Additional Information

Dunedoo Solar Farm

June 2021

Project Number: 20-764

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1. Introduction

This report has been prepared by NGH Pty Ltd on behalf of ib vogt GmbH (The Proponent) to provide additional information to the Department of Planning, Industry and Environment (DPIE) requested via letter on 19 March 2021 and subsequent emails dated 24 March 2021, 26 March 2021 and 31 March 2021, regarding Dunedoo Solar Farm. This report supports the Environmental Impact Statement (EIS) dated September 2020 and subsequent responses to DPIE including:

- NGH Submissions Report dated March 2021
- NGH Amendment Report dated March 2021

The request for additional information consists of the following factors:

- Visual impact
- Road upgrades
- Access
- Hazards
- Schedule of land
- Crown lands
- Consultation
- Landowner's consent
- Water access
- Network capacity
- Cumulative impacts
- Subdivision
- Site layout / infrastructure plan
- Noise
- Biodiversity
- BESS locations
- Transformer.

The following sections summarise each factor as per the above order.

2. Information Request and Responses

The following section provides a brief summary of DPIE's requests, following with the relevant response.

2.1 Visual Impact

Correspondence from DPIE dated 19 March 2021, stated:

"…provide further assessment detailing how the proposal has considered the full extent of visual impacts on all potentially impacted non-associated receivers including;

- *a clear description and evidence of the potential of the impacts on each receiver, including from residences R3 and R4 to R9 inclusive (such as representative viewpoints and photomontages);*
- *consideration of all elements of the project (including solar panels, on-site substation, inverters, communications tower, operations and maintenance buildings, transmission infrastructure, synchronous condenser, battery storage);*
- *topographical maps of the site and surrounding area for a 2 km radius; and*
- *details of the proposed measures to mitigate the potential impacts on receivers."*

Response

The EIS included on page xix a table of definitions detailing all of the Proposal's components, as indicated below:

" Proposal:

> *The construction, operation and decommissioning of a 55-MW AC solar farm generally comprising a solar array, access roads, underground and above ground cables, on-site substation and associated operational facilities including the construction of a 66-kV Transmission Line (TL) from the proposed on-site substation to the existing Essential Energy Dunedoo Substation, as set out in this EIS."*

The definition above includes elements within the solar array such as solar panels, on-site substation, inverters, communications tower, operations and maintenance buildings, transmission infrastructure, synchronous condenser, and battery storage.

The Landscape and Visual Impact Assessment (LVIA) provided in Section 8.3 of the EIS covered the full extent of visual impacts associated with the Proposal, as defined in the EIS. The assessment was undertaken through the analysis of viewpoints informed by topographical maps, field work observations, landscape character and the popularity of vantage points. However, the EIS did not provide an assessment from each of the impacted non-associated receivers.

Moir Landscape Architects (Moir LA) completed an Addendum Report to the LVIA for Dunedoo Solar Farm on 12 April 2021 (Addendum LVIA, attached in Appendix D) which assessed the impacts to residences R3 to R9 from all elements of the Proposal, as defined above and in the EIS. A summary of the impacts for each residence is provided below:

R3 Low / moderate, resulting in a ***Moderate Visual Impact Rating***, as the project is 664 metres to the east of the dwelling and likely to be visible from the residence. There is existing vegetation that would likely intervene with the views. Therefore, screen planting along the western edge of the Proposal would assist in reducing the potential visual impact rating from this residence to ***nil-low***.

R4 low / moderate, resulting in a ***Moderate Visual Impact Rating*** as the project is 346 metres to the South West of the residence and is likely to be visible to the south. There are some scattered trees between the dwelling at the Project, however views are generally

uninterrupted to the south. The incorporation of screen planting along the northern boundary of the Project would reduce the potential visual impacts from the residence. In addition, screen planting close to and to the south of the property as shown in Appendix D would provide an opportunity to further reduce potential visual impacts towards the Project, all together impacts would be reduced to ***nil-low***.

R5 low / moderate, resulting in a ***Moderate Visual Impact Rating*** as the project is 1.609 metres to the South West of the residence. There are some scattered trees between the residence at the Project, along the side of Digilah Road which may reduce the potential visual impact. No plating would be required as the existing vegetation to the south west of the residence would significantly reduce potential visual impacts. In addition, the Project already proposes side boundary planting to the north. With the existing vegetation and proposed planting, the impact rating would be reduced to ***nil-low***.

R6 low / moderate, resulting in a ***Moderate Visual Impact Rating*** as the project is 1.753 metres to the West of the residence. There are some scattered trees between the residence and the Project. The incorporation of screen planting along the eastern edge of the Project would significantly reduce the potential visual impacts rating from the residence, to ***nil-low***.

R7 NIL / low, resulting in a ***Low Visual Impact Rating*** as the project is 1.743 metres to the North of the residence. There will be no visual impact as the existing vegetation on the eastern side of the substation and vegetation associated with the Talbragar river and south of All Weather Road is likely to screen the views to the proposed substation expansion.

R8 NIL / low, resulting in a ***Low Visual Impact Rating*** as the project is 1.788 metres to the North of the residence. Once established, the proposed substation expansion is likely to be noticeable from this dwelling. Existing scattered vegetation to the north of the dwelling associated with the Talbragar River and to the south of All Weather Road is likely to fragment views to the Solar Farm Project from this dwelling. By minimising clearance of existing vegetation, the potential impacts would be sufficiently reduced to ***nil-low.***

R9 low / moderate, resulting in a ***Moderate Visual Impact Rating*** as the project is 1.949 metres to the North of the residence. Once established, the proposed substation expansion is likely to be noticeable from this dwelling. Existing scattered vegetation to the north of the property will fragment the views to the Project and therefore reduce the impact rating to ***nil-low.***

2.1.1 Local Topography

A topographical map of the locality is presented Figure 2-1. The figure indicates that the area is relatively flat, as described within the executive summary, and in sections 3.1, 8.1.2, 8.2.3, 9.1.1, 9.6.2, 9.8.1, tables 8-17 and 8-18, on page 148, of the EIS. The utilisation of the topographical information and the full extent of the project. Appendix A provides this figure in higher resolution.

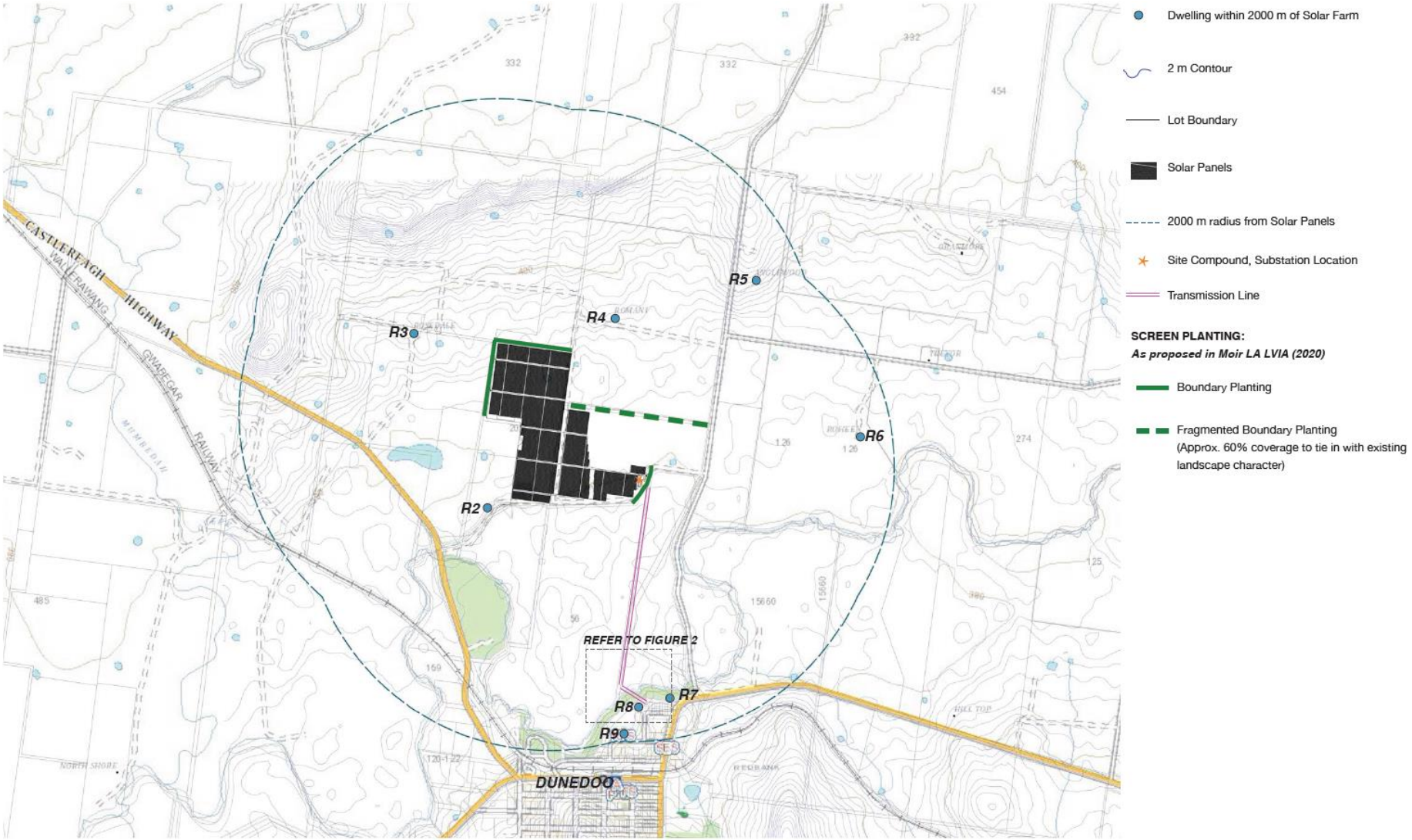


Figure 2-1 Dunedoo Solar Farm Topographical Map

2.1.2 Ancillary Structures and Layout Redesigning

The site layout as presented in the EIS has been designed to avoid impacts where possible, minimise impacts as far as reasonable and mitigate residual impact.

