



Planning,
Industry &
Environment

Culcairn Solar Farm

Independent Planning Commission Briefing

25 February 2021

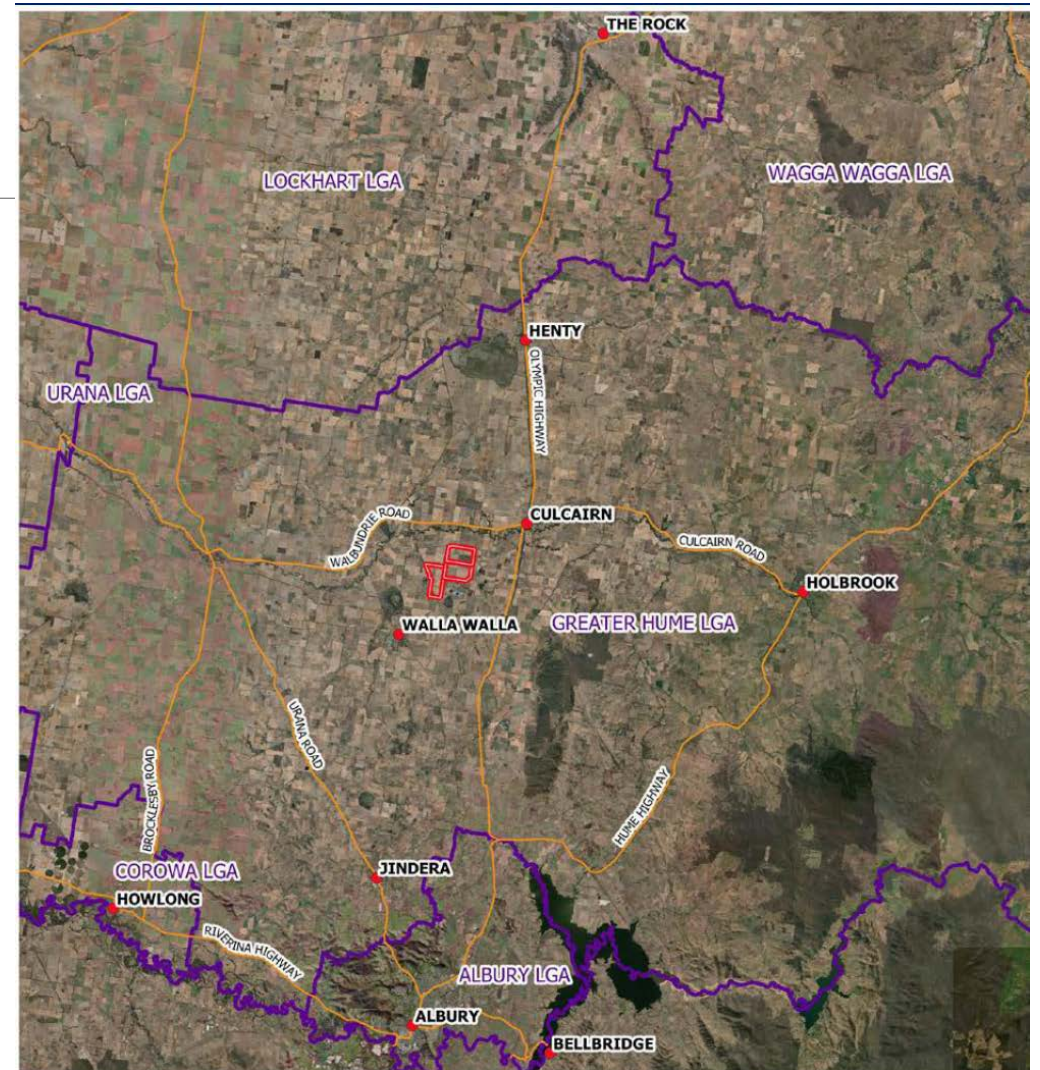
Contents

1. *Context*
2. *Submissions*
3. *Amendments*
4. *Key issues*



Proposed Project

- Neoen Australia Pty Ltd
- 350 MW solar farm
- 100 MW / 200 MWh energy storage facility
- 900,000 panels - 4.2 metres high
- connection to TransGrid's 330kV transmission line
- on site substation
- 30 years (but can be extended)
- 892 hectare development footprint
- \$636.6 million investment
- \$5 million contributions to Council
- \$4.8 million to Community Benefit Fund
- 500 construction jobs



