplane pilots when determining the suitability of a place to safely take off and land. It provides an overview of pilot responsibilities, discusses the relevant circumstances recommended to be considered and includes general information and advice to enhance the safety of taking off and landing at any place.

2 Introduction

2.2 Use of Aerodromes

2.2.1 Regulation 91.410 authorises a place for use as an aerodrome if: (i) it is suitable for the landing and taking-off of aircraft; and (ii) an aircraft can land at or take off from the place safely, having regard to all the circumstances of the proposed landing or take-off (including the prevailing weather conditions).

4.2.4 The examples below are two of many possible considerations:

- the obstacles surrounding the aerodrome have been accurately described and are still current (e.g. have the trees on final grown taller since last reported), and

– the information provided enables the pilot to judge whether or not a landing approach can be made from both runway directions.

3.3.2 AC 91-10 v1.6, Operations in the vicinity of non-controlled aerodromes, dated September 2025

This AC provides guidance on procedures that, when followed, will improve situational awareness and safety for all pilots when flying at, or in the vicinity of, non-controlled aerodromes.

7.2 Traffic circuit direction

7.2.1 The standard aerodrome traffic circuit facilitates the orderly flow. Unless an alternative requirement for an aerodrome is stated in the ERSA [En Route Supplement Australia] or NOTAMs, all turns must be made to the left (regulation 91.385).

7.2.2 When arriving at an aerodrome to land, the pilot will normally join the circuit on upwind, crosswind (midfield), or at or before mid-downwind. Landings and take-offs should be made on the preferred runway.

7.3.2 During initial climb-out, the turn onto crosswind should be appropriate to the performance of the aircraft but, in any case, not less than 500 ft [feet] above terrain so as to be at circuit height when turning downwind (regulation 91.390). Pilots may vary the size of the circuit depending on:

– the performance of the aircraft

– AFM/Pilot's Operating Handbook requirements

– company standard operating procedures

– other safety reasons.

7.8 Final approach

7.8.1 The turn onto final approach should be:

– completed by a distance and height that is common to all operations at the aerodrome

– commensurate with the speed flown in the circuit for all aircraft of the same type.

Illustrations of the standard aerodrome traffic circuit procedures provided in AC 91-10 v1.6. are shown in Figure 10 and Figure 11.

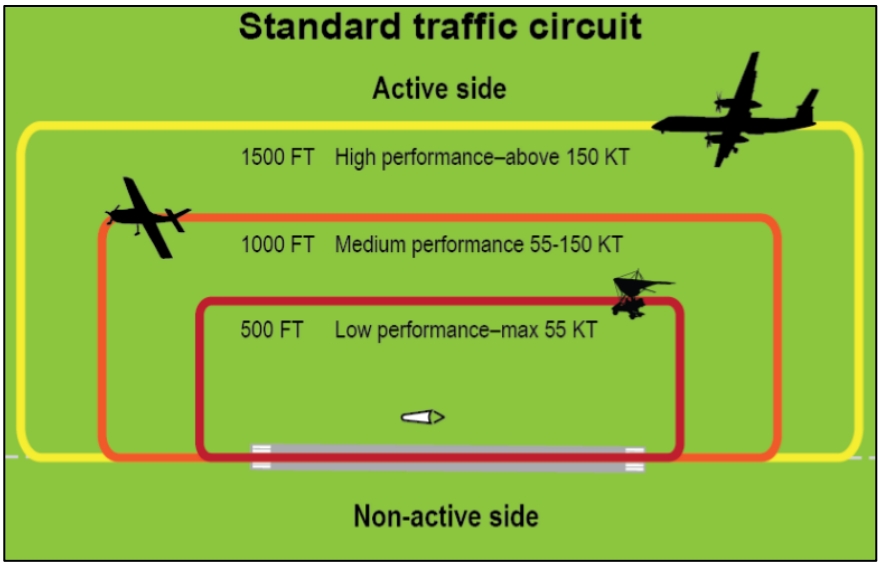


Figure 10 Lateral and vertical separation in the standard aerodrome traffic circuit

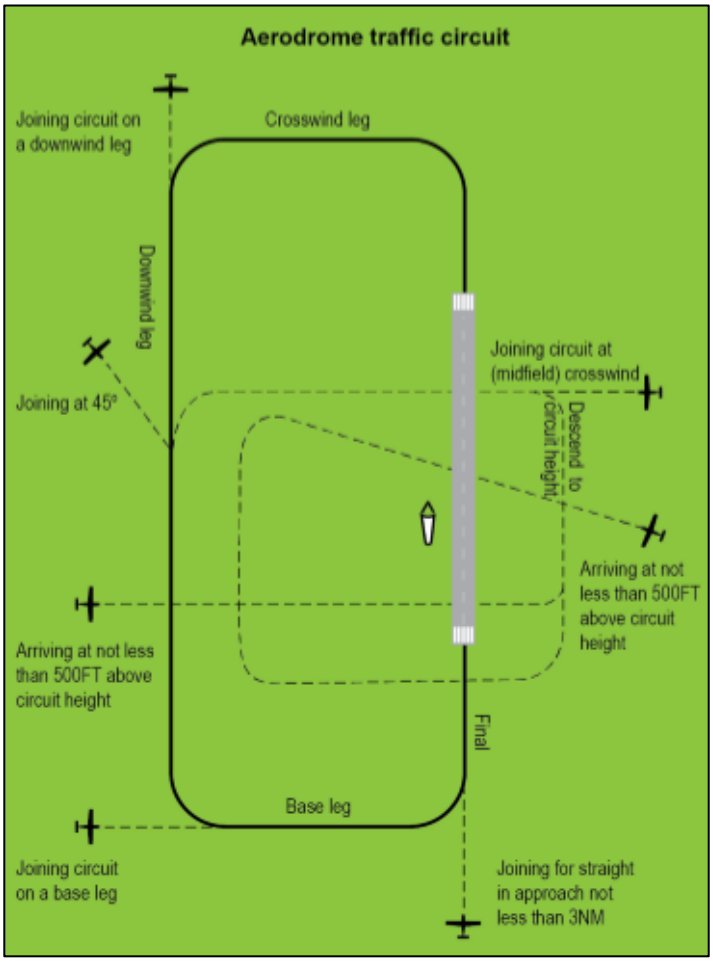


Figure 11 Aerodrome standard traffic circuit, showing arrival and joining procedures.

Paragraph 7.11 refers to a distance that is "normally" well outside the circuit area and where no traffic conflict exists, which is at least 3 nm. The paragraph is copied below:

> *7.11 Departing the circuit area*
>
> *7.11.1 Aircraft should depart the aerodrome circuit area by extending one of the standard circuit legs or climbing to depart overhead. However, the aircraft should not execute a turn to fly against the circuit direction unless the aircraft is well outside the circuit area and no traffic conflict exists. This should be 500 ft or more above the circuit height and at least 3 nm from the departure end of the runway but may be less for aircraft with high climb performance. In all cases, the distance should be based on the pilot's awareness of traffic and the ability of the aircraft to climb above and clear of the circuit area.*

3.4. Rules of flight

3.4.1 Flight under Day Visual Flight Rules (Day VFR)

According to Australia's Aeronautical Information Package (AIP) the meteorological conditions required for visual flight in the applicable (class G) airspace at or below 3,000 ft above mean sea level (AMSL) or 1,000 ft AGL (whichever is the higher) are: 5,000 m visibility, clear of clouds and in sight of ground or water.

CASR 91.267 (Minimum height rules—other areas) prescribes the minimum height for flight. Generally speaking, and unless otherwise approved, aircraft are restricted to a minimum height of 500 ft AGL above the highest point of the terrain and any object on it within a radius of 300 m in visual flight during the day when not in the vicinity of built-up areas, and 1000 ft AGL over built up areas (within a horizontal radius of 600 m of the point on the ground or water immediately below the aeroplane).

Flight below these height restrictions is permitted in certain circumstances.

3.4.2 Flight under Night Visual Flight Rules (Night VFR)

With respect to flight under the Visual Flight Rules (VFR) at night CASR 91.277 requires that the pilot in command of an aircraft flying VFR at night must not fly below the appropriate lowest safe altitude (unless during take-off and landing operations, within 3 nm of an aerodrome).

3.4.3 Flight under Instrument Flight Rules (Day or Night) (IFR)

According to CASR Part 91, flight under the Instrument Flight Rules (IFR) requires an aircraft to be operated at a height clear of obstacles that is calculated according to an approved method.

Obstacle lights on structures not within the vicinity of an aerodrome are effectively redundant to an aircraft being operated under the IFR.

3.5. Aircraft operator characteristics

Flying training may be conducted under either the IFR or VFR. Other general aviation operations under either IFR or VFR are also likely to be conducted at various aerodromes in the area.

Flight under day VFR is conducted above 500 ft above the highest point of the terrain within a 300 m radius unless the operation is approved to operate below 500 ft above the highest point of the terrain.

Marking the proposed OHTL monopoles and powerlines will be determined after receiving consultation feedback from stakeholders. Further advice will be available after feedback is received, following consultation with the parties listed in Table 2.

IFR and Night VFR (which are required to conform to IFR applicable altitude requirements) aircraft operations are addressed in Section 6.

3.6. Passenger transport operations

Scheduled and non-scheduled passenger transport operations are generally operated under the IFR.

3.7. Private operations

Private operations are generally conducted under day or night VFR, with some IFR. Flight under day VFR is conducted above 500 ft AGL in areas outside city and township built-up areas. These operations are usually conducted at altitudes well above 500 ft AGL for passenger comfort and fuel efficiency.

3.8. Military operations

There may be some high-speed low-level military jet aircraft and helicopter operations conducted in the area. Military operations are conducted under separate but compatible regulations and standards, including obstacle separation requirements.

Refer to Section 5 for a detailed response from the Department of Defence.

3.9. Aerial application operations

Aerial application operations including such activities as fertiliser, pest and crop spraying are generally conducted under day VFR below 500 ft AGL: usually between 6.5 ft and 100 ft AGL.

Due to the nature of the operations conducted, aerial agriculture pilots are subject to rigorous training and assessment requirements to obtain and maintain their licence to operate under these conditions.

The inclusion of the OHTL on aeronautical charts will enable the pilots conducting an aerial application flight operation to be aware of the presence of the OHTL and consider its impact during the planning of their low-level flights. When combined with the briefing carried out with the landowner prior to any such flights, and the Aerial Application Association of Australia (AAAA) formal risk management program, the pilot will have the best possible knowledge about the obstacle environment around the intended flight(s). These briefings are no different to current practices associated with low-level flights near large transmission lines.

3.9.1 Aerial Application Association Australia (AAAA)

The AAAA has a formal risk management program (which is recommended for use by its members) to assess the risks associated with their operations and implement applicable treatments to ensure an acceptable level of safety can be maintained.

The AAAA has initiated a Powerline Safety Program and identified that *"powerlines have been a significant safety issue since the electrification of rural areas and wirestrikes have been a major threat to aerial application since the late 1940s when the industry began in Australia.*

> *While training and ongoing professional development play a significant role in preparing pilots to manage the risks associated with low level operations around powerlines, there are two key initiatives that can support and improve safety for the sector:*
>
> - *The provision of mapping information on powerline networks*
> - *The marking of powerlines.*
>
> *Over recent years, AAAA has worked to reshape the Australian Standards (AS) on the marking of powerlines (AS 3891 Parts 1 & 2), has developed and delivered world-leading human factor training courses, and has worked with powerline companies to develop mapping and marking systems and make them available to pilots and business owners.*
>
> *AAAA has now launched its Powerline Safety Program that aims to encourage and facilitate power companies improving aviation safety and provide a way of both aviation businesses and rural landholders engaging in meaningful safety actions to improve safety.*
>
> *Wirestrikes account for approximately 57% of all aerial application accidents/incidents. While this is only a fraction of the total safety problem surrounding contact between all vehicles and farm implements with power infrastructure, it is a significant cost to the industry and a personal impact on pilots involved in wirestrikes."*

The AAAA Tall Structures Policy dated March 2024 states in part:

> *The development of tall structures in agricultural and bushfire prone areas can pose a direct threat to aviation safety, particularly where fixed and rotary aircraft may be requested to operate for agricultural or bush/grass fire control.*
> *The absence of historical aircraft use in an area is considered an insufficient reason to discount the threat to Aviation Operations.*
>
> *The AAAA will oppose any development application or similar process unless the proponent has:*

- *Identified the structure as posing a low-level flying risk that needs to be managed on an ongoing basis*
- *Consulted honestly and in detail with local aerial application operators or the AAAA where a local operator cannot be identified*
- *Consulted with adjoining landowners regarding the impact on adjacent properties*
- *Included appropriate lighting and marking in the development proposal, consistent with providing a warning to low level flying*
- *Identified the process for advising of the location height and presence of the structure to the relevant authorities, and*
- *Ensure that the proposal is in keeping with CASA requirements for structures near aerodromes, including temporary landing areas.*

Reporting the Project's final design, including coordinates and heights, to Airservices Australia and the Department of Defence would ensure that they are marked on aeronautical charts, enabling pilots to be aware of them and to be compliant with a key AAAA initiative.

3.9.2 Aerial application operators

Aerial application operators generally align their positions with the AAAA policies, and utilise the AAAA formal risk management programme.

Based on previous studies for other OHTL projects undertaken by Aviation Projects, and the results of consultation with AAAA and local aerial application operators, it is reasonable to conclude that safe aerial application operations would be possible on properties within the Project Area and on neighbouring properties, subject to final OHTL monopole locations and by implementing recommendations provided in this report at Section 10.

To facilitate the flight planning of aerial application operators, details of the Project, including location and height information of OHTL and OHTL monopole should be provided to landowners so that, when asked for hazard information on their property, the landowner may provide the aerial application pilot with all relevant information.

The use of helicopters and drones enables aerial application operations to be conducted in closer proximity to obstacles than would be possible with fixed wing aircraft due to their greater manoeuvrability.

3.10. Emergency services

3.10.1 Royal Flying Doctor Service

The RFDS and other emergency services operations are generally conducted under the IFR, except when arriving/departing a destination that is not serviced by instrument approach aids or procedures, in which case they would be operating day or night VFR.

Most emergency aviation services organisations have formal risk management programs to assess the risks associated with their operations and implement applicable treatments to ensure an acceptable level of safety can be maintained.

For example, pilots and crew require specific training and approvals, additional equipment is installed in the aircraft, and special procedures are developed.

3.10.2 Aerial firefighting

Aerial firefighting operations (firebombing in particular) are conducted under Day VFR, sometimes below 500 ft AGL. Under certain conditions visibility may be reduced/limited by smoke/haze.

Aerial firefighting organisations have formal risk management programs to assess the risks associated with their operations and implement applicable treatments to ensure an acceptable level of safety can be maintained. For example, pilots require specific training and approvals, additional equipment is installed in the aircraft, and special procedures are developed.

Aircraft operating companies involved in aerial firefighting are licenced by CASA under CASR Part 137.

4. INTERNAL CONTEXT

4.1. Project description

The 275 kV OHTL runs approximately 11 km from the solar farm substation to the proposed Calvale to Calliope River Transmission Line Reinforcement Project. The OHTL will be comprised of the following:

The Project within the Planning Scheme jurisdiction would:

- Traverse 7 freehold allotments
- Comprise approximately 10 km of OHTL
- Be partly within the existing Powerlink easement and adjoining the proposed Calvale to Calliope River Transmission Line Reinforcement Project and Calvale to Wurdong 275 kV Transmission Line, where the OHTL will under cross the existing and proposed transmission lines.
- Travel adjacent to Option A and Option B switchyard, construction compound and construction laydown area, which also adjoins the Calvale to Calliope River Transmission Line Reinforcement Project.
- Require approximately 43 monopoles with a maximum height of 50 metres (m). The monopoles will be constructed of either steel or concrete. Monopoles will have a foundation radius of approximately 15 m, with some monopoles (particularly corner monopoles) requiring stays. The final requirements for stays will be confirmed during detailed design. Refer to Figure 4 to Figure 6 depicting indicative monopoles.

The highest monopole (NP 45) across all monopoles in both jurisdictions (Planning Scheme and Development Scheme), has a ground elevation of 101.5 m Australian Height Datum (AHD) which, with a 50 m monopole height, has anoverall height 151.5 m AHD (497 ft AMSL).

All monopoles and the switchyard are included in this assessment. It is noted that the monopoles are up to 20 m higher than the switchyard, making assessment of their impacts the most conservative parameter for assessment for aviation impacts.

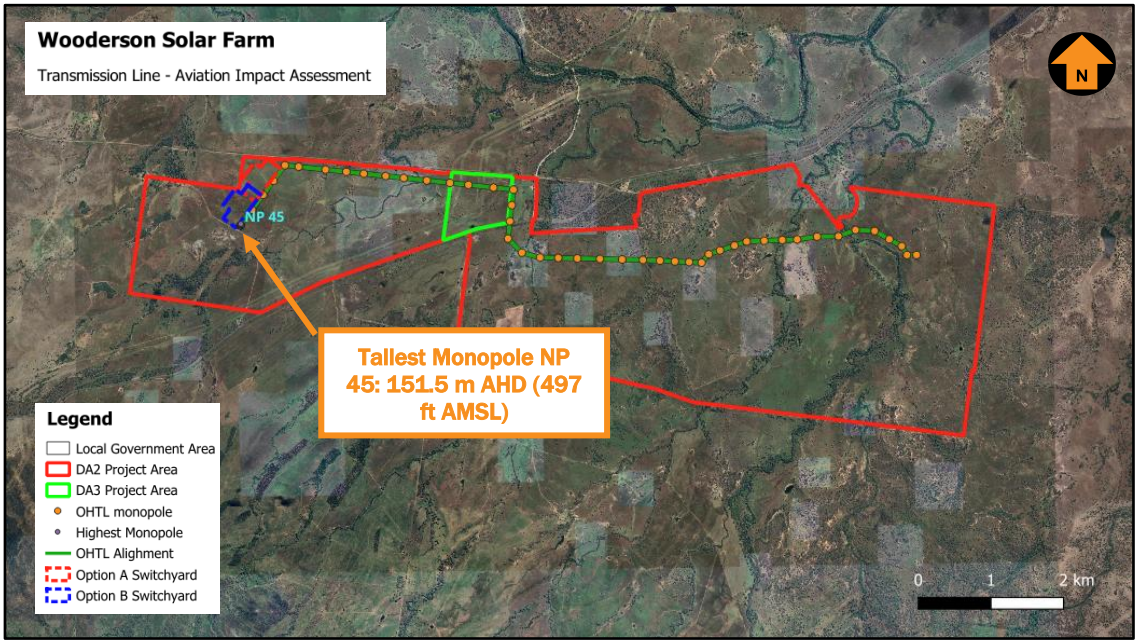


Figure 12 The proposed OHTL alignment.

5. CONSULTATION

The following list of stakeholders was identified as requiring consultation:

1. Airservices Australia
2. Department of Defence
3. Gladstone Airport Corporation
4. Banana Shire Council
5. GE Aerospace
6. RFDS
7. Queensland Ambulance Service
8. Queensland Fire and Emergency Services
9. Capricorn Helicopter Rescue Service

Details and results of the consultation activities are provided in Table 2.

Table 2 Stakeholder consultation details

Agency/Contact	*Activity/Date*	*Response/ Date*	*Issues Raised During Consultation*	*Action Proposed*
Airservices Australia	Email sent on 23 February 2026	Email received on 12 March 2026	***Airspace Procedures*** *With respect to procedures designed by Airservices in accordance with ICAO PANS-OPS and Doc 9905, at a maximum height of 151.5m (498ft) AHD the transmission line will not affect any sector or circling altitude, nor any instrument approach or departure procedure at Gladstone and Thangool aerodromes.* *Note: Procedures not designed by Airservices at Gladstone and Thangool aerodromes were not considered in this assessment.* ***Communications/Navigation/Surveillance (CNS) Facilities*** *We have assessed the proposed activity to the above specified height for any impacts to Airservices Precision/Non-Precision Navigation Aids, Anemometers, HF/VHF/UHF Communications, A-SMGCS, Radar, PRM, ADS-B, WAM or Satellite/Links and have no objections to it proceeding.* *Note: Meteorological instruments not owned by Airservices were not considered in this assessment. In accordance with Part 139 (Aerodromes) Manual of Standards, Chapter 19, we recommend consulting with the Bureau of Meteorology (the Bureau) to ensure that the proposed activity does not adversely affect their*	No action required

Agency/Contact	Activity/Date	Response/ Date	Issues Raised During Consultation	Action Proposed
			equipment. The Bureau can be contacted at airport.developments@bom.gov.au ***Air Traffic Control (ATC) Operations*** *There are no additional instructions/concerns from ATC.* ***Summary*** *The proposed activity does not impact Airservices operations or facilities at Gladstone and Thangool aerodromes.*	
Department of Defence	Email sent on 23 February 2026	Email received on 20 April 2026	*Thank you for providing Defence with the opportunity to comment on the Woodernson Solar Farm, located approximately 40 kilometres (km) south-west of Gladstone in Central Queensland.* *Defence has nil comments.* *Should this development application be approved, Defence requests that the proponent actions the following instructions:* ***Tall Structure Reporting Requirements:*** *The proposed transmission line towers may meet the threshold for reporting tall structures.* *As such, Defence requests that vertical obstacle notification be provided to Airservices Australia (AsA).* *Marking tall structures on aeronautical charts enhances flight safety by supporting accurate pilot navigation. Airservices Australia maintains the national database for tall structures that exceed:*	Please complete the following steps: 1. Complete the Vertical Obstacle Notification Form: ATS-FORM-0085 — Vertical Obstruction Data Form (available at: airservicesaustralia.com) 2. Submit the completed form to VOD@airservicesaustralia.com once the development reaches its maximum height.

Agency/Contact	Activity/Date	Response/ Date	Issues Raised During Consultation	Action Proposed
			• *30 metres AGL within 30 km of an aerodrome; and* • *45 metres AGL elsewhere for RAAF operations.* ***Required Actions:*** *Please complete the following steps:* 1. *Complete the Vertical Obstacle Notification Form:* *ATS-FORM-0085 — Vertical Obstruction Data Form* *(available at: airservicesaustralia.com)* 2. *Submit the completed form to VOD@airservicesaustralia.com once the development reaches its maximum height.* ***Further Information:*** *For additional guidance regarding the reporting of tall structures, you may contact the Airservices Australia VOD team:* • *Phone: 02 6268 4111* • *Email: VOD@airservicesaustralia.com* • *Reference: Civil Aviation Safety Regulation Part 175 — Airservices and You (available on the Airservices website)*	
Gladstone Airport Corporation	Email sent on 23 February 2026	Email received on 13 March 2026	*Thank you for contacting Gladstone Airport in relation to the Woodernson Solar Farm - OHTL (AP-101610-01). Upon reviewing the information supplied, Gladstone*	No action required

Agency/Contact	Activity/Date	Response/ Date	Issues Raised During Consultation	Action Proposed
			Airport does not see any conflicts arising from this development.	
Banana Shire Council	Email sent on 23 February 2026		On-going	
GE Aerospace	Email sent on 23 February 2026	Email received on 28 March 2026	*Thank you for forwarding the proposal to us. We have completed our assessment of the proposed solar farm and determined that there is no impact to our procedure at YGLA.*	No action required
Royal Flying Doctor Service	Email sent on 23 February 2026	Email received on 24 February 2026	*Have reviewed on behalf of RFDS (Qld Section) and conclude that this project will have no impact on our operations over this area and at Gladstone and Thangool airports.*	No action required
Queensland Ambulance Service	Email sent on 23 February 2026	Email received on 24 March 2026	*The Queensland Ambulance Service, Central Region does not have any feedback to provide. It is suggested that contact with made with Capricorn Helicopter Rescue Service.*	Consultation advice email sent to Capricorn Helicopter Rescue Service (feedback as below)
Queensland Fire and Emergency Services	Email sent on 23 February 2026	Email received on 12 March 2026	*From QFD Aviation's perspective, we don't have any feedback to provide at this time.*	No action required
Capricorn Helicopter Rescue Service	Email sent on 24 March 2026	Email received on 20 April 2026	*CapRescue has nothing to add to this report, thank you*	No action required

6. AVIATION IMPACT STATEMENT

6.1. Overview

Potential safety risks include (but are not limited to) impacts on flight procedures and aviation communications, navigation, and surveillance (CNS) facilities, which require assessment by Airservices Australia.

To facilitate these assessments, proposals submitted to Airservices Australia must include an AIS.

This analysis considers the aeronautical impact of the OHTL and OHTL monopoles on the following:

- The operation of certified aerodromes within 30 nm of the Project
- Grid and Air Route LSALTs
- Airspace protection
- Aviation navigation and communication facilities
- ATC surveillance radar installations
- Local aircraft operations.

6.2. Nearby certified aerodromes

A certified aerodrome is an aerodrome regulated by the CASA under CASR Part 139 with defined standards established in CASR Part 139 MOS.

There are 2 certified aerodromes located within 30 nm of the Project – Gladstone Airport (YGLA) and Thangool Airport (YTNG).

The 30 nm radius represents the 25 nm minimum sector altitude (MSA) for aerodromes with terminal instrument flight procedures. The 25 nm MSA is determined by assessing obstacles within 30 nm (25 nm plus 5 nm buffer) of the aerodrome reference point or navigational aid on which the MSA is based.

The location of the Project relative to YGLA and YTNG Airports is shown in Figure 13 (Source: Google Earth). The orange circle around each airport represents a distance of 30 nm from the aerodrome reference point of each airport.

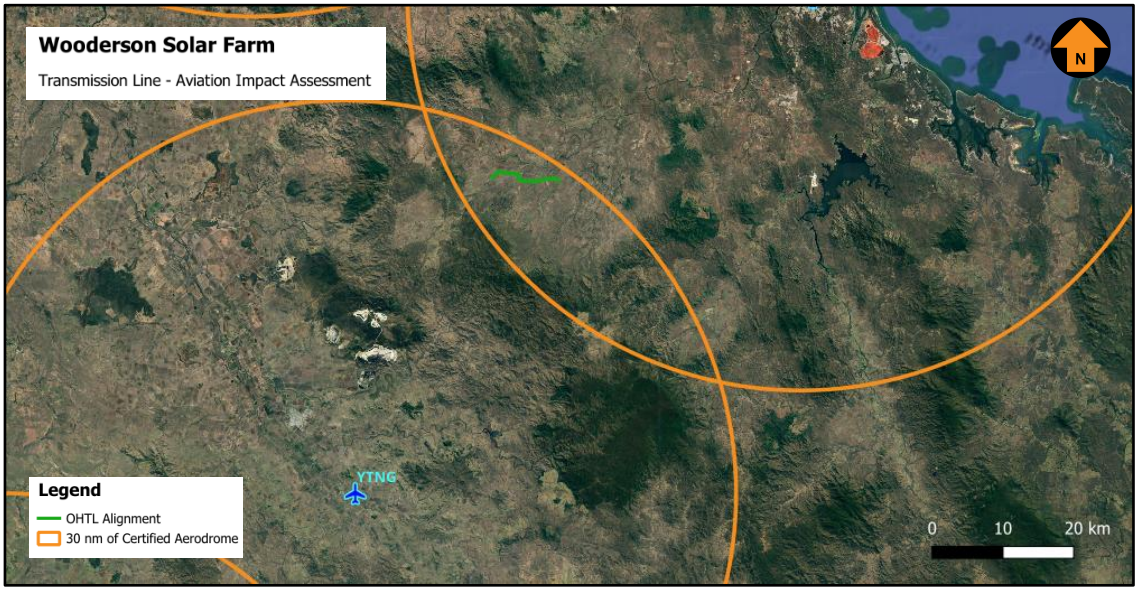


Figure 13 Location of Certified Airports in relation to the indicative OHTL alignment.

6.3. Gladstone Airport (YGLA)

YGLA is operated by the Gladstone Airport Corporation. Its published aerodrome elevation is 18 m AHD (59 ft AMSL) (Source: Airservices Australia, AIP, effective 19 March 2026).

The Aerodrome Reference Point (ARP) coordinates published in Airservices Australia's Designated Airspace Handbook (DAH) are Latitude 23°52'11" S and Longitude 151°13'22" E. (Source: AIP, effective 19 March 2026).

6.3.1 Obstacle Limitation Surface

Obstacle Limitation Surface (OLS) is established for each runway. For the Code 3 non-precision runway at YGLA, the maximum lateral extent of the OLS is up to 5.5 km for the conical surface and 15 km for the take-off and approach surfaces.

The closest monopole would be approximately 23 nm / 43 km from YGLA. The proposed Project would be outside YGLA's OLS.

6.3.2 Instrument procedures.

A check of the AIP via the Airservices Australia website showed that YGLA is served by non-precision instrument flight procedures (source: AIP, effective 19 March 2026).

Table 3 Identifies the aerodrome and procedure charts for YGLA, designed by Airservices Australia and GE Aerospace.

Table 3 Gladstone Airport (YGLA) aerodrome and procedure charts

Chart name	*Effective date*	*Design Organisation*
AERODROME CHART	13 June 2024 (Am 179)	Airservices Australia
GNSS ARRIVAL	25 March 2021 (Am 166)	Airservices Australia
RNP X RWY 10 (AR)	04 September 2025 (Am 184)	GE Aerospace
RNP RWY 10	21 March 2024 (Am 178)	Airservices Australia
RNP RWY 28	28 November 2024 (Am 181)	Airservices Australia
VOR RWY 28	28 November 2024 (Am 181)	Airservices Australia

6.3.3 PANS-OPS Surfaces

A detailed assessment of the PANS-OPS surfaces associated with the published instrument approach procedures was undertaken:

- MSA Surfaces
- IFR Circling Areas
- PANS-OPS Approach Procedure Surfaces.

MSA surfaces

The MSA is applicable for each instrument approach procedure at YGLA. Images of the MSA published for YGLA is shown in Figure 14 (source: AIP, effective 19 March 2026).

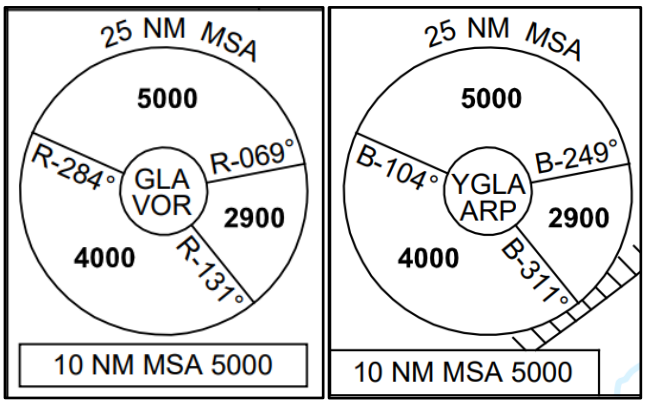


Figure 14 MSA at Gladstone Airport

The CASR Part 173 MOS requires a minimum obstacle clearance (MOC) of 984 ft to be applied above the highest terrain or obstacle within the applicable segment. A 5 nm buffer is applied to both the 10 nm and 25 nm MSA circles and to the higher edge of each sector within the MSA.