The assessment of the on-site ancillary structures identified that a number of existing farm structures are an existing element in the landscape, and the proposed ancillary structures are within the scale and appearance of these farm structures.

Within the land available, the structural elements of the proposal have been sited adjacent to existing buildings and away from adjacent dwellings to reduce visual impact as far as possible. Solar arrays and associated infrastructure have been oriented/staggered within the site to avoid significant areas of heritage and biodiversity south, east and northeast of the project and Biophysical Strategic Agricultural Land (BSAL) to the south of the project.

In relation to off-site structures, the resulting extended substation will require the removal of vegetation and therefore resulting in a visual impact during the construction to a low number of residences on Evan Street and River. As the proposed buffer planting to the south and west is established, the substation would not be noticeable from surrounding residences and road users. In addition, transmission lines are an existing element in the landscape, and as the upgraded transmission line would run within the existing easement, these are unlikely to be noticeable to motorists travelling along Digilah Road.

The assessment determined that as the impact rating would be reduced to ***nil-low***, there are no remaining impact that will need mitigation, and therefore redesign of the site layout is not warranted. In addition, any further redesign of the site layout onto land south, east or northeast is highly constrained and limited, and would result in higher overall impact of the project as the project layout would most likely increase.

2.1.3 Summary of Mitigation Measures

In addition to the visual impact mitigation measures detailed in the EIS, additional measures have been created as a result of the Addendum LVIA for the residences to reduce impact as far as reasonable.

- Screen planting along the western and southern edge of the substation expansion as specified on page 14 of the LVIA Addendum in Appendix D
- Small length of planting be installed and maintained in close proximity to dwelling R4, if requested and or agreed with the owner, generally as specified on page 7 and A.4 of the LVIA Addendum in Appendix D.
- Focus on appropriate plant selections that are able to achieve the screening aims appropriately, selects species appropriate to the regions and provide for simple and effective maintenance.
- During design and construction:
    - Consideration of recessive colour palettes for the building materials that will be used for construction.
    - Avoid unnecessary signage on fences, logos etc.
    - Proposed buildings will need to be sympathetic to existing architectural elements in the landscape.

- Cut and fill and loss of existing vegetation throughout the construction process will need to be minimised.
- Unnecessary lighting will need to be avoided.

2.2 Road Upgrades

Correspondence from DPIE dated 19 March 2021, stated:

"provide DWG files confirming the storage capacity of the proposed short auxiliary left turn (AUL(S)) upgrade treatment at the intersection of Castlereagh Highway and All Weather Road."

Response

The DWG file of the AUL(S) was provided to TfNSW on 22/3/2021. This was used as the basis for the Proponent undertaking additional ongoing consultation with TfNSW to provide a solution in relation to the road upgrades and heavy vehicle access to site.

The consultation concluded on 20 May 2021 (refer to Appendix B) with TfNSW considering the transport solution provided in the EIS is appropriate with the following additional detail:

- A traffic control plan be used to manage entry and exit to site via the Castlereagh Highway and All Weather Road junction consistent with the draft Traffic Control Plan (TCP), attached to this response in Appendix B or as otherwise agreed with TfNSW.
- The Castlereagh Highway and All Weather Road junction is to be upgraded to a BAL standard as required by and consistent with Austroads guidelines. The EIS has already included assessment of a design equivalent to a BAL and no additional assessment is therefore required.

2.3 Powerline Access

Correspondence from DPIE dated 19 March 2021, stated:

"Access to transmission line options 1 and 2 provide details of the site access points proposed for the transmission lines."

Response

Access to both transmission line options on Lot 80 DP754309 will be provided through the entry south from All Weather Road under the powerline, as indicated in Figure 4-1 of the EIS and replicated as Figure 2-5 in this document.

Where Option 1 traverses Lot 37 DP130889, access is expected through the crossing point at Lot 80 DP 754309 or via existing land owner access points. Option 1 also traverses Lot 7012 DP93290, running parallel to an existing Essential Energy powerline and within an existing easement. Access to this section of Option 1 will be through the existing easements indicated in section 4.3.7 of the EIS.

Option 2 traverses Lot 37 DP130889 and Lot 7012 DP93290 running parallel to an existing Essential Energy powerline and within an existing easement. Access to this section of Option 2 will be through the existing easements indicated in section 4.3.7 of the EIS.

These options have been described throughout the EIS, specifically in section 4.3.7, and associated impacts have been assessed in sections 8.1, 8.2, and 9.4; of the EIS.

2.4 Hazards

Correspondence from DPIE dated 19 March 2021, stated:

"…include the location of gas pipeline operated by the APA Group in the site layout plan, with this pipeline labelled as 'high pressure gas transmission pipeline – no works without prior approval of APA.' "

As indicated in the Preliminary Hazard Assessment (PHA) a high-pressure gas pipeline, operated by APA Group, traverses the development footprint, specifically under the proposed transmission line route, as shown in Figure 2-2 below. No works around the pipeline would occur without prior the relevant approval.

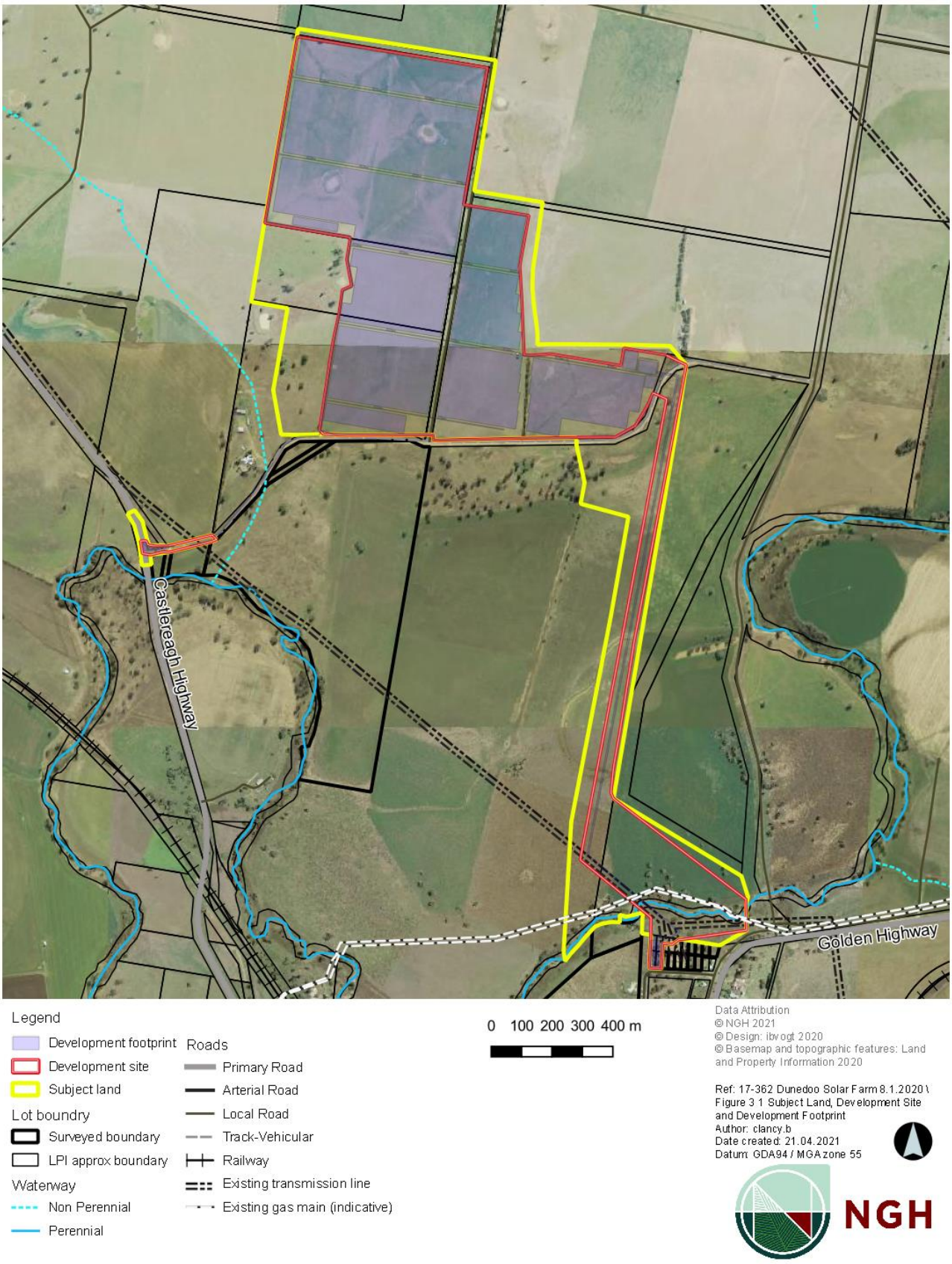


Figure 2-2 Proposed and existing elements of Dunedoo Solar Farm

2.5 Schedule of Land

Correspondence from DPIE dated 19 March 2021, stated:

"…confirm that all land parcels associated with the development have been included in the EIS".

Response

The land parcels associated with the Proposal have remained unchanged throughout the lodgement and response to submission, and still are as indicated within the EIS. These are:

For the PV Field: Lot 137 DP 754309, Lot 140 DP 754309, Lot 1 DP 854326, Lot 1 DP 1260716, and Lot 80 DP 754309 north of All Weather Road.

For the Castlereagh Highway / All Weather Road intersection upgrade and passing bay: Lot 1 DP 535659 and All Weather Road's road reserve.

For the 66-kV TL and associated infrastructure: Lot 80 DP 754309, Lot 7012 DP 93290, Lot 37 DP 754309, Talbragar River Reserve 56146, the Talbragar River and All Weather Road's road reserve.