18-441 Culcairn Solar Farm
Culcairn SF Regional Context

Legend

-  Subject Land
-  NSW Major Roads
-  NSW Local Government Areas
-  Towns

0 7.5 15 km



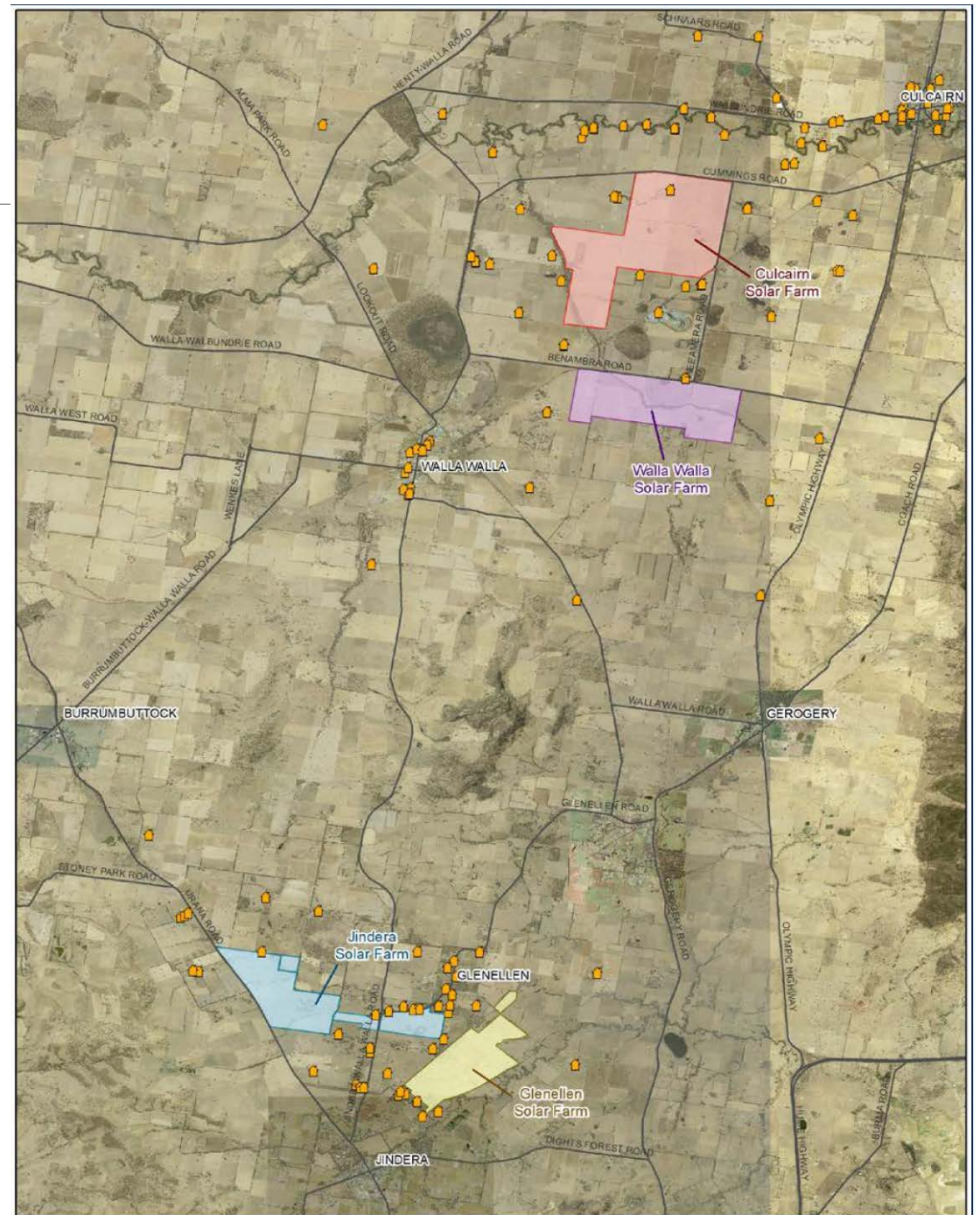
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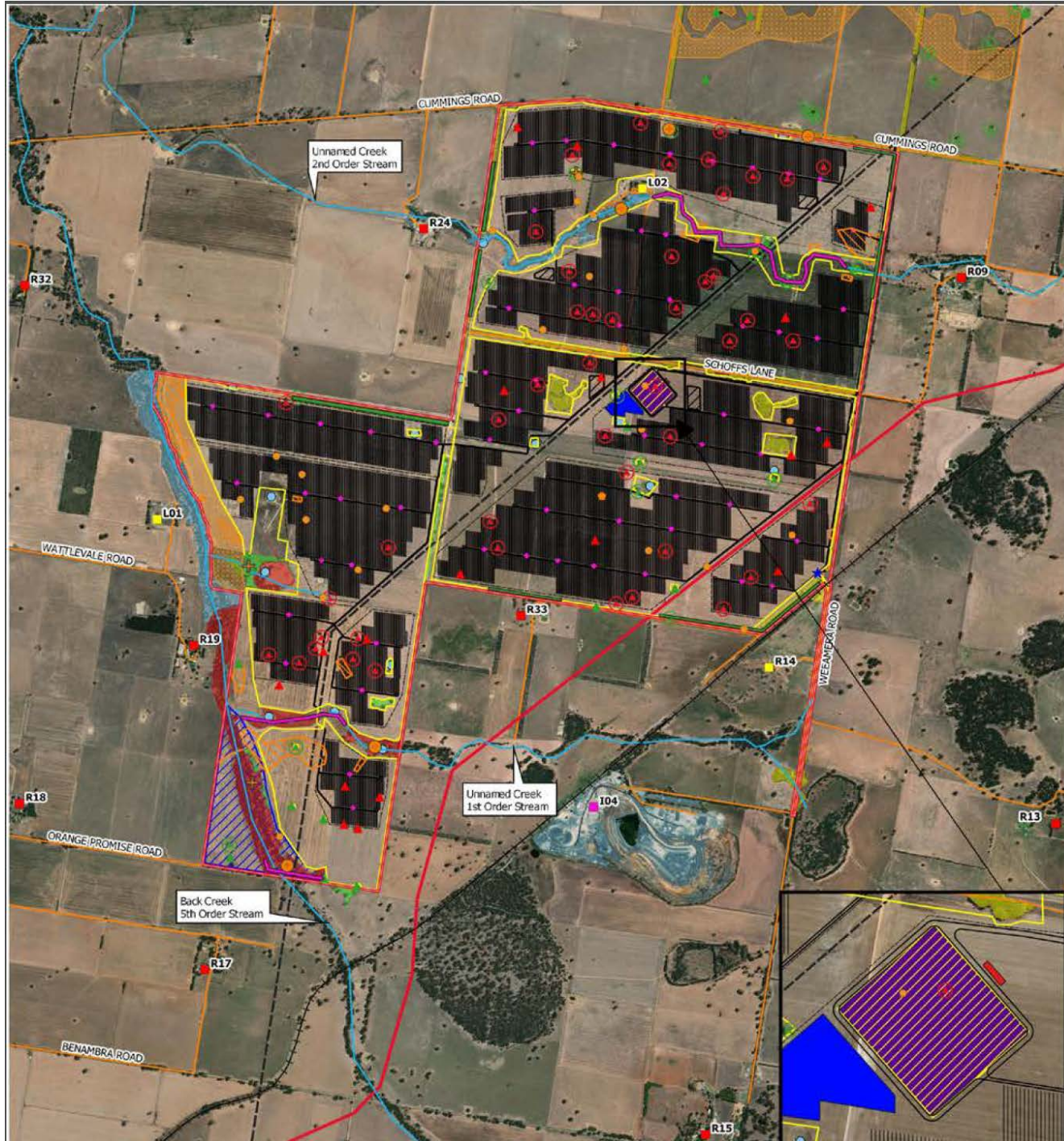
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Regional Context
Author: Sarah H
Date created: 07.10.2020
Datum: GDA94 / MGA zone 55