Obstacles within the 25 nm MSA of YGLA's ARP define the minimum height at which an IFR aircraft can fly when within 25 nm of the airport when not in visual flight conditions.

The proposed Project Area is entirely within the southwestern sector of the 25 nm MSA of YGLA. Figure 15 (Source: AECOM, Google Earth) shows YGLA's 25 nm MSA (25 nm MSA + 5 nm buffer area) and their related PANS-OPS surface heights (ft AMSL).

The western sector of 25 nm MSA is 1219 m AHD (4000 ft AMSL), and protection surface elevations are 919 m AHD (3016 ft AMSL).

The highest monopole (NP 45), which has the highest ground elevation of 101.5 m Australian Height Datum (AHD) across all monopoles in both jurisdictions (Planning Scheme and Development Scheme), is 151.5 m AHD (497 ft AMSL). It would be lower than YGLA's 25 nm MSA.

Therefore, the proposed Project would not impact YGLA's MSA surfaces.

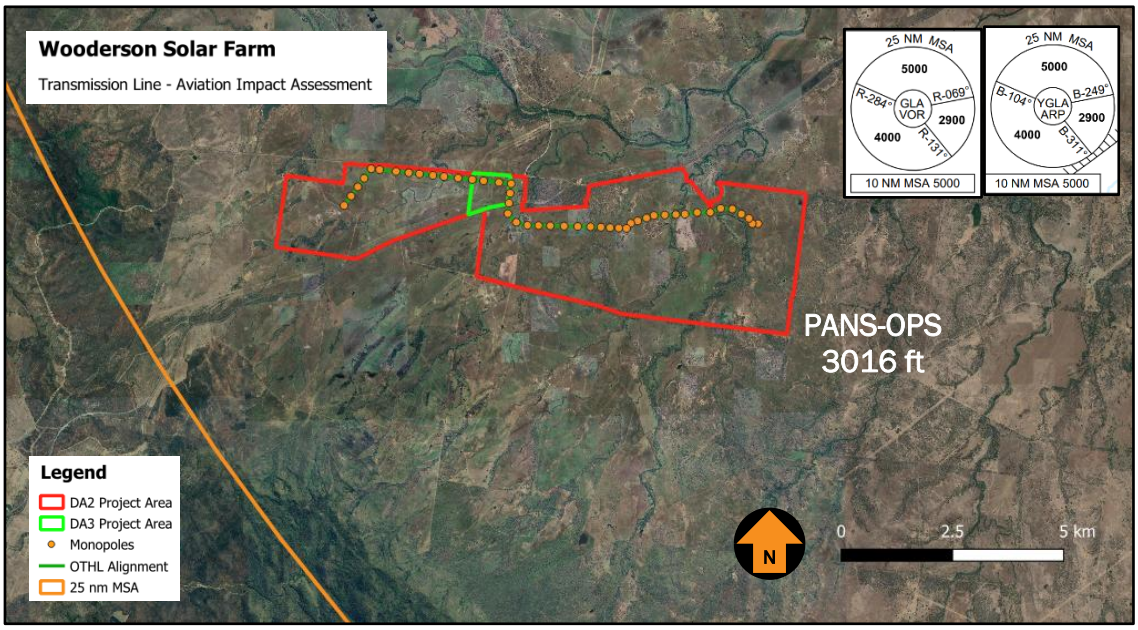


Figure 15 Gladstone Airport 25 nm MSA surfaces

IFR circling areas

A circling approach is an extension of an instrument approach to the specified circling minima (lowest altitude permitted without visual reference to the ground) at which point the pilot will visually manoeuvre the aircraft to align with the runway for landing. Typically, a circling approach is only conducted where there is no runway-aligned instrument procedure or if the runway used for the approach procedure is not suitable for landing.

Circling areas are established by the instrument flight procedure designer based on ICAO specifications related to the performance category of the designed aircraft. The circling area is determined by drawing an arc centred on the threshold of each usable runway and joining these arcs by tangents. Category D is the most demanding aircraft category in Gladstone Airport's instrument flight procedures.

The radii for each relevant category of aircraft are provided below:

- Category A – 1.68 nm / 3.11 km
- Category B – 2.66 nm / 4.93 km
- Category C – 4.20 nm / 7.78 km

The closest OHTL monopole (NP 1) would be approximately 23 nm / 43 km from the threshold of Runway 10 and, therefore, the proposed Project would not impact circling areas established for instrument flight procedures.

PANS-OPS Surfaces

A detailed assessment of the PANS-OPS surfaces associated with the published instrument approach procedures was undertaken.

The closest OHTL monopole (NP 1) would be approximately 23 nm / 43 km from YGLA. Therefore, the proposed Project would be outside or beneath the procedures' protection surfaces of YGLA.

6.4. Thangool Airport (YTNG)

YTNG is operated by the Banana Shire Council. Its published aerodrome elevation is 196 m AHD (644 ft AMSL) (Source: Airservices Australia, AIP, effective 19 March 2026).

The ARP coordinates published in Airservices Australia's DAH are Latitude 24°29'38" S and Longitude 150°34'34" E. (Source: AIP, effective 19 March 2026).

6.4.1 Obstacle Limitation Surface

For the Code 2 non-precision runway at YTNG, the maximum lateral extent of the OLS is up to 4.7 km for the conical surface and 2.5 km for the take-off and approach surfaces.

The closest OHTL monopole (NP 45) would be approximately 50 km (27 nm) from YTNG. The proposed Project would be outside YTNG's OLS.

6.4.2 Instrument procedures.

A check of the AIP via the Airservices Australia website showed that YTNG is served by non-precision instrument flight procedures (source: AIP, effective 19 March 2026).

Table 4 Identifies the aerodrome and procedure charts for YTNG, designed by Airservices Australia.

Table 4 Thangool Airport aerodrome and procedure charts

Chart name	*Effective date*
AERODROME CHART	30 November 2023 (Am 177)
RNP RWY 10	13 June 2024 (Am 179)
RNP RWY 28	13 June 2024 (Am 179)

6.4.3 PANS-OPS Surfaces

A detailed assessment of the PANS-OPS surfaces associated with the published instrument approach procedures was undertaken:

- MSA Surfaces
- IFR Circling Areas
- PANS-OPS Approach Procedure Surfaces.

MSA surfaces

An image of the MSA published for YTNG is shown in Figure 16 (source: Airservices Australia, AIP, effective 19 March 2026).

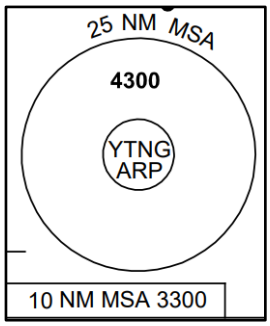


Figure 16 MSA at Thangool Airport

The proposed Project Area is within the 25 nm MSA of YTNG. The orange circle represents the 25 nm MSA of YTNG, Figure 17 (Source: AECOM, Google Earth).

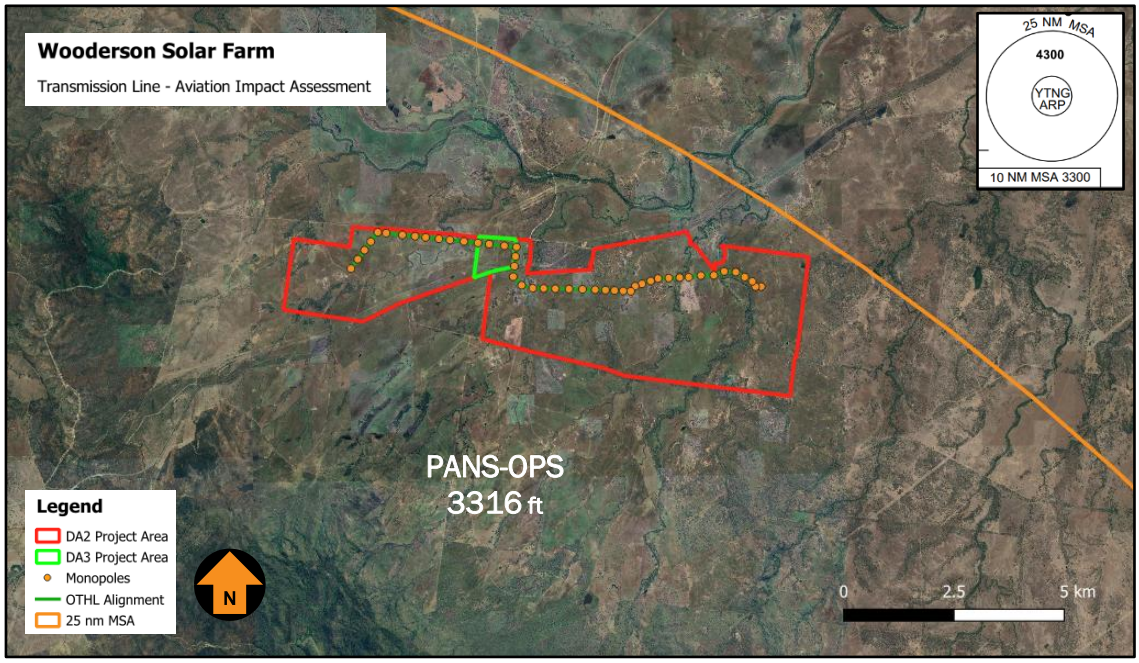


Figure 17 Thangool Airport 25 nm MSA PANS-OPS surfaces.

The minimum altitude of 25 nm MSA is 1311 m AHD (4300 ft AMSL), and the PANS-OPS elevation is 1011 m AHD (3316 ft AMSL).

The highest OHTL monopole (NP 45), which has the highest ground elevation of 101.5 m Australian Height Datum (AHD) across all monopoles in both jurisdictions (Planning Scheme and Development Scheme), is 151.5 m AHD (497 ft AMSL). It would be lower than YTNG's 25 nm MSA.

Therefore, the proposed Project would not impact YTNG's MSA surfaces.

IFR circling areas

Category C is the most demanding aircraft category in YTNG's instrument flight procedures. The radius of Category C is 4.2 nm / 7.78 km.

The closest OHTL monopole (NP 45) is approximately 50 km from the threshold of Runway 14. Therefore, the proposed Project would not impact circling areas established for instrument flight procedures.

PANS-OPS Surfaces

A detailed assessment of the PANS-OPS surfaces associated with the published instrument approach procedures was undertaken.

The closest OHTL monopole (NP 45) would be approximately 50 km from YTNG. Therefore, the proposed Project would be outside all procedures' protection surfaces of YTNG.

6.5. Air routes and LSALT

CASR Part 173 MOS requires that the published LSALT for a particular airspace grid or air route provides a minimum of 1000 ft clearance above the controlling (highest) obstacle within the relevant airspace grid or air route tolerances.

6.5.1 Grid LSALT

The Project Area is located within the Grid LSALT 4600 ft AMSL, which provides clearance above obstacles with heights up to 3600 ft AMSL



Figure 18 Grid LSALT in proximity to the Project.

Figure 18 shows the Grid LSALTs in proximity to the Project (source: ERC Low National, OzRunways, Google Earth).

The highest OHTL monopole (NP 45), which has the highest ground elevation of 101.5 m Australian Height Datum (AHD) across all monopoles in both jurisdictions (Planning Scheme and Development Scheme), is 151.5 m AHD (497 ft AMSL). It would be below LSALT's obstacle height limit. Therefore, the proposed Project would not impact the 4600 ft Grid LSALT.

6.5.2 Air Route LSALTs

To assess an air route's LSALT, a protection area 7 nm laterally on either side is used.

Few air routes are within 7 nm of the Project. The OHTL monopoles and Switchyard are beneath the air route protection surface.

The proposed Project would not impact any air route LSALT.

6.6. Airspace Protection

The Project Area is located in Class G airspace which is uncontrolled airspace, and is not located in any Restriction, Prohibited, and Danger areas.

The proposed Project would not impact controlled or designated airspace.

6.7. Aviation facilities

National Airports Safeguarding Framework (NASF) Guideline G (*Protection of Aviation Facilities - Communication, Navigation and Surveillance (CNS)*) and CASR Part 139 (*Aerodromes*) (F2025L00663 dated 12 June 2025) specify the area where building and structure development can potentially cause unacceptable interference to CNS facilities.

The proposed Project would be a sufficient distance from nearby certified airports and aviation facilities and would not have an impact.

6.8. ATC Surveillance Radar installations

Airservices Australia requires an assessment of the potential for OHTL monopoles to affect the radar line of sight. There is one permanent radar facility located close to the Project:

- Mt Alma RSR, which is located approximately 14 km north of the Project.

6.8.1 EUROCONTROL Guidelines

EUROCONTROL guidelines for assessing the potential impact on wind turbines on radar surveillance sensors stipulate the following assessment requirements:

Primary Surveillance Radar (PSR)

- Zone 1 0-500 m: Not permitted.
- Zone 2 500 m – 15 km: Detailed assessment.
- Zone 3: Further than 15 km but within maximum instrumented range and in radar line of sight: Simple assessment.
- Zone 4: Anywhere within maximum instrumented range but not in radar line of sight or outside the maximum instrumented range: No assessment.

Secondary Surveillance Radar (SSR)

- Zone 1: 0 - 500 m: Not permitted.
- Zone 2: 500 m - 16 km but within maximum instrumented range and in radar line of sight: Detailed assessment.
- Zone 4: Further than 16 km or not in radar line of sight: No assessment.

(Zone 3 is not established for secondary surveillance radar)

The Project would be within the line-of-sight range of Mt Alma RSR radar, and a detailed assessment would be required.

6.8.2 NASF Guideline G

For primary and secondary surveillance radar, there should be no temporary or permanent obstructions and should not infringe Zone A or Zone B. Any sharp discontinuity protruding into the area of interest such as single metal light towers, power pylons and city buildings, would impact on performance and should be avoided where possible.

Zone A: If development is located (as shown in Figure 19):

- Within 500 m of the antenna; and
- Above a horizontal plane located 4 m below the base of the antenna.

Zone B: If development is located:

- Within 4000 m of the antenna; and
- The development will cross the zone boundary (defined as an elevation angle of 0.5° measured from 8 m below the height of the radar antenna).

Area of interest: If development is located:

- Within 15 km of the antenna; and
- The height of the development will cross the zone boundary (defined as an angle of elevation of 0.25° measured from the height of the antenna).

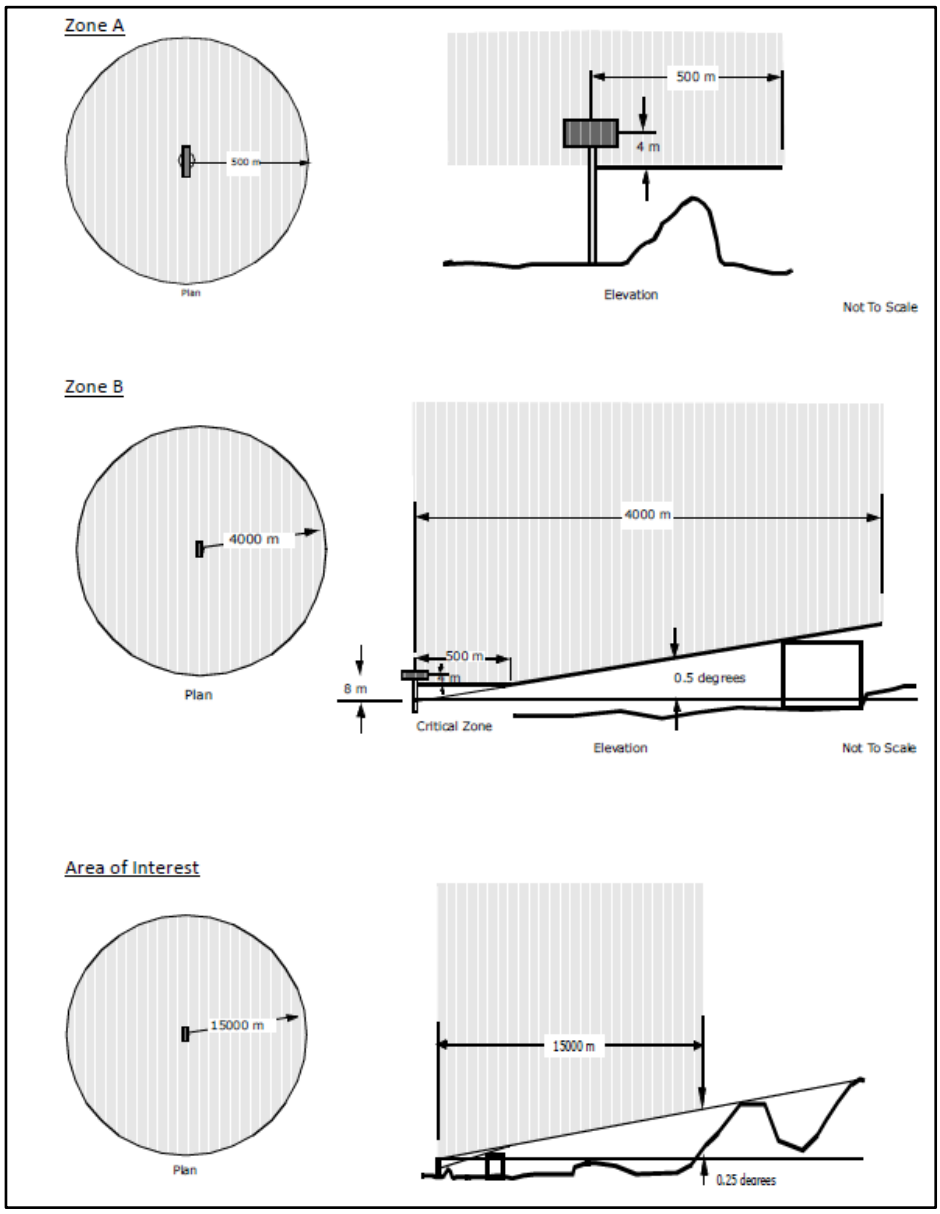


Figure 19 Zones of PSR and SSR

The nearest Mt Alma RSR is an En-route / SSR. The antenna elevation at Mt Alma is 776.235 m AHD (Source: Queensland Government Webpage).

The nearest OHTL monopole (NP 41) is approximately 14.1 km south of the radar facility. Its height would be 144.2 m AHD (473.2 ft AMSL), which is lower than the clearance.

The highest OHTL monopole (NP 45), which has the highest ground elevation of 101.5 m Australian Height Datum (AHD) across all monopoles in both jurisdictions (Planning Scheme and Development Scheme), is approximately 14.9 km north of the radar facility. Its height would be 151.5 m AHD (497 ft AMSL), lower than the clearance.

The Project would be below Mt Alma's line of sight. A summary of the analysis is provided in Table 5.

As Airservices Australia has all the detailed information on the Surveillance Radar, further consultation with Airservices Australia would be required to confirm that there is no impact.

Table 5 Summary of analysis of Radar clearance

OHTL Monopole ID	*Distance from Mt Alma RSR*	*Antenna Elevation (AHD)*	*Clearance Plane Elevation at development site* *(Distance x Tan 0.25 + TAR elevation (m AHD))*
NP 41	14.1 km	776.235 m	837.8
NP 45	14.9 km	776.235 m	841.2

6.9. Aviation Impact Statement Summary

Based on the Project layout provided, with regards to YGLA and YTNG, the Project:

- Would not impact the OLS surfaces
- Would not impact any PANS-OPS surfaces.
- Would not impact the Grid LSALT and Air Route LSALT
- Would be wholly contained within Class G airspace and would not impact controlled or designated airspace
- Would not impact the aviation navigation facilities of nearby certified airports.
- Would be within the line-of-sight range of Mt Alma RSR; further consultation with Airservices Australia is required to confirm that there is no impact.

7. UNCERTIFIED AERODROME

A search of various aviation datasets identified uncertified aerodromes near the Project. They are not subject to CASR Part 139 regulations.

Uncertified aerodromes can take the form of a fully serviceable aerodrome with sealed runways and comprehensive facilities, or they can be a paddock on private property used by the landholder or for aerial agricultural operations.

The aviation datasets used for the search are:

- AIP aeronautical charts effective 27 November 2025
- OzRunways - which sources its data from Airservices Australia (AIP). The aeronautical data provided by OzRunways is approved under CASA CASR Part 175.

As a guide, an area of interest within a 3 nm radius of an uncertified aerodrome is used to assess the potential impacts of proposed developments on aircraft operations at or within the vicinity of the uncertified aerodrome. The 3 nm radius is considered to be the area in which aircraft are making preparations to join the circuit prior to landing and within which to manoeuvre after take-off to depart from the aerodrome.

Figure 20 shows the location of nearby uncertified aerodrome relative to the Project and a nominal 3 nm buffer from the closer uncertified aerodrome (source: Google Earth).

Bellgree Aerodrome (YBLX) and one Unknown Aerodrome (1) are the closest in relation to the Project. The proposed Project would be outside the 3 nm of any uncertified aerodrome and no impact would be expected.

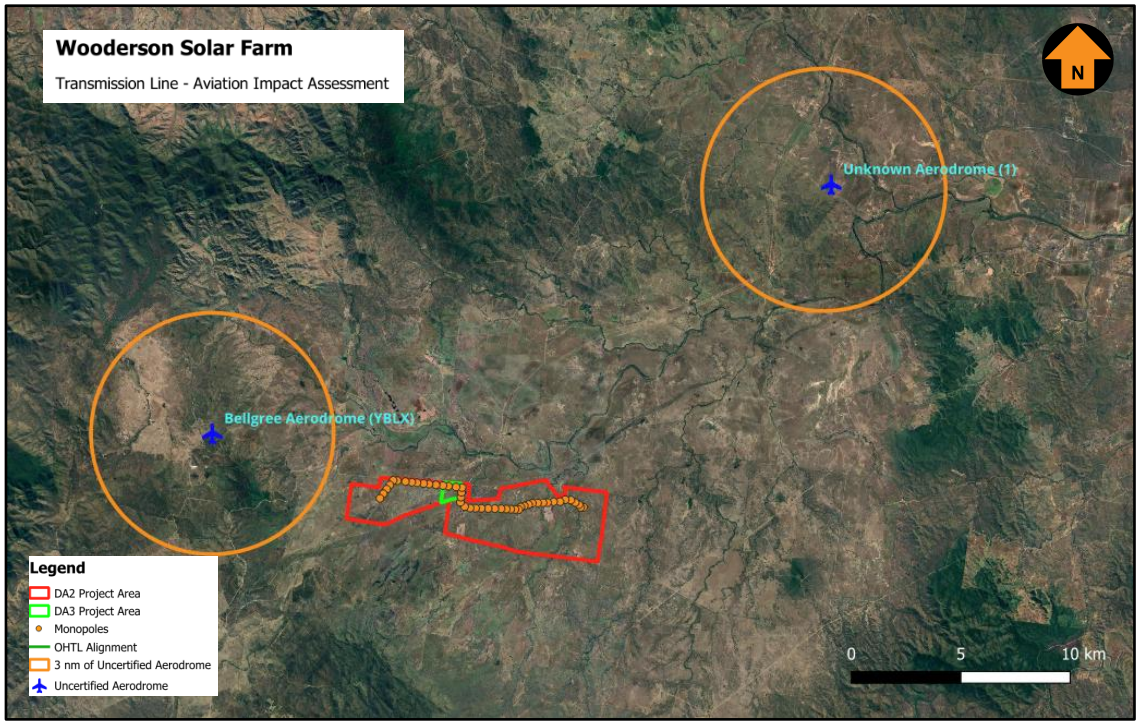


Figure 20 Uncertified Aerodrome in the vicinity of the Project.

8. HAZARD LIGHTING AND MARKING

8.1. AS 389 – 1 2021 Air Navigation Cables etc Part 1 Marking

This document specifies requirements for marking overhead cables and their support structure designed to provide a visual warning to pilots of aircraft, other than those aircraft involved in planned and legal low-level aviation operations. The relevant marking requirements for those operations can be found in AS 3891.2.

5.1.2 Thresholds for marking

This document defines the hierarchy of thresholds for marking of cables and their supporting structures, and a framework to conduct a risk assessment where applicable as follows:

a) Cables and supporting structures in proximity to a certified aerodrome (30 km).

b) Cables and supporting structures in proximity to any non-certified aerodrome or landing area.

c) Cable height in excess of 90 m.

d) Cable spans exceeding 1 500 m and height of 60 m.

e) All other cables

The Proposed Project would not be within 30 km of any certified aerodrome or any uncertified aerodrome. It is expected belong to all other cables, and:

5.8 All other cables and supporting structures

Where a cable or supporting structure is not required to be marked by any other requirement of this document, consideration should be given to conducting a risk assessment to determine if it poses a known threat to aviation safety.

For this purpose, the risk assessment considerations found in Clause 5.9 may be instructive.

For example, overhead cables and their supporting structures with long spans not otherwise required to be marked or spans crossing a river, waterway, valley or highway should be risk assessed for constituting a hazard to aircraft.

If a risk assessment identifies any significant risk posed to aviation safety, the following risk mitigation actions may also be considered:

a) Marking of the cable or structures in accordance with either Part 1 or Part 2 of this document, whichever would be the most effective marker in the particular circumstances.

b) Provision of appropriate mapping information on the location of the cable or structures to relevant aviation bodies or aircraft operators.

c) In consultation with affected parties, assessment of removal, redesign or reconfiguration of the cable or structure that may lower the threat posed to aviation safety in accordance with Clause 5.9.

5.9 Risk assessment framework

Where there is no requirement to mark a cable or structure as a consequence of the application of aviation regulations or this document, the person or entity considering installation of aircraft warning markers may conduct a risk assessment to determine the possible effectiveness of additional marking.

Such a risk assessment should be carried out as described in AS ISO 31000. The risk assessment should consider at least the following issues:

a) *Location – If the cable or its supporting structures are located in an area where aviation activities are likely to take place.*

b) *Visibility – If the cable or its supporting structures are in a position that would make identification by a pilot difficult.*

c) *Orientation – If cable or supporting structures alignment is in conflict with likely aviation activity.*

d) *Height – If the cable or its supporting structures are strung at a high level above ambient vegetation.*

e) *History – If the cable or its supporting structures have ever been stuck previously by an aircraft.*

f) *Consultation – If the relevant aerodrome operator, property owner, the cable owner and any relevant aviation company, pilot or their delegate have been consulted. The aerodrome owner, aviation business, pilot or their delegate should be satisfied with effectiveness of the proposed aircraft warning markers.*

Marking the proposed OHTL monopoles and powerlines will be determined after receiving consultation feedback from stakeholders. Further advice will be available after feedback is received, following consultation with the parties listed in Table 2.

9. CONCLUSIONS

The key conclusions of this AIA are summarised as follows:

9.1. Planning considerations

The Project, as proposed, satisfies the planning provisions of the Planning Scheme Section 6.2.2, and Development Scheme, and will not create incompatible intrusions or compromise the safety of existing airports and associated navigation and communication facilities.

9.2. Aviation Impact Statement

With regards to YGLA and YYNG, the Project:

- Would not impact any OLS surfaces.
- Would not impact any PANS-OPS surfaces.
- Would not impact any Grid LSALT and Air Route LSALT.
- Would be wholly contained within Class G airspace and would not impact controlled or designated airspace.
- Would not impact the aviation navigation facilities of nearby certified airports.
- Would be within the line-of-sight range of Mt Alma RSR, further consultation with Airservices Australia is required to confirm that there is no impact.

9.3. Aircraft operator characteristics

Aircraft will be required to navigate around the Project in low cloud conditions where aircraft need to fly at 500 ft AGL.

Aircraft flying at night in visual conditions are permitted to descend or climb to or from an appropriate minimum altitude when within 3 nm of the aerodrome.

The proposed OHTL would not be within 3 nm of any uncertified aerodrome.

10. RECOMMENDATIONS

Recommended actions resulting from the conduct of this assessment are provided below.

Notification and reporting

- Final details of OHTL monopole coordinates and elevation should be provided to Airservices Australia at least 2 weeks prior to construction commencing, by submitting the VOD form to Airservices Australia.
- Any obstacles 100 m or more AGL (including temporary construction equipment) should be reported to Airservices Australia NOTAM office until they are incorporated in published operational documents. With respect to crane operations during the construction of the Project, a notification to the NOTAM office may include, for example, the following details:
    - The planned operational timeframe and maximum height of the crane; and
    - Either the general area within which the crane will operate and/or the planned route with timelines that crane operations will follow.
- Once the final design is confirmed, details of the OHTL monopole should be provided to local and regional aircraft operators prior to construction (RFDS, Ambulance Service, Fire and Emergency Services, or any location operator that proponent identified) in order for them to consider the potential impact of the OHTL on their operations.
- To facilitate the flight planning of aerial application operators, details of the Project, including the 'as constructed' location and height information of OHTL monopoles, should be provided to landowners so that, when asked for hazard information on their property, the landowner may provide the aerial application pilot with all relevant information.
- Marking the proposed OHTL monopoles and powerlines will be determined after receiving consultation feedback from stakeholders, but prior to commencement of construction. Further advice will be available after feedback is received, following consultation with the parties listed in Table 2

Triggers for review

- Triggers for review of this risk assessment are provided for consideration:
    - Prior to construction to ensure the regulatory framework has not changed.
    - Following any significant changes to the context in which the assessment was prepared, including the regulatory framework.
    - Following any near miss, incident or accident associated with operations considered in this risk assessment.