For the extension of the existing Essential Energy Dunedoo substation: Lots 181-186 and 196-201 DP 754291.

Lot 5 DP130930, as requested by DPIE to be inspected for the Schedule of Lands, is not part of the proposal. The site boundary sits on the southern edge of Lot 5 DP130930. Refer to Figure 2-2 above for details. The Proponent confirms that Lot 5 is not part of the Proposal.

2.6 Crown Lands

Correspondence from DPIE dated 19 March 2021, stated:

"…confirm the status of acquisition for the relevant portions of Talbragar River Reserve (56146) easement, including confirmation that Council is supportive of this acquisition."

Response

Construction licenses for the transmission line over Lot 7012 DP93290, will be sought with the Warrumbungle Shire Council or Department of Crown Land, whoever is the Crown Land Manager.

Operation licenses are also to be sought with the Crown Land Manager to allow the transmission line to be operated over Lot 7012 DP93290 prior to the registration of the easements. Easements over Lot 7012 DP93290 would be established via compulsory acquisition by Essential Energy under the *Conveyancing Act 1919* and the *Crown Land Management Act 2016 where relevant*, over the transmission line after it is constructed.

Consultation with the Warrumbungle Shire Council and/or Crown Land throughout the development of the proposal, has indicated that Council and/or Crown is supportive of the Project and indicated that there are statutory license and acquisition application processes to be followed by the Proponent.

2.7 Consultation

Correspondence from DPIE dated 19 March 2021, stated:

"…provide further details of consultation undertaken with surrounding landowners and residents, and issues raised including receivers R3 and R4 to R9 inclusive.

Response

Consultation with the community has been ongoing for some years. This is thoroughly detailed in Section 6.3 of the EIS. In addition, evidence of the most recent Community Consultation with specific land owner has been provided to the DPIE separately.

In relation to receivers R3-R9 (noting that R3 and R4 are owned by the same landowner) numerous consultation activities were undertaken where these receivers were involved as indicated in Appendix C of the EIS.

These consultation activities generally fall into the following categories:

- Specific one-on-one consultation with relevant receivers
- Neighbour door knocking on 19 February 2020.
- Neighbour door knocking on 22 July 2020.
- 2 x Open Days for public attendance.
- Project website.
- Regular newsletters circulated to the general community.

More recently, the Proponent engaged with receiver R3 and R4 who raised a concern on visual impacts during the exhibition of the EIS for the Proposal. The visual consultant, Moir LA, visited the residence on behalf of the Proponent and assessed the visual impacts. A photomontage of the views from the residence to the Proposal has been provided in the Amended LVIA and communicated with the owner of R3 and R4.

The photomontage indicated that screen planting as proposed in the EIS appropriately and reasonably mitigates visual impact at R3. Solar farm edge planning is also able to significantly mitigate visual impact at R4, however, a small amount of screen planting adjacent to the dwelling (if requested by the owner of R4) could be installed to further mitigate impact of the solar farm to the southwest of the property as shown in the photomontages in the Addendum LVIA.

Consultation with the landowner for properties R3 and R4 have been provided separately to DPIE.

2.8 Landowner's Consent

Correspondence from DPIE dated 19 March 2021, stated:

"The Department also notes that landowner's consent is required from landowners of all land parcels associated with the development (including Crown land)."

Response

The Proponent has provided consent from the Crown Lands directly to the Department of Planning, Industry and Environment.

2.9 Water Access

Correspondence from DPIE dated 26 March 2021, stated:

"Please include details of the water license and access arrangements as required in the comments provided by DPIE Water Group."

Response

The Proponent has engaged with local commercial water suppliers. Correspondence confirming ability to contract water for the project has been provided directly to the Department of Planning, Industry and Environment.

2.10 Network Capacity

Correspondence from DPIE dated 26 March 2021, stated:

"Please provide details confirming that Essential Energy (EE) has advised that there is adequate network capacity to accommodate the project (including any correspondence / connection enquiry with EE)"

Response

The Proponent has engaged with Essential Energy for some time. Correspondence confirming ability to connect to the electrical network at a capacity required for the project has been provided directly to the Department of Planning, Industry and Environment.

2.11 Cumulative Impacts

Correspondence from DPIE dated 26 March 2021, stated:

"Please include a further assessment of the potential cumulative impacts associated with other proposed / approved SSDs in the region (including any solar farms, wind farms and/or minerals mining projects), particularly regarding traffic / noise / amenity impacts, as well as impacts on local accommodation, infrastructure and services associated with the construction workforce. This should include consideration of any potential construction overlap associated with other projects in the region, as well as any mitigation measures proposed. Please also review the distances of these other projects from the proposal, as some of the distances referenced in the EIS with relation to the proposal are incorrect. I have attached a map that details some of the other projects in the area. While it is noted that there are several other SSDS in the region, you can focus primarily on the projects located within ~50km of the site (ie Stubbo, Beryl, Valley of the Wind, Bodangora, Liverpool Range) whilst still also referencing / considering the others in the area. I'm happy to clarify further if required."

Response

DPIE's list of projects shown in Table 2-1 below and shown within the Central West Orana REZ in Figure 2-2 below., updates the distances presented in the EIS, and are mostly located south of the Dunedoo site. Valley of the Winds windfarm is the closest proposal at 15km to the east while Liverpool Range Windfarm and Stubbo Solar Farm, are further away located approximately 40 km from the Proposal. These three site could have overlapping construction periods with the Proposal and are therefore most likely to result in cumulative impact.

The Valley of the Winds is still at an EIS stage and therefore, the Dunedoo Solar Farm would be expected to be in operation before the time the windfarm construction commences. This removes the potential for cumulative impacts.

Liverpool Range Windfarm and Stubbo Solar Farm, in combination with the Proposal, have the most potential to overlap construction periods, however, this is still not a likely outcome based on project timelines. It is, however, more likely that the project construction periods will occur sequentially, providing longer term benefit, and not impacts, to the region.

If, however, construction periods of Liverpool Range Wind Farm, Stubbo Solar Farm and Dunedoo Solar Farm do overlap the most likely impacts would be on local accommodation, amenity and traffic cumulative impacts:

- Traffic impacts would most likely occur along the major regional haulage routes that are already highly trafficked and the incremental impact of the Dunedoo Solar Farm is considered negligible and manageable by the existing network.
- Amenity impact would be limited to those within a few km of the site or along the major regional haulage routes. Sites are sufficiently spaces that amenity may only be impacted on

regional transport routes that are already highly trafficked and the incremental impact of the Dunedoo Solar Farm is considered negligible and manageable by the existing network

- Accommodation and workforce impacts can be mitigated since the Study Area has significant capacity in terms of construction-related workers (12,630 workers) already living in the region, 1860 construction-related businesses capable of serving multiple concurrent infrastructure projects and 1,120, unemployed labour force participants, some of whom could work on these infrastructure projects (subject to suitable skills mix). As noted above, it is more likely that these three projects will occur simultaneously and provide a long term benefit to the region.

One further note is that the number of unemployed persons will likely increase and remain high in the Study Area due to the impacts of COVID-19 and Dunedoo Solar Farm could provide significant opportunities to the region.

As indicated in the EIS, the development status of these nearby proposals varies; therefore, construction timing is uncertain. Therefore, cumulative impacts are expected to remain generally as originally assessed in the EIS

Table 2-1 Nearest renewables development within 50km of the Proposal

Renewable project	Status	Key date	Distance from Dunedoo	Impact on Dunedoo
Bodangora Wind Farm	Built	Operating since 2018	50 km southwest	Minimal
Beryl Solar Farm	Built	Operating since 2019	40 km south	Minimal
Liverpool Range Wind Farm	Approved – under modification for size of turbine	Determined in 2018 Modification yet to be determined	40 km east	Moderate impact on Dunedoo, construction likely to start after Dunedoo
Stubbo Solar Farm	Under assessment	Determination expected by June 2021	35 km southeast	High impact and may have the same construction period as Dunedoo
Valley of the Winds Wind Farm	Prepare EIS	Determination expected 2022 or after	15 km east	Minimal