Local Context

Proposals in Greater Hume LGA

- **Culcairn Solar Farm**
 - Generation capacity: 350 MW and a 100 MW / 200 MWh energy storage facility
 - Development footprint: 892 ha
- **Walla Walla Solar Farm - approved**
 - Generation capacity: 300 MW
 - Development footprint: 493 ha
- **Jindera Solar Farm - approved**
 - Generation capacity: 120 MW and a 30 MW / 60 MWh energy storage facility
 - Development footprint: 337 ha
- **Glenellen Solar Farm – exhibited**
 - Generation capacity: 200 MW
 - Development footprint: 400 ha

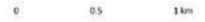




18-441 Culcairn Solar Farm
Culcairn Solar Farm Constraints Layout

Legend

<ul style="list-style-type: none"> Project Site Development Footprint Substation BESS Control Building Inverters Construction Compound Subdivision Agricultural (32 ha) Substation (4 ha) Proposed Access 	<ul style="list-style-type: none"> Internal Access Network Fences PV Array Existing Components/Features Existing Transmission Line Gas Pipeline Public Roads Waterways Railway Dams Proposed Vegetative Screening Visual Screening Biodiversity/Supplementary Screening 	<ul style="list-style-type: none"> Sensitive Receivers Associated Landowner Non-associated Landowner Industry Archaeological Site Type Cultural Tree Modified Tree Isolated Find Cultural Object Artefact Scatter Potential Archaeological Deposits 	<ul style="list-style-type: none"> Paddock Trees Hollow Bearing Retain Non-hollow Bearing Retain Hollow Bearing Remove Non-hollow Bearing Remove Plant Community Types (PCT) PCT5: River Red Gum herbaceous-grassy very tall open forest woodland PCT74: Yellow Box - River Red Gum tall grassy riverine woodland PCT76: Western Grey Box tall grassy woodland PCT277: Blakely's Red Gum - Yellow Box Grassy Woodland
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 Ref: 200907 Culcairn SF 1 Culcairn Solar Farm
 Constraints Layout
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Community Engagement

- Public Exhibition
 - 228 public submissions (146 object, 81 support, 1 comment)
 - 2 special interest group submissions (1 object, 1 comment)
 - Advice from government agencies –DPI Agriculture; Transport for NSW; Biodiversity Conservation Division; DPIE Water; Rural Fire Service; Crown Lands, Heritage NSW, Exploration and Geoscience, EPA – no objections
 - Greater Hume Shire Council – objects
- Public Meeting + Site Visit – 7 November 2019
- Consultation with Landowners

Public Submissions

Submitter	Object*	Support	Comment	Total
< 2 km	53 (52)	19	0	72
2 – 5 km	25 (24)	9	1	35
5 - 25 km	36 (32)	13	0	49
> 25 km	32 (30)	40	0	72
Total	146 (138)	81	1	228

* Numbers in brackets represent unique submissions



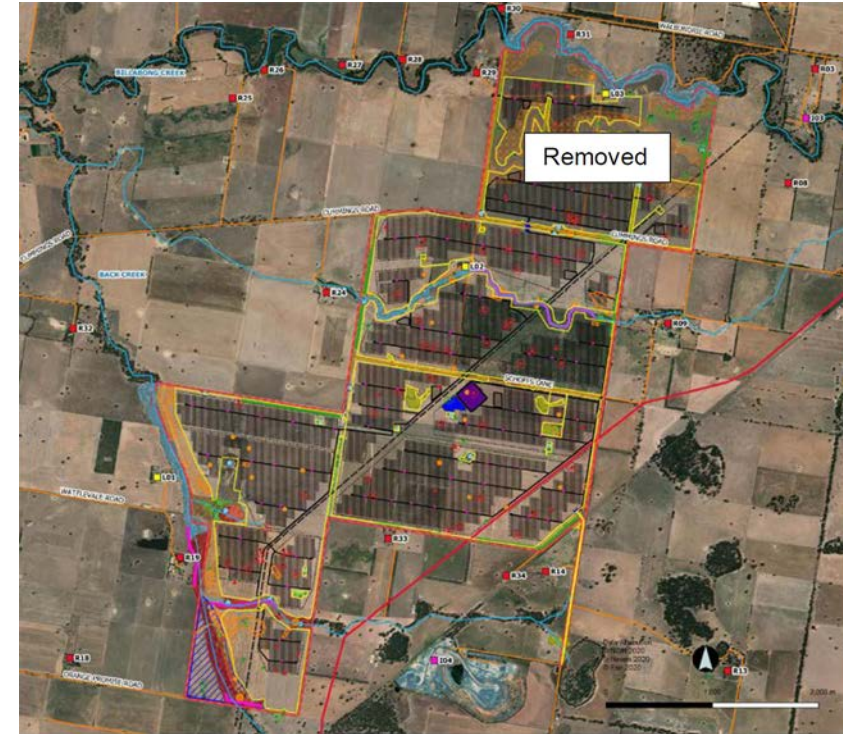
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Key Issues