ANNEXURES

1. References
2. Definitions
3. CASA regulatory requirements – Lighting and Marking of Obstacles
4. Proposed OHTL Monopole Design Details

ANNEXURE 1 – 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 19 March 2026
    - Designated Airspace Handbook, effective 27 November 2025
- Australian Government, Department of Infrastructure, Transport, Regional Development, Communications, Sports and the Arts:
    - National Airport Safeguarding Framework, Guideline F *Managing the Risk of Intrusions into the Protected Operational Airspace of Airports*
    - National Airport Safeguarding Framework, Guideline G *Protecting Aviation Facilities – Communication, Navigation and Surveillance (CNS).*
- Civil Aviation Safety Authority
    - Advisory Circular (AC) 91-02 V1.2, *Guidelines for aeroplanes with MTOW not exceeding 5700 kg – suitable places to take off and land*, dated November 2022.
    - AC 91-10 v1.6: *Operations in the vicinity of non-controlled aerodromes*, dated September 2025.
    - AC 139.E-01 v1.0—*Reporting of Tall Structures*, dated December 2021.
    - AC 139.E-05 v1.1 *Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome* (October 2022).
    - CASR Part 139 Manual of Standards (MOS)– *Aerodromes.*
    - CASR Part 173 MOS – *Standards Applicable to Instrument Flight Procedure Design.*
    - Civil Aviation Regulations 1988 (CAR).
    - Civil Aviation Safety Regulations 1998 (CASR).
- Queensland Government, Department of State Development, Infrastructure and Planning, *State Development Assessment Provisions (SDAP)* version 3.5 in December 2025.
- Gladstone Regional Planning Scheme (which commenced on 12 October 2015)
- International Civil Aviation Organization (ICAO):
    - Doc 8168 *Procedures for Air Navigation Services—Aircraft Operations* (PANS-OPS)
    - Annex 14—*Aerodromes*
- OzRunways, aeronautical navigation charts extracts, dated March 2026
- Standards Australia, ISO 31000:2018 *Risk management – Guidelines*

ANNEXURE 2 – DEFINITIONS

Term	*Definition*
Aerodrome	A defined area on land or water (including any buildings, installations, and equipment) intended to be used either wholly or in part for the arrival, departure, and surface movement of aircraft.
Aerodrome facilities	Physical things at an aerodrome which could include: a. the physical characteristics of any movement area including runways, taxiways, taxilanes, shoulders, aprons, primary and secondary parking positions, runway strips and taxiway strips; b. infrastructure, structures, equipment, earthing points, cables, lighting, signage, markings, visual approach slope indicators.
Aerodrome reference point (ARP)	The designated geographical location of an aerodrome.
Aeronautical Information Publication (AIP)	Details of regulations, procedures, and other information pertinent to the operation of aircraft
En-route Supplement Australia (ERSA)	Contains information vital for planning a flight and for the pilot in flight as well as pictorial presentations of all licensed aerodromes
Civil Aviation Safety Regulations 1998 (CASR)	Contain the mandatory requirements in relation to airworthiness, operational, licensing, enforcement.
Instrument meteorological conditions (IMC)	Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minimum specified for visual meteorological conditions.
Manual of Standards (MOS)	The means CASA uses in meeting its responsibilities under the Act for promulgating aviation safety standards
National Airports Safeguarding Framework (NASF)	The Framework has the objective of developing a consistent and effective national framework to safeguard both airports and communities from inappropriate on and off airport developments.
Obstacles	All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight.
Project Area	The Project infrastructure will be situated within the bounds of the 'Project Area' which comprises of freehold allotments, Dawson Highway Road Reserve, Duck

Term	*Definition*
	Holes Road Reserve and two unnamed road reserves. The Project Area has a total area of 2675.91 ha.
Project Disturbance Footprint	The Project Disturbance Footprint is estimated to be 211.05 ha, is defined as including permanent and temporary components for construction: Permanent components include the following: • Approximately 11 km of 275 kV OHTL, contained within a 60 m wide easement. • Approximately 45 monopoles, contained within the 60 m wide easement. • New switchyard (either Option A or Option B). • Access tracks located within the 60 m wide easement that will be used for ongoing maintenance. • Access tracks (where located outside the easement) that will be used for ongoing maintenance. • Upgrades to Duck Holes Road. • Vegetation clearing. • Security fencing. Temporary components include the following: • Option A and Option B switchyard construction compound area. • Option A and Option B switchyard temporary laydown area. • Vegetation clearing. The Project Disturbance Footprint has included a buffer around the proposed infrastructure to allow for design refinement during detailed design.
Runway	A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

ANNEXURE 3 – CASA REGULATORY REQUIREMENTS – LIGHTING AND MARKING

In considering the need for aviation hazard lighting and marking, the applicable regulatory context was determined.

The Civil Aviation Safety Authority (CASA) regulates aviation activities in Australia. Applicable requirements include the Civil Aviation Regulations 1988 (CAR), Civil Aviation Safety Regulations 1998 (CASR) and associated Manual of Standards (MOS) and other guidance material. Relevant provisions are outlined in further detail in the following section.

Civil Aviation Safety Regulations 1998, Part 139—Aerodromes

CASR 139.165 requires the owner of a structure (or proponents of a structure) that will be 100 m or more above ground level to inform CASA. This must be given in written notice and contain information on the proposal, the height and location(s) of the object(s) and the proposed timeframe for construction. This is to allow CASA to assess the effect of the structure on aircraft operations and determine whether the structure will be hazardous to aircraft operations.

Advisory Circular 139.E-01 v1.0—Reporting of Tall Structures

In Advisory Circular (AC) 139.E-01 v1.0—Reporting of Tall Structures, CASA provides guidance to those authorities and persons involved in the planning, approval, erection, extension or dismantling of tall structures so that they may understand the vital nature of the information they provide.

Airservices Australia has been assigned the task of maintaining a database of tall structures. RAAF and Airservices Australia require information on structures which are:

a) 30 metres or more above ground level—within 30 kilometres of an aerodrome; or

b) 45 metres or more above ground level elsewhere for the RAAF, or

c) 30 m or more above ground level elsewhere for Airservices Australia.

The purpose of notifying Airservices Australia of these structures is to enable their details to be provided in aeronautical information databases and maps/charts etc used by pilots, so that the obstacles can be avoided.

Overhead transmission lines

Overhead transmission lines (OHTL) and/or supporting towers/poles that are located where they could adversely affect aerial application operations should be identified in consultation with local aerial application operators and marked in accordance with Part 139 MOS 2019 Chapter 8 Division 10 section 8.110 (7) and section 8.110 (8):

> *8.110 Marking of hazardous obstacles*
>
> *(7) Hazardous obstacles in the form of wires or cables must be marked using 3-dimensional coloured objects attached to the wire or cables. Note: Spheres and pyramids are examples of 3-dimensional objects.*
>
> *(8) The objects mentioned in subsection (7) must:*
> *(a) be approximately equivalent in size to a cube with 600 mm sides; and*
> *(b) be spaced 30 m apart along the length of the wire or cable.*

ANNEXURE 4 – PROPOSED OHTL MONOPOLE DESIGN DETAILS

The monopole design details are indicative and subject to confirmation during detailed design.

Monopole ID	*X Easting (m)*	*Y Northing (m)*	*Terrain Elevation (m AHD)*	*Monopole height AGL (m)*	*Max Monopole Elevation (m AHD)*	*Max Monopole Elevation (ft AMSL)*
NP 1	284828	7333158	68.512	50	118.5	388.8
NP 2	284698	7333158	72.577	50	122.6	402.2
NP 3	284625	7333279	70.778	50	120.8	396.3
NP 4	284454	7333374	65.094	50	115.1	377.6
NP 5	284251	7333488	63.917	50	113.9	373.7
NP 6	283988	7333503	63.766	50	113.8	373.2
NP 7	283753	7333415	64.397	50	114.4	375.3
NP 8	283458	7333411	65.833	50	115.8	380.0
NP 9	283183	7333372	66.963	50	117.0	383.7
NP 10	282979	7333364	65.317	50	115.3	378.3
NP 11	282730	7333354	69.913	50	119.9	393.4
NP 12	282488	7333344	73.909	50	123.9	406.5
NP 13	282320	7333287	75.14	50	125.1	410.6
NP 14	282121	7333220	70.325	50	120.3	394.8
NP 15	281966	7333168	67.186	50	117.2	384.5
NP 16	281868	7333052	65.439	50	115.4	378.7
NP 17	281695	7333060	63.435	50	113.4	372.2
NP 18	281499	7333070	66.047	50	116.0	380.7
NP 19	281293	7333080	71.746	50	121.7	399.4
NP 20	281059	7333089	74.092	50	124.1	407.1
NP 21	280772	7333096	67.904	50	117.9	386.8
NP 22	280466	7333103	79.317	50	129.3	424.3
NP 23	280155	7333111	75.836	50	125.8	412.8
NP 24	279892	7333117	82.421	50	132.4	434.5
NP 25	279642	7333123	72.132	50	122.1	400.7
NP 26	279391	7333189	69.33	50	119.3	391.5

Monopole ID	X Easting (m)	Y Northing (m)	Terrain Elevation (m AHD)	Monopole height AGL (m)	Max Monopole Elevation (m AHD)	Max Monopole Elevation (ft AMSL)
NP 27	279199	7333384	72.331	50	122.3	401.3
NP 28	279226	7333620	71.318	50	121.3	398.0
NP 29	279250	7333844	70.437	50	120.4	395.1
NP 30	279274	7334057	67.911	50	117.9	386.8
NP 31	278999	7334086	73.525	50	123.5	405.3
NP 32	278653	7334123	78.887	50	128.9	422.9
NP 33	278400	7334150	75.479	50	125.5	411.7
NP 34	278081	7334184	81.724	50	131.7	432.2
NP 35	277763	7334218	76.041	50	126.0	413.5
NP 36	277513	7334245	78.648	50	128.6	422.1
NP 37	277212	7334277	82.258	50	132.3	433.9
NP 38	276971	7334303	78.503	50	128.5	421.6
NP 39	276685	7334333	79.557	50	129.6	425.1
NP 40	276315	7334373	88.612	50	138.6	454.8
NP 41	276125	7334393	94.233	50	144.2	473.2
NP 42	275967	7334179	92.835	50	142.8	468.6
NP 43	275825	7333986	95.512	50	145.5	477.4
NP 44	275673	7333780	93.27	50	143.3	470.0
NP 45	275516	7333568	101.481	50	151.5	497.0

AVIATION PROJECTS

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Appendix I

Ecological Assessment Report

Overhead Transmission Line and Switchyard for the Wooderson Solar Farm

Ecological Assessment Report

Final

March 2026

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Overhead Transmission Line and Switchyard for the Wooderson Solar Farm

Ecological Assessment Report

Final

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
Wooderson Solar Development Co Pty Ltd

Project Director: Christopher Lee
Project Manager: Madi Jones
Technical Manager: Gillian Turner
Report No.: 23412 / R22
Date: March 2026

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

Acknowledgement of Country



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Document Status

Rev No.	Reviewer Name	Date	Approved for Issue Name	Date
V1	Gillian Turner	24/11/2025	Chris Lee	28/11/2025
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V3	Madi Jones	24/03/2026	Gillian Turner	25/03/2026

Executive Summary

Wooderson Solar Development Co Pty Ltd (WSD or Proponent) is proposing to develop the Wooderson Solar Farm Project approximately 40 kilometres (km) southwest of Gladstone, Queensland. To connect the Wooderson Solar Farm to the National Energy Market (NEM), a 9.4 km Overhead Transmission Line (OHTL) and a switchyard (the Project) is required. Umwelt was commissioned by WSD to undertake an ecological assessment within the 'Project Area'. The Project Area is defined as the area within which all Project infrastructure and associated vehicular access will be located, comprising freehold allotments, the Dawson Highway road reserve, and two unnamed road reserves, and covering a total area of 2,675.9 hectares (ha).

This report presents the findings of desktop assessments and field surveys, evaluating the presence of and potential Project impacts to Matters of State Environmental Significance (MSES). While the primary focus is on MSES, Matters of National Environmental Significance (MNES) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) are also documented to provide broader Project context. The Wooderson Solar Farm has been assessed under the EPBC Act and determined to be a **not controlled action** (published on 14/02/2026), therefore, no further assessment or offsets are required under the EPBC Act.

The Project Area is divided into 2 Development Applications (DA)s (see **Figure ES 1**). The majority of the OHTL and switchyard falls within the DA2 Area, which will be assessed by the Gladstone Regional Council. A separate DA is required for the section of the OHTL within the Callide Infrastructure Corridor State Development Area (CICSDA) (DA3 Area), which will be assessed by the Office of the Coordinator-General. This report assesses the two areas concurrently, distinguishing between these areas where appropriate. Together, both areas are referred to as the Project Area.

The Project involves the development, operation and maintenance of an OHTL and an associated switchyard. The combined spatial extent of all permanent and temporary Project infrastructure within the Project Area is referred to as the 'Project Disturbance Footprint'. This footprint represents the maximum area within which Project-related work may occur.

The Wooderson Solar Farm component of the broader Project will be subject to a separate DA (DA1) and is therefore excluded from this ecological assessment. As a result, a subset of the Project Disturbance Footprint has been defined for the purposes of assessing ecological impacts associated only with the OHTL and switchyard.

This subset, which excludes all areas assessable under DA1, is referred to as the 'Vegetation Clearance Footprint'. The Vegetation Clearance Footprint covers a total area of 153.7 ha and forms the basis of this ecological assessment (**Figure ES 1**).

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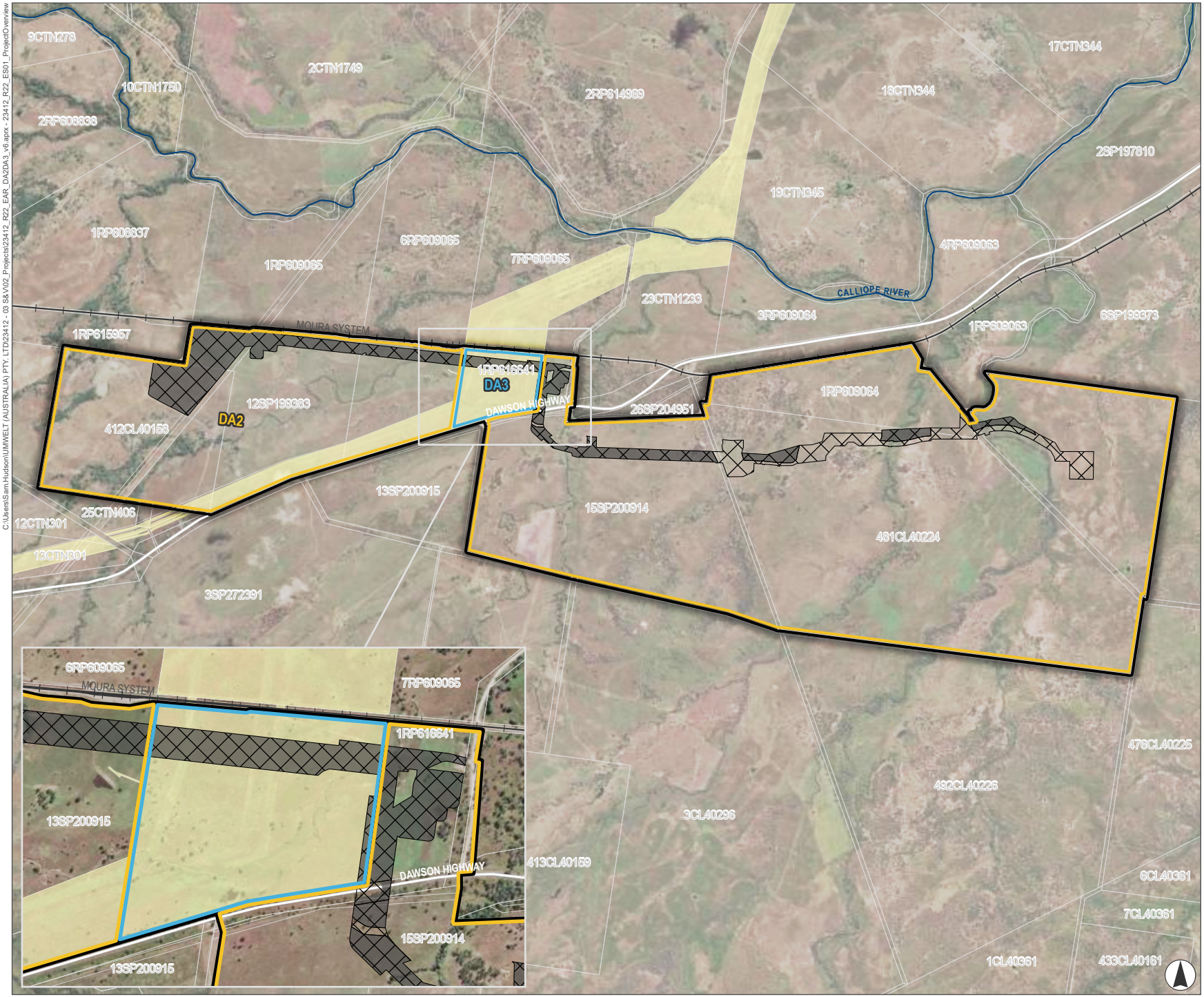
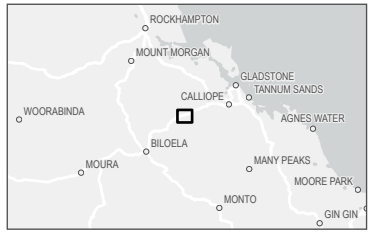


FIGURE ES 1

Project Area, Disturbance Footprint and Vegetation Clearance Footprint

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Project Disturbance Footprint
- Callide Infrastructure Corridor SDA
- Railways
- Major Watercourse
- Major Roads
- QLD Cadastre



0 1 2

Kilometres

Scale 1:60,000 at A4
GDA1994 Zone 56

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Image Source: ESRI Basemap (2025) | **Data Source:** QLD DoR (2025)

Umwelt identified and evaluated the terrestrial ecological values within the Project Area through a desktop assessment and four field survey events since 2021. The desktop assessment consolidated information from available environmental databases and included a review of historical aerial photography. Ecological field surveys were undertaken by Umwelt in accordance with relevant State and Federal ecological survey guidelines.

Key findings across the Project Area:

- A total of 243 flora species were identified during the field surveys. No threatened flora species were identified during the field survey.
- A total of 92 fauna species were identified during the field surveys, comprising of 58 birds, 26 mammals, four reptiles and four amphibian species (including introduced species).
- The overall Project Area is predominantly mapped as Category X vegetation but also includes 18.7 ha of Category C vegetation and 256.6 ha of Category R vegetation.
- Ground-truthed Regional Ecosystem (RE) mapping within the Project Area identified a total of 243.3 ha of remnant and 76.6 ha of regrowth REs.

Key findings relevant to DA2:

- One threatened species listed under the *Nature Conservation Act 1992* (NC Act) and EPBC Act was recorded in the DA2 Area, the squatter pigeon (southern) (*Geophaps scripta scripta*).
- The Vegetation Clearance Footprint within the DA2 Area contains no Category B or C vegetation, but includes:
    - **18.2 ha of Category R vegetation**.
    - **124.1 ha of Category X vegetation.**
- No State-mapped prescribed REs containing remnant vegetation (MSES Regulated Vegetation) mapped within the DA2 Area or Vegetation Clearance Footprint.
- Ground-truthed REs identified within DA2 Area were:
    - one 'endangered' (RE 11.12.17)
    - three 'of concern' (REs 11.3.4a, 11.3.4, 11.3.2 and 11.12.3)
    - four 'least concern' (REs 11.12.1, 11.3.25d and 11.3.25b).
- Seven fauna habitat types were identified within the DA2 Area.
- Two MSES were identified within the DA2 Vegetation Clearance Footprint: Waterways for Waterway Barrier Works and Protected Wildlife Habitat for 6 conservation significant fauna species (refer to **Section 4.6**). These MSES are not prescribed environmental matters under State code 16 and are therefore exempt from Significant Residual Impact (SRI) assessment for this Project. Habitat for conservation significant species occur as non-remnant areas or as small fragments that are already disturbed by historical clearing, exotic weeds and cattle grazing.

Key findings relevant to DA3:

- The Vegetation Clearance Footprint within the DA3 Area contains no Category B or C vegetation, but includes:
    - **0.5 ha of Category R vegetation.**

- **10.8 ha of Category X vegetation.**

- There is no State-mapped prescribed REs containing remnant vegetation (MSES Regulated Vegetation) mapped within the Project Area or Vegetation Clearance Footprint for DA3.
- Ground-truthed RE mapping identified no remnant or regrowth REs within the DA3 Area or Vegetation Clearance Footprint, verifying the entire DA3 section as non-remnant.
- Two fauna habitat types were identified within the DA3 Area.
- Two MSES were identified within the DA3 Vegetation Clearance Footprint: Waterways for Waterway Barrier Works and Protected Wildlife Habitat for 3 conservation significant fauna species (refer to **Section 4.6**). These MSES are not prescribed environmental matters under State Code 16 and are therefore exempt from SRI assessment for this Project. Habitat for conservation significant species occur as non-remnant areas or as small fragments that are already disturbed by historical clearing, exotic weeds and cattle grazing.

Based on desktop assessment and field surveys, a detailed likelihood of occurrence assessment was completed for NC Act and EPBC Act listed threatened flora and fauna species. Based on the likelihood of occurrence assessment, a total of 11 threatened and special least concern (migratory and non-migratory) fauna species are considered to have a 'Known', 'High' or 'Moderate' likelihood of occurrence. No threatened flora species are considered to have a 'Known', 'High' or 'Moderate' likelihood of occurrence.

Overall, the Vegetation Clearance Footprint generally consists of pasture with some small fragments of vegetation of poor condition due to historical clearing, grazing and weed infestations. Most remnant and regrowth vegetation is concentrated along creek lines, which likely provide limited movement opportunities and some ecological connectivity within an otherwise fragmented landscape.

With the consideration of relevant ecological values, an ecological assessment was undertaken which identified several sources of potential impact, with the greatest risk to vegetation and flora and fauna occurring during the construction phase due to habitat loss (refer to **Table ES 1**). Other potential impacts include loss of fauna movement opportunities, exacerbation of biosecurity risks and disturbance from indirect impacts such as noise, light and dust.

To mitigate potential impacts, the Project has optimised the site layout to consider ecological constraints, particularly in riparian areas which are natural corridors for fauna movement and refuge. As the Project progresses into detailed design and construction, ecological constraints will continue to be considered with any options to avoid or reduce impacts investigated. In addition, pre-clearance surveys will be undertaken within appropriate habitat for the threatened species 'Known' and likely to occur within the Vegetation Clearance Footprint. If additional threatened species are located during pre-clearance surveys, efforts will be made to avoid or minimise impacts through the micro-siting process.

Where avoidance is not possible, the Project will be governed by of the following management plans:

- Construction Environmental Management Plan (CEMP)
- An Operational Environmental Management Plan (OEMP)
- A Vegetation and Fauna Management Plan (VFMP)
- An Erosion and Sediment Control Plan (ESCP)
- A Site Stormwater Quality Management Plan (SQMP)

- A Decommissioning Management Plan (DMP)
- A Progressive Rehabilitation Plan (PRP)
- A Bushfire Management Plan (BMP)
- any species-specific High-risk Species Management Plans (SMP)s.

These will outline mitigation measures and associated procedures to limit and reduce impacts on vegetation, flora and fauna.

Table ES 1 Summary of MSES Likelihood of Occurrence ('Moderate' to 'High' and 'Known') and Maximum Direct Impact

Ecological Value	Likelihood of Occurrence	Habitat Utilisation	Area within the Project Area (ha)	Maximum Direct Impact Area (ha) within the Vegetation Clearance Footprint		Figure Reference
				DA2 Area	DA3 Area	
MSES Protected Wildlife Habitat (Threatened and Special Least Concern (Non-migratory) Fauna						
koala *Phascolarctos cinereus*	Moderate	Climate refugia	65.0	1.4	-	**Figure E.5**
		Breeding and foraging	247.0	1.3	-	
		Shelter	7.8	-	-	
		Dispersal (with trees)	642.4	23.6	0.1	
		Dispersal (without trees)	1,707.5	115.8	11.2	
short-beaked echidna *Tachyglossus aculeatus*	High	Breeding, dispersal and foraging	2,669.8	142.1	11.3	**Figure E.1**
southern greater glider *Petauroides volans*	Moderate	Likely or current denning habitat	109.0	-	-	**Figure E.4**
		Potential or future denning habitat	61.7	-	-	
		Foraging and dispersal	76.6	1.2	-	
yakka skink *Egernia rugosa*	Moderate	Suitable habitat	15.6	-	-	**Figure E.6**
squatter pigeon (southern) *Geophaps scripta scripta*	Known	Foraging and breeding	293.1	2.7	-	**Figure E.2**
		Foraging	26.7	-	-	
		Dispersal	835.6	33.2	-	
		Potential water source	6.1	0.2	-	
white-throated needletail *Hirundapus caudacutus*	Moderate	Foraging and roosting	181.9	1.6	-	**Figure E.3**
		Dispersal and marginal foraging	2,494.0	140.8	11.3	

Ecological Value	Likelihood of Occurrence	Habitat Utilisation	Area within the Project Area (ha)	Maximum Direct Impact Area (ha) within the Vegetation Clearance Footprint		Figure Reference
				DA2 Area	DA3 Area	
Latham's snipe *Gallinago hardwickii*	Moderate	Foraging and roosting	6.1	0.2	-	**Figure E.7**
MSES Regulated Vegetation						
Remnant vegetation within the defined distance of a watercourse	N/A	N/A	-	-	-	**Figure 4.6**
'Endangered' or 'of concern' prescribed REs	N/A	N/A	-	-	-	**Figure 4.7**
Essential habitat	N/A	N/A	-	-	-	**Figure 4.5**
Connectivity areas	N/A	N/A	-	-	-	**Figure 4.6**
MSES Waterway Barrier Works						
Waterways providing for fish passage	N/A	Low impact waterways	✓	✓	-	**Figure 4.4**
		Moderate impact waterways	✓	✓	✓	
		High impact waterways	✓	✓	-	
		Major impact waterways	✓	✓	-	
MSES Wetlands and Watercourses						
Wetland in a Wetland Protection Area	N/A	N/A	-	-	-	**Figure 4.3**
Other Ecological Values						
fork-tailed swift *Apus pacificus*	Moderate	Foraging and Dispersal	2,675.9	142.4	11.3	**Figure E.8**
oriental cuckoo *Cuculus optatus*	Moderate	Foraging and Dispersal	170.3	1.4	-	**Figure E.9**

Ecological Value	Likelihood of Occurrence	Habitat Utilisation	Area within the Project Area (ha)	Maximum Direct Impact Area (ha) within the Vegetation Clearance Footprint		Figure Reference
				DA2 Area	DA3 Area	
eastern osprey *Pandion haliaetus*	Moderate	Foraging and Dispersal	75.1	1.6	-	**Figure E.10**
grey-headed flying-fox *Pteropus poliocephalus*	Moderate	Foraging	182.7	0.0[1]	-	**Figure E.11**

[1] Rounded down to 0.0 ha

Abbreviations

Abbreviations	Descriptions
AEC	Animal Ethics Committee
AHD	Australian Height Datum
ALA	Atlas of Living Australia
APZ	Asset Protection Zone/s
AS	Australian Standard
Biosecurity Act	*Biosecurity Act 2014*
BMP	Bushfire Management Plan
BPA	Biodiversity Planning Assessment
CEMP	Construction Environmental Management Plan
Council	The Gladstone Regional Council
CICSDA	Callide Infrastructure Corridor State Development Area
CSG	Coal seam gas
DA	Development application
DAF	Department of Agriculture and Fisheries
DBH	Diameter Breast Height
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DESTI	Department of Environment, Tourism, Science and Innovation
DEWHA	Department of the Environment, Water, Heritage and the Arts
DMP	Decommissioning Management Plan
DNRMMRRD	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Procurement and Construction
EO Act	*Environmental Offsets Act 1994*
EO Regulation	Environmental Offsets Regulation 2014
ESCP	Erosion and Sediment Control Plan
Fisheries Act	*The Fisheries Act 1994*
GBO	General biosecurity obligation
GBR	Great Barrier Reef
GBRMP	Great Barrier Reef Marine Park
GBRWHA	Great Barrier Reef World Heritage Area
GDE	Groundwater Dependant Ecosystem/s
GES	General ecological significance
GTRE	Ground-truthed Regional Ecosystem
ha	hectares
HES	High ecological significance

Abbreviations	Descriptions
HVR	High-value regrowth
km	kilometres
KoRV	Chlamydia and Koala Retrovirus
kV	kilovolt
LGA	Local government area
LIKTs	locally important koala trees
m	metres
mm	millimetres
MNES	Matters of National Environmental Significance
MNES Guidelines	Significant Impact Guidelines 1.1 – MNES
MSES	Matters of State Environmental Significance
MW	Megawatt/s
NC Act	*Nature Conservation Act 1992*
NC Act Animals Regulation	Nature Conservation (Animals) Regulation 2020
NC Act Plants Regulation	Nature Conservation (Plants) Regulation 2020
NHP	National Heritage Place
OHTL	Overhead Transmission Line
O&M	Operations and Maintenance
PCS	Power Conversion Systems
Planning Act	Planning Act 2016
PMAV	Property Map of Assessable Vegetation
PMST	Protected Matters Search Tool
Poplar Box TEC	Poplar Box Grassy Woodland on Alluvial Plains Threatened Ecological Community
PPL	Pipeline Petroleum Lease
PRP	Progressive Rehabilitation Plan
PV	Photovoltaics
PVMP	Property Vegetation Management Plan
QEJP	Queensland Energy and Jobs Plan
Reef 2050 Plan	Reef 2050 Long-Term Sustainability Plan
2050 Reef WQIP	Reef 2050 Water Quality Improvement Plan 2017–2022
REDD	Regional Ecosystem Description Database
RE/s	Regional Ecosystem/s
SDA	State Development Area
SDS	Safety Data Sheet
SMP	High-risk Species Management Plan
SQMP	Stormwater Management Plan
spp.	Species
SPRAT	Species Profile and Threats Database

Abbreviations	Descriptions
TEC	Threatened Ecological Community
Umwelt	Umwelt (Australia) Pty Ltd
VFMP	Vegetation and Fauna Management Plan
VM Act	*Vegetation Management Act 1999*
WoNs	Weeds of National Environmental Significance
WPA	Wetland protection areas

Definitions

Term	Definition
DA1	The Wooderson Solar Farm components, excluding the OHTL and switchyard in this ecological assessment, subject to a separate Development Application (DA1).
DA2 Area	Transmission corridor and switchyard within the Gladstone Regional Council Local Government Area to be assessed by Gladstone Regional Council with referral to concurrence and advice agencies.
DA3 Area	Transmission corridor within the Callide Infrastructure Corridor State Development Area to be assessed by the Office of the Coordinator General.
Habitat	A species preferred environment required to sustain a viable population. Suitable habitat may include breeding, foraging and shelter resources for fauna or preferred environmental conditions of flora.
Lacustrine wetland	Large, open, water-dominated systems (for example, lakes) larger than 8 ha.
Matters of National Environmental Significance	Matters of National Environmental Significance (MNES) includes nine protected matters: • world heritage areas • national heritage places • wetlands of international importance (listed under the Ramsar Convention) • listed threatened species and ecological communities • listed migratory species (protected under international agreements) • Commonwealth marine areas • Great Barrier Reef Marine Park • nuclear actions (including uranium mines) • water resources (that relate to unconventional gas development and large coal mining development).
Migratory species	Migratory species established under section 209 of the *Environment Protection and Biodiversity Conservation Act 1999* comprising: • migratory species which are native to Australia and are included in the appendices to the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals Appendices I and II) • migratory species included in annexes established under the Japan-Australia Migratory Bird Agreement (JAMBA) and the China-Australia Migratory Bird Agreement (CAMBA) • native, migratory species identified in a list established under, or an instrument made under, an international agreement approved by the Minister, such as the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).
Regional Ecosystem	A vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil (Neldner et al. 2024) Regional Ecosystems are described in the Regional Ecosystem Description Database, produced by the Queensland Herbarium.
Regrowth vegetation	Non-remnant vegetation that has a significant woody component but fails to meet the structural and/or floristic characteristics of remnant vegetation. Includes vegetation that has regrown after clearing or been heavily thinned or logged (Neldner et al. 2024).