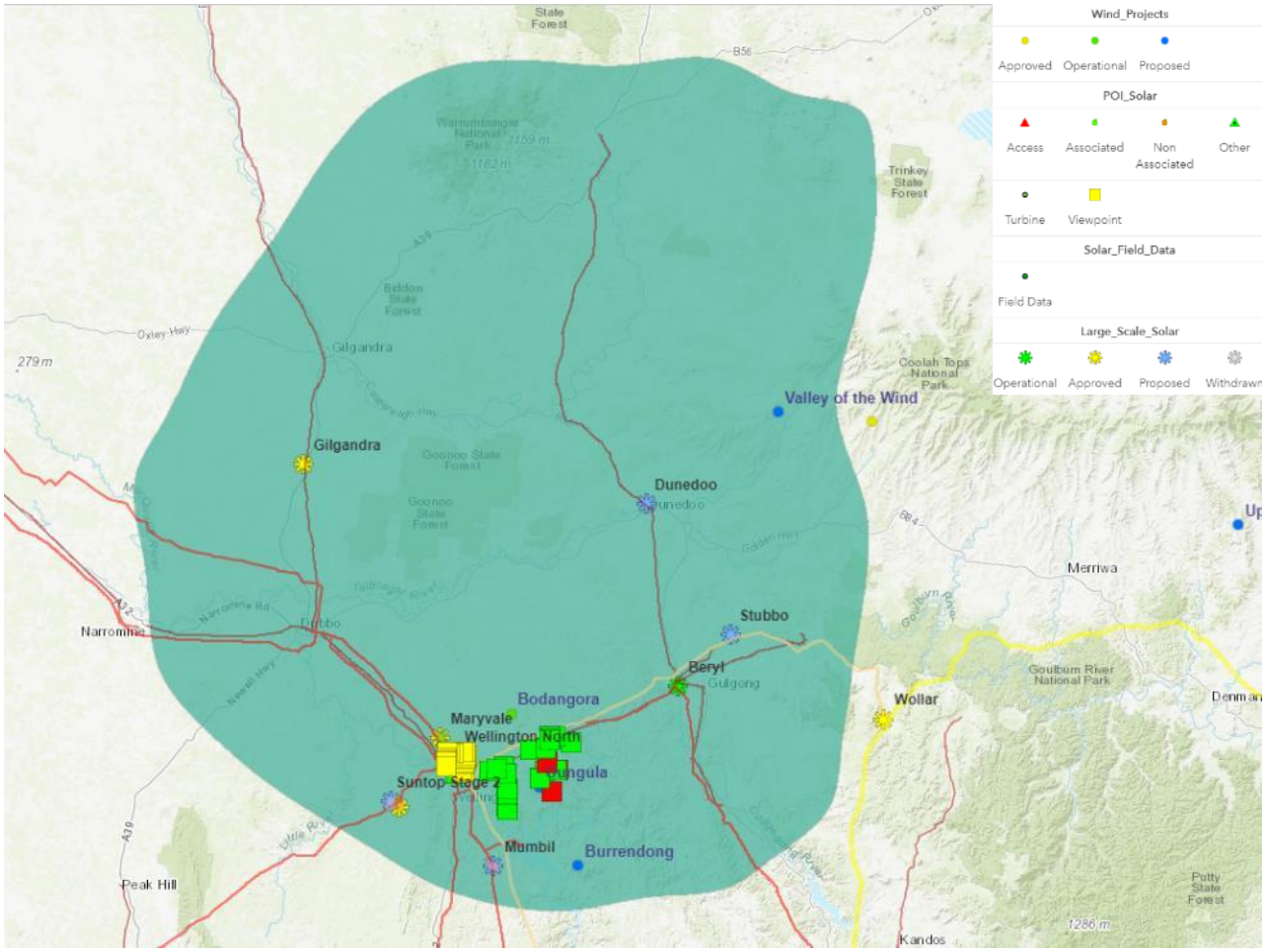


Figure 2-3 Wind and solar developments surrounding Dunedoo Solar Farm

2.12 Subdivision

Correspondence from DPIE dated 26 March 2021, stated:

"Please provide a higher resolution subdivision plan that clearly identifies the subdivision proposed, together with a table listing existing lots (including lot size) and proposed lots (including lot size)."

Response

The table below provides the lots involved with the Proposal, with their existing size and subsequent subdivision.

Table 2-2 Involved lots and their sizes (Pre and Post Subdivision)

Existing Lot	Existing Lot Sizes
Lot 1 DP854326	27.266 ha
Lot 140 DP754309	16.346 ha
Lot 137 DP754309	39.415 ha

Existing Lot	Existing Lot Sizes
Lot 1 DP1260716	2.818 ha
Lot 80 DP 754309	242.171 ha
Proposed Lots	**Proposed Lot Sizes**
Subdivision Part A (part lot 140 DP754309 and part lot 1 DP854326) – landowner to retain	23.462 ha
Subdivision Part B (part lot 140 DP754309, part lot 1 DP854326, full lot 137 DP754309 and full lot 1 DP1260716) - part of the development	64.864 ha
Subdivision Part C - Substation	0.588 ha
Subdivision Part D - part of the development	29.517 ha
Subdivision Part E – landowner to retain	41.756 ha
Subdivision NA – landowner to retain	164.734 ha

Refer to Figure 2-4 for the proposed lot consolidation in higher resolution in Appendix C .

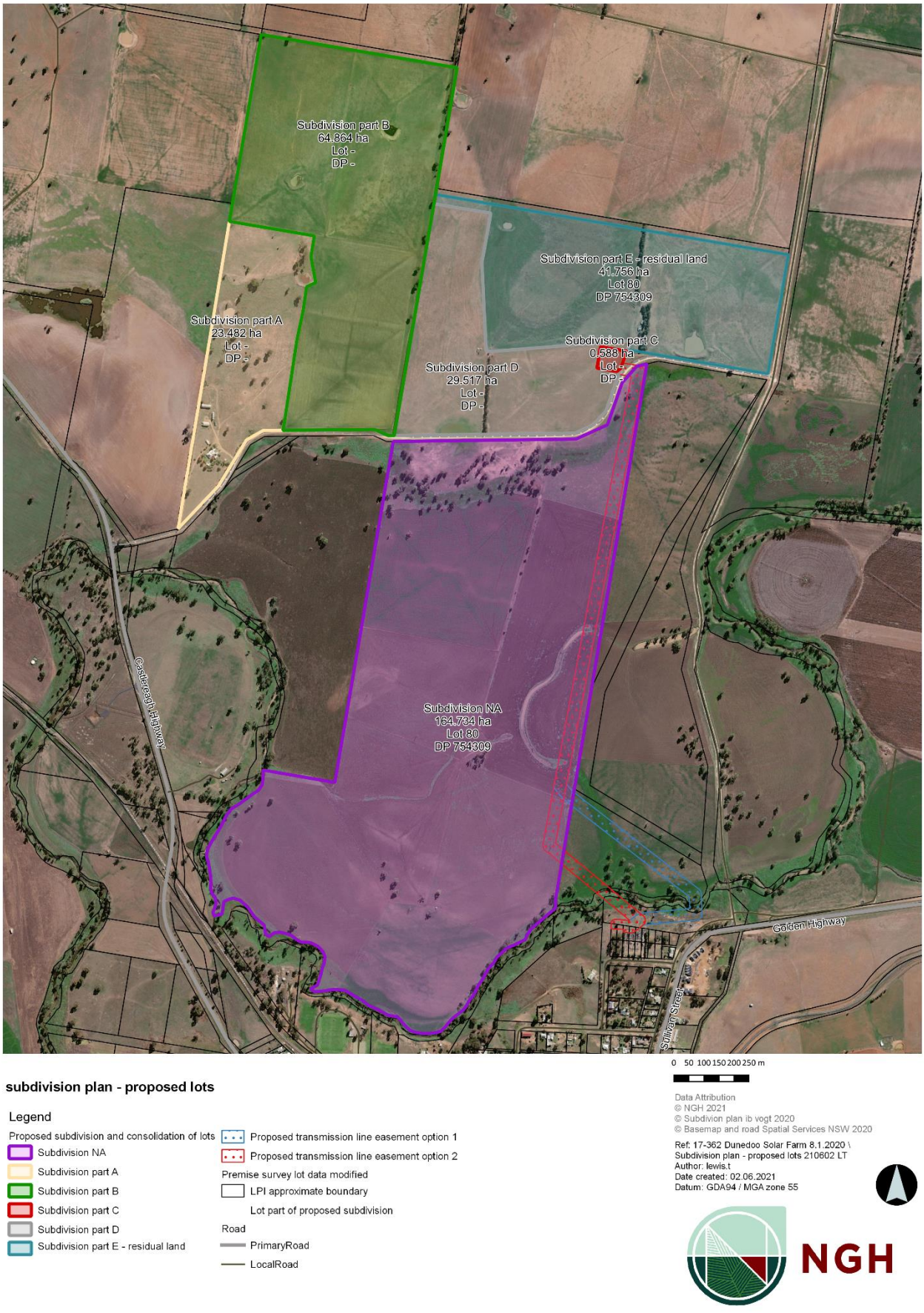


Figure 2-4 Proposed lot consolidation plan

2.13 Site Layout / Infrastructure Plan

Correspondence from DPIE dated 26 March 2021, stated:

"Please update site layout / infrastructure plan to clearly identify all proposed infrastructure"

Response

The proposed site layout of Dunedoo Solar Farm is presented in Figure 2-2 above. Figure 4-1 in the EIS provided a comprehensive detail of proposed infrastructure with Figure 2-5 below (replicated in Appendix E) showing proposed infrastructure. In addition, Figure 2-6 to Figure 2-8 show the site layout during construction, operation, and specifically the transmission line options where it would traverse Talbragar River. This has remained the same since the lodgement of the EIS.