- Impacts on agricultural land
- Visual impacts on the landscape and local residents
- Biodiversity impacts
- Amenity impacts – noise and dust
- Impacts on the local road network
- Cumulative impacts – Glenellen, Walla Walla, Culcairn Solar Farm

Project Amendments

- removing all project infrastructure north of Cummings Road (313 ha);
- total reduction of the development footprint by 234 ha (from 1,126 ha to 892 ha);
- Residences:
 - R24 - additional 60 m setback to 498 m, including an additional 5 m of vegetation screening (resulting in 20 m wide screening);
 - R33 – additional 120 m setback to 250 m,
 - R17 - additional riparian screening to reduce visual impacts and increase habitat connectivity across the site;
 - R14 - agreement;
- Biodiversity:
 - reduction in proposed clearing of paddock trees by 35 (from 99 to 64);
 - reduction of native vegetation clearing from 0.61 ha to 0.33 ha;
- upgrading a section (1.4 km) of Weeamera Road from 6 m to 7m width.

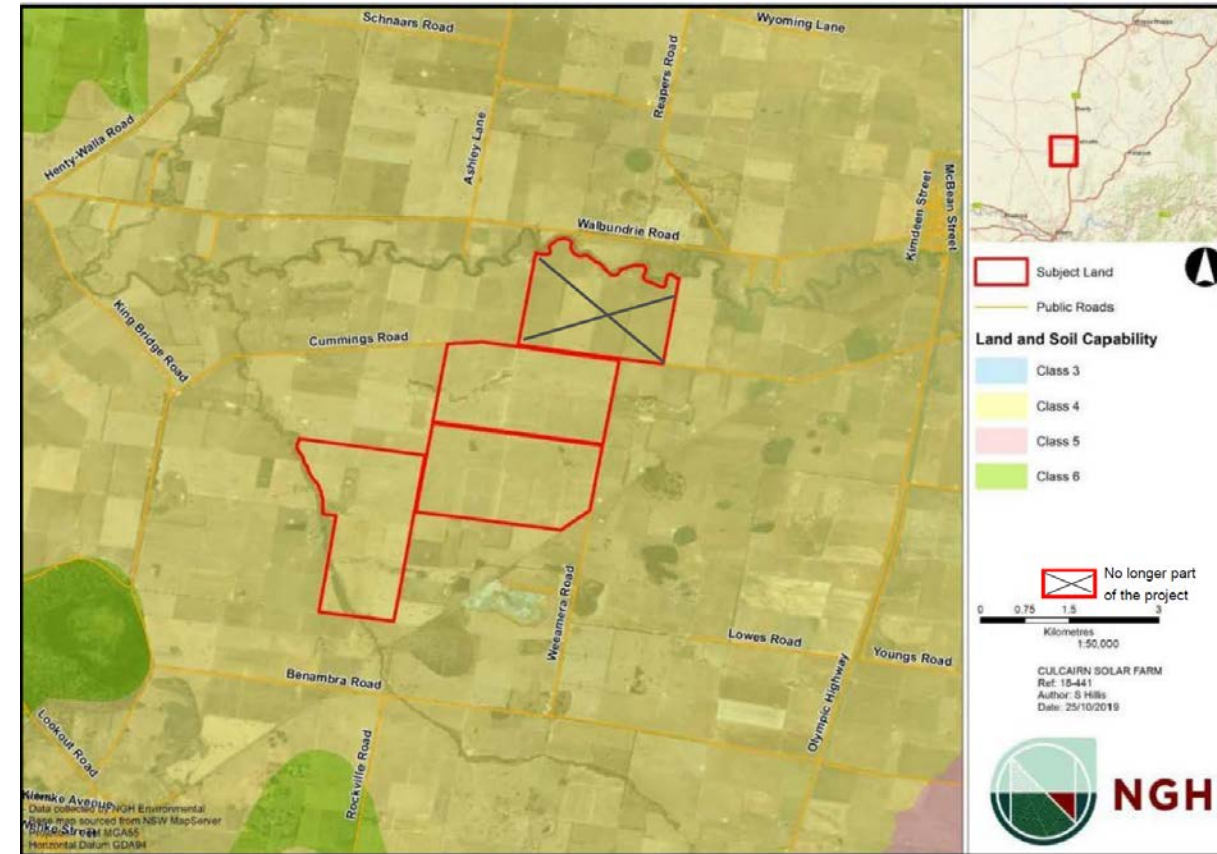


Project Amendments

Aspect	EIS (January 2020)	RTS and Amendment Report (June, 2020)	Final Proposed Project
Project site (ha)	1,351	1,351	1,039 (- 312)
Development footprint (ha)	1,126	1,084 (- 42)	892 (- 192)
Number of PV panels	1,100,000		900,000
Distance from R24 to solar panels	438 15 m deep screening	498 (+ 60 m setback) 20 m deep screening	498 20 m deep screening
Distance from R33 to solar panels			250 m (+ 120 m setback)
R17 and R19		additional riparian screening	additional riparian screening
R14			agreement
Native vegetation removal (ha)	0.61	0.37 (- 0.24)	0.33 (-0.04)
Clearing of paddock trees	99	77 (- 22)	64 (-13)