Term	Definition
Remnant vegetation	A regional ecosystem that has not undergone recent clearing. It is defined under the Queensland *Vegetation Management Act 1999* as: forming the predominant canopy of the vegetation— i. covering more than 50% of the undisturbed predominant canopy, and ii. averaging more than 70% of the vegetation's undisturbed height, and iii. composed of species characteristic of the vegetation's undisturbed predominant canopy.
Project Area	The Project infrastructure and vehicular access will be situated within the bounds of the 'Project Area' which comprises of freehold allotments, Dawson Highway Road Reserve and two unnamed road reserves. The Project Area has a total area of 2,675.9 hectares.
Project Disturbance Footprint	The Project Disturbance Footprint (estimated to be 211.1 ha) is defined as including permanent and temporary components for construction: • Permanent components include the following: • Approximately 11 km of 275 kV OHTL, contained within a 60 m wide easement. • Approximately 45 monopoles, contained within the 60 m wide easement. • New switchyard (either Option A or Option B). • Access tracks located within the 60 m wide easement that will be used for ongoing maintenance. • Access tracks (where located outside the easement) that will be used for ongoing maintenance. • Vegetation clearing. • Security fencing. Temporary components include the following: • Option A and Option B switchyard construction compound area. • Option A and Option B switchyard temporary laydown area. • Vegetation clearing. The Project Disturbance Footprint includes a buffer around the proposed infrastructure to allow for design refinement during detailed design.
The Project	The proposed OHTL and switchyard associated with the Wooderson Solar Farm, located 40 kilometres south-west of Gladstone in Central Queensland.
Threatened Ecological Community	Three categories exist for listing threatened ecological communities (TECs) under the *Environment Protection and Biodiversity Conservation Act 1999*: • critically endangered • endangered • vulnerable.
Threatened species	Threatened fauna and flora may be listed under Section 178 of the *Environment Protection and Biodiversity Conservation Act 1999* in any one of the following categories: • extinct • extinct in the wild • critically endangered • endangered • vulnerable.

Term	Definition
Vegetation Clearance Footprint	The maximum spatial extent of direct impacts resulting from the Project's proposed OHTL and switchyard infrastructure (the Project Disturbance Footprint), excluding areas assessed for vegetation clearance separately under DA1.
Vegetation community	An identified vegetation community (i.e. structure, composition, condition and/or underlying geology) verified from a field survey. Communities may include Regional Ecosystems, remnant vegetation and/or disturbed/novel ecosystems (e.g. parkland, disturbed roadsides etc.).
Watercourse	A watercourse as determined by the DNRMMRRD under the *Water Act 2000* (Queensland).

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1.0 Introduction

1.1 Project Background

Wooderson Solar Development Co Pty Ltd (WSD or the Proponent), a wholly owned subsidiary of Central Queensland Power Pty Ltd (CQP), is developing the proposed Wooderson Solar Farm (**Figure 1.1**). A 275 kilovolt (kV) overhead transmission line (OHTL) and associated switchyard is proposed to connect the solar farm to the National Electricity Market (NEM), via Powerlink's proposed Calvale to Calliope River 275 kV Transmission Line Reinforcement Project, located approximately 10 kilometres (km) west of the solar farm.

Umwelt was commissioned by WSD to undertake an ecological assessment for the OHTL and switchyard (the Project), pertaining to terrestrial ecological Matters of State Environmental Significance (MSES) potentially impacted by the Project. This ecological assessment report has been developed to support 2 Development Applications (DAs) to obtain a development permit for a material change of use for major electricity infrastructure from Gladstone Regional Council (GRC). The Wooderson Solar Farm will be subject to a separate DA (DA1) and is not included in this ecological assessment. This ecological assessment demonstrates the Project's compliance with the biodiversity overlay code under the Gladstone Regional Council Planning Scheme Version 2 (Planning Scheme). A separate DA is required for the section of the OHTL that intersects the Callide Infrastructure Corridor State Development Area (CICSDA). This report assesses that area concurrently, with clear delineation between the 2 DA areas.

The Project is located approximately 40 km south-west of Gladstone and 20 km west of Calliope, within the GRC Local Government Area (LGA). The Project is mapped within the rural zone under the Planning Scheme and is predominately utilised for agricultural purposes. There is no zoning under the CICSDA Development Scheme.

The Queensland Government's 2025 Energy Roadmap outlines a practical plan for the State's energy transition, reinforcing its commitment to affordable, reliable, and sustainable energy. The Wooderson Solar Farm supports both current Commonwealth and State energy and emissions targets, including:

- Commonwealth: Reducing emissions 43% below 2005 levels by 2030, 62 to 70% by 2035 and achieving net zero by 2050.
- Queensland: Accelerating large-scale solar and wind in Central Queensland and achieve net-zero emissions by 2050.

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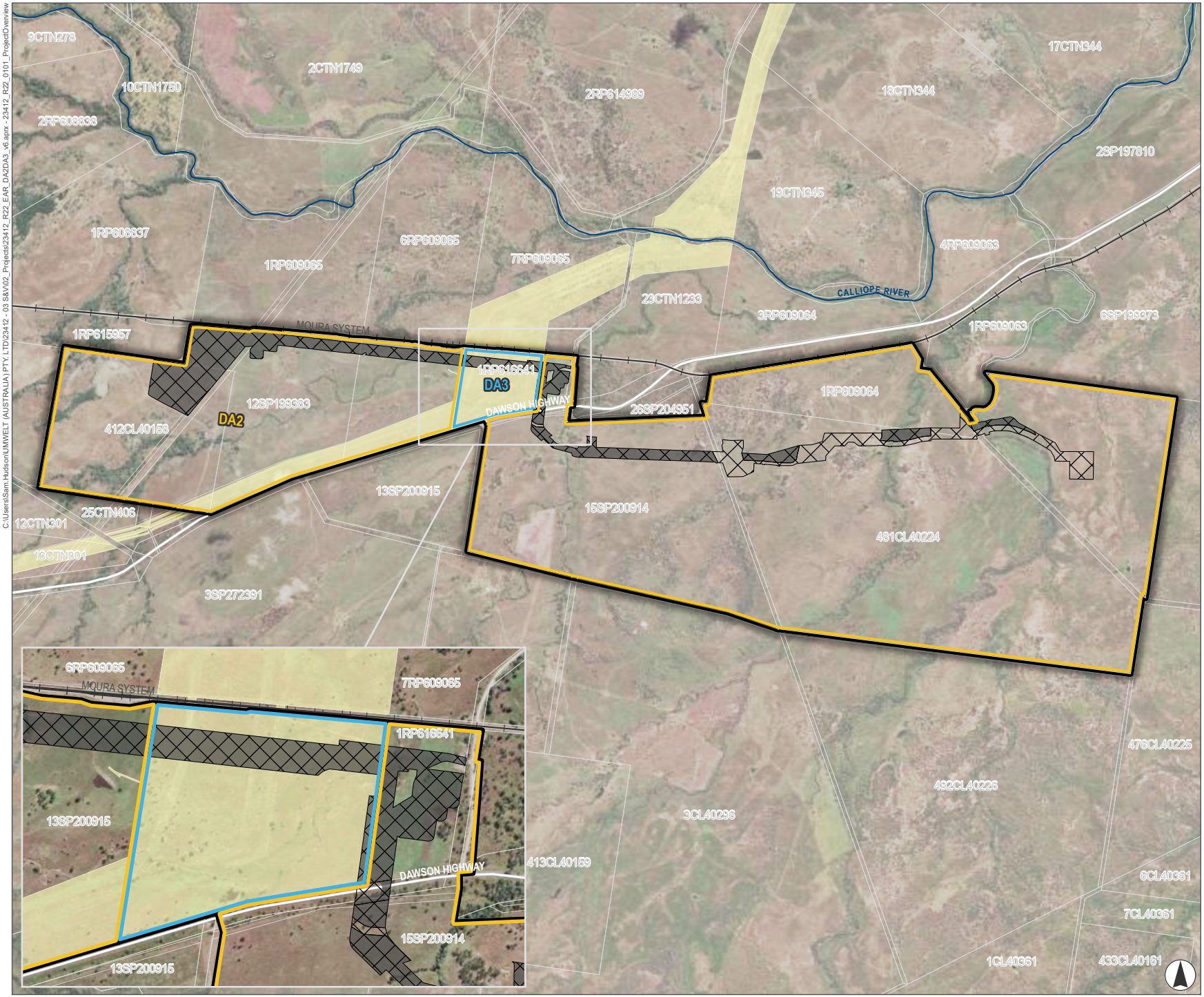
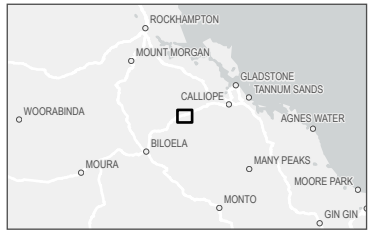


FIGURE 1.1

Project Area, Disturbance Footprint and Vegetation Clearance Footprint

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Project Disturbance Footprint
- Callide Infrastructure Corridor SDA
- Railways
- Major Watercourse
- Major Roads
- QLD Cadastre



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Kilometres

Scale 1:60,000 at A4
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1.2 Project Description

1.2.1 Infrastructure

1.2.1.1 Overhead Transmission Line

The proposed OHTL extends approximately 11 km from the solar farm substation, traverses west to the proposed new switchyard and connects into the Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.

The OHTL will be contained within a 60 m wide easement, located with the jurisdiction of the Planning Scheme and Development Scheme (**Figure 1.2**). The following delineates between the infrastructure and works located in each jurisdiction:

The OHTL within the Planning Scheme jurisdiction will:

- traverse 7 freehold allotments
- comprise approximately 10 km of OHTL
- be partly within and adjoining Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project and existing Calvale to Wurdong 275 kV Transmission Line, where the OHTL will under cross the existing and proposed transmission lines.
- travel adjacent to Option A and Option B switchyard, construction compound and construction laydown area, which also adjoins Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.

require approximately 43 monopoles with a maximum height of 50 m. The monopoles will be constructed of either steel or concrete. Monopoles will have a foundation radius of approximately 15 m, with some monopoles (particularly corner monopoles) requiring stays. The final requirements for stays will be confirmed during detailed design. Refer to **Photo 1.1** and **Photo 1.2** depicting indicative monopoles and **Figure 1.2** for indicative monopole locations.

It is noted that these are indicative locations only and will be subject to refinement during detailed design which will take into account impact assessment findings and approval requirements.

The OHTL within the CICSDA jurisdiction will:

- traverse 1 freehold allotment
- approximately 840 m of OHTL
- traverse an easement containing gas pipelines and located within the Development Scheme
- require up to 2 monopoles with a maximum height of 50 m. The monopoles will be constructed of either steel or concrete. Monopoles will have a foundation radius of appropriately 15 m, some monopoles particularly corner monopoles requiring stays. The foundations of a third monopole may partially be located within the Development Scheme jurisdiction, with the centre of the pole located immediately west of the Development Scheme jurisdiction. Refer to **Photo 1.1** and **Photo 1.2** depicting indicative monopoles and **Figure 1.2** for indicative monopole locations.

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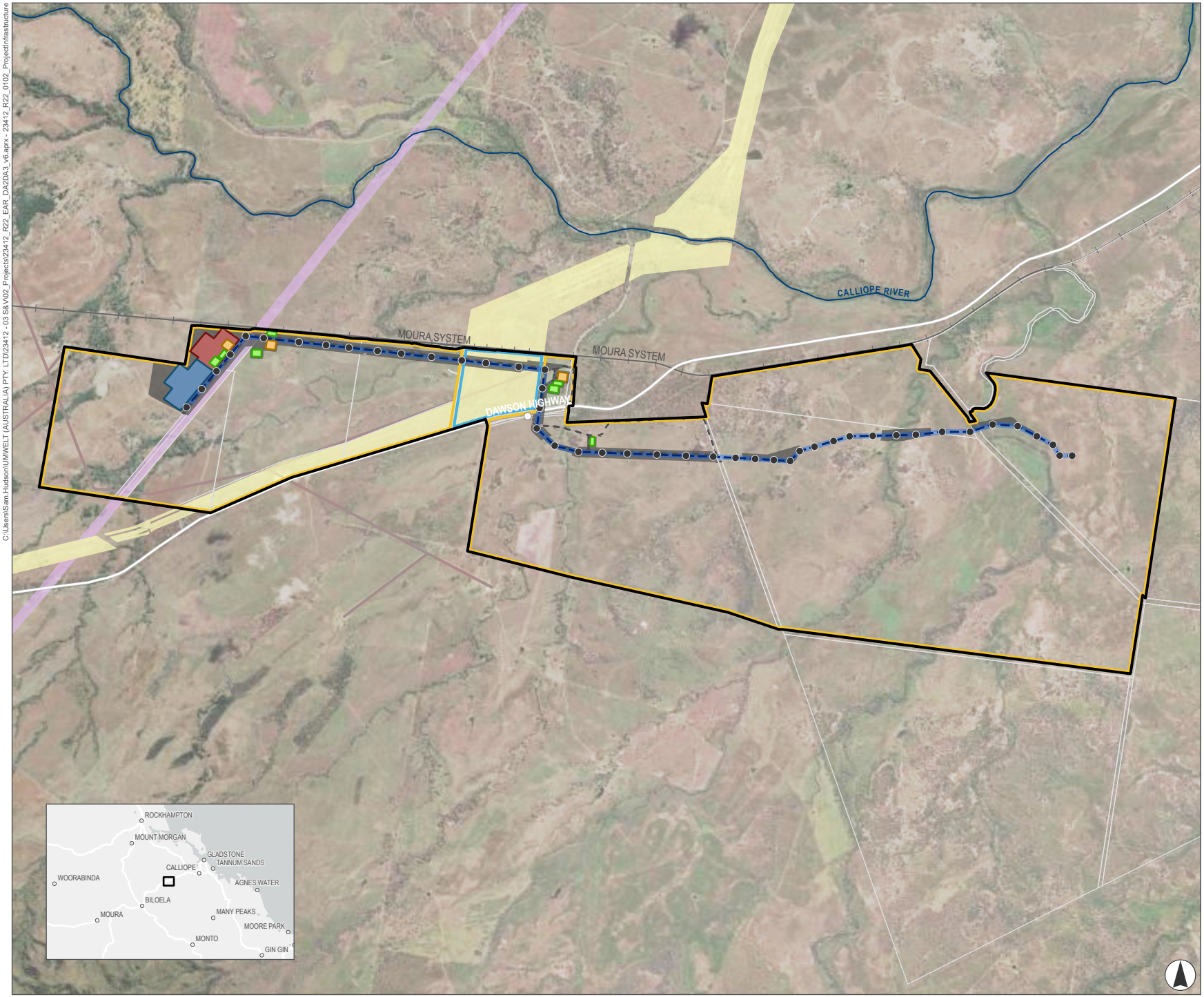


FIGURE 1.2

Project Infrastructure

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Powerlink Transmission Corridor
- Callide Infrastructure Corridor SDA
- Cadastre
- Major Watercourse
- Major Roads
- Railways
- Indicative 60m Easement
- Construction Compound Area
- Temporary Laydown Areas
- Switching Station (Option A)
- Switching Station (Option B)
- OHTL Indicative Route
- Site Access
- OHTL Indicative Pole Locations

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Kilometres

Scale 1:60,000 at A4
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Photo 1.1 **Example 275 kV OHTL under construction (Cowell Electric, 2025)**



Photo 1.2 **Example 275 KV OHTL (Australian Power Industry Partners, 2025)**

1.2.1.2 Switchyard

A new switchyard is proposed to be located at the western end of the OHTL for cut-in connection to Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project (**Figure 1.2**).

The final location of this switchyard is awaiting confirmation from Powerlink, with two potential locations assessed for the purposes of this application being Option A (red) and Option B (blue) (**Figure 1.2**). Both options are proposed to be included within the Project Disturbance Footprint to allow for flexibility in the final location and allow for continued discussions with Powerlink.

The switchyard includes a cleared level platform of approximately 170 m by 80 m for connection of Wooderson Solar Farm, subject to confirmation with Powerlink. There will also be space for potential future expansion contained within a security fence. It will include switchgear to isolate circuits in an emergency, as well as devices to monitor and communicate the performance or circuits.

The Project Disturbance Footprint includes the maximum possible area required for the switchyard.

The switchyard will ultimately be transferred to the ownership of Powerlink, the Transmission Network Service Provider. This is anticipated to occur upon commissioning of the switchyard; however, the timing is subject to confirmation with Powerlink. An example of a Powerlink switchyard is shown in **Photo 1.3** below.



Photo 1.3 Example Powerlink switchyard (Cowell Electric, 2025)

1.2.1.3 Site Access and Internal Access Tracks

A proposed new direct access from the Dawson Highway is not proposed as part of DA2 and DA3, however, direct assess has been proposed as part of DA1. DA2 will utilise the proposed new access from the Dawson Highway and will provide construction and maintenance access to the southern Project Area.

To limit disturbance, internal access within the southern section of the Project Area will use the approved access tracks as part of DA1, except for some additional sections that will provide specific access to the OHTL. These additional access tracks will be up to 7 m wide in accordance with Powerlink access track specifications and are shown on **Figure 1.2.**

Access to the Project Area to the north of the Dawson Highway will be via Duck Holes Road and predominantly within the 60 m wide easement. These access tracks will also be up to 7 m wide in accordance with Powerlink access track specifications. Some sections are located outside the easement to provide access to switchyard Option A and Option B Construction Compound Area and switchyard Option A and Option B Temporary Laydown Area.

Access to the switchyard will be via Duck Holes Road and either via the same track within the OHTL easement, or via a second track immediately adjacent to the OHTL easement. This will be confirmed with Powerlink during detailed design.

Access tracks may cross waterways or watercourses within the Project Area. Where required, culverts will be installed. Where achievable, these will be designed in accordance with the Accepted Development Requirements for operational work that is constructing and raising Waterway Barrier Works (dated September 2025 or as amended) or form part of secondary approvals during detailed design.

1.2.2 Construction

1.2.2.1 Timeframes

Construction of the OHTL and switchyard is estimated to take approximately 15 months. It is anticipated that these activities will commence at the same time and indicatively anticipated to commence in March 2029.

Construction timeframes will be dependent on securing Project approvals, timing and staging of construction of other assets including the solar farm and Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project.

Note that these timeframes are based on construction of the assets only. The OHTL will only commence export of electricity during commissioning of the solar farm.

1.2.2.2 Workforce and Construction Hours

Preliminary estimates of the construction workforce required for the Project will be up to 80 full time equivalent (FTE), comprising up to approximately 50 FTE for the switchyard and 30 FTE for the OHTL.

Construction activities will generally be limited to daylight hours and will vary depending on the season. However, it is expected that most works will occur during standard construction hours of 7 am to 6 pm, Monday to Saturday.

During certain construction activities, works may be required to be undertaken outside of standard hours (i.e. Sunday or night-time periods). In these instances, appropriate mitigation and management measures will be incorporated into the Construction Environmental Management Plan (CEMP). The CEMP will serve as an overarching management plan that will manage and monitor impacts during construction.

1.2.2.3 Field Activities

The list below provides a standard approach to the progression of construction activities that will occur for the Project:

- Site set out
- Pre-clearing survey
- Road and rail approvals
- Site establishment (construction compounds, laydown areas, equipment and materials)
- Installation of fencing, gates, grides and clean down bays
- Earthworks for access tracks and hardstand areas
- Vegetation clearing
- Monopole site benching
- Foundation installation
- Structure assembly and erection
- Conductor and earth wire stringing
- Commissioning of all components

- Reliability testing
- Rehabilitation of temporary disturbance areas
- Demobilisation.

Some deviation from the standard approach is anticipated for the sections of Project Disturbance Footprint intersecting gas pipelines. Subject to agreement with the pipeline owner, this may include:

- Temporary protection (i.e. matting, plates, exclusion fencing) over pipelines.
- Access and / or construction controls such as vehicle load limits, vibration restrictions, or controlled access tracks as required.
- Modified stringing set-up, if required, to avoid ground contact or maintain specific clearance over the pipeline.

1.2.2.4 Site Set Out

Following cadastral survey of the OHTL easement, the location of the OHTL within the easement will be set out. Structure sites will be marked and orientated using design information. Structure locations will be selected based on the technical characteristics of the structures and conductors, topographical constraints, landholder requirements and environmental considerations.

Easement boundaries will be identified, and the Project Disturbance Footprint will be marked prior to vegetation clearing.

1.2.2.5 Laydown and Construction Compound

Temporary ancillary facilities would be required during construction, and would typically include:

- Construction compounds involving a storage area, offices and meeting room, ablution facilities, canteen and parking.
- Laydown areas involving areas suitable for storing materials, plant and equipment.

While the construction compounds and laydown areas could be located anywhere within the Project Disturbance Footprint, 3 indicative construction compounds and 7 indicative laydown areas are identified in **Figure 1.2.**

These facilities would be compacted with gravel to allow for all weather access. Once construction is complete, these areas would be revegetated or have infrastructure installed dependent on their location within the Project layout.

1.2.2.6 Infrastructure Crossings

Road and Rail:

The Project Disturbance Footprint will traverse 2 unnamed local road corridors and one State-Controlled Road (Dawson Highway). Whilst the Project Disturbance Area footprint is located south of the Moura Railway, the Project does not intersect or traverse the railway corridor.

Transmission Lines:

The Project Disturbance Footprint will be partly within and adjoining Powerlink's proposed Calvale to Calliope River Transmission Line Reinforcement Project and Calvale to Wurdong 275 kV Transmission Line, where the OHTL will under cross the existing and proposed transmissions lines.

Gas Pipelines:

The Project Disturbance Footprint will be partly within a gas pipeline easement within the Development Scheme. The easement contains gas pipelines owned by Santos GLNG Pty Ltd (Petroleum Pipeline Licence ([PPL]) 66), Australia Pacific LNG Gladstone Pipeline Limited (PPL 163), and APA WGP Pty Ltd (PPL 154)).

1.2.2.7 Plant and Equipment

The plant and equipment required for the construction of the Project would include:

- Earthmoving machinery and equipment for site preparation (such as excavators, compactors, rollers and graders)
- Pile-driving equipment (piling rigs)
- Specialised power line stringing equipment
- Cable trenching and laying equipment
- Forklifts and cranes
- Machinery and equipment for substation and inverter infrastructure establishment
- Manual tools, including compressed air and electric tools
- Water trucks for dust suppression
- Diesel generator/s
- Heavy vehicles, utility vehicles and light vehicles.

1.2.2.8 Demobilisation and Rehabilitation

All disturbed areas impacted from construction will be reinstated at the end of construction through the implementation of Construction Environmental Management Plans (the CEMP).

1.2.3 Operations and Maintenance

During operation, normal practice is for maintenance staff to carry out scheduled inspections of the OHTL easement, switchyard and access tracks. Maintenance timing will depend on the risk of vegetation growth and the requirement for emergency repairs.

The Project will be operated in accordance with an Operational Environmental Management Plan (OEMP).

1.2.4 Decommissioning

At the end of the Wooderson Solar Farm's operational life, it is anticipated to either be upgraded (subject to additional planning approvals, as required) or decommissioned. The decommissioning of the solar farm would result in the OHTL being no longer required and so it will also be decommissioned. It is anticipated that switchyard would remain operational as a Powerlink network asset.

Decommissioning the OHTL will be in agreement with the landholders, and would involve removing infrastructure, returning the Project Area to its pre-existing land use as far as practicable, and easements maybe surrendered to the property owner. Some infrastructure such as access tracks may be retained where agreed with and beneficial to the landowner.

Where feasible and practical all dismantled and decommissioned infrastructure and equipment will be recycled. It is anticipated that more material would be recyclable by the end of the operational life than is currently possible, as recycling industries establish. Structures and equipment that cannot be recycled would be disposed of at an approved waste management facility in accordance with all statutory requirements.

Vehicle movements and personnel requirements during the decommissioning phase are expected to be similar or less than the construction phase.

1.3 Project Boundary Definitions

For this ecological assessment, 4 distinct spatial boundaries are defined (**Figure 1.1**):

Project Area:

The Project infrastructure and vehicular access will be located within the Project Area. The Project Area comprises a combination of freehold allotments, the Dawson Highway road reserve, and two unnamed road reserves.

The Project Area covers a total area of 2,675.9 ha (**Section 1.3.1**) and is divided into 2 separate DA areas, based on the applicable assessment pathway:

- **DA2 Area**: the portion of the Project Area located outside the CICSDA, subject to assessment and approval by the GRC.
- **DA3 Area**: the portion of the Project Area located within the CICSDA, subject to assessment and approval by the Office of the Coordinator-General.

Project Disturbance Footprint:

The Project Disturbance Footprint is a subset of the Project Area and represents the total extent of land that has been assessed for potential direct disturbance associated with the construction of the Project. The Project Disturbance Footprint includes both permanent and temporary disturbance areas required for the construction of the OHTL and switchyard, as well as buffers around the proposed infrastructure to allow for design refinement during detailed design (**Section 1.3.2**).

The Project Disturbance Footprint is 211.1 ha.

Vegetation Clearance Footprint:

The Vegetation Clearance Footprint is a further refinement of the Project Disturbance Footprint and defines the permanent and temporary disturbance areas required for the construction of the OHTL and switchyard, excluding all areas assessed for vegetation clearance associated with DA1. Accordingly, the Vegetation Clearance Footprint represents the maximum area of direct ecological impact assessed in this report (**Section 1.3.3**).

1.3.1 Project Area

The Project Area comprises both the DA2 and DA3 Areas, covering a total of 7 freehold land parcels, and local road corridors over approximately 2,675.9 ha. These local road corridors are unnamed and do not contain existing road infrastructure. The Project Area comprises a mixture of anthropogenically modified land that has been utilised for agriculture, primarily cattle grazing. Ecological field surveys have focused entirely on the Project Area.

Details of the land parcels within the Project Area are provided in **Table 1.1**. An overview of the Project Area is shown in **Figure 1.1**.

Table 1.1 Project Area and Land Parcels

Lot and Plan	Area (ha)	Tenure	Encumbrances
DA2 Area			
15SP200914	519.7	Freehold	BSP241820
13SP200915	127.3	Freehold	AFSP239330 BSP311702
1RP609064	171.2	Freehold	
12SP199383	249.9	Freehold	AGSP239330 ERP618835 FSP157659
412CL40158	292.5	Freehold	DRP618834 GSP157660 AHSP239331
481CL40224	1,188.88	Freehold	
Dawson Highway road reserve	5.9	-	
1RP616641 (Part Lot)			
DA3 Area			
1RP616641 (Part Lot)	83.1	Freehold	AESP239330

1.3.2 Project Disturbance Footprint

Within the Project Area, the Project Disturbance Footprint represents the maximum spatial extent of direct impacts resulting from the Project's proposed infrastructure. The Project Disturbance Footprint includes land that has been assessed for direct impacts as part of DA1, as well as land assessed for direct impacts as part of this report for the DA2 and DA3 sections of the Project Area. Construction and operation of the Project will occur within the Project Disturbance Footprint.

Permanent components include the following:

- Approximately 11 km of 275 kV OHTL, contained within a 60 m wide easement.
- Approximately 45 monopoles, contained within the 60 m wide easement.
- New switchyard (either Option A or Option B).
- Access tracks located within the 60 m wide easement that will be used for ongoing maintenance.
- Access tracks (where located outside the easement) that will be used for ongoing maintenance.
- Vegetation clearing.
- Security fencing.

Temporary components include the following:

- Option A and Option B switchyard construction compound area.
- Option A and Option B switchyard temporary laydown area.
- Vegetation clearing.

The Project Disturbance Footprint is shown on **Figure 1.1**.

1.3.3 Vegetation Clearance Footprint

Within the Project Disturbance Footprint, the Vegetation Clearance Footprint represents the maximum spatial extent of direct impacts (vegetation clearance) resulting from the Project's proposed infrastructure subject to assessment under DA2 and DA3 (excluding land assessed for vegetation clearance under DA1). The Vegetation Clearance Footprint does not include land assessed for direct impacts as part of DA1 and represents the additional area that is being assessed as part of DA2 and DA3 only.

The Vegetation Clearance Footprint is approximately 153.7 ha and has been designed in consideration of avoiding and minimising environmental, social and engineering constraints in the immediate vicinity of the Project. The Vegetation Clearance Footprint comprises infrastructure outlined in **Section 1.2**. The Vegetation Clearance Footprint covers:

- 143.2 ha within the DA2 Area.
- 11.3 ha within the DA3 Area.

The Vegetation Clearance Footprint is shown on **Figure 1.1**.

1.4 Scope and Objectives

The primary objective of this ecological assessment is to describe the existing ecological values of the Project Area, assess the potential impacts of the Project and provide an assessment against the relevant GRC development codes. The following scope of work was completed to support these objectives:

- A comprehensive desktop assessment of relevant background information and available environmental databases to identify ecological values within the Project Area, with a focus on MSES in accordance with the Gladstone Regional Council Planning Scheme Biodiversity areas overlay.
- Ground-truthing the occurrence, extent and condition of Regulated Vegetation and Regional Ecosystems (REs) in accordance with Neldner et al. (2025).
- Assessment of the likelihood of occurrence for threatened, near threatened and special least concern species listed under the *Nature Conservation Act 1992* (NC Act).
- Verification of the extent and condition of habitat for threatened, near threatened and special least concern species identified as 'Known', 'High' or 'Moderate' likelihood of occurring.
- Observational fauna surveys in accordance with the *Terrestrial fauna Survey Guidelines (version 4)* (Eyre, Ferguson, et al. 2022) targeting threatened or near threatened species.
- Describe and assess potential impacts to ecological values and the underlying ecological processes (e.g. habitat connectivity, ecological threatening processes) in accordance with the Planning Scheme Biodiversity areas overlay.
- Significant residual impact assessments for MSES identified as 'Known' to occur, or have a 'High' or 'Moderate' likelihood of occurrence, in accordance with the *Significant Residual Impact Guidelines* (Department of State Development, 2014).
- Identification of potential impacts, associated with the Vegetation Clearance Footprint to MSES and an overview of avoidance strategies and mitigation measures associated with the Project.
- Assessment of the Project against the relevant codes in the Planning Scheme.