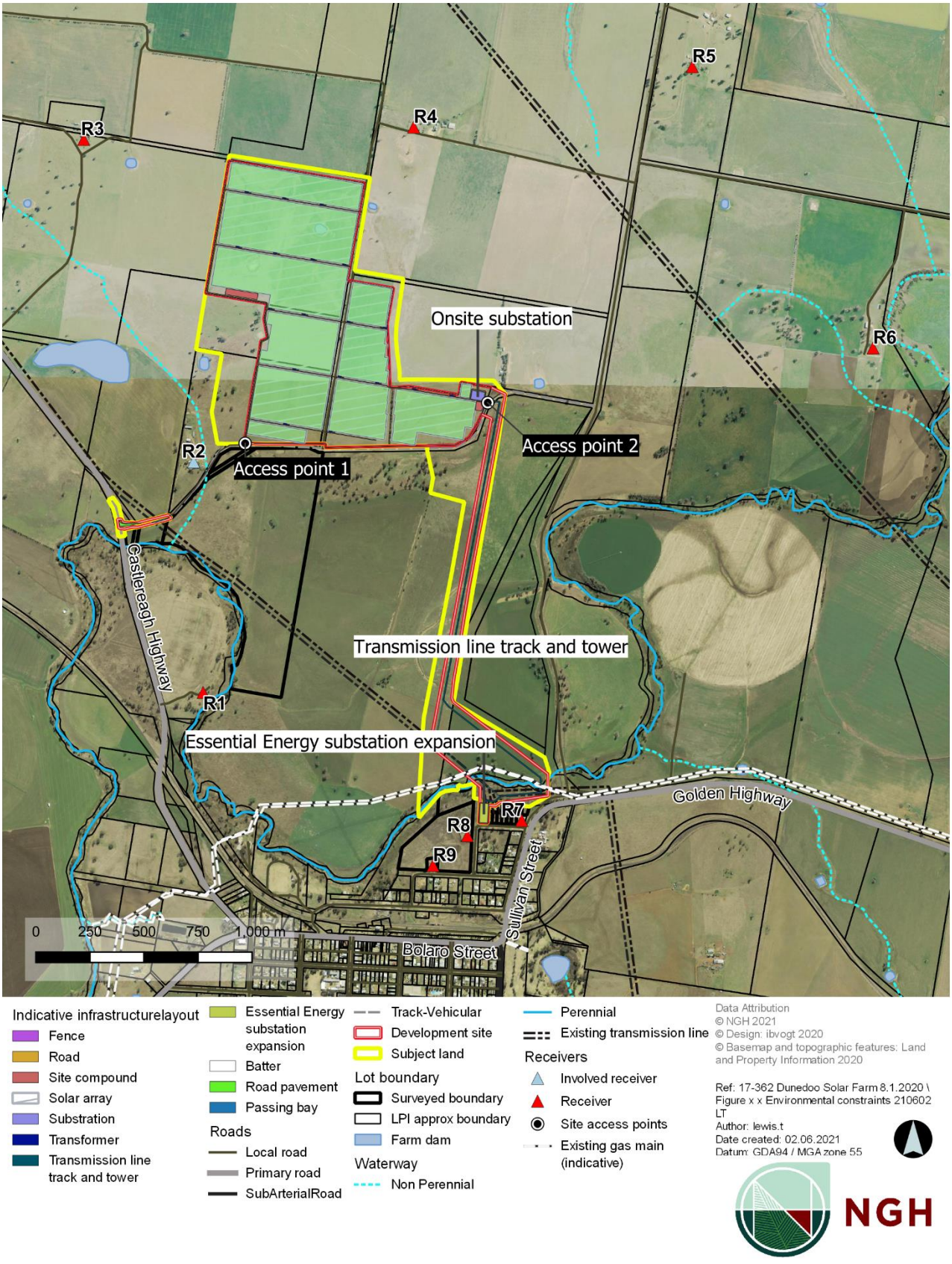


Figure 2-5 Proposal Infrastructure Lay-out

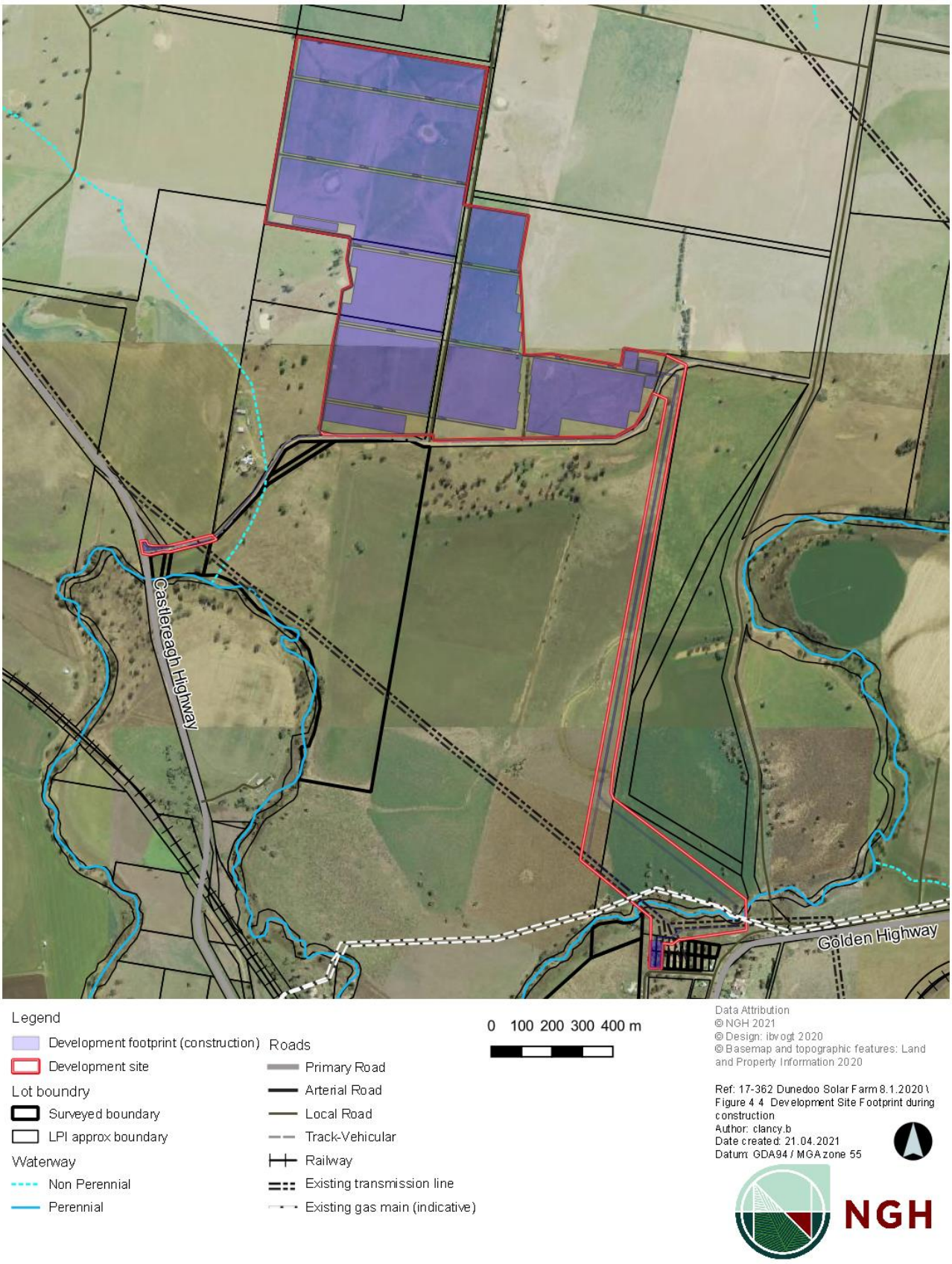


Figure 2-6 Dunedoo Solar Farm proposed construction footprint

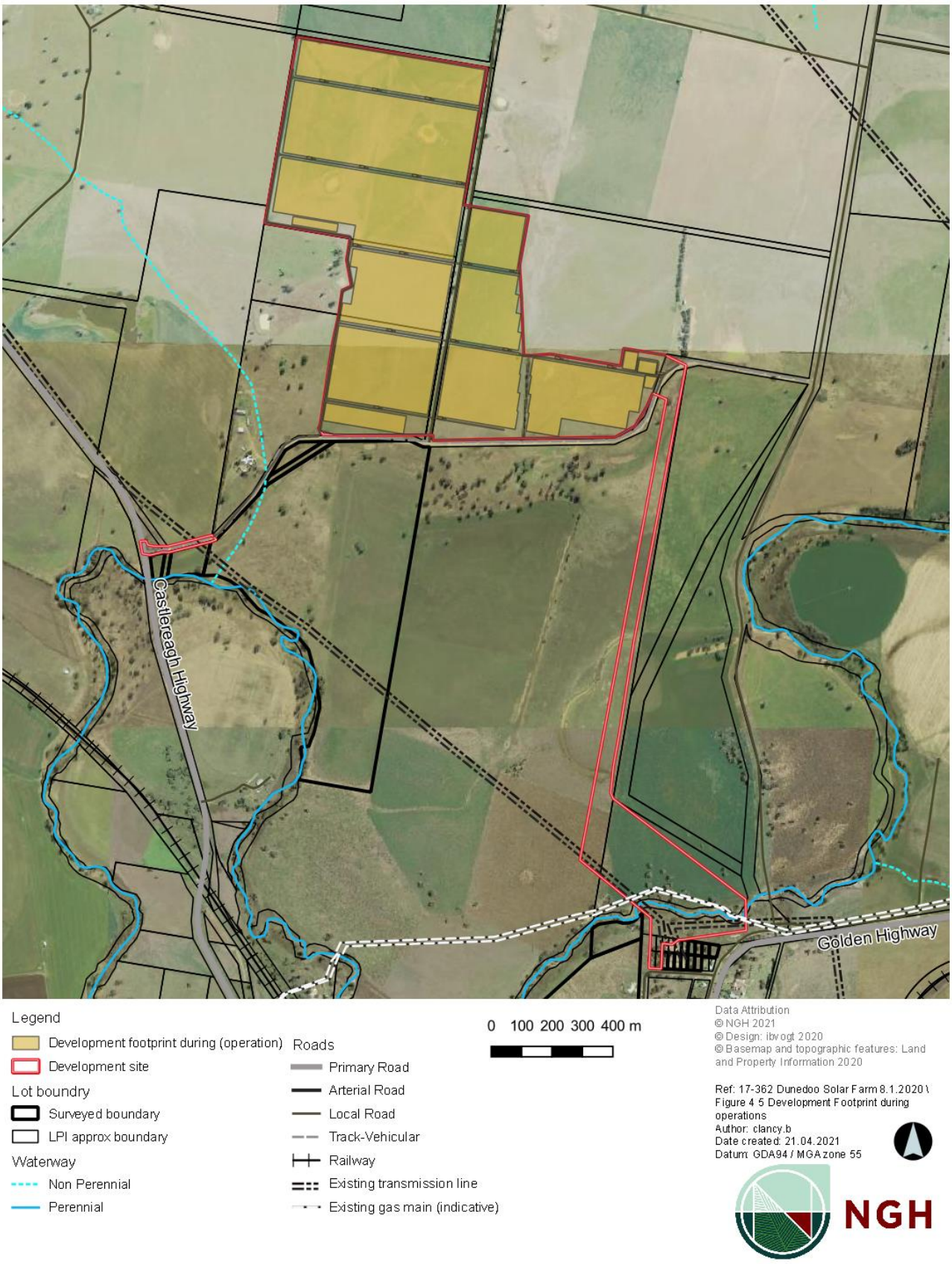


Figure 2-7 Dunedoo Solar Farm proposed operational footprint

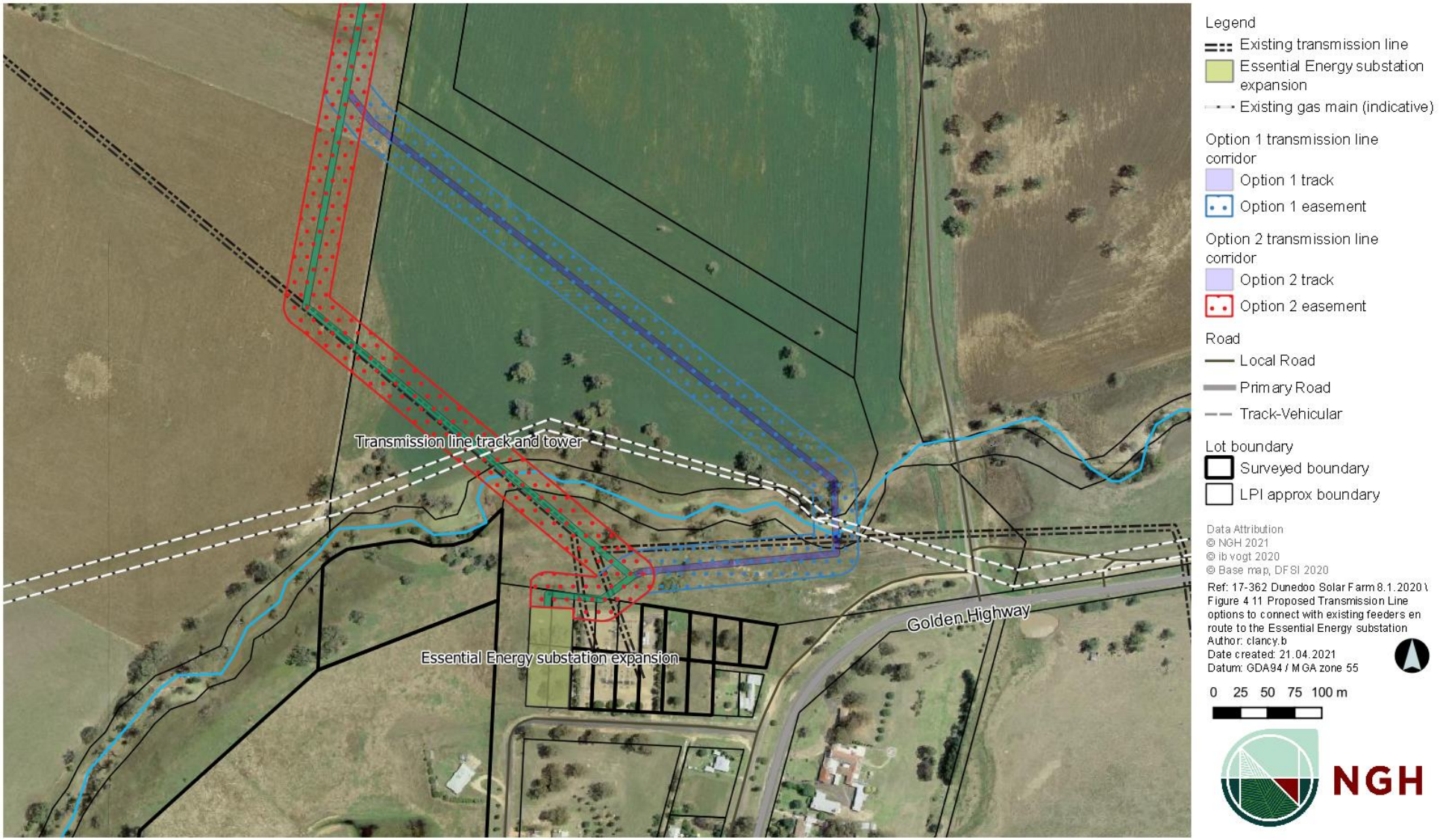


Figure 2-8 Transmission line options and existing elements

2.14 Noise

Correspondence from DPIE dated 26 March 2021, stated:

"Confirm the number of inverters proposed (Noise Impact Assessment (NIA) indicates 25 across 13 stations and EIS indicates 18 inverters across 18 separate locations). If 18 are proposed, please confirm whether there will be any differences in the noise outcomes associated with this number of inverters, as the NIA is based on 25 across 13 locations."

Response

We note that references to the number of inverters and stations in the EIS and NIA are not consistent. The table below shows the references between the EIS and NIA to inverters, stations, and BESS.

Table 2-3 Rerence to Inverters, Statios and BESSs between EIS and NIA.

	NIA	EIS	EIS table 9-30
Inverters	25	18	25
Stations	13	18	/
BESSs	13	18	13

The Proponent confirms that the intended numbers are 25 inverters at 13 locations, corresponding to 13 battery energy storage systems. These numbers are referenced in the NIA and will remain as such. This section updates the relevant sections of the EIS such that all aspects of the EIS and expert reports are consistent. No additional assessment is required.

2.15 Biodiversity

Correspondence from DPIE dated 26 March 2021, stated:

*"The BDAR submitted with the EIS refers to a **66 MW** solar farm, while it is noted that the proposal is for a **55 MW** solar farm. Please confirm whether the development footprint referenced in the BDAR is the same as that referenced in the EIS and whether there would be any difference in the biodiversity / ecological impacts associated with this (if relevant). Please also confirm whether the BDAR has incorporated the required road upgrades as part of the assessment / calculations."*

Response

The Biodiversity Development Assessment Report (BDAR) submitted with the EIS refers to the solar farm energy capacity in direct current (DC) as 66 megawatts (MW) DC. Note that 66 MW DC is equivalent to 55 MW alternating current (AC); the latter of which was described in the EIS. There is no change in the capacity and therefore does not affect the Development Footprint or any associated impacts that may result from the change in capacity. For clarity, the connection point can accept 55MW AC and the exact installed DC MW capacity will be determined through detailed design and be located within the Development Footprint and other site constraints.

As to the impact in relation to the road upgrades, Figure 1-1 on page 4 of the BDAR shows project that was considered for the assessment. In addition, Figure 3-2 on page 15 shows the road upgrade in its relevant shaded colours corresponding to Zone 1 PCT 281 and Zone 5 Non- native.

Therefore, all assessments and calculations of the affected areas, do include the required road upgrade areas and no additional calculations are necessary.

2.16 BESS Locations

Correspondence from DPIE dated 26 March 2021, stated:

"NIA is based on 13 BESS locations, while EIS indicates that there will be 18. Please confirm the number of BESS locations. If the number is increased, please also confirm whether this would result in a change in the noise outcome modelled in the NIA."