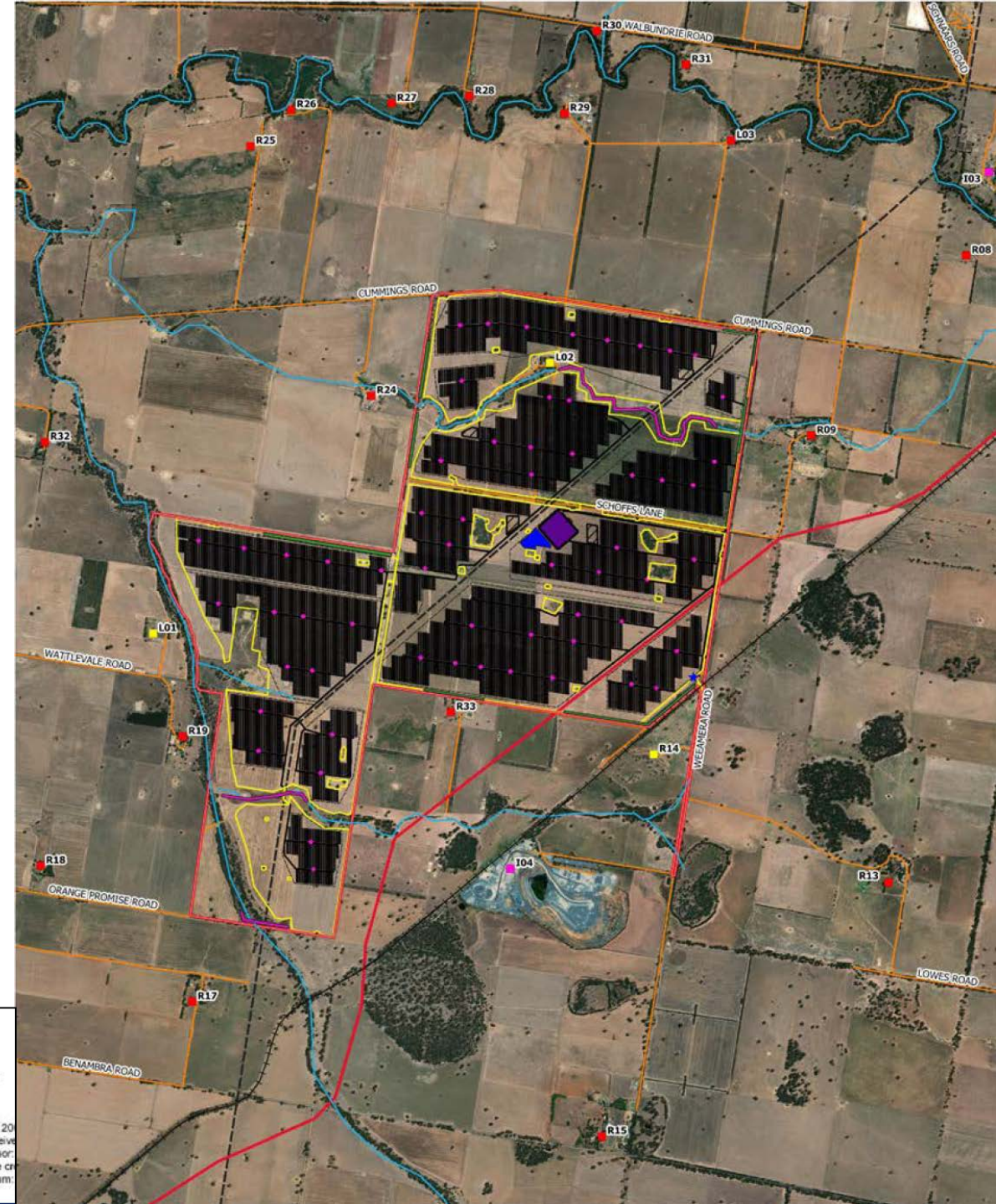
Agricultural Land

- Site currently used for cropping with intermittent grazing
- Class 4 (100%) under *Land and Soil Capability Mapping for NSW*
- Applicant undertook Agricultural Impact Assessment confirming Class 4 capability and DPI Agriculture accepted conclusions
- Removed 313 ha (i.e. 23%) would continue current agricultural practices
- Manage and restore land capability for agriculture following decommissioning
- Cumulative: 4 projects proposed or approved in the area (2,000 ha) represent 0.59% of the 335,000 ha of land being used for agriculture within Greater Hume LGA

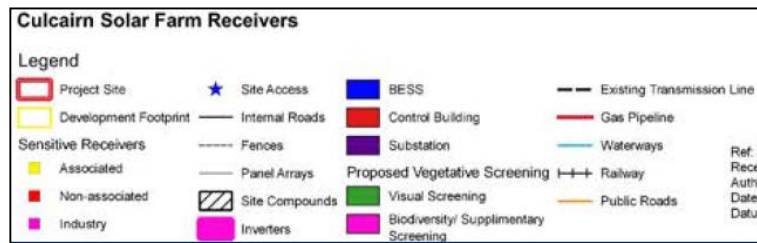


Visual

- 5 non-associated residences within 1 km of the project,
- Amendments to reduce visual impacts
 - Panels removed north of Cummings Road which would reduce visual impacts on R29 and R8
 - Project infrastructure setback for R17, R24, R33
- Existing intervening vegetation and topography partially limits views at other nearby residences
- Landscape plantings would further reduce views of the project