While the purpose of this report is to address MSES, Matters of National Environmental Significance (MNES) listed under the EPBC Act are also documented here to provide broader Project context, where considered relevant. The Wooderson Solar Farm has been assessed under the EPBC Act and determined to be **a not controlled action**, therefore, no further assessment or offsets are required under the EPBC Act (EPBC number: 2026/10417, decision published on 14/02/2026).

2.0 Legislative Context

2.1 Local

2.1.1 Gladstone Regional Council Planning Scheme

The Project will be located entirely within the boundaries of the GRC LGA. Applicable developments that are proposed within the LGA are assessable against GRC local planning instrument (where located outside a State Development Area Development Scheme), the GRC Planning Scheme.

The Planning Scheme sets out GRC intended settlement pattern, expected planning and development outcomes, and assessment requirements for development within the LGA.

An assessment against the 'Biodiversity Areas Overlay Code' is required to address biodiversity requirements for the Project's DA2. A detailed response to these relevant codes will be provided in the DA2 Planning Assessment Report. This ecological assessment demonstrates the Project's compliance with the biodiversity areas overlay code under the Planning Scheme.

As DA3 covers the area within the CICSDA, it requires assessment by the Office of the Coordinator-General and assessment against the Development Scheme. The objectives of the Development Scheme are provided in **Section 2.2.7.1**.

2.1.1.1 Biodiversity Areas Overlay Code

The purpose of the biodiversity areas overlay code of the Planning Scheme is to:

- Protect and enhance MNES and MSES and their associated ecological processes and biodiversity values.
- Maintain or enhance the health and resilience of biodiversity to support ecological integrity.
- Maintain or enhance ecological connectivity to preserve fauna movement, habitat values, remnant vegetation and ecological processes.
- Protect or enhance water quality, ecosystem health and the natural hydrological functioning of waterways, wetlands and their riparian areas and buffers.
- Protect, rehabilitate and manage coastal natural resources, biodiversity and ecosystem services values.

The purpose of the code will be achieved through the following overall outcomes:

- Development avoids adverse impacts on MNES and MSES and their associated ecological processes and biodiversity values, unless:
    - it is demonstrated that MNES or MSES do not exist on the site, or
    - where adverse environmental impacts cannot be avoided, impacts are minimised, and an environmental offset is provided for any residual adverse impacts, and a net environmental benefit is achieved.
- Development avoids direct and indirect impacts resulting in species or habitat loss or disturbance, soil degradation or pollution due to vegetation clearing, erosion and contamination, acidification, salinity, waste disposal or modification to natural processes.

- Fragmentation of remnant vegetation, ecological corridors and existing habitat is avoided to maintain ecological function and biodiversity values and to maintain or increase the resilience of ecosystems and habitat to threatening processes, including the impacts of climate change.
- A network of connecting corridors and linkages between areas supporting MNES, MSES, wetlands, waterways, remnant vegetation, habitat areas and other natural areas are maintained, created or restored, including provision for continuous links from the coast to upper catchments.
- Development including infrastructure, is designed and located to maintain and enhance continuity of wildlife movement (including fish passage) and ecological processes for terrestrial and aquatic species.
- The hydrological regime of wetlands and waterways is protected and rehabilitated.
- Development avoids encroachment or expansion into sensitive terrestrial or aquatic habitats along the foreshore or riparian areas unless it is for management of public access, recreation, public use or other public benefit.
- Development maintains sustainable community access to beaches, waterways, national parks and other land in protected area estates.
- Development incorporates and maintains an appropriate buffer in accordance with minimum best practice distances to avoid adverse impacts.
- Development maintains or enhances the scenic amenity of important natural coastal landscapes, views and vistas.

2.2 State

2.2.1 Nature Conservation Act 1992

The NC Act establishes a regulatory regime to manage flora and fauna within Queensland. Specifically, the NC Act regulates the 'take' (i.e. fell, remove, catch etc.) of flora and fauna and provides a permitting framework for such activities. Under the NC Act, permits are required to:

- tamper with an animal breeding place (i.e. a bower, burrow, cave, hollow, nest etc)
- clear protected plants. Threatened species are listed under the NC Act in *the* Nature Conservation (Animals) Regulation 2020 (NC Act Animals Regulation) and the Nature Conservation (Plants) Regulation 2020 (NC Act Plants Regulation) in the following categories:
- Least concern and/or special least concern (non-migratory).
- Near threatened.
- Vulnerable.
- Endangered.
- Critically endangered.
- Extinct in the wild or extinct.

A pre-clearing survey is required under the NC Act prior to commencing vegetation clearing to confirm the presence of active animal breeding places and clearing is to be carried out in accordance with an approved Species Management Program (SMP).

2.2.2 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) regulates the clearing of native vegetation in Queensland. Approval under the VM Act is required if remnant or certain types of regrowth vegetation is to be cleared, with applications for approval likely to be accompanied by a Property Vegetation Management Plan (PVMP).

It should be noted that a range of vegetation values provisioned under the VM Act are recognised as MSES. The presence and extent of MSES is relevant to developments and activities through the application of the Queensland *Environmental Protection Act 1994*, NC Act and *Environmental Offsets Act 2014* (EO Act).

In relation to MSES, regulated vegetation includes the following values described under the VM Act:

- endangered or Of Concern REs (VM Act class) that are remnant
- essential habitat
- regulated vegetation (remnant REs) to the extent they are located within a defined distance from the defining banks of a watercourse
- regulated vegetation (remnant REs) that intersects with an area shown on the vegetation management wetlands map (to the extent of the intersection).

2.2.3 Biosecurity Act 2014

The Queensland *Biosecurity Act 2014* (Biosecurity Act) establishes a framework to regulate and control invasive plants and animals. Under the Biosecurity Act, landowners are responsible for taking all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is known as the general biosecurity obligation (GBO).

The Biosecurity Act categorises restricted matters (restricted plants and animals) into the following:

- Category 1: must be reported to an inspector within 24 hours (includes Red Imported Fire Ants, amongst others) (call Biosecurity Queensland on 13 25 23).
- Category 2: must be reported within 24 hours to an inspector or authorised officer (call Biosecurity Queensland on 13 25 23).
- Category 3: must not be distributed either by sale or gift or released into the environment.
- Category 4: must not be moved.
- Category 5: must not be kept.
- Category 6: must not be fed (animals).
- Category 7: must be euthanised (animals).

2.2.4 Planning Act 2016

The *Planning Act 2016* (Planning Act) is Queensland's key piece of legislation pertaining to the strategic planning and development of the State. The Planning Act mandates the framework of planning instruments and process for development assessment whilst incorporating the regulatory requirements of other Queensland environmental statutory legislation, such as the VM Act.

Subordinate to the Planning Act, the Planning Regulation 2017 (Planning Regulation) details the mechanics for the operation of the Planning Act. This includes prescription of accepted, prohibited and assessable development, assessment benchmarks for assessable development and identification of the assessment manager (i.e. the chief executive or local government).

2.2.5 Fisheries Act 1994

The purpose of the Queensland *Fisheries Act 1994* (Fisheries Act) is to provide management and protection of fish habitats, fish ways, aquaculture, marine plants, coral limestone and general fisheries resources. Integrated into the Planning Act, approval from the State Government may be required when assessable development works include the construction or raising waterway barrier works, fisheries development works in declared fish habitat areas or the removal, destruction or damage to marine plant(s).

2.2.6 Environmental Offsets Act 2014

The Queensland EO Act establishes the framework for environmental offsets in Queensland. The EO Act is supported by the Environmental Offsets Regulation 2014 (EO Regulation), the Queensland Environmental Offsets Policy 2017, the Queensland Environmental Offsets Policy General Guidelines (Offsets General Guide) and the Financial Settlement Offset Calculation Methodology.

The EO Act outlines the framework for environmental offsets and how they should be provided. It supports assessment legislation by coordinating the delivery of environmental offsets across jurisdictions and placing limits on when an environmental offset condition may be imposed. It also provides for the subsequent assessment, delivery, and compliance with offset conditions once imposed.

The EO Regulation provides further detail on several elements of the EO Act, including details of the activities and environmental matters to which the EO Act applies. The policy provides the decision-support tool to enable administering agencies to assess offsets proposals to ensure they meet the requirements of the EO Act. The EO Act, EO Regulation and Environmental Offsets Policy 2017 form Queensland's environmental offsets framework.

The environmental offset framework only applies when a prescribed activity is likely to have a significant residual impact on a prescribed environmental matter. Prescribed environmental matters include MSES, defined in the EO Regulations as the following:

- Regulated Vegetation – prescribed REs that:
    - are endangered REs
    - are of concern REs
    - intersect with an area shown as a wetland on a vegetation management wetland map
    - contain an area of essential habitat on an essential habitat map for near threatened wildlife
    - are located within a defined distance of a relevant watercourse or drainage feature.
- Connectivity areas.
- Wetlands and watercourses that are:
    - a wetland in a wetland protection area

- a wetland of high ecological significance shown on the map of Queensland wetlands environmental values
- a wetland or watercourse in high ecological value waters.

- Designated precinct in a strategic environmental area.
- Protected wildlife habitat.
- Protected areas.
- Highly protected zones of state marine parks.
- Fish habitat areas.
- Waterway providing for fish passage.
- Marine plants.

2.2.7 State Development and Public Works Organisation Act 1971

The *State Development and Public Works Organisation Act 1971* (SDPWO Act) establish the legislative framework for the declaration, coordination, and assessment of major development projects in Queensland. The SDPWO Act is supported by the State Development and Public Works Organisation Regulation 2020 (SDPWO Regulation), which provides procedural detail for the environmental assessment and approval of coordinated projects.

State Development Areas (SDAs) are declared under section 77 of the SDPWO Act. SDAs are clearly defined areas of land established by the Coordinator General to promote economic development in Queensland. They typically take the form of one of the following:

- industrial hubs for development requiring larger footprints strategically located close to ports or major rail and road networks
- infrastructure corridors for the collocation of infrastructure
- major development sites and public works.

The DA3 Area intersects the CICSDA, requiring approval from the Coordinator-General under the Development Scheme.

The Project has been assessed against the relevant provisions of the Development Scheme ,, demonstrating compliance with the objectives of the Development Scheme (**Section 2.2.7.1)**.

2.2.7.1 CICSDA Development Scheme 2012

The DA3 Area is located within the CICSDA and as such is subject to assessment and approval by the Coordinator-General and the Development Scheme. The objectives of the Development Scheme are:

- Provide, manage and plan land for the establishment of an efficient and effective infrastructure corridor of regional, state and national significance for co-located underground pipelines (principally for the transportation of gas) between Callide and the GSDA, to facilitate economic development.

- Ensure the integrity and functionality of the CICSDA is maintained and protected from land uses and activities that may be incompatible with, or adversely affect, the continued use of the State development area for co-located underground pipelines (principally for the transportation of gas) of regional, state and national significance.
- Protection of the CICSDA to ensure the land resource is effectively utilised and uses are appropriately sited such that infrastructure, and distances between infrastructure, does not consume land unnecessarily or compromise future use and ensures the long-term viability of infrastructure within the CICSDA.
- Ensure the impacts of land use minimises operational impediments on existing infrastructure and surrounding uses and provides orderly development of infrastructure within the CICSDA.
- Ensure locations for infrastructure, other than gas transportation infrastructure, to intersect the CICSDA are minimised and rationalised.
- Ensure the physical characteristics of land are considered in determining the suitability and location of land uses.
- Ensure land use recognises and appropriately addresses environmental, cultural heritage and community values.
- Ensure the impacts of land use on the environment, including cumulative impacts, are minimised to meet the requirements of applicable government policies.

This assessment aims to recognise and appropriately address environmental values within the DA3 Area.

2.3 Commonwealth

2.3.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). Under the EPBC Act, if the Federal Minister for the Environment and Water (the Minister) determines that an action is a 'controlled action' which would have or is likely to have a significant impact on MNES or Commonwealth land, then the action may not be undertaken without prior approval from the Minster. The EPBC Act identifies nine MNES:

- World Heritage properties.
- National Heritage places.
- Ramsar Wetlands of International Significance.
- Threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- Nuclear actions (including uranium mining).
- Water resources (in relation to coal seam gas development and large coal mining development).

Under the EPBC Act, any action that is likely to have a significant impact on these matters may be deemed a 'controlled action'. The Wooderson Solar Farm was referred under the EPBC Act on 16/01/2026 (EPBC referral number: 2026/10417) and has been assessed and determined to be a **not controlled action** on 14/02/2026.

While the purpose of this report is to address State legislation, MNES known or likely to occur are also documented to provide broader Project context, where considered relevant.

2.3.1.1 EPBC Act Environmental Offsets Policy

The EPBC Act Environmental Offsets Policy provides guidance on the use of offsets where a proposed action is likely to result in significant residual impacts to MNES, after avoidance and mitigation measures have been applied.

The Wooderson Solar Farm has been assessed under the EPBC Act and determined to be a **not controlled action**; therefore, offsets under the EPBC Act are not required.

3.0 Methodology

3.1 Desktop Assessment

A comprehensive desktop assessment was undertaken to identify ecological matters likely to be present within the Project Area. All existing data was reviewed to identify the presence or potential presence of MSES and NC Act listed species within the Project Area. The results were used to compile preliminary likelihood assessments, which identified the target threatened species and communities and any potential habitat areas. Survey methods were based on this information and were prepared in accordance with the appropriate State survey guidelines, with consideration of Commonwealth survey guidelines. The following legislation, triggers and databases were used to assess the potential MSES and NC Act listed species within the Project Area:

- Protected Matters Search Tool (PMST) Database, as issued by the DCCEEW (Department of Climate Change, Energy, the Environment and Water, 2025a) (20 km buffer around an approximate central coordinate; Latitude: -24.1050, Longitude: 150.8845).
- Wildlife Online extract issued by the Queensland Department of Environment, Science, Tourism and Innovation (DETSI), (20 km buffer around an approximate central coordinate; Latitude: -24.1050, Longitude: 150.8845) (Department of the Environment, Tourism, Science and Innovation, 2025b).
- Protected Plants Flora Survey Trigger Map issued by DETSI (Department of the Environment, Tourism, Science and Innovation, 2023).
- Regulated Vegetation Management Map as issued by the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development (DoNRMMRRD) (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, 2025a).
- Vegetation Management Supporting Map including Essential Habitat mapping (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, 2024).
- Biodiversity Planning Assessment (BPA) Corridors mapping issued by the Department of Environment and Science (formerly DES – now DETSI) (Department of Environment and Science, 2020a).
- DETSI remnant RE and pre-clear mapping (Version 12.0) and associated Regional Ecosystem Description Database (REDD) (Version 13.1) (Queensland Herbarium, 2024).
- Department of Primary Industries (DPI) (formerly Department of Agriculture and Fisheries [DAF]) Queensland Waterways for Waterway Barrier Works, identified under the Fisheries Act (Department of Agriculture and Fisheries, 2025).
- DETSI mapped wetlands under the Queensland Wetlands Program and the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (i.e. high ecological significance [HES] and general ecological significance [GES] wetlands) under the Environmental Protection Regulation 2019.
- Map of Queensland Wetland Environmental Values (Department of the Environment, Tourism, Science and Innovation, 2024b).
- Atlas of Living Australia (ALA) database records (20 km buffer around the Project Area) (ALA, 2025).

- Latest Queensland Globe available aerial photography (Queensland Globe, 2025).
- Gladstone Regional Council Planning Scheme Online Mapping (Gladstone Regional Council, 2025).

3.1.1 Species Literature

Survey methods were undertaken in accordance with Commonwealth and State survey guidelines. The initial desktop assessment identified NC Act listed fauna and flora species that could potentially occur within the Project Area, which were targeted during the field surveys within representative habitat types. Methods used to target threatened species were deployed based on the DCCEEW survey guidelines for Australian threatened fauna and other relevant State survey guidelines, including:

- *Terrestrial Vertebrate Fauna Survey Guidelines for Queensland (version 4)* (Eyre, Ferguson, et al. 2022).
- *Commonwealth Survey Guidelines for Australia's Threatened Mammals* (Department of Sustainability, Environment, Water, Population and Communities, 2011).
- Targeted species survey guidelines from the following sources:
    - *Targeted Species Survey Guidelines for Yakka Skink (Egernia rugosa)* (Ferguson & Mathieson, 2014).
    - C*ommonwealth Survey Guidelines for Australia's Threatened Bats* (Department of the Environment, Water, Heritage and the Arts, 2010).
    - *Commonwealth Survey Guidelines for Australia's Threatened Birds* (Department of Environment, Water, Heritage and the Arts, 2010).
    - *Commonwealth Survey Guidelines for Australia's Threatened Reptiles* (Department of Sustainability, Environment, Water, 2011).
    - *A review of the koala habitat assessment criteria and methods* (Youngentob et al. 2021).
    - *Species Profile and Threats Database (SPRAT)* (Department of Climate Change, Energy, the Environment and Water, 2025b).
    - *Draft Referral guidelines for nationally listed Brigalow Belt reptiles* (Department of Climate Change, Energy, the Environment and Water, 2023).
    - *Guide to greater glider habitat in Queensland* (Eyre, Smith, et al. 2022).
- Available conservation advice, commonwealth listing advice and recovery plans for all species identified during the desktop assessment.

3.1.2 Likelihood of Occurrence Assessment

Database searches identified State and Commonwealth listed threatened species that may occur within the Project Area, including a 20 km buffer surrounding the Project Area. The initial likelihood of occurrence assessments were made prior to undertaking field surveys and were based on a comprehensive desktop assessment (using the database searches listed in **Section 3.1**) and the ecologists' understanding of the broader region surrounding the Project Area.

These resources allowed for identification of known distributions and preferred habitat areas for species of interest. The criteria used to assess the likelihood of threatened species occurring within the Project Area is presented in **Table 3.1**. After completion of the field surveys, the likelihood of occurrence assessment was updated based on the on-ground habitat types and conditions and any species identified as present within the Project Area.

Table 3.1 Likelihood of Occurrence Definitions

Potential to Occur	Description
Known	The listed species has been recorded in the Project Area during the past decade (or during the Project-specific survey period). Record is considered valid and associated with a high spatial confidence.
High	Given the extent, quality and suitability of habitat in the Project Area, the location of the Project Area relative to existing contemporary records (past 20 years) of the species (with consideration of sampling effort in the region and the species' detectability) it is highly likely that the species occurs in the Project Area. Also includes species likely to regularly occur in the Project Area during migratory, short-distance seasonal or nomadic movements (including cases for which likelihood of occurrence is high regardless of the nature of habitat present in the Project Area).
Moderate	Potential or suitable habitat is present in the Project Area though given the distribution of records in the surrounding region and/or the species' detectability, a 'Moderate' rating for likelihood of occurrence is deemed more appropriate than a 'Low' or 'High' rating. Includes species that may be present or may occasionally utilise the Project Area but for which there may be little information or those that are either cryptic or occur at low densities. Also includes species that may occasionally occur in the Project Area during migratory, short-distance seasonal or nomadic movements.
Low	The Project Area either contains limited suitable habitat or only potential/marginal habitat. The species is either very scarce or absent in the surrounding region. The species is deemed to have a 'Low' likelihood of occurrence in the Project Area based on the aforementioned factors. The species may disperse through or near the Project Area infrequently.
No	The Project Area is fundamentally unsuitable for the species. For example, this is usually applied to marine species or seabirds for terrestrial sites.

3.2 Field Assessment

This section identifies the Project team, relevant licensing, approvals and field survey methods that were implemented to verify desktop results, ground-truth REs, wildlife habitat, confirm the presence of Threatened Ecological Communities (TECs) and identify threatened species. This section also identifies the limitations associated with flora and fauna surveys and the criteria under which the likelihood of occurrence was assessed.

3.2.1 Project Team and Qualifications

Table 3.2 provides a list of the key Umwelt personnel involved with this Project and their relevant qualifications and experience.

Table 3.2 Key Personnel

Personnel and Role	Qualifications	Experience
Sebastian Knight Principal Ecologist	Bachelor of Science (Ecology & Conservation Biology), Griffith University	Sebastian Knight is a principal ecologist with over 12 years professional experience in ecological assessment and monitoring gained through working within private environmental consultancy and State Government. Sebastian has developed a broad ecological knowledge base from working on a diverse range of large-scale infrastructure projects, primarily across Central and Northern Queensland and the Northern Territory. Sebastian's work has been undertaken across numerous sectors including transport, renewables, coal seam gas, mining and Defence. Sebastian regularly performs the role of technical lead for large, complex projects. This has involved strategic survey design and implementation, managing and coordinating field teams and subcontractors and delivering technical reports and impact assessments. Deliverables for such projects have included Environmental Impact Statement biodiversity chapters, Preliminary Documentation, Commonwealth EPBC Act referrals, technical reports, offset strategies and management plans.
Gillian Turner, Principal Ecologist (flora)	Bachelor of Science (Environmental Biology) (Hons), Curtin University of Technology Master of Science (Plant Biology), University of Western Australia	Gillian is a principal ecologist with over 15 years of experience in surveying, identifying, managing, and monitoring flora and vegetation. She regularly co-ordinates and undertakes flora and vegetation field surveys, threatened flora searches, plant community and condition mapping, TEC determination and mapping, vegetation monitoring, technical report writing, ecological due-diligence and environmental impact assessments.
Loren Appleby Principal Ecologist (fauna)	Bachelor of Science (Ecology & Conservation Biology), Griffith University	Loren Appleby has led and conducted ecological surveys across many different environments throughout Queensland, New South Wales and Western Australia during her 11 years in the profession. Experience acquired includes conducting threatened fauna and flora surveys in accordance with State and Commonwealth guidelines, species identification, ground-truthing of vegetation communities, and determination of threatened species habitat and condition. Loren interprets relevant legislation, coordinates field programs, analyses data and prepares ecological assessment reports for a range of clients.
Peter Splatt Senior Ecologist (fauna)	Bachelor of Science (Ecology), Griffith University	Peter is a fauna ecologist in Umwelt's Brisbane ecology team. He is experienced in designing and managing complex ecological assessments including baseline and targeted threatened species surveys, bird and bat utilisation assessments and vegetation mapping and monitoring programs.

Personnel and Role	Qualifications	Experience
		Leaning on experience gained in his early career servicing the Queensland mining sector, Peter has transitioned into a range of sectors working closely with clients, and providing high quality, technical outputs primarily supporting the Queensland renewable energy sector. More recently, Peter has played a key role in the state and Commonwealth primary approvals for several large wind farms in Queensland having led and managed the technical ecological components associated with these projects. Peter's ecology studies have supported the application of major environmental approvals including EPBC Act referrals, environmental impact statements and State Development Applications.
Karalyn Fletcher, Senior Ecologist (flora)	Bachelor of Science (Ecology & Conservation Biology), Griffith University	Karalyn is an experienced terrestrial ecologist at Umwelt's Brisbane ecology team, with 9 years in the environmental industry, including 4 years as an ecological consultant. Her attention to detail and comprehensive understanding of Queensland and Commonwealth legislation as it pertains to ecology, enables her to provide efficient and practical solutions for a variety of clients. Her consulting experience includes leading and collaborating on projects across a diverse range of industry sectors, including energy, coal seam gas, mining, urban development, and linear infrastructure.
Jarrod Carlson, Ecologist (flora)	Bachelor of Science (Environmental Science) (Honours), Queensland University of Technology	Jarrod is an early-career terrestrial ecologist with experience across field surveys, ecological assessments, Geographic Information System (GIS), and technical reporting. He has contributed to major projects including transmission infrastructure assessments and pre-clearance survey work, applying strong attention to detail and a practical understanding of State and Federal environmental legislation. His work spans a range of sectors, including energy, infrastructure, and research.

3.2.2 Scientific Licence and Animal Ethics Approval

Umwelt hold all licences and permits required to undertake this scope of works. Relevant licences and identifiers for Queensland are provided below:

- Scientific Use Registration (Registration number SUR001572): this satisfies the registration requirements of Section 52 of the Queensland *Animal Care and Protection Act 2001* and confirms that Umwelt is registered as being able to use animals for scientific purposes.
- Animal Ethics Committee (AEC) Approval (Reference number CA 2024/11/1910); allowing for the completion of activities that required the 'use' of animals in accordance with the requirements of the Animal Care and Protection Act.

3.2.3 Field Survey Timing and Weather Conditions

A total of 5 mobilisations, across 19 surveys days, was completed by Umwelt between 2021 and 2024. The length, timing, and weather conditions at the time of the surveys are detailed in **Table 3.3**. Weather data for all field surveys were extracted from the nearest weather station, Gladstone Airport (station number 39326), approximately 47.5 km east of the Project Area (Bureau of Meteorology, 2025). The methods employed during the above field surveys are detailed in **Section 3.2.4** and **Section 3.2.5**.

Table 3.3 Field Survey Timing and Weather Conditions

Field Survey	Survey Dates	Survey Length	Rainfall (mm)[1]	Total Prior Rainfall (mm)[2]	Temperature (°C) (max)[3]	Season
Baseline flora and fauna	13 to 15 December 2021	3 days	0.0	371	31.5	Summer
Baseline flora and fauna	9 to 14 October 2023	5 days	10.0	47	31.1	Spring
Baseline flora and fauna, targeted threatened species surveys	20 to 23 February 2024	4 days	2.2	251	32.6	Summer
Baseline flora and fauna, targeted threatened species surveys	24 to 26 September 2024	3 days	0.0	183	27.5	Spring
Targeted threatened species surveys	9 to 12 December 2024	4 days	10.4	60	32.4	Summer

[1] *Rainfall* experienced *during the duration of the survey period.*

[2] *Rainfall experienced during the three months preceding the surveys.*

[3] *Maximum temperatures experienced during the surveys.*

3.2.4 Flora

The flora and vegetation surveys were undertaken to identify and record vascular flora species as well as classify and map vegetation communities. These surveys were undertaken to comply with relevant Commonwealth and State Government survey guidelines.

3.2.4.1 Vegetation Communities

Ground-truthing and validation of State vegetation communities within the Project Area was undertaken in accordance with the *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland Version 7.0* (Neldner et al. 2025). Vegetation sampling was undertaken by completing 10 tertiary and 76 quaternary surveys within representative examples of each RE observed within the Project Area (**Figure 3.1**).

Quaternary plots constitute rapid vegetation surveys which include marking the Global Positioning System (GPS) location and recording the dominant species in each of the structural layers (including height and cover of the ecologically dominant layer [EDL]), along with soil/landform and structural data. Tertiary assessments include the collection of height and cover data for each strata measured using a transect, as well as species presence and dominance in each stratum. To support data collected at the tertiary and quaternary sites, 54 rapid flora and vegetation observation points supplement survey locations to achieve a detailed vegetation record/coverage of the Project Area (**Figure 3.1**). These points identified vegetation boundary changes or dominant canopy species but do not include height or cover observations at a location.

Vegetation was classified as REs with reference to the descriptions within the REDD, version 13.1, and the RE Technical Descriptions for the Brigalow Belt (Queensland Herbarium, 2018), and Specht's (Specht, 1970) structural formation classes.

Vegetation within the Project Area was classified as 'Remnant', 'Regrowth' or 'Non-remnant' according to the criteria below:

- Remnant – vegetation communities that conform to the definition under the VM Act and referenced by Neldner et al. 2025. Specifically, 'vegetation, part of which forms the predominant canopy of the vegetation:
    - Covering more than 50% of the undisturbed predominant canopy; and
    - Averaging more than 70% of the vegetation's undisturbed height; and
    - Composed of species characteristics of the vegetation's undisturbed predominant canopy.'
- Regrowth – is non-remnant vegetation that has a significant woody component but fails to meet the structural/or floristic characteristics of remnant vegetation. Includes vegetation that has regrown after clearing or heavily cleared or logged.
- Non-remnant – all vegetation that is not mapped as remnant or regrowth vegetation. This includes changes to vegetation caused by clearing or other extensive human disturbances and fails to meet the structural and/or floristic characteristics of remnant vegetation. It also includes urban and cropping land.

Where possible, REs mapped within the Project Area were ground-truthed and re-mapped as homogeneous polygons where they had been previously mapped as heterogeneous polygons.

3.2.4.2 Threatened Ecological Communities

In conjunction with Tertiary and Quaternary assessments, TEC assessments were undertaken to verify the presence and condition of EPBC Act listed TECs. 7 TEC assessments were undertaken within the Project Area (**Figure 3.1**).

Specific condition criteria and characteristics used for the assessment are based on respective information provided within the listing advice published for each TEC. The following sections provide further details on the key diagnostic characteristics and condition thresholds assessed for TECs considered potentially occurring based on the desktop assessment.

Poplar Box Grassy Woodland on Alluvial Plains TEC

Within the Brigalow Belt bioregion, the Poplar Box Grassy Woodland on Alluvial Plains TEC (Poplar Box TEC) is typically associated with the following REs: 11.3.2, 11.3.17, 11.4.7 and 11.4.12. Vegetation communities with potential to be this TEC were assessed against the TEC conservation advice requirements (Department of the Environment and Energy, 2019), which included:

- A tree crown cover >10% of patch scale.
- A tree canopy that shows the following characteristics:
    - Canopy trees can reach of potential height of at least 10 m or more
    - A dominance of poplar box (*Eucalyptus populnea*) within the canopy layer
    - Hybrids of poplar box with other *Eucalyptus spp*. must be counted as part of the poplar box component when assessing the previous criterion
    - A crown cover of shrubs to small trees (1 to 10 m in height) less than 30%
- A ground cover dominant by perennial native grasses, other native herbs and sometimes chenopods.

A list of native plants associated with this TEC can be found in Appendix A of the Conservation Advice (Department of the Environment and Energy, 2019).

3.2.4.3 Targeted Threatened Flora Specie Search

Surveys to assess the presence and/or absence of potentially occurring threatened flora identified through the desktop assessment were targeted as part of the flora survey effort. During this survey, all areas of potentially suitable habitat were surveyed for threatened flora using the random meander technique (Cropper, 1993). This method is particularly suitable for locating species that typically occur at low densities or that may be distributed in isolated clumps. If threatened flora species were identified, the location was marked with a GPS and information regarding the number of individuals and habitat was noted.