Response

The correct numbers are 25 inverters at 13 locations, corresponding to 13 battery energy storage systems. These numbers are referenced in the NIA and will remain as such. Therefore, no additional assessment is required.

2.17 Transformer

Correspondence from DPIE dated 26 March 2021, stated:

"The noise modelling in the NIA is based on an 80 MVA transformer. Please confirm the total output capacity of the transformer. If the output capacity of the transformer is different than that modelled in the NIA please confirm whether this would result in a different noise outcome."

Response

The noise modelling in the NIA states that the 80MVA transformer would emit a sound level of 90dB(A). This has been used as a reasonable representative transformer for the purpose of the NIA to demonstrate compliance with relevant requirements. During detailed design, a transformer of different capacity (larger or smaller) may be specified, however, noise limits will be maintained at relevant receivers.

3. Conclusion

This Additional Information has been prepared by NGH on behalf of the Proponent.

In relation to the matters discussed in this report, NGH has undertaken a review of DPIE's additional information requests and concludes that:

- Further assessment for visual impacts at R3-R9 have found that
    - planting as proposed in the EIS effectively mitigates visual impact at all residences except R4.
    - Small length of planting be installed and maintained in close proximity to dwelling R4, if requested by the owner, as specified on page 7 of the Addendum LVIA.
    - Screen planting along the western and southern edge of the substation expansion as required.
    - Focus on appropriate plant selections that are able to achieve the screening aims appropriately, selects species appropriate to the regions and provide for simple and effective maintenance. presented in the Addendum LVIA.
- During design and construction:
    - Consideration of recessive colour palettes for the building materials that will be used for construction.
    - Avoid unnecessary signage on fences, logos etc.
    - Proposed buildings will need to be sympathetic to existing architectural elements in the landscape.
    - Cut and fill and loss of existing vegetation throughout the construction process will need to be minimised.
    - Unnecessary lighting will need to be avoided.

- Outcomes from the consultation with TfNSW resulted in the acceptance of the traffic and transport solution proposed in the EIS, noting the following additional detail:
    - A traffic control plan be used to manage entry and exit to site via the Castlereagh Highway and All Weather Road junction consistent with the draft Traffic Control Plan (TCP), attached to this response in Appendix B, or as otherwise agreed with TfNSW.
    - The Castlereagh Highway and All Weather Road junction is to be upgraded to a BAL standard as required by and consistent with Austroads guidelines.
- The APA Group high-pressure gas pipeline has been included in the figures and no works around the pipeline would occur without prior the relevant approval.
- Lot 5 DP130930 does not form part of the Proposal.
- Warrumbungle Shire Council and Crown Lands (as crown land manager) can facilitate construction licenses, operation licenses, and establishment of an easement over Lot 7012 DP93290 providing statutory application processes are followed.
- Ongoing project consultation has occurred, particularly with receivers R3 and R4.