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Visual

R9

- located 585 m from the nearest solar infrastructure
- at the same elevation as the project site and has well established and dense vegetation within the curtilage of the residence and along Weeamera Road
- supplementary vegetation screening along Weeamera Road with a 5 m deep vegetation buffer to provide additional screening

R17 and R19

- located 1.16 km (R17) and 363 m (R19) from the nearest solar panels
- existing dense mature riparian vegetation along Back Creek and an unnamed creek provide screening
- proposed enhancement of the riparian vegetation would increase habitat connectivity and provide additional screening at these residences

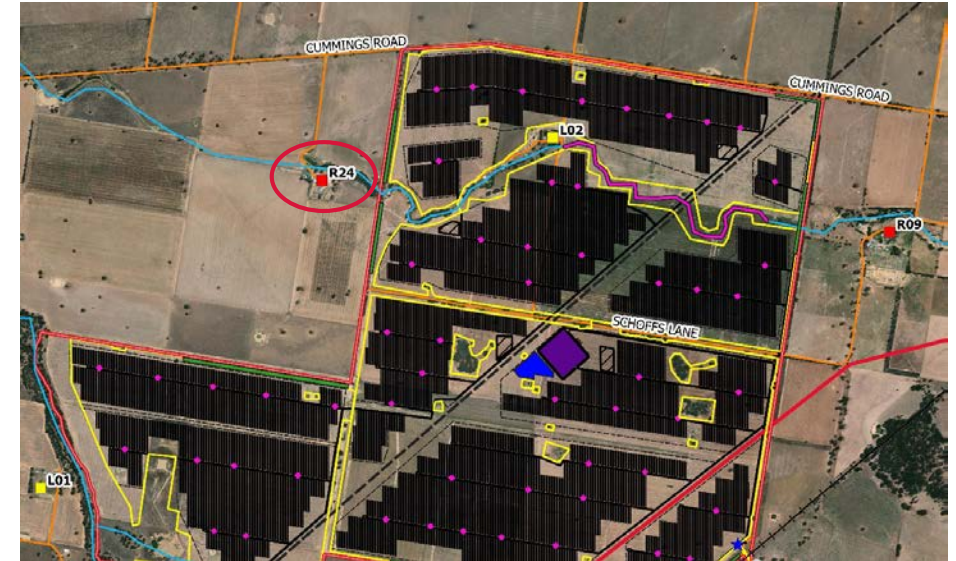
R33

- nearest residence located 121 m south of project boundary and 250 m from nearest solar panels (additional 120 m as part of the amended application)
- landscape plantings immediately north to a depth of 20 m would further reduce views of the project

Visual

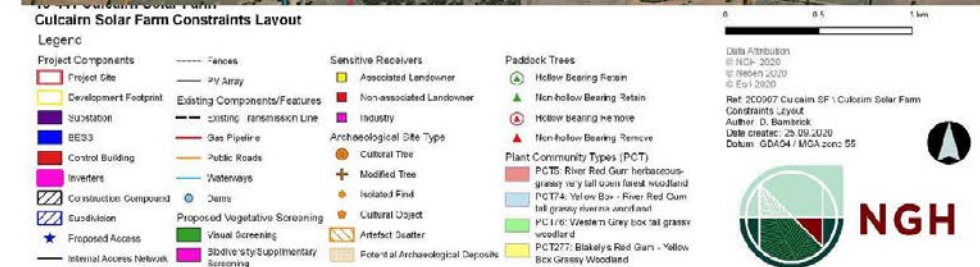
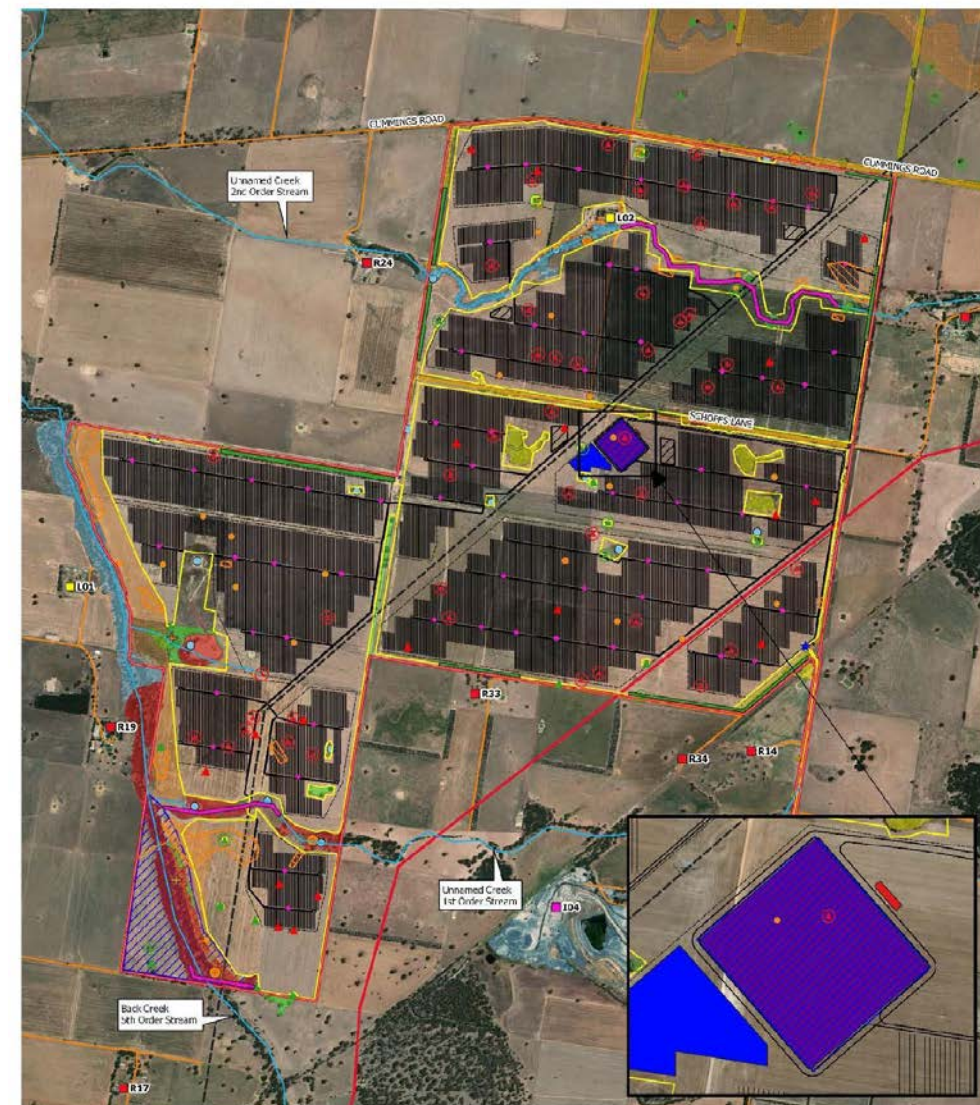
R24