As part of the desktop assessment, threatened flora species that were targeted as part of the field surveys included:

- *Cycas megacarpa*.
- *Acacia ermophiloides*.

3.2.4.4 Opportunistic Flora Observations

Incidental flora species observed during the survey were also recorded to provide a more comprehensive species list. Specimens of any plant taxa that could not be identified in the field were collected, pressed and dried in accordance with the requirements of the Queensland Herbarium (Queensland Herbarium & Bean, 2016).

Dried specimens were then identified through reference books and keys and through comparison with named species. Nomenclature used in this report follows that of the Census of the Flora and Fungi of Australia (Brown & Bostock, 2023). Introduced species are denoted by an asterisk in the text (*).

3.2.4.5 Introduced Flora

Introduced flora were opportunistically recorded within the Project Area while undertaking the field surveys. Presence and abundance recordings of the following were undertaken during the field surveys:

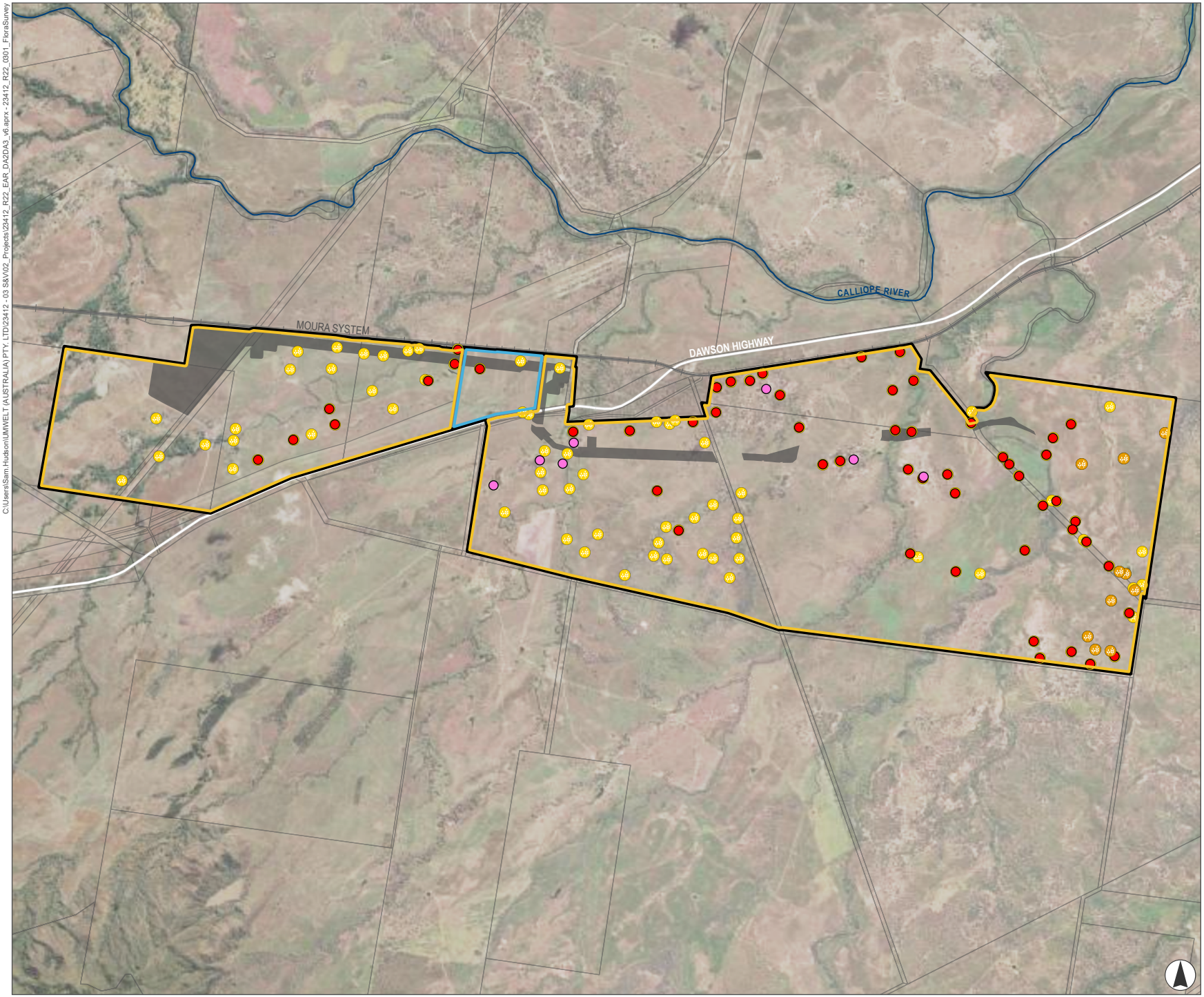
- Restricted matter flora species listed under the Biosecurity Act, Schedules 1 and 2.
- Weeds of National Environmental Significance (WoNS).

It is important to note that the data collected for introduced species serves as an indicator and may not encompass all introduced flora within the Project Area. The primary aim of collecting weed data was to gain insight into the dominant introduced flora and their threatening processes within the Project Area.

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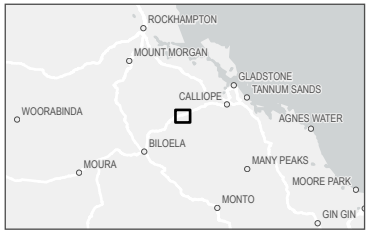
FIGURE 3.1

Flora Survey Locations



Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Major Roads
- Railways
- Major Watercourse
- QLD Cadastre
- Quaternary Sites
- General Flora Observations
- Tertiary Sites
- TEC Assessment Sites



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3.2.5 Fauna

A combination of field survey methodologies was employed to assess the occurrence of NC Act and EPBC Act listed threatened or near threatened fauna species identified as having a 'High' or 'Moderate' likelihood of occurrence (**Appendix B**). Survey methods employed were based on survey guidelines for threatened species published by the Commonwealth and State Government as detailed in **Section 3.1.1**. The initial baseline assessments included undertaking habitat assessments and actively searching for species of interest. Fauna field survey techniques and effort are detailed in **Table 3.4** and field survey effort displayed in **Figure 3.2**.

Table 3.4 Fauna Field Survey Techniques

Survey Method	Description	Survey Effort Undertaken Across Project Area
Fauna habitat assessments	Fauna habitat values were characterised using a comprehensive habitat assessment methodology within all accessible broad habitat types capturing variation in condition, vegetation types and disturbances. The presence and abundance of specific habitat resources was also assessed, including but not limited to: • koala (*Phascolarctos cinereus*) food and potential shelter trees • hollow bearing trees and stags • fallen logs, woody debris and leaf litter • rocky features such as surface rocks, boulders, crevices, overhangs and caves • presence, abundance and type of mistletoe • presence and/or absence of wetland features, including gilgai formations • proximity to water and whether it is permanent or ephemeral • habitat assessments were conducted and used to inform habitat modelling for each of the potentially occurring or known conservation significant species.	Habitat assessments were completed at 53 sites and focussed on all fauna species.
Active diurnal searches	Active diurnal searches were conducted within all habitat types to identify the presence of fauna or signs of fauna activity including scats and scratches. Potential yakka skink (*Egernia rugosa*) burrows were also a key target. Searches included scanning the trees and ground, searching beneath microhabitat such as rocks, fallen timber and peeling bark, digging through leaf litter and soil at tree bases and flushing birds from areas with a dense or grassy ground cover. Grass tussocks were gently disturbed to flush ground-dwelling birds such as the threatened squatter pigeon (southern) (*Geophaps scripta scripta*). Active birding was also completed at farm dams and watercourses where accessible. Disturbance to microhabitat features and reptiles was kept to a minimum.	3.2 person-hours of active diurnal searches were conducted.

Survey Method	Description	Survey Effort Undertaken Across Project Area
	Active searches were also completed opportunistically at Habitat Assessment sites.	
Diurnal Bird Surveys	Roaming and/or meandering bird surveys using both visual and auditory identification were conducted within all habitat types. Active birding was also completed at farm dams and watercourses where accessible.	8.1 person-hours of bird surveys has been conducted by 2 ecologists over 2023 and 2024, targeting migratory bird species, including watercourse watches.
Spotlight searches	Spotlighting on foot was undertaken within a variety of habitats including eucalyptus woodlands and woodlands to open forests supporting *Melaleuca spp*. to target species such as the koala and southern greater glider (*Petauroides volans*). To bolster survey effort, spotlighting was also undertaken from the passenger window of a slow-moving vehicle, which is a proven method for detecting arboreal mammals. Nocturnal spotlighting surveys were undertaken half-an-hour after sunset for a duration of approximately 4 hours a night.	7.1 person-hours of spotlighting has been conducted by 2 ecologists over 2023 and 2024.
Remote camera monitoring	Remote camera traps were deployed in representative habitats to record both nocturnal and diurnal fauna. Camera traps were baited with a mixture of rolled oats, sardines, peanut butter, honey and vanilla essence. Captured images of fauna were identified to species level where possible. All photos were reviewed to record the presence of target species as well as other fauna species of note (including pest species).	A total of 8 remote camera traps were deployed, totalling 21 camera trap nights.
Nocturnal call playback	Call playback surveys were conducted for koala in areas of suitable habitat within the Project Area. Call playback surveys were conducted at night using a loudspeaker paired to a smart phone. At each call playback site, koala calls were broadcast for 2 minutes following by 2 minutes of silence and/or listening.	33 minutes of nocturnal call playback was conducted opportunistically.
Acoustic bat call detection	Anabat Swift units were deployed in representative habitats to record microchiropteran calls. Detection was conducted across the Project Area between dusk and dawn across all habitat types. Recorded calls were analysed by 'Balance Environmental' for species identification purposes.	One Anabat Swift detector was deployed, totalling 4 trap days.
Bioacoustic recorder deployment	Autonomous acoustic recording devices (Titley Chorus acoustic recorders) were deployed within the Project Area to document the presence of koala in areas of suitable foraging and breeding habitat for these species. Recorders were set to record for 6 hours each day (1.5 hours before and after sunset and 1.5 hours before and after sunrise). Sound recordings downloaded from acoustic recording devices were analysed for calls of target species using the software package Kaleidoscope (Wildlife Acoustics Incorporated).	A total of 3 bioacoustic recorders were deployed, totalling 8 trap days (48 total hours)

Survey Method	Description	Survey Effort Undertaken Across Project Area
Incidental observations	All fauna observed incidentally throughout the Project Area were recorded, including large mammals when encountered during spotlight surveys and when travelling between survey sites.	Sixteen observations were recorded over the 19 field survey days conducted by 2 Ecologists (approximately 286 person hours).

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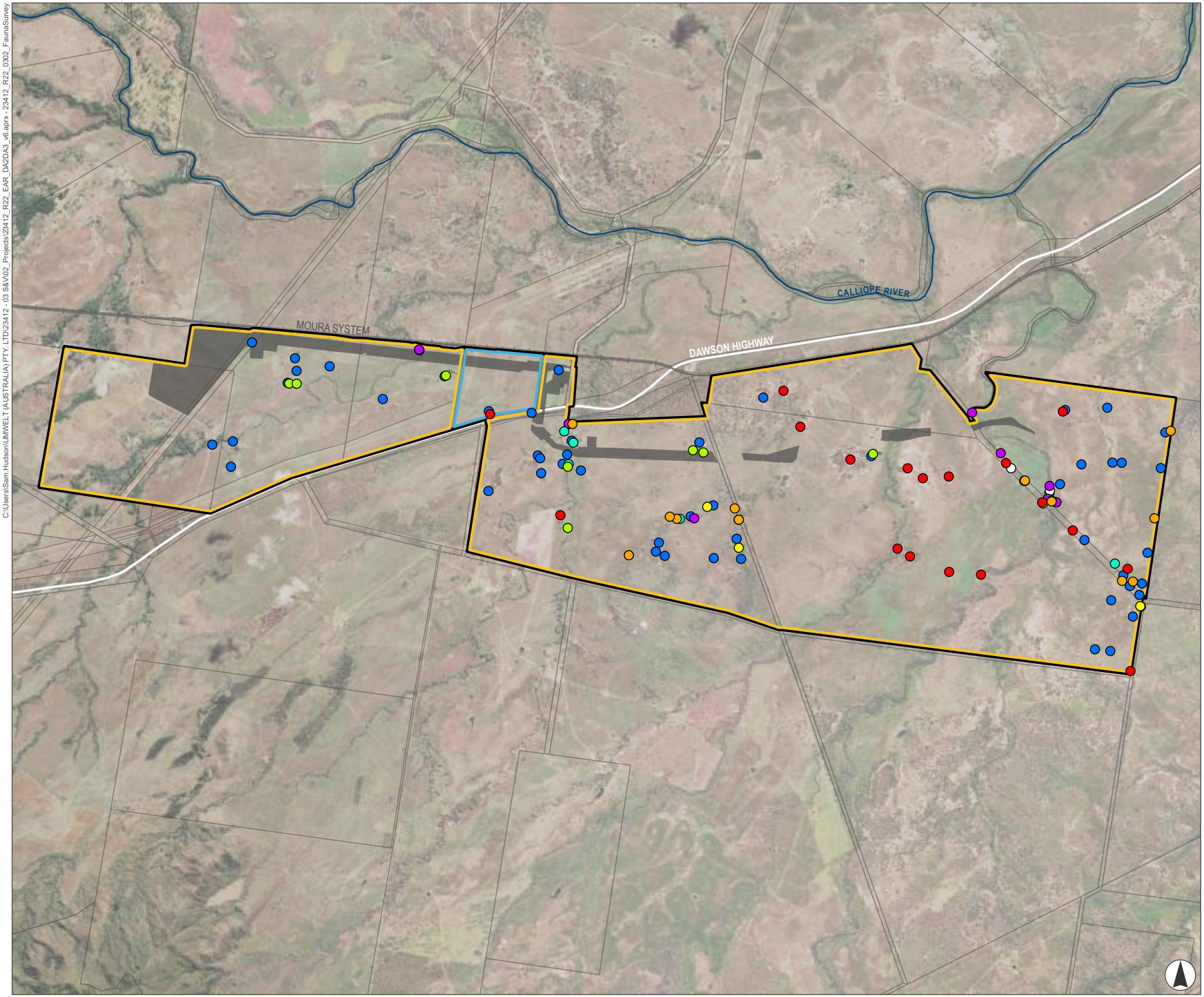
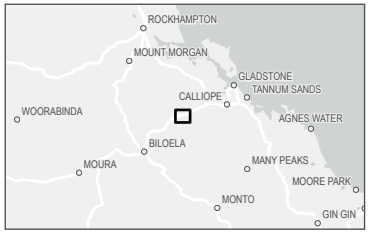


FIGURE 3.2

Fauna Survey Locations

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Major Roads
- Railways
- Major Watercourse
- QLD Cadastre
- General Fauna Observation
- Active Search
- Bird Survey
- Call Playback / Stag Watch
- Spotlight Survey
- Anabat
- Bioacoustic
- Motion Camera
- Habitat Assessments



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3.2.6 Assumptions and Survey Limitations

This assessment has been completed using a combination of field-validated data and desktop information. The review of relevant legislation undertaken for this assessment was restricted to documents available and applicable at the time of submission of this report. Any new or newly enacted legislation applied by any level of government following the finalisation of this report may require additional assessment.

Ecological surveys have a range of inherent limitations associated with seasonal timing of the survey, variable climate conditions and species behaviour and ecology (e.g. cryptic, nocturnal, naturally rare). As such, species directly observed during field surveys represent a 'snapshot' in time and may not provide a true indication of species presence or absence or a complete complement of fauna species utilising within the Project Area. This applies particularly to highly mobile fauna species (e.g. locally nomadic or migratory species) which may utilise habitat on a seasonal or intermittent basis.

Despite the above, survey effort and coverage overall is considered appropriate, as representative vegetation communities and habitat types were sampled, and an extensive suite of flora and fauna survey methodologies were employed. The limitations have been taken into consideration throughout this report.

3.3 Species Habitat Modelling

Species specific habitat modelling was undertaken for threatened species identified as having a 'Known', 'High' or 'Moderate' likelihood of occurrence within the Project Area.

The 'Modelling criteria' for each species was primarily based on the individual species habitat requirements. As required, other publicly available datasets were reviewed to inform the modelling criteria, including species recovery plans (where available), referral guidelines, approved conservation advice and listing advice, management plans and peer-reviewed journal articles.

Habitat assessments, species records (public and ones captured for the Project), and the ground-truthed RE mapping informed the modelling of potential habitat according to their modelling criteria. Where required, species habitat was categorised by a species' utilisation of a specific habitat type. For example, habitat utilisation of Koala (*Phascolarctos cinereus*) has been divided into climate refugia, breeding & foraging, shelter and dispersal based on this species habitat requirements and potential usage across the Project Area.

Although REs form the basis of the habitat criteria discussed in this assessment, the presence and abundance of required habitat resources as determined through field surveys was considered foremost when assessing if the habitat was suitable for a particular MSES. The modelling criteria are detailed in **Appendix D**.

3.4 Significant Residual Impact

An assessment against the *Significant Residual Impact Guideline: For matters of state environmental significance and prescribed activities assessable under the Sustainable Planning Act 2009* (Department of State Development, 2014) has been undertaken to determine whether the Project is likely to have a Significant Residual Impact (SRI) on MSES. If after all reasonable avoidance and mitigation measures have been taken by the Project, there is still a SRI on an MSES, an offset may be required.

4.0 Results

4.1 Environmental Context

4.1.1 Brigalow Belt Bioregion

The Project Area is located within the Brigalow Belt bioregion which encompasses approximately 216,000 square kilometres (km^2) of central Queensland, extending from Townsville, Queensland in the north to Narrabri, New South Wales in the south (Sattler & Williams, 1999). Brigalow forests and woodlands growing on clay soils are one of the major vegetation types that characterise the region (Sattler & Williams, 1999). While historically brigalow vegetation covered up to 6,000,000 ha of the bioregion in Queensland, extensive broad scale clearing, predominantly for agriculture, has greatly reduced the extent of this community throughout the bioregion (Sattler & Williams, 1999). In addition to remnant brigalow vegetation, other ecosystems that typify the bioregion include eucalypt forest and woodlands, grasslands, dry rainforest, cypress woodland and riparian communities (Sattler & Williams, 1999).

The Interim Biogeographic Regionalisation of Australia (IBRA) divides the Brigalow Belt into the Brigalow Belt North and Brigalow Belt South (Sattler & Williams, 1999). The Brigalow Belt North bioregion, in which the Project is located, comprises 14 subregions. The Project Area is located within the Mount Morgan Ranges subregion. This subregion is characterised by rugged to hilly terrain dominated by volcanic rocks. The steeper areas are dominated by *Eucalyptus crebra* (narrow leaved ironbark) woodlands with *Corymbia erythrophloia* (red bloodwood), *Blakella citrodora* (spotted gum) and *Acacia rhodoxylon* (rosewood) (Sattler & Williams, 1999).

4.1.2 Climate

The Gladstone region has a sub-tropical climate with high rainfall variability. The average rainfall for the Gladstone region is 860.3 millimetres (mm) and is predominately seasonal, characterised by wet summers (December to February) and dry winters. The average monthly temperature ranges between a maximum of 30.8 degrees Celsius (°C) and a minimum of 23.2°C recorded during January and July, respectively (**Figure 4.1**).

Meteorological data was collected at the Project Area's nearest Bureau of Meteorology (BOM) station: Gladstone Airport (Station Number: 39326), located approximately 47.5 km east of the Project Area (Bureau of Meteorology, 2025).

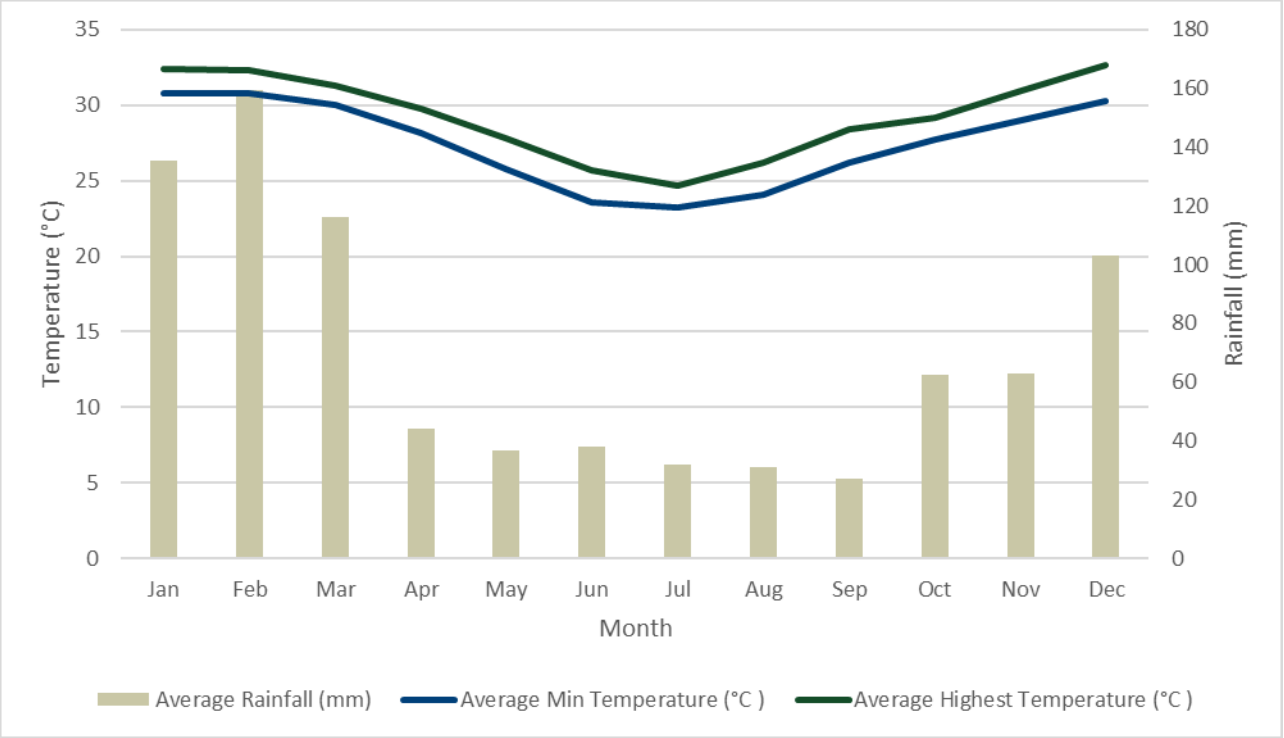


Figure 4.1 **Mean Minimum and Maximum Temperatures and Rainfall Recorded in the Gladstone Region since 1993 (Station 39326)**

4.1.3 Topography

The Project Area is located on a gently undulating to flat landscape that rises to low hills, ranging from 60 m Australian Height Datum (AHD) in the north-east boundary, which is associated with low-lying areas and adjacent watercourses, to 100 m AHD in elevated hills and rises (**Figure 4.2**). The topography of the Project Area appears to be part of a valley formed by fluvial and alluvial processes, with the area being moderately depressed relative to the surrounding landscape. The foothills of the Calliope Range are situated to the south of the Project Area.

4.1.4 Surface Geology and Land Zones

The Geological Survey of Queensland (2024) Detailed Surface Geology Mapping and GeoScience Australia 1:250,000 geology mapping (Monto Sheet SG 5601) identified 5 geological units mapped within the Project Area (**Figure 4.2**). Based on these mapped geological units, three land zones, as described by (Wilson & Taylor, 2012), may be present including:

- Land zone 3: recent Quaternary alluvial systems (alluvial river and creek flats).
- Land zone 4: Tertiary-early Quaternary clay plains (clay plains).
- Land zone 12: Mesozoic to Proterozoic igneous rocks (hills and lowlands on granitic rocks).

A summary of the geology units mapped within the Project Area and associated land zones is provided in **Table 4.1**.

Table 4.1 Geology and Land Zones within the Project Area

Geological Unit	Lithology Description	Land Zone	Source	Presence in the Project Areas
Qa	Clay, silt, sand and gravel; flood-plain alluvium.	4/3	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, Detailed Surface Geology (2025)	DA2, DA3
TQa	Locally red-brown mottled, poorly consolidated sand, silt, clay, minor gravel; high-level alluvial deposits (generally related to present stream valleys but commonly dissected).	4/3		DA2
PRgab	Deeply weathered grey medium-grained biotite-hornblende granodiorite.	12		DA2, DA3
PRgar	Grey to pinkish grey medium-grained biotite-hornblende granodiorite, locally with poikilitic K feldspar	12		DA2
Rgav	Pale pink to grey medium-grained biotite granite, locally with pyrite along joint planes	12		DA2

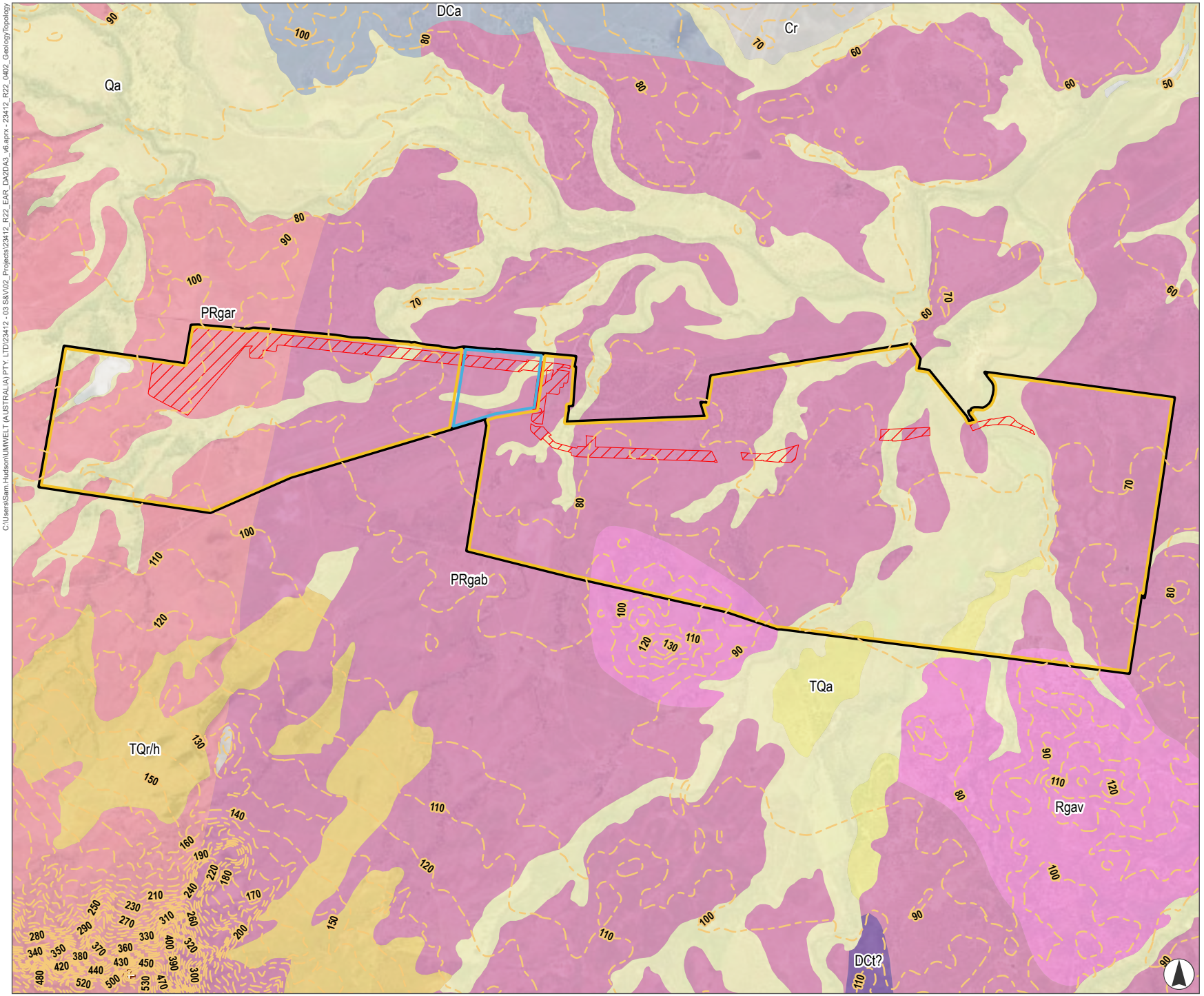


FIGURE 4.2

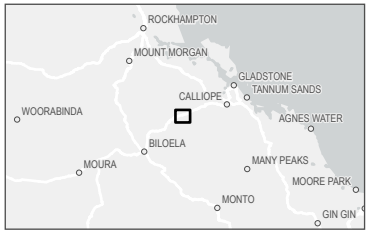
Surface Geology and Topography

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Mountain
- Contours (10m Intervals)

Detailed surface geology

- Bocoolima Granodiorite (PRgab)
- Mount Alma Formation (DCa)
- Qa-QLD (Qa)
- Rockhampton Group (Cr)
- Rocky Point Granodiorite (PRgar)
- Three Moon Conglomerate? (DCt?)
- TQa-QLD (TQa)
- TQr/h-YARROL/SCAG (TQr/h)
- Voewood Granite (Rgav)
- Water body (unspecified) (W)



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4.1.5 Hydrology

The Project Area is located within the Calliope drainage basin. The Calliope drainage basin is approximately 224,863 ha in area and encompasses the townships of Beecher, Burua, Calliope, Clarke, Gladstone, Mount Alma and Yarwun (Department of the Environment, Tourism, Science and Innovation, 2025a). Within the Project Area, there are numerous unnamed tributaries to the Calliope River and ephemeral watercourses, including Maxwelton Creek (stream order 4), Running Creek (stream order 4), Doubtful Creek (stream order 4) Lost Spring Creek (stream order 4) (**Figure 4.3**). Watercourses and drainage features within the Project Area generally flow in a north-east direction before joining the Calliope River – a major watercourse located 1 km north of the Project Area, which flows north-east and ultimately into the Great Barrier Reef (GBR). The GBR is protected under the EPBC Act as a MNES for the following:

- listed on the World Heritage List as the GBR World Heritage Area (GBRWHA)
- listed on the National Heritage List
- Great Barrier Reef Marine Park (GBRMPA).