- Cumulative impacts as result of the updated distances of other proposals in the region with the Dunedoo Solar Farm proposal would remain generally the same as assessed in the EIS and may provide benefits to the region through sequential construction of projects.
- Site layout / infrastructure plan has been clearly identified all proposed infrastructure in the EIS and in this response.
- The solar farm is 55MW AC. The exact number of solar panels is to be determined during detailed design to fit within the Development Footprint and other site constraints.
- The number of inverters is as referenced in the NIA with 25 inverters at 13 locations, corresponding to 13 battery energy storage systems
- The Proponent has used an 80MVA transformer to demonstrate compliance with relevant requirements. During detailed design, a transformer of different capacity (larger or smaller) may be required, however, noise limits will be maintained at relevant receivers.
- All assessments and calculations of the affected areas as a result of the Proposal do include the required road upgrade areas, and no additional calculations are deemed necessary.
- additional safeguards or mitigation measures proposed here are:
    - Small length of planting be installed and maintained in close proximity to dwelling R4, if requested by the owner, as specified on page 7 of the Addendum LVIA.
    - Screen planting along the western and southern edge of the substation expansion as required.
    - Focus on appropriate plant selections that are able to achieve the screening aims appropriately, selects species appropriate to the regions and provide for simple and effective maintenance. presented in the Addendum LVIA.
- During design and construction:
    - Consideration of recessive colour palettes for the building materials that will be used for construction.
    - Avoid unnecessary signage on fences, logos etc.
    - Proposed buildings will need to be sympathetic to existing architectural elements in the landscape.
    - Cut and fill and loss of existing vegetation throughout the construction process will need to be minimised.
    - Unnecessary lighting will need to be avoided.

4. References

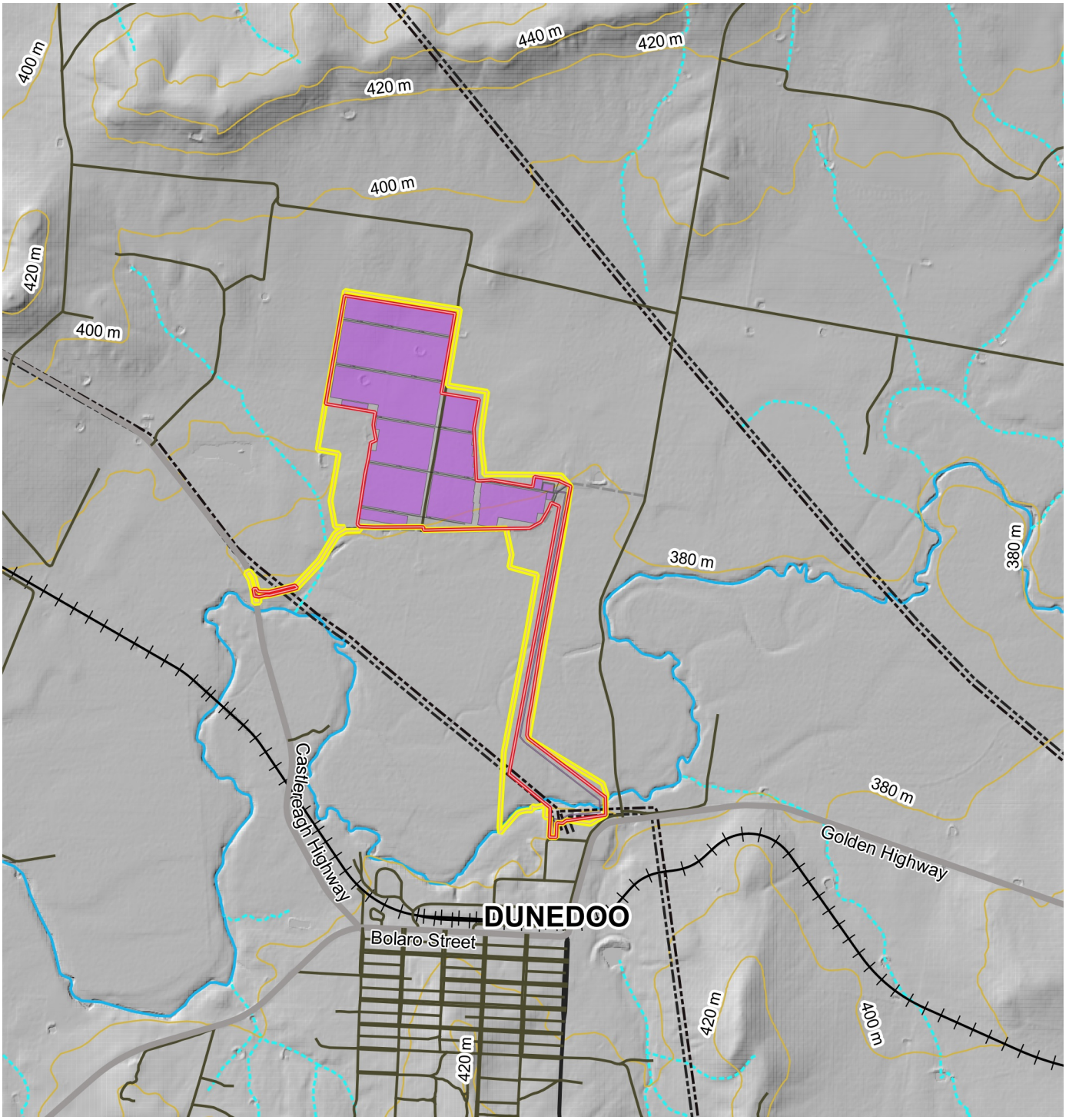
Moir Landscape Architecture (2021) *Landscape Visual Impact Assessment Addendum Report, Proposed Dunedoo Solar Farm*. Prepared for ib vogt GmbH.

NGH (2020a) *Dunedoo Solar Farm Environmental Impact Statement*. Prepared for ib vogt GmbH.

NGH (2020d) *Dunedoo Solar Farm Submissions Report.* Prepared for ib vogt GmbH.

Stantec (2020) *Traffic Impact Assessment Report.* Prepared for ib vogt GmbH.

Appendix A Topographical Map



Solar farm with topography - hillshade

Legend

- Development Footprint
- Development site
- Subject Land
- Contour (elevation indicated)
- Existing transmission line

Waterway

- NonPerennial
- Perennial

- Railway

Road

- LocalRoad
- PrimaryRoad
- SubArterialRoad
- Track-Vehicular

0 100 200 300 400 m

Data Attribution
© NGH 2021
© ib vogt 2020
© Base map, Elevation and Depth - Foundation Spatial Data 2021, topographic features DFSI Spatial Services NSW 2020

Ref: 17-362 Dunedoo Solar Farm 8.1.2020 \ Solar farm with topography - hillshade
Author: clancy.b
Date created: 31.03.2021
Datum: GDA94 / MGA zone 55

NGH

Appendix B Final Consultation with TfNSW

Jorge Van Den Brande

From: Alexandra Power <Alexandra.Power@transport.nsw.gov.au>
Sent: Thursday, 20 May 2021 5:04 PM
To: Hugh Sangster
Cc: Development Western
Subject: RE: Dunedoo - Suggested transport solution

Hello Hugh,

I have discussed the matter with Andrew and TfNSW would be willing to consider the BAL given the TCP and the volumes turning left from the Castlereagh Highway into Allweather Road.

The information provided is as per our discussions and in line with our expectations.

Kind regards

Alexandra Power
Team Leader Development Services-Renewables West
Regional and Outer Metropolitan Division | TfNSW
T 02 6861 1428

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From: Hugh Sangster [mailto:Hugh.Sangster@ibvogt.com]
Sent: Wednesday, 5 May 2021 4:14 PM
To: Alexandra Power <Alexandra.Power@transport.nsw.gov.au>
Cc: Simon Kerrison <Simon.Kerrison@ibvogt.com>
Subject: Dunedoo - Suggested transport solution

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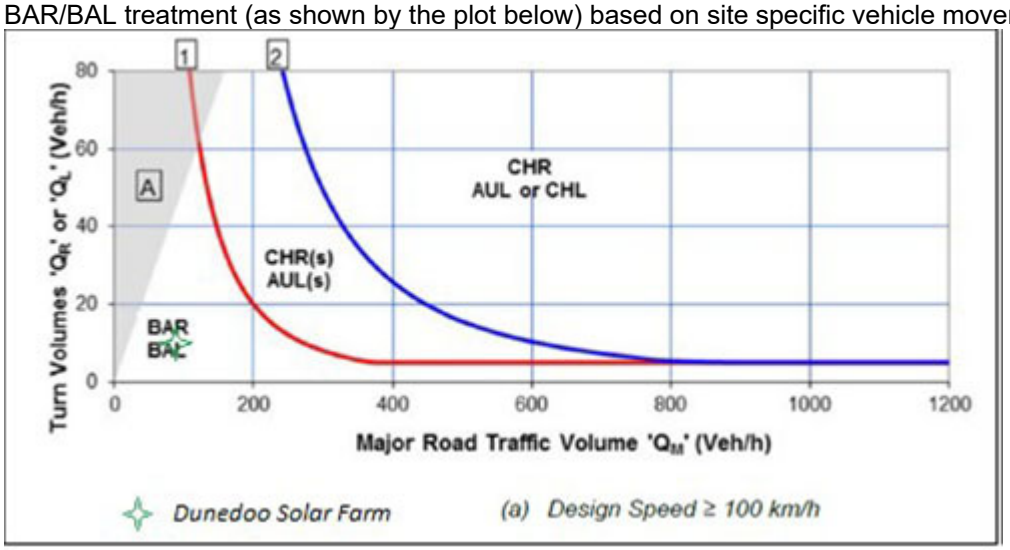
Hi Alexandra,

Thanks for your time over the past weeks and months discussing the Dunedoo Solar Farm transport. This email is intended to capture the outcomes of these discussions for presentation in our additional information to DPIE for the purpose of determination.