- located 498 m west and 780 m north of the nearest solar panels
- views from the residence are screened by the existing mature vegetation along the creek line and the presence of outbuildings surrounding the residence to its east and south
- proposed setback of infrastructure from the project boundary to its east
- proposed 20 m deep landscape screening to the predominant views



Biodiversity

- high quality native vegetation along Back Creek and unnamed creek
- large areas of the site are exotic grazed pasture or crops
- project designed to avoid
 - 70.53 ha out of 70.86 ha of native vegetation
 - 72 out of 136 paddock trees
 - all 16 farm dams
- disturbance of
 - 0.32 ha of Box-gum Woodland
 - 0.01 ha of River Red Gum open forest wetland
- disturbance requires 44 ecosystem credits and 15 species credits to be retired on accordance with the NSW Biodiversity Offset Scheme.



Other issues

Transport:

- Route via Olympic Highway, Benambra Road and Weeamera Road
- Conditions to
 - Upgrade Weeamera Road north of the Quarry (approximately 1.4 km) from 5 m unsealed to 7 m sealed pavement
 - Undertake dilapidation surveys for Benambra Road and Weeamera Road and repair any damage caused by the project to the satisfaction of Council to allow for two-way heavy vehicle movement and Council support this upgrade

Noise:

- All receivers below the 'highly noise affected' criterion of 75 db(A) during construction
- 2 non-associated residences predicted to experience construction noise levels above the 'noise management level' of 50 dB(A) (R19 – 54 dB(A) and R33 – 63 dB(A)) for short term (2 to 3 weeks) and intermittent (2 to 3 hours per day)
- No exceedances in operational noise levels (35 dB(A)) for any non-associated residences during day and night under normal operation
- Under the worst-case scenario modelled during night-time hours assuming that the battery operates at full output, potential to be audible at one receiver R33 (1 dB(A) exceedance of NML)
- The Department has recommended a condition requiring Neoen to comply with the project noise trigger level at any non-associated residences.

Cumulative impacts

Agriculture

- with other operational, approved and proposed SSD solar farms in the Riverina Murray region, the loss of 8,000 ha of agricultural land represents 0.09 % of the 9.1 million ha of land being used for agricultural output in the Riverina Murray region, and would result in a negligible reduction in the overall productivity of the region
- if all four proposed SSD solar projects within Greater Hume LGA proceed, they would have a combined development footprint of approximately 2,000 ha, which is approximately 0.59% of the 335,000 ha of land being used for agriculture within the Greater Hume LGA

Traffic

- part of transport route is currently utilised by the Quarry, and the primary haulage route for the proposed Walla Walla Solar Farm
- Benambra Road has sufficient capacity to accommodate traffic volumes and maintain LoS A on Benambra Road and Weeamera Road

Cumulative impacts (continued)

Noise:

- no receivers would experience exceedances of the noise affected criterion in the event that both the Walla Walla Solar Farm and Culcairn Solar Farm are approved and constructed concurrently

Visual

- R17 approximately 800 m from the development footprint of each project but due to the distance, existing vegetation and topography of the area, views from R17 to both projects would be limited

Heat island

- The study found that changes to air temperatures would be negligible within 30 m of the development footprint, and that any impacts would be further reduced once vegetation screening at the project boundary became effective
- Vegetation such as ground cover under panels also influences that movement of air
- Neoen has confirmed the development footprint at least 30 m away from the boundary of adjacent private properties and groundcover would be established on site and there are areas of retained vegetation on site and areas of proposed vegetation buffer
- The Department considers that, with the implementation of the recommended conditions of consent, including setback distances and vegetation screening, the project would not significantly impact the agricultural operations of neighbouring landholders given the relatively low impacts associated with the solar farm

Evaluation

- The Department has completed a comprehensive assessment of the project in accordance with the requirements of the EP&A Act.
- This has included community consultation and detailed advice from government agencies.
- The Department fully acknowledges that some members of the community remain strongly opposed to the project, and that the project would result in a range of residual environmental and amenity impacts on the local community.
- However, the Department considers that the changes made to the project through the assessment process have significantly reduced the residual impacts of the project.