Matters related to the GBR listed under the EPBC Act were considered as part of the Wooderson Solar Farm EPBC Act referral (2026/10417) to ensure compliance with relevant environmental protection standards. This assessment resulted in a decision of **not controlled action** under the EPBC Act (published on 14/02/2026).

A Surface Water Impact Assessment (including a Flood Impact Assessment) has been completed for the Project, with a summary of potential impacts and management measures provided in **Section 5.1.4.3**.

4.1.6 Land Use

The Project Area exists in a region which has undergone substantial disturbance and clearing of vegetation within the last 200 years for agricultural and resource mining purposes. Through these processes, the natural environment has undergone substantial alteration and fragmentation of habitat values, including through the sowing of pastural grasses resulting in the spread of invasive weeds.

A review of historical imagery identified that the Project Area has undergone large scale land clearing for stock grazing purposes since the first available aerial imagery from 1959 (Q Imagery, 2025). Despite this, large areas within the central-eastern portion of the Project Area have not been subjected to large scale clearing since the late 1990s and currently contain mature regrowth communities of sparse to open woodlands, dominated by native *Eucalyptus* and *Melaleuca* species. While areas of remnant vegetation exist within the landscape, they are subject to very high levels of disturbance and fragmentation. These areas are predominately along riparian corridors and provide localised habitat values.

Infrastructure present within the Project Area includes several unsealed access tracks, artificial waterbodies such as dams and troughs, and cattle fencing. The Dawson Highway intersects the western portion of the Project Area, and the Aurizon Moura System railway corridor runs along the northern boundary.

4.2 Ecological Function

4.2.1 Watercourses

A review of the VM Act watercourse mapping shows that stream orders 1 to 4 occur within the Project Area (**Figure 4.3**). Stream order 4 watercourses are associated with perennial Maxwelton Creek, Doubtful Creek, Lost Spring Creek and Running Creek. Stream order 3 watercourses are associated with Duck Hole Creek. No MSES declared high ecological values waters (watercourses) are mapped within the Project Area. These watercourses all feed to the Calliope River, running approximately 1 km to the north of the Project Area. Watercourse features are consistent with the mapped waterways under the Biodiversity Overlay of the Planning Scheme.

Mapped watercourses and tributaries include low, moderate, high and major impact waterways under the Fisheries Act as Queensland Waterways for Waterway Barrier Works (Department of Agriculture, Fisheries and Forestry, 2025) (**Figure 4.4**). Waterway barrier works within these mapped waterways are subject to design and construction criteria stipulated in the ADR (Department of Agriculture, Fisheries and Forestry, 2025) or the provisions of State code 18: Construction of waterway barrier work.

4.2.2 Wetlands

A review of the Queensland Wetland Mapping identified that there are no MSES declared high ecological value waters (wetlands), MSES high ecological significant (HES) wetlands, or MSES Regulation Vegetation (100 m from a wetland) within the Project Area (**Figure 4.3**). There are no lacustrine MSES HES wetlands within the Project Area. The nearest is outside of the Project Area approximately 1.3 km east. A review of the Queensland Wetland Environmental Values Map under the Environmental Protection Regulation 2019 identified no Wetland Protection Area (WPA) intersecting with the Project Area. The WPA is a buffer area that protects HES wetlands in the GBR catchments (**Figure 4.3**). The nearest WPA is situated approximately 890 m east of the Project Area.

4.2.3 Aquatic Values

Aquatic ecological values assessed within the Project Area relate to the network of ephemeral and / or semi-permanent creek systems and various agricultural dams. Typically, local drainage patterns follow surface topography, and flow from higher elevations in the south-western extent, towards lower elevations in the north-eastern extent of the Project Area. Watercourses and farm dams encompass the extent of habitat areas providing suitable conditions for aquatic life. Vegetation associated with watercourses was found to be consistent, supporting either REs 11.3.25b and 11.3.25d (refer to **Section 0**), or narrow strips of non-remnant riparian vegetation. Dominant riparian canopy species included *Melaleuca viminalis*, *M. fluviatilis* and *Casuarina cunninghamiana* with associated *Blakella tessellaris*, *Eucalyptus tereticornis* and *E. populnea*.

During the field surveys, several watercourses and farm dams contained water (**Photo 4.1** and **Photo 4.2**). Some stream pools, typically those surrounded by remnant vegetation, were found to have clear, shallow water, with a sandy substrate and some woody debris, exposed tree roots and trailing bank vegetation. Small fish and some native crayfish (*Cherax spp.*) were observed in these locations. Aquatic flora species were limited and confined to several species of rushes (genus of *Cyperus*, *Lomandra* and *Juncus*). No listed fauna species are supported by the aquatic habitat of the Project Area.

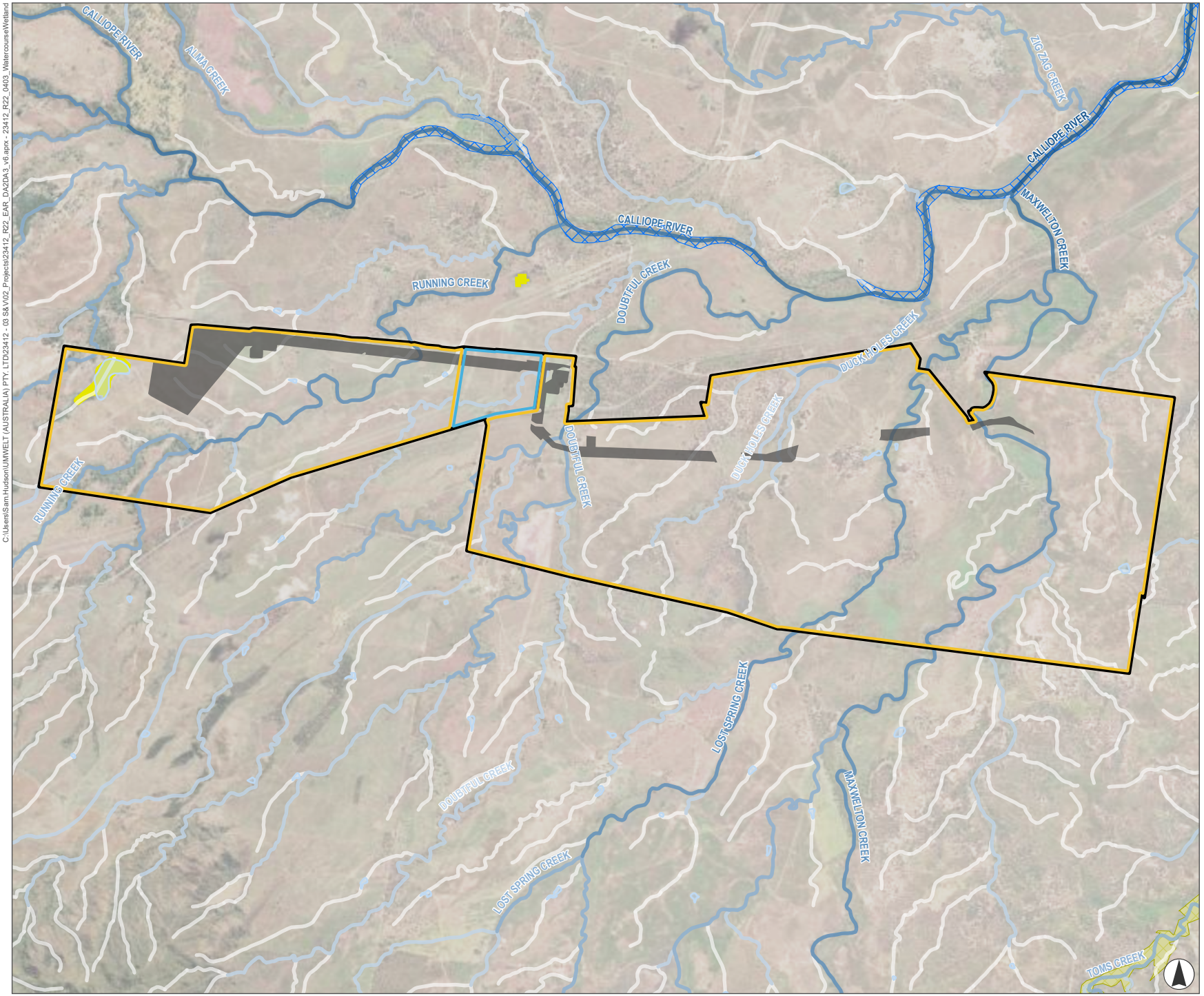
A total of five farm dams were recorded within the Project Area and varied in their suitability for use by MSES species. While most contained limited fringing vegetation, some farm dams were observed to support gently sloping banks and muddy margins, occasionally with sufficient cover in the lower strata to provide refuge opportunities for Latham's snipe (*Gallinago hardwickii*).



Photo 4.1 Artificial Dam with Native Aquatic Flora Species



Photo 4.2 Doubtful Creek (stream order 4) which intersects the DA2 Area



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FIGURE 4.3

Watercourses and Wetlands

Legend

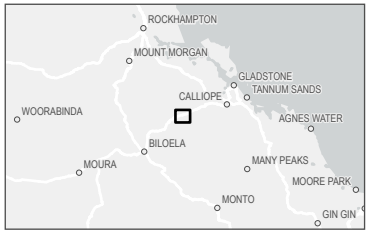
- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Water Point

Stream Order

- 1
- 2
- 3
- 4
- 5
- 6

Wetland areas

- Riverine wetlands [hydrologically natural]
- Lacustrine wetlands [hydrologically modified or artificial]
- Contains wetlands [1 to 50%]



0 1 2

Kilometres

Scale 1:60,000 at A4
GDA1994 Zone 56

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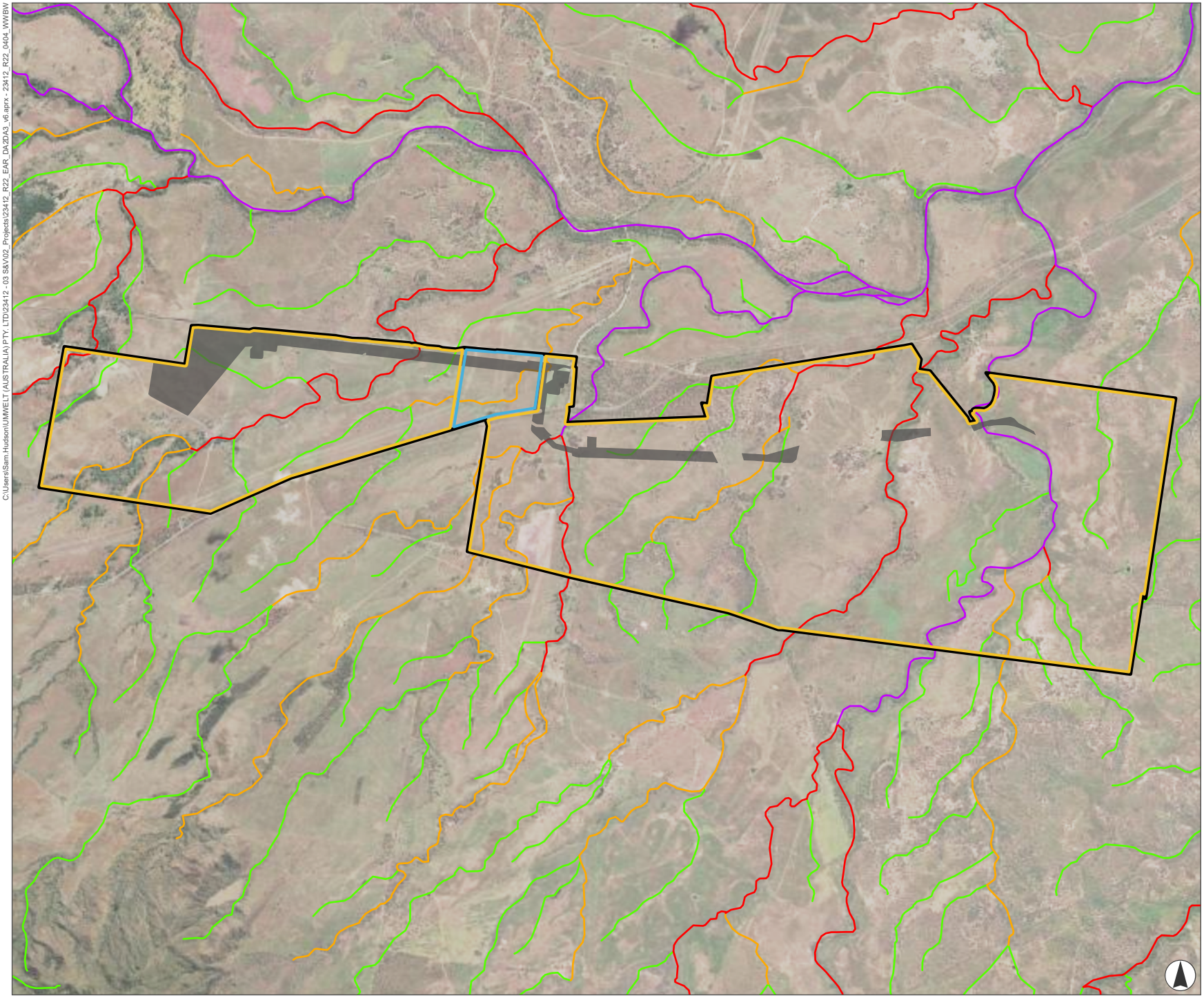


FIGURE 4.4

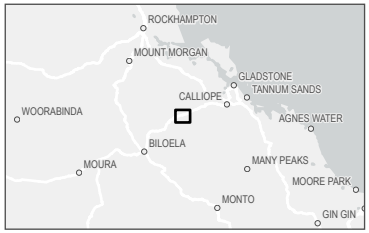
Queensland Waterways for Waterway Barrier Works

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)

Waterways For Waterway Barrier Works

- 1 - Low
- 2 - Moderate
- 3 - High
- 4 - Major



0 1 2

Kilometres

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4.2.4 Corridors and Connectivity

Biodiversity corridors are important areas of vegetation facilitating biodiversity movement across the landscape. Corridor mapping includes the provision of a buffer area to a corridor, so that the development on or adjacent to a corridor (within the buffer area) is adequately assessed to prevent potential impacts of development on a wildlife corridor.

Historic (broad scale land clearing) and current land use practices (agricultural, mining and coal seam gas) have diminished the connectivity value of the majority of the Project Area both at the local and landscape scale. Cleared land is the primary barrier to movement for fauna species, with many areas not supporting any shrub or canopy cover. Other barriers to movement include roads such as the Dawson Highway as well as the Moura Rail System (**Figure 4.5**). Although habitat on either side of the road would retain functional connectivity for larger bodied species, these roads would act as barriers to movement for numerous smaller taxa. Movement across these barriers would also elevate the risk of death or injury by vehicle collision. Several other private tracks dissect the Project Area but are used sparingly by the landholders and are primarily located within cleared areas. Barbed-wire fences are also present, but unlikely to form a significant barrier at any one location for MSES species.

A review of the Queensland statewide corridor mapping (Department of the Environment, Tourism, Science and Innovation, 2024a) indicates that the Project Area is located outside of a State-wide terrestrial biodiversity corridor, however, is intersected by 98 ha of a regional riparian corridor associated with Maxwelton Creek (**Figure 4.7**). It is likely that vegetation associated with Maxwelton Creek and Lost Spring Creek within the Project Area comprise important movement corridors between more intact vegetation in surrounding private land and protected areas such as Maxwelton State Forest, Kroombit Tops National Park, Dan Dan State Forest, Calliope Range State Forest and Don River State Forest. Furthermore, these areas eventually connect to a State-wide terrestrial corridor to the south. While there is greater connectivity in areas along riparian zones, most patches are highly fragmented at the landscape scale and the expanse of non-remnant habitat between patches likely acts as a barrier to movement for many species. Despite this, these fragments are still likely to provide habitat opportunities for a range of species including listed threatened and migratory species and may provide stepping stone dispersal habitat for larger bodied species who are able to traverse non-remnant landscapes (i.e. squatter pigeon (southern) and koala).

4.2.5 Essential Habitat

A review of the essential habitat mapping shown on the Vegetation Management Supporting Map (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, 2025b), was reviewed to identify areas delineated as species essential habitat. This review determined that essential habitat is not present within the Project Area. Essential habitat for squatter pigeon (southern) (*Geophaps scripta scripta*) is mapped 1 km north of the Project Area along the Calliope River. Nearby essential habitat is displayed in **Figure 4.6**.

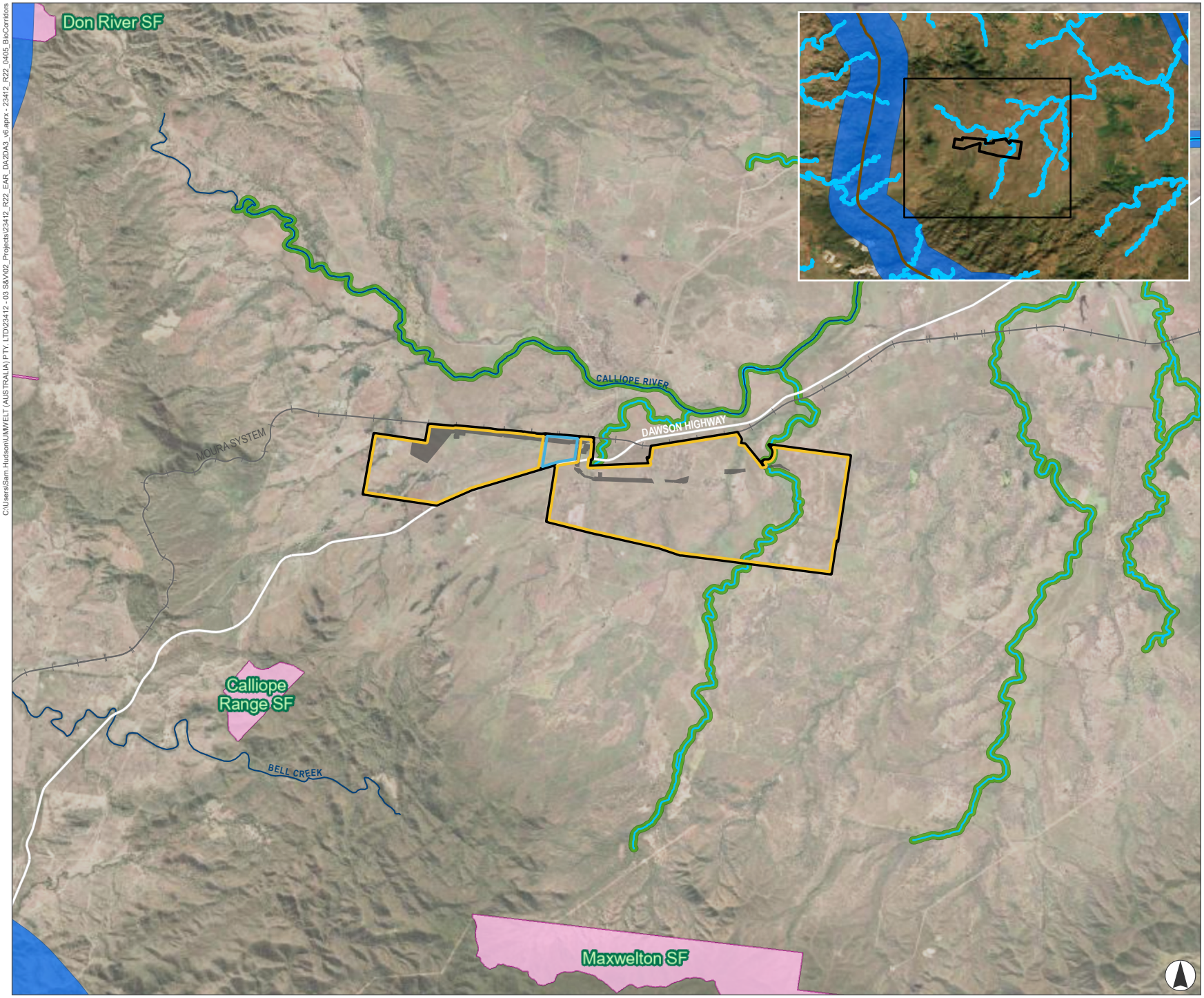


FIGURE 4.5

Queensland Statewide Biodiversity Corridors and Essential Habitat

Legend

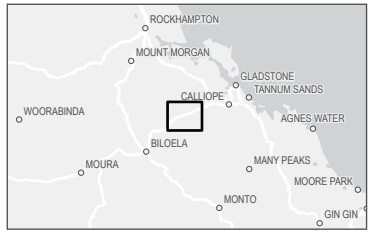
- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Major Roads
- Railways
- Major Watercourse

Statewide Biodiversity Corridors

- Riparian Corridor Centrelines
- Terrestrial centrelines
- State Corridor Buffer
- Regional Corridor Buffer

Protected areas and forests of Queensland

- State Forest



0 1 2

Kilometres

Scale 1:140,000 at A4
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4.3 Flora

4.3.1 Regulated Vegetation

A review of the Regulated Vegetation Management Map (Version 7.15) (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, 2025a) identified the Project Area is predominantly mapped as Category X (non-remnant) vegetation (**Figure 4.6** and **Appendix A**). A Property Map of Assessable Vegetation (PMAV) is subject to several lots within the Project Area (LotPlan - 2006/004238 and LotPlan - 2016/003772 (**Figure 4.6**).

Areas of Category C (high-value regrowth vegetation) and Category R (regrowth watercourse and drainage feature areas) are mapped within the Project Area, particularly along watercourses including Maxwelton Creek, Duck Hole Creek, Doubtful Creek and Running Creek (**Figure 4.6**) and along a road easements that intersect the Project Area.

There are no patches of MSES Regulated Vegetation (Category B), as shown on the Regulated Vegetation Management Map (Version 7.15) (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, 2025a)(**Figure 4.6**). Further details regarding MSES Regulated Vegetation are provided in **Section 4.6**.

A summary of the regulated vegetation mapped within the Project Area is provided in **Table 4.2** and depicted in **Figure 4.6**.

Table 4.2 Regulated Vegetation Mapped within the Project Area and Vegetation Clearance Footprint

Category	Description	Extent within the Project Area (ha)	Extent within the Vegetation Clearance Footprint (ha)	
			DA2 Area	DA3 Area
C	High-value regrowth (HVR) vegetation	42.1	-	-
R	Regrowth watercourse and drainage feature area (within 50 m)	256.6	18.2	0.5
X	Non-remnant (unregulated) vegetation	2,377.2	124.1	10.8

Under the VM Act, clearing of Category X vegetation on freehold land is exempt clearing. Clearing of Category C and R vegetation is not assessable development and will be undertaken in accordance with the Accepted Development Vegetation Clearing Code (ADVCC), either complying with the clearing limits or providing an exchange area for the relevant clearing areas. Clearing of Category X vegetation within a road reserve is technically assessable development, however this can also be undertaken in accordance with the ADVCC. Therefore, no assessment of regulated vegetation is required as part of this EAR.

4.3.2 Regional Ecosystems

A review of the State RE mapping (version 13.1) (Department of Natural Resources Mines and Energy, 2020) shows that the Project Area is mapped entirely as non-remnant vegetation. Areas of HVR are mapped around Maxwelton Creek and existing road cadastral easements that intersect the Project Area (**Figure 4.7**).

Field investigations ground-truthed both remnant and regrowth REs within the Project Area (**Figure 4.8, Table 4.3**). In total, 659.8 ha of remnant and 397.3 ha of regrowth REs was verified, comprising of one 'endangered', 4 'of concern' and 4 'least concern' REs under the VM Act.

Most of the Project Area (88%) comprises non-remnant vegetation (2,356.0 ha) interspersed with remnant (9%). Regrowth vegetation comprised of 3% of Project Area.

A summary of the ground-truthed REs including their extent and condition is provided in **Table 4.3** and depicted on **Figure 4.8**. A detailed description of each RE including a representative photo is provided in **Table 4.4**.

Table 4.3 Extent and Condition of Ground-truthed REs Identified within the Project Area and Vegetation Clearance Footprint

RE	REDD Short Description	VM Act Status[2]	Condition	Extent within Project Area (ha)	Extent within the Vegetation Clearance Footprint	
					DA2 Area (ha)	DA3 Area (ha)
11.3.2	*Eucalyptus populnea* (poplar box) woodland on alluvial plains.	OC	Remnant	9.8	-	-
			Regrowth	5.9	-	-
11.3.4	*Eucalyptus tereticornis* and/or *Eucalyptus spp.* woodland on alluvial plains.	OC	Remnant	105.0	-	-
			Regrowth	54.3	-	-
11.3.4a	*Blakella tessellaris* (Moreton Bay ash) woodland. On alluvial sandridges to elevated levees and level terraces adjacent to larger stream channels which are irregularly flooded or possibly relict.	OC	Remnant	6.4	-	-
			Regrowth	0.8	-	-
11.3.25b	*Melaleuca leucadendra* (broadleaved tea-tree) and/or M. fluviatilis, *Nauclea orientalis* (Leichhardt tree) open forest.	LC	Remnant	67.2	1.4	-
			Regrowth	0.3	-	-

[2] *VM Act Status: E = Endangered, OC = Of Concern, LC = Least Concern*

RE	REDD Short Description	VM Act Status[2]	Condition	Extent within Project Area (ha)	Extent within the Vegetation Clearance Footprint	
					DA2 Area (ha)	DA3 Area (ha)
11.3.25d	*Melaleuca bracteata* woodland to open forest. Occurs on fringing alluvial soils or near-channel levees on heavy wet clays.	LC	Remnant	5.9	-	-
			Regrowth	2.1	-	-
11.12.1	*Eucalyptus crebra* woodland on igneous rocks.	LC	Remnant	7.4	-	-
11.12.3	*Eucalyptus crebra*, *E. tereticornis*, *Angophora leiocarpa* (rusty gum) woodland on igneous rocks especially granite.	OC	Remnant	9.5	0.0[3]	-
			Regrowth	6.4	-	-
11.12.17	*Eucalyptus populnea* woodland on igneous rocks. Colluvial lower slopes.	E	Remnant	57.7	0.2	-
			Regrowth	9.7	1.1	-
Non-remnant	Non-remnant	-	Non-remnant	3,280.1	139.7	11.3

[3] Rounded down to 0.0 ha

Table 4.4 Ground-truthed REs within the Project Area

RE	RE Description	Representative Photo
11.3.2	*Eucalyptus populnea* woodland (to 25 m) on alluvial plains with associated *Eucalyptus crebra*. The very sparse sub-canopy layer consisted of *Atalaya hemiglauca*, *Vachellia bidwillii* and *Petalstigma pubescens* (quinine tree). A very sparse shrub layer consisted juvenile canopy species, *Grewia latifolia* (dysentery plant), Lantana camara* (lantana) and *Cryptostegia grandiflora**(rubber vine). The ground layer was generally sparse to mid-dense and was characterised to predominately native grasses and forbs, including *Chloris ventricose* (tall chloris), *Eragrostis brownii* (Brown's lovegrass), *Sporobolus caroli* (fairy grass), *Chloris inflata** (purpletop chloris), *Chloris virgata** (feathertop rhodes grass), *Paspalidium distans* (shotgrass), *Cymbopogon refractus* (barbed-wire grass) and *Cyanthilium cinereum*. The landform ranged from alluvial flats, abandoned channels to very gently rising plains. Areas of Category R vegetation was ground-truthed to contain this RE, as well as additional patches of remnant and regrowth forms not previously mapped by the DoNRMMRRD Vegetation reflecting regrowth were typically 8–13 m in height.	

RE	RE Description	Representative Photo
11.3.4	*Eucalyptus tereticornis*, *Blakella tessellaris*, *C. clarksoniana* and *E. crebra* open woodland to woodland (to 15 m) on alluvial plans and levees. A sparse sub-canopy of *E. crebra* and *B. tessellaris* was also present. A sparse to mid-dense shrub layer was present and consisted of canopy recruits, *Lantana camara**, *Acacia salicina* (doolan), *Melaleuca viridiflora* and *Petalostigma pubescens*. The sparse to mid-dense ground layer was dominated by a combination of introduced and native grasses and forbs, including *Alloteropsis semialata* (cockatoo grass), *Sporobolus creber*, *Chloris inflata**, *Eragrostis leptostachya*, *Aristida spp*. *Lantana montevidensis** (creeping lantana), *Perotis rara* (comet grass) and *Scleria mackaviensis*. While this RE was heavily fragmented and often restricted to isolated patches or alluvial flats, this RE was predominately found to meet the condition thresholds of remnant vegetation, with more areas ground-truthed that were not previously reflected in the DoNRMMRRD mapping. The landform generally ranged from alluvial flats to levees.	

RE	RE Description	Representative Photo
11.3.4a	*Blakella tessellaris* woodland to open woodland (to 12 m) with sub-dominant *Eucalyptus crebra*, *E. populnea* and *C. clarksoniana*, on alluvial elevated levees and level terraces adjacent to large stream channels. This vegetation community was found across the southwestern and northeastern portions of the Project Area and predominately met the condition thresholds of mature regrowth, with more areas ground-truthed that were not previously reflected in the DoNRMMRRD mapping. A low tree or tall shrub layer (3-7 m) dominated by juvenile canopy species and Petalostigma pubescens, *Acacia salicina* and *Grevillea striata* (beefwood) was also present. The ground layer was generally sparse to mid-dense and was characterised by exotic and native species including, *Bothriochloa pertusa**, *Urochloa decumbens**, *Panicum effusum*, *Sporobolus australasicus*, *Aristida spp*. and *Chloris spp*. All patches of vegetation characteristic of 11.3.4a have been subject to previous land clearing and grazing pressures.	 

RE	RE Description	Representative Photo
11.3.25b	*Melaleuca viridiflora*, *M. fluviatilis* and *Casuarina cunninghamiana* open-forest (to 20 m) on watercourses and fringing levees. Associated canopy tree species included *Nauclea orientalis* and *Blakella tessellaris*. The sparse to mid-dense sub-canopy was characterised by *Mallotus philippensis*, *Glochidion ferdinandi*, *Ficus opposita*, *Ficus coronata* and *Melia azedarach*. The mid-dense shrub layer consisted of juvenile canopy and sub-canopy species and high infestations of exotic *Lantana camara**, *Cryptostegia grandiflora**, *Maclura cochinchinensis* (cockspur thorn) and *Cardiospermum grandiflorum**. The ground-layer consisted of predominately exotic grasses and forbs, including *Praxelis clematidea**, *Euphorbia heterophylla** and *Megathyrsus maximus**. Within the Project Area, RE 11.3.25b is the dominant watercourse community present along Maxwelton Creek, Doubtful Creek and Lost Spring Creek.	
11.3.25d	*Melaleuca bracteata* low woodland to low open forest (to 7 m) on coarse sand pits and levees. This vegetation community occurred in both a remnant and mature regrowth form, associated with an unnamed watercourse (stream order 2) in the southern portion of the eastern section of the DA2 Area.	