Evaluation (continued)

- With these changes, and the implementation of the recommended conditions, the Department considers that the environmental and amenity impacts of the project can be managed to achieve acceptable outcomes.
- The Department also considers that the project would provide significant economic and social benefits to the region and would contribute to the transition of the NSW economy away from a reliance on fossil fuels in accordance with NSW Government policy.
- Overall, the Department considers that the project achieves an appropriate balance between maximizing the efficiency of the solar resource and the associated benefits of the project, and minimising the potential impacts on surrounding land uses, local residents and the environment.
- It therefore considers that the project is approvable, subject to strict conditions.

Transport Route

- Transport route: Olympic Highway to site (via Benambra Road and Weeamera Road)
- Access is off Weeamera Road
- Partially common haulage route with Walla Walla Solar Farm (Benambra Road)
- All roads designated for use by B-doubles and over-dimensional vehicles (up to 36 m long vehicles)
- 1.4 km of Weeamera Road will be upgraded
- 18 month construction period (12 month peak)
- Maximum 100 heavy and 150 light vehicle movements per day (during peak)
- 9 x OSOM vehicle movements during construction, upgrading or decommissioning (26 m long)
- Operations: 5 light and occasionally up to 5 heavy (routine maintenance) vehicle movements per day

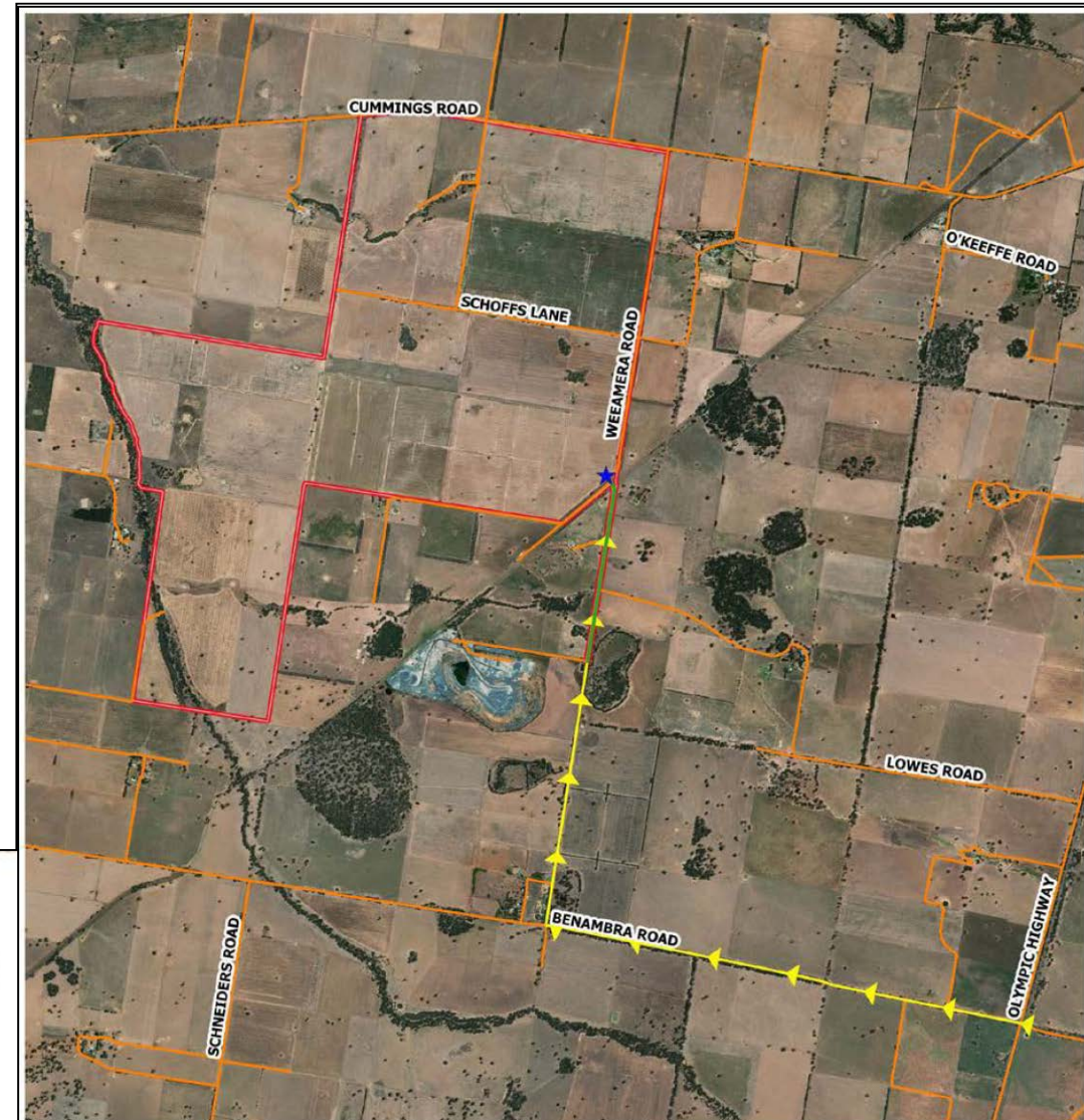


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Culcairn SF Access Route

Legend

- | | |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
|  Subject Land |  Road Upgrades |
|  Site Access |  Public Road |
|  Haulage Route | |





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