RE	RE Description	Representative Photo
11.12.1	*Eucalyptus crebra* woodland to open-woodland (to 15 m) on igneous rocks. Other associated tree species included *E. melanophloia*, *Corymbia erythriophloia* and *C. clarksoniana*. The very sparse subcanopy was dominated by *Grevillea striata*, *Melaleuca nervosa* and *Petalostigma pubescens*. Occasionally a shrub layer (to 5 m) dominated by juvenile canopy species and *Lantana camara** was present, although extensive grazing has likely reduced the capacity for canopy species to regenerate. The ground layer was diverse and comprised a variety of native and introduced herbs and graminoids, including *Heteropogon contortus* (black speargrass), *Themeda triandra* (kangaroo grass), *Melinis repens** (red natal grass), *Gomphocarpus physocarpus** (balloon cottonbush) and *Pterocaulon sphacelatum* (applebush). Within the Project Area, one large patch of this RE was ground-truthed within the eastern section of the DA2 Area.	
11.12.3	*Eucalyptus tereticornis* dominant open-woodland to woodland (to 15 m) with subdominant to dominant *E. crebra* on rolling granite hills. Other associated species in the canopy layer included *Corymbia clarksoniana* and *Blakella tessellaris*. The very sparse subcanopy was dominated by *Vachellia bidwillii*, *Melaleuca nervosa*, *Grevillea striata* and *Petalostigma pubescens*. Occasionally a shrub layer (to 5 m) dominated by juvenile canopy species and *Lantana camara** was present, although extensive grazing has likely reduced the capacity for canopy species to regenerate. The ground layer was characterised by native species including *Cymbopogon refractus*, Digitaria ammophila (silky umbrella grass), *Chrysopogon fallax*, *Sida hackettiana*, *Murdannia graminea* (murdannia) and *Fimbristylis dichotoma* (common fringe-rush). Within the Project Area, patches of this RE were ground-truthed within the south extent, where the landform rises into rolling granite hills. Patches of this vegetation have been subject to historical land clearing processes and was predominately ground-truthed to meet the condition threshold of mature regrowth, with areas of remnant dispersed throughout the Project Area.	

RE	RE Description	Representative Photo
11.12.17	*Eucalyptus populnea* woodland (to 17 m) with associated *E. crebra* on igneous colluvial lower slopes. Occasionally, a sub-canopy was present, and included *Petalostigma pubescens*, *Eremophila mitchellii* and *Corymbia clarksoniana*. A shrub layer was largely absent from this vegetation community; however, sometimes included *Atalaya hemiglauca*, *Acacia salicina* and *Capparis canescens*. The ground-layer was predominantly characterised by native grass and forbs species including *Aristida spp*. *Chloris spp*. *Eragrostis spp*. *Eremophila debilis* (winter apple), *Achyranthes aspera*, *Rostellularia adscendens*, *Centipeda minima*, *Murdannia graminea*, *Glossocardia bidens* (native cobbler's pegs), *Cyperus gracilis*, *Spermacoce brachystema*, and *Desmodium spp*. Many patches of this RE in remnant form were not previously mapped by the DoNRMMRRD. Vegetation within this community was largely intact and not subjected to extensive anthropogenic disturbances.	
Non-remnant	Vegetation characteristics of this vegetation community is dominated by exotic grasses with occasional scattered emergent trees. The exotic grasses are dominated by *Hyparrhenia hirta** (coolati grass) and *Eragrostis curvula** (African love grass) with *Heteropogon contortus* whilst the scattered canopy trees vary but may include *Eucalyptus populnea*, *E. tereticornis* and *Blakella tessellaris* or shrubby *Vachellia bidwillii* and Petalostigma pubescens. Extensive grazing activities are evident in addition to past land clearing. This vegetation community is associated with a diversity of landforms and soils.	

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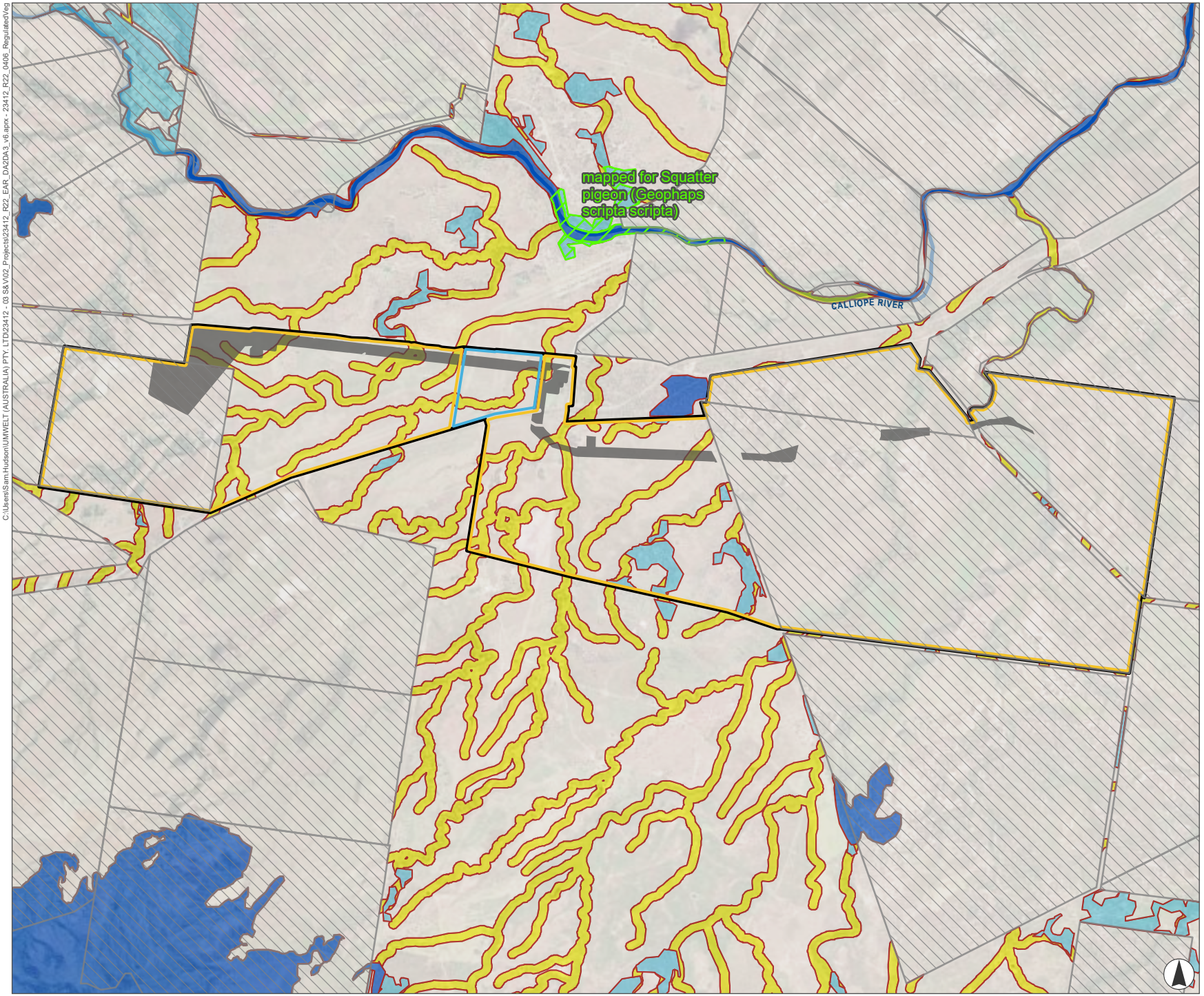


FIGURE 4.6

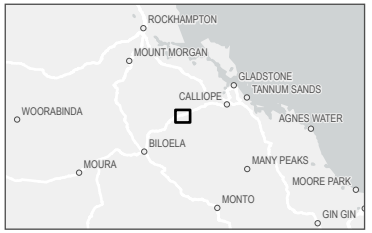
Regulated Vegetation

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Major Watercourse
- Essential Habitat
- PMAV

RVM Categories

- Category B
- Category C
- Category R
- Category X



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Kilometres

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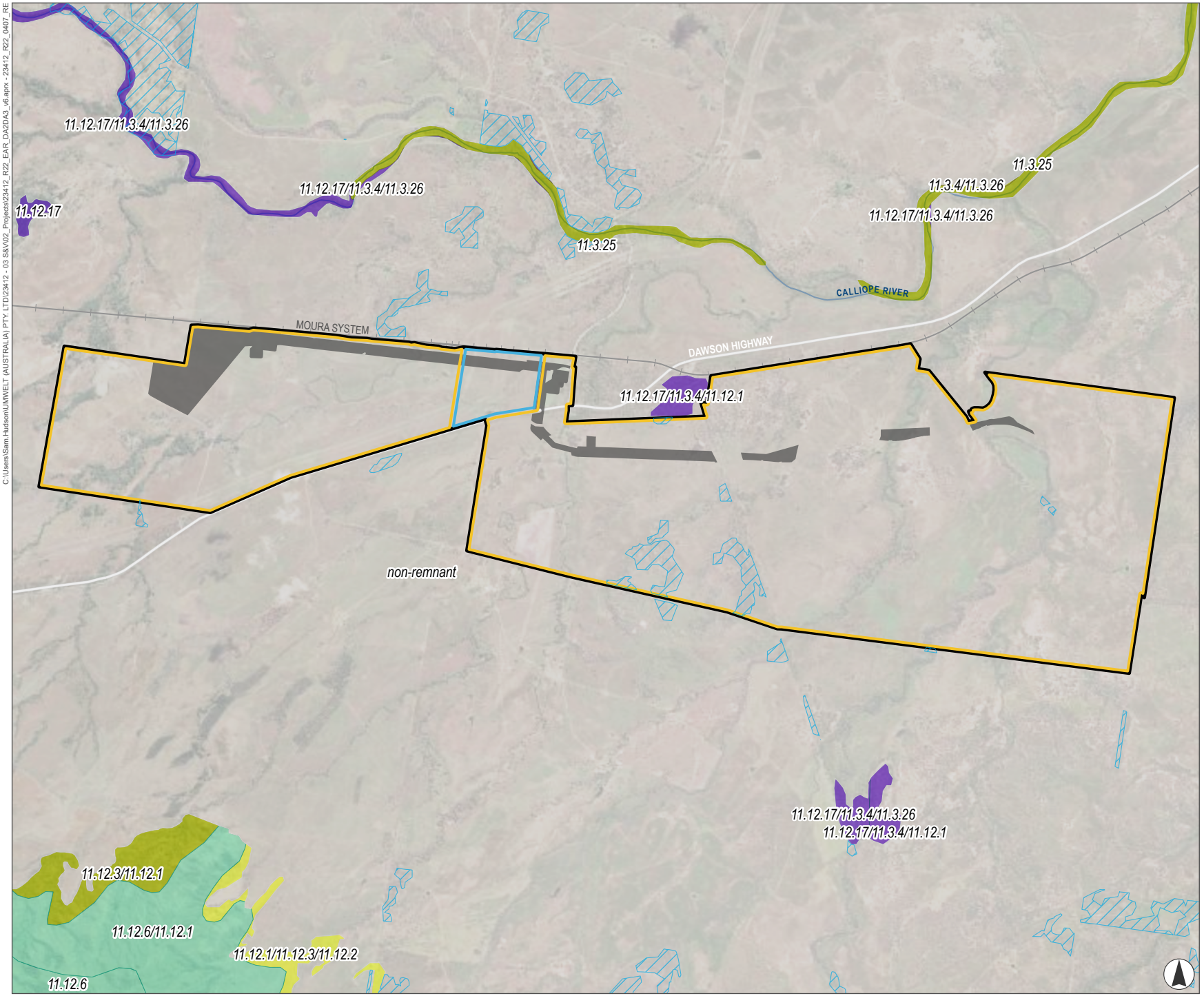


FIGURE 4.7

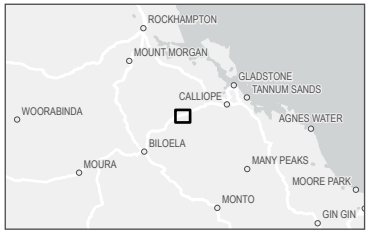
State-mapped Regional Ecosystems

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Major Roads
- Major Watercourse
- Railways
- High Value Regrowth (RVM Cat C)

Regional Ecosystem (RE) Mapping

- Endangered - Dominant vegetation
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Non-remnant vegetation, cultivated or built environment



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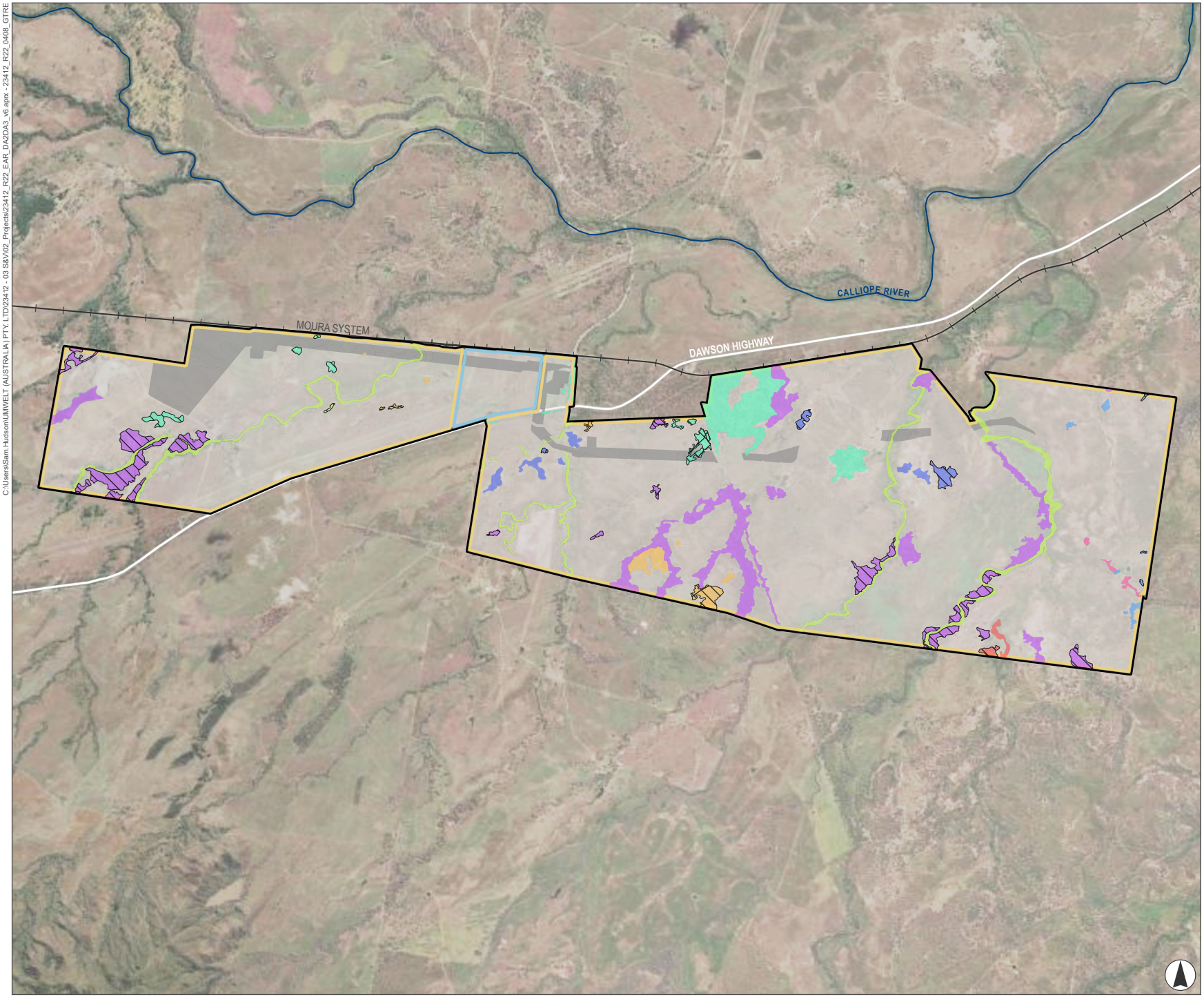


FIGURE 4.8

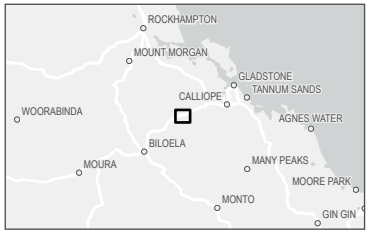
Ground-truthed Regional Ecosystems

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Major Watercourse
- Railways
- Major Roads

Ground-Truthed Regional Ecosystem Mapping

- 11.12.1
- 11.12.17
- 11.12.3
- 11.3.2
- 11.3.25b
- 11.3.25d
- 11.3.4
- 11.3.4a
- Non-remnant
- Regrowth



0 1 2

Kilometres

Scale 1:60,000 at A4
GDA1994 Zone 56

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4.3.3 Threatened Ecological Communities

While EPBC Act–listed TECs are not considered under State legislation, they are detailed below for context and completeness. The Wooderson Solar Farm has been assessed under the EPBC Act and determined to be a **not controlled action** (published on 14/02/2026), therefore, no assessment or offsets are required under the EPBC Act.

Field assessments confirmed one TEC listed under the EPBC Act, the Poplar Box TEC within the Project Area. The PMST report (Department of Climate Change, Energy, the Environment and Water, 2025a) listed a further 7 TECs as potentially occurring within or within 20 km of the Project Area. The field assessments, however, confirmed that these TECs are unlikely to be present within the Project Area due to the absence of supporting REs and/or the Project Area being outside of the distribution of the TEC (**Table 4.5**).

The location and extent of Poplar Box TEC is depicted in **Figure 4.9** and summarised in **Section 4.3.3.1**. The likelihood of occurrence assessment for all TECs is provided in **Appendix B**.

Table 4.5 Possible TECs identified from the PMST database

TEC	EPBC Act Status	Analogous REs[4]	Presence within the DA2 Area (ha)	Presence within the DA3 Area (ha)
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community	Endangered	12.2.7, 12.3.4, 12.3.4a, 12.3.5, 12.3.6, 12.3.20	**Not Present** The DA2 Area is located within the Brigalow Belt Northern Bioregion, which is outside of the boundary of this TEC.	**Not Present** The DA3 Area is located within the Brigalow Belt Northern Bioregion, which is outside of the boundary of this TEC.
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	12.1.1, 12.3.20	**Not Present** The DA2 Area is within the Brigalow Belt North Bioregion and is outside of the distribution of this TEC.	**Not Present** The DA3 Area is within the Brigalow Belt North Bioregion and is outside of the distribution of this TEC.
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	11.3.3, 11.3.15, 11.3.16, 11.3.28, 11.3.37	**Not Present** The DA2 Area is located within the Brigalow Belt Northern Bioregion, which is outside of the boundary of this TEC.	**Not Present** The DA3 Area is located within the Brigalow Belt Northern Bioregion, which is outside of the boundary of this TEC.

[4] *These REs can form part of or align with the TECs if the key diagnostic characteristics and condition thresholds specified as part of the Commonwealth Conservation or Listing Advice are also met.*

TEC	EPBC Act Status	Analogous REs[4]	Presence within the DA2 Area (ha)	Presence within the DA3 Area (ha)
Lowland Rainforest of Subtropical Australia	Critically Endangered	12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1, 12.12.16	**Not Present** Vegetation or REs consistent with this TEC was not observed within the DA2 Area.	**Not Present** Vegetation or REs consistent with this TEC was not observed within the DA3 Area.
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	11.3.2, 11.3.17, 11.4.7, 11.4.12	**Confirmed Present** A total of three patches of Poplar Box TEC (RE 11.3.2) are present within the DA2 Area, covering approximately 6.6 ha. No TEC is present within the Vegetation Clearance Footprint. Other analogous REs are present within the DA2 Area but do not meet the condition criteria for the TEC.	**Not Present** Despite its presence in the adjacent DA3 Area, no areas of Poplar Box TEC are present within the DA3 Area.
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	11.2.3, 11.3.11, 11.4.1, 11.5.15, 11.8.3, 11.8.6, 11.8.13, 11.9.4, 11.8.9 11.11.18	**Not Present** Vegetation consistent with this TEC was not observed within the DA2 Area.	**Not Present** Vegetation consistent with this TEC was not observed within the DA3 Area.
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	12.3.3, 12.3.3a, 12.3.3d, 12.3.19, 12.3.20, 12.3.10, 12.3.18	**Not Present** The DA2 Area is within the Brigalow Belt North Bioregion and is outside of the distribution of this TEC.	**Not Present** The DA3 Area is within the Brigalow Belt North Bioregion and is outside of the distribution of this TEC.
Weeping Myall Woodlands	Endangered	11.3.2, 11.3.17, 11.4.7, 11.4.12	**Not Present** Vegetation consistent with this TEC was not observed within the DA2 Area.	**Not Present** Vegetation consistent with this TEC was not observed within the DA3 Area.

4.3.3.1 Poplar Box Grassy Woodland on Alluvial Plains TEC

The Poplar Box TEC comprises grassy woodlands and open woodlands on active alluvial plains along the east coast of Australia (Department of the Environment and Energy, 2019). Poplar Box TECs are assigned a Condition Class (Class A, B or C) according to:

- crown cover dominance of canopy trees
- percentage cover of native perennial vegetation in the ground layer
- native species richness within the ground layer
- density of mature trees (>30 centimetres (cm) diameter at breast height (DBH)).

Three patches of Condition Class C - Poplar Box TEC were identified within the DA2 Area, totalling 6.6 ha (**Figure 4.9**). The Vegetation Clearance Footprint avoids all patches of Poplar Box TEC.

The Project has sought to apply the mitigation hierarchy to the greatest extent practicable, with no direct impacts proposed to the Poplar Box TEC. A 30 m avoidance buffer has been applied around 2 of the 3 patches of TEC within the Project Area to limit potential fragmentation impacts and indirect impacts. However, 0.4 ha of the Vegetation Clearance Footprint is within 30 m of (but outside) one Poplar Box TEC patch, giving consideration to the engineering, hydrological, ecological, and landowner requirements for the access track and transmission easement design in this area.

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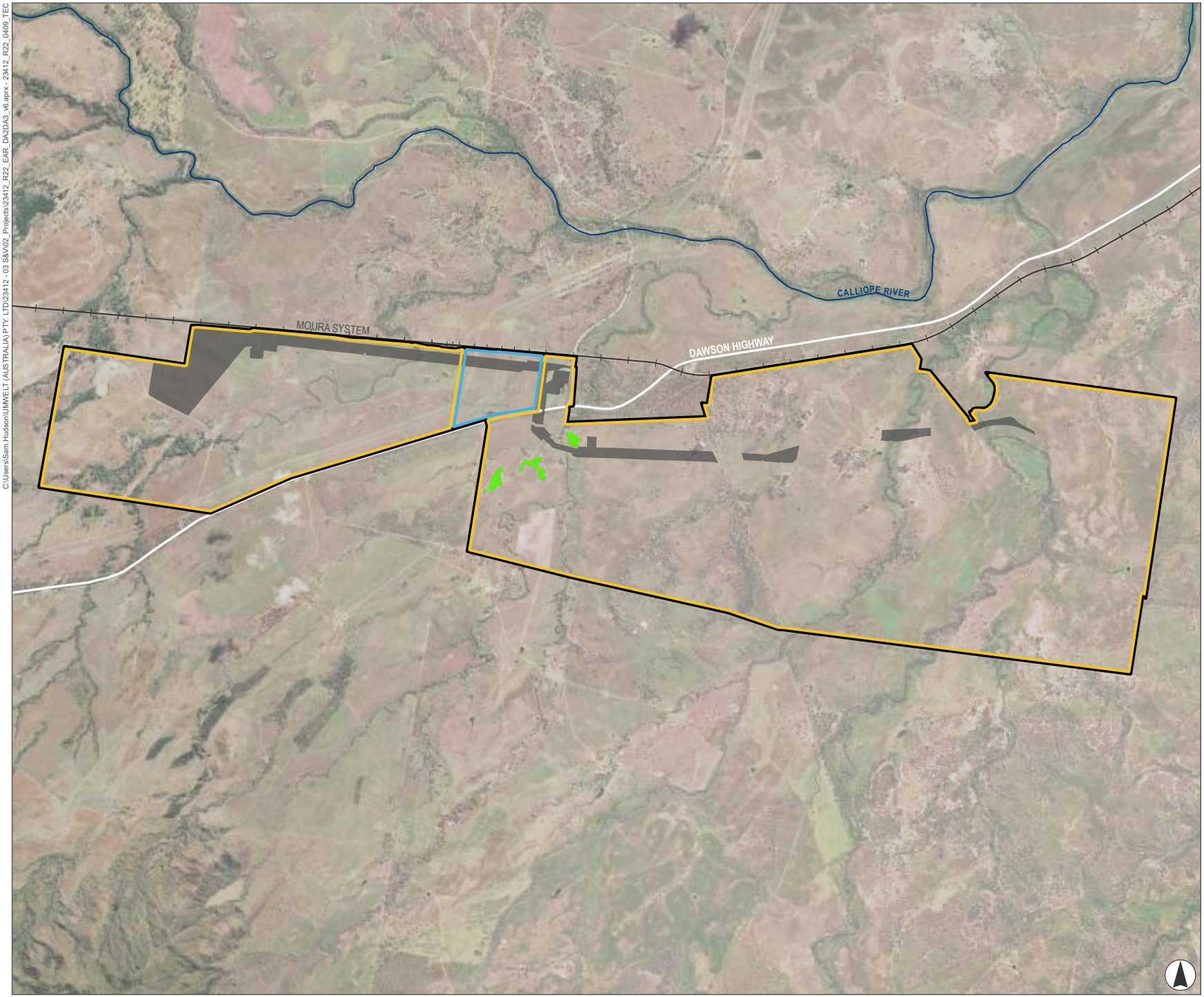


FIGURE 4.9

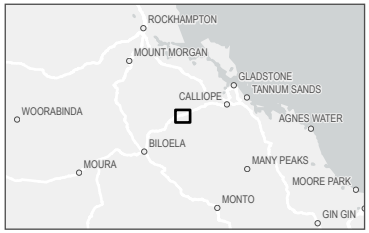
EBPC Act Threatened Ecological Communities

Legend

- Project Area
- Project Area (DA2)
- Project Area (DA3)
- Vegetation Clearance Footprint (DA2 & DA3)
- Major Watercourse
- Railways
- Major Roads

Ground-Truthed Regional Ecosystem Mapping

- Poplar Box TEC Confirmed



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Kilometres

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4.3.4 Flora Diversity

A total of 243 flora species from 56 families were systematically and opportunistically identified during field surveys throughout the Project Area. The plant families representing most taxa were Poaceae (61 taxa) and Myrtaceae (13 taxa). A total of 49 introduced flora species were identified during field surveys. A detailed list of species recorded during field surveys is provided in **Appendix C**.

4.3.5 Threatened Flora

The desktop assessment identified 21 threatened flora species under the NC Act and EPBC Act as previously recorded (WildNet, ALA) or predicted to occur (PMST) within 20 km of the Project Area (**Figure 4.10** and **Appendix A**). Of these, 19 are listed under the EPBC Act and 17 are listed under the NC Act. A likelihood of occurrence assessment was conducted for each of these species which accounted for species' habitat preference and occurrence data from the desktop assessment. Based on the initial desktop assessment, two threatened flora species, namely *Cycas megacarpa* and *Acacia eremophiloides*, were considered to have a 'High' likelihood of occurrence and were targeted during ecological field surveys.

An extensive search for target species was undertaken as part of the ecological field surveys and no individuals and/or populations were identified. Given the failure to detect these species during surveys and the lack of suitable habitat identified, all threatened flora species identified in the desktop assessment are considered to have a 'Low' likelihood or 'No' potential to occur within the Project Area. An updated likelihood of occurrence assessment for threatened flora species, reflecting the results of both desktop and field investigations, is provided in **Appendix B**.

4.3.6 Protected Plant Flora Trigger Mapping

The Project Area does not contain any 'high-risk' areas on the DETSI Protected Plants Flora Survey Trigger Map (Version 10) (Department of the Environment, Tourism, Science and Innovation, 2023) (**Figure 4.10** and **Appendix A**). The nearest 'high-risk' area is located approximately 2.5 km south of the western section of the Project Area, likely associated with *Cycas megacarpa* and *Acacia eremophiloides*. As such, a survey in accordance with the *Flora Survey Guideline – Protected Plants* (Department of Environment, Tourism, Science and Innovation, 2025) is not required for the Project.

4.3.7 Introduced Flora

Six introduced species listed as Category 3 Restricted Matters under the Biosecurity Act and WoNS, were recorded within the during field surveys (**Table 4.6**). The GBO under Part 1 of the Biosecurity Act states that all individuals and organisations are responsible for biosecurity risk and threats under their control.

Other introduced weed species observed during the field surveys included *Hyparrhenia hirta**, *Eragrostis curvula**, *Bothriochloa pertusa**, *Megathyrus maximus**, *Urochloa mosambicensis** and *Xanthium occidentale**. A detailed list of species recorded during the field surveys is provided in **Appendix C**.

Table 4.6 Listed WoNS and Restricted Matter weeds within the Project Area

Scientific Name	Common Name	WoNS	Biosecurity Act Status	Occurrence within the Project Area
Aristolochia elegans*	Dutchman's pipe	Yes	Category 3	Low to moderate abundance throughout the Project Area. Higher infestations were observed within the riparian zones of Maxwelton and Lost Spring Creek (REs 11.3.25b and 11.3.25d), strangling the canopy trees.
Cryptostegia grandiflora*	Rubber vine	Yes	Category 3	Scattered to low abundance throughout the Project Area. Often observed as individual plants, or occasionally small infestations of multiple plants.
Lantana camara*	Lantana	Yes	Category 3	Scattered across the Project Area in low to moderate abundance. High infestations were observed along the riparian zones of Maxwelton Creek and Lost Spring Creek (REs 11.3.25b and 11.3.25d) and was often the dominant species within the shrub-layer.
Lantana montevidensis*	Creeping lantana	Yes	Category 3	Scattered across the Project Area in low abundance.
Opuntia stricta*	Common prickly pear	Yes	Category 3	Scattered across the Project Area in low abundance.
Opuntia tomentosa*	Velvety prickly pear	Yes	Category 3	Scattered across the Project Area in low abundance.