1. The proposed transport solution is generally as proposed in the EIS. Some specific details are included below for information:
2. The Austroad requirements for the Castlereagh Highway and All Weather Road junction (The Junction) is for a BAR/BAL treatment (as shown by the plot below) based on site specific vehicle movements etc.:



   a. A BAR cannot physically be constructed at The Junction due to the bridge and other physical limitations. A draft Traffic Control Plan (TCP) as attached has been agreed instead of a BAR to safely manage heavy vehicle movements at The Junction during construction. The intention is that the final version of the TCP would be based on this draft and form part of the Construction Traffic Management Plan agreed with TfNSW and Council (already provided for in the EIS).
   b. A BAL at The Junction is proposed as required by the Austroads guidelines. Only a small portion of heavy vehicle construction traffic is predicted to enter site from the Castlereagh Highway in a southbound direction. The BAL, as required by Austroads guidelines, would therefore expect relatively low levels of use and, for those vehicles that do use the BAL, TCP arrangements as described at point 2(a) will also be relevant.
3. During operation of the solar farm, heavy vehicles entering and exiting the site via the Junction are expected to be minimal and infrequent. It is possible that unplanned outages or site damage could necessitate some heavy vehicle movements to site, however, these would also be expected to be sporadic and may not occur at all. Overall, during operations, negligible heavy vehicle volumes are expected.

Can you please confirm that the above is in line with our discussions and your expectations. Please give me a call if you wish to discuss or you have any questions/clarifications.

For your information, I will share this email with Kevin Tighe at WSC so that he is aware of the current status of the proposal.

thanks again and I look forward to hearing from you.

Regards,
Hugh

Hugh Sangster

Senior Development Manager
Australia

ib vogt GmbH

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SYDNEY NSW 2000
Australia

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www.ibvogt.com

Sitz der Gesellschaft: Berlin, Amtsgericht Charlottenburg, HRB 86173
Geschäftsführung: Anton Milner, Dagmar Vogt, Carl von Braun

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NOTES

1. "D" value - 100m in accordance with RMS "Traffic control at worksites".

2. All signs and temporary traffic control devices to be covered or removed outside of constructions hours.

3. Existing speed limit signs must be covered during construction hours

4. Locations of signages are to be confirmed on-site to ensure appropriate visibility.

5. Aerial image obtained from SixMaps. Any scaling and dimensions are indicative only and subject to detailed survey.

6. Temporary Variable Message Signs (VMS) may also be located along the Castlereagh Highway, approximately 250m from All Weather Road intersection to provide additional warning/safety during construction activity. VMS message to be agreed prior to construction.

PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE

REV	REVISIONS	DATE
REV2	FOR INFORMATION	05/05/21

DESIGNED		
DRAWN	SH	05/05/21
CAD REVIEW		
DES CHECK		
REVIEWED	KM	05/05/21
APPROVED	KM	05/05/21

Stantec

ib vogt GmbH
DUNEDOO SOLAR FARM

CASTLEREAGH HIGHWAY & ALL WEATHER ROAD - TCP

Status Stamp: **FOR INFORMATION**
Date Stamp: **05/05/21**
Scales: NTS
Drawing No.: STN-001
Rev.: 2

05/05/21

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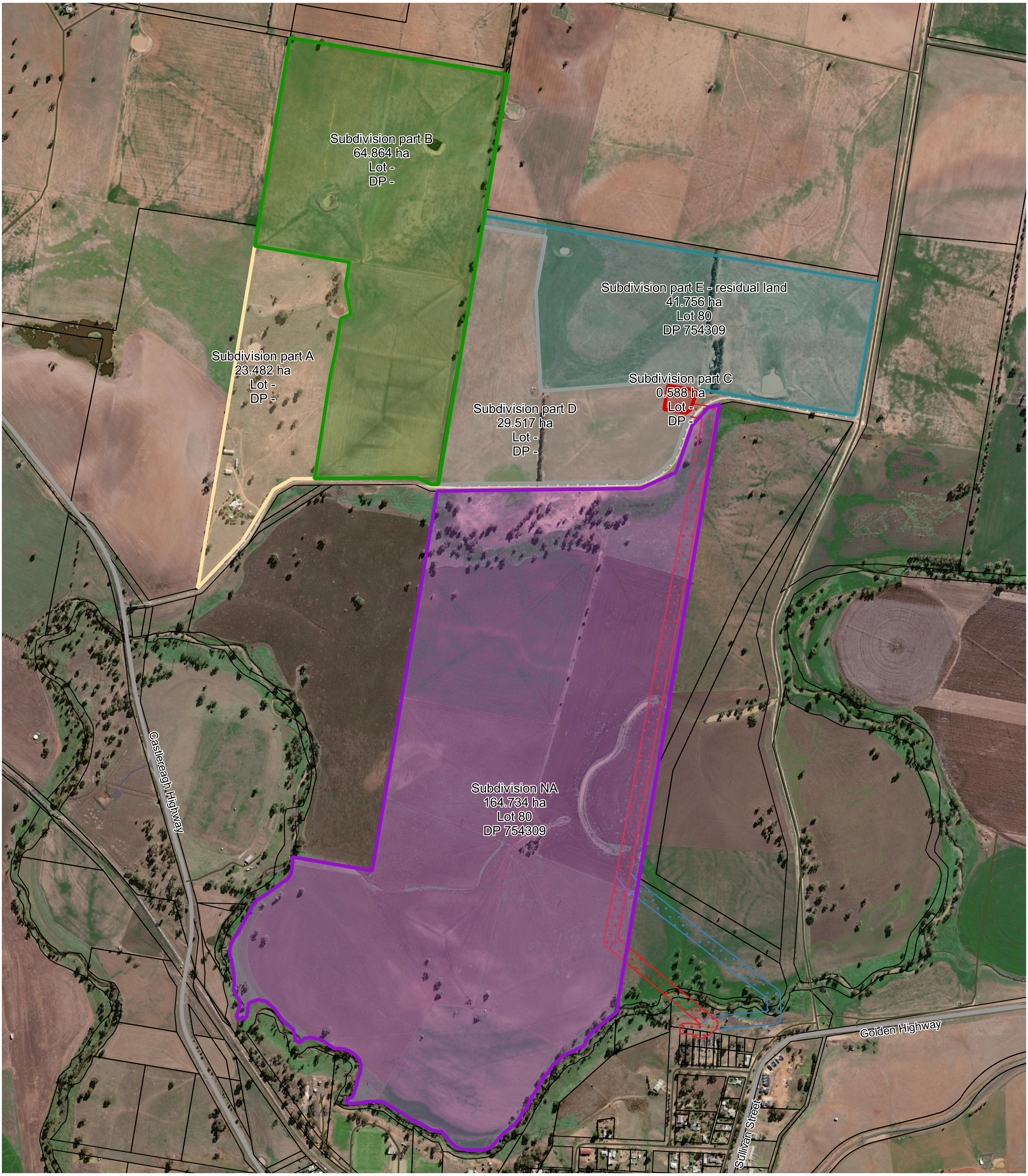
Appendix C Proposed Lot Consolidation



0 50 100 150 200 250 m

subdivision plan - proposed lots

Legend

Proposed subdivision and consolidation of lots
- Subdivision NA
- Subdivision part A
- Subdivision part B
- Subdivision part C
- Subdivision part D
- Subdivision part E - residual land

- Proposed transmission line easement option 1
- Proposed transmission line easement option 2

Premise survey lot data modified
- LPI approximate boundary
- Lot part of proposed subdivision

Road
- PrimaryRoad
- LocalRoad

Data Attribution
© NGH 2021
© Subdivion plan ib vogt 2020
© Basemap and road Spatial Services NSW 2020

Ref: 17-362 Dunedoo Solar Farm 8.1.2020 \
Subdivision plan - proposed lots 210602 LT
Author: lewis.t
Date created: 02.06.2021
Datum: GDA94 / MGA zone 55

NGH

Appendix D Addendum LVIA

Dunedoo Solar Farm

Landscape and Visual Impact Assessment

Addendum Report

Prepared for: **NGH Consulting**

Project No: **1544** Issue: **Revision B** Date: **3rd June 2021**

DOCUMENT HISTORY AND STATUS

Project No: **1544**

Project Name: **Dunedoo Solar Farm | Landscape and Visual Impact Assessment Addendum**

Issue	Status	Date of Issue	Author	Approved by
A	Draft issued for review	April 2021	AR	DM
B	Final draft issued for review	03.06.21	AR	DM

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www.moirla.com.au ACN: 097 558 908 ABN: 48 097 558 908

1.0 Introduction

1.0 Introduction

The purpose of this report is to provide a response to the Request for Further Information (RFI) dated *19th March 2021* in relation to the Landscape and Visual Impact Assessment (LVIA) prepared for Dunedoo Solar Farm (SSD-8847) in September 2020.

Table 1 provides an overview of the RFI requests in relation to visual impacts and a cross reference to where the request has been addressed.

DPIE Request:	Refer to:
Visual: provide further assessment detailing how the proposal has considered the full extent of visual impacts on all potentially impacted non-associated receivers including;	
• *a clear description and evidence of the potential of the impacts on each receiver, including from residences R3 and R4 to R9 inclusive (such as representative viewpoints and photomontages);*	**Section 2.0** **Appendix A: Photomontages**
• *consideration of all elements of the project (including solar panels, on-site substation, inverters, communications tower, operations and maintenance buildings, transmission infrastructure, synchronous condenser, battery storage);*	**Section 3.0**
• *topographical maps of the site and surrounding area for a 2 km radius; and*	**Figure 1**
• *details of the proposed measures to mitigate the potential impacts on receivers.*	**Section 2.0 & Section 4.0**

Table 1. Overview of RFI

2.0 Additional Dwelling Assessment

2.0 Additional Assessment from Dwellings R3 - R9

2.1 Study Method

A detailed desktop assessment has been undertaken for dwellings identified as R3 - R9. The following has been undertaken to provide a clear description and evidence of the potential impacts on each receiver:

1. Determine the extent of potential visibility of the Project
A desktop assessment has been utilised to determine the distance to the Project and the extent of potential visibility. A site inspection was undertaken for two of the dwellings (R3 and R4).

2. Identify existing intervening factors
The extent of visibility is overlaid onto the most recent available aerial imagery to determine if intervening factors (such as existing vegetation, structures etc.) may assist in reducing potential visibility of the project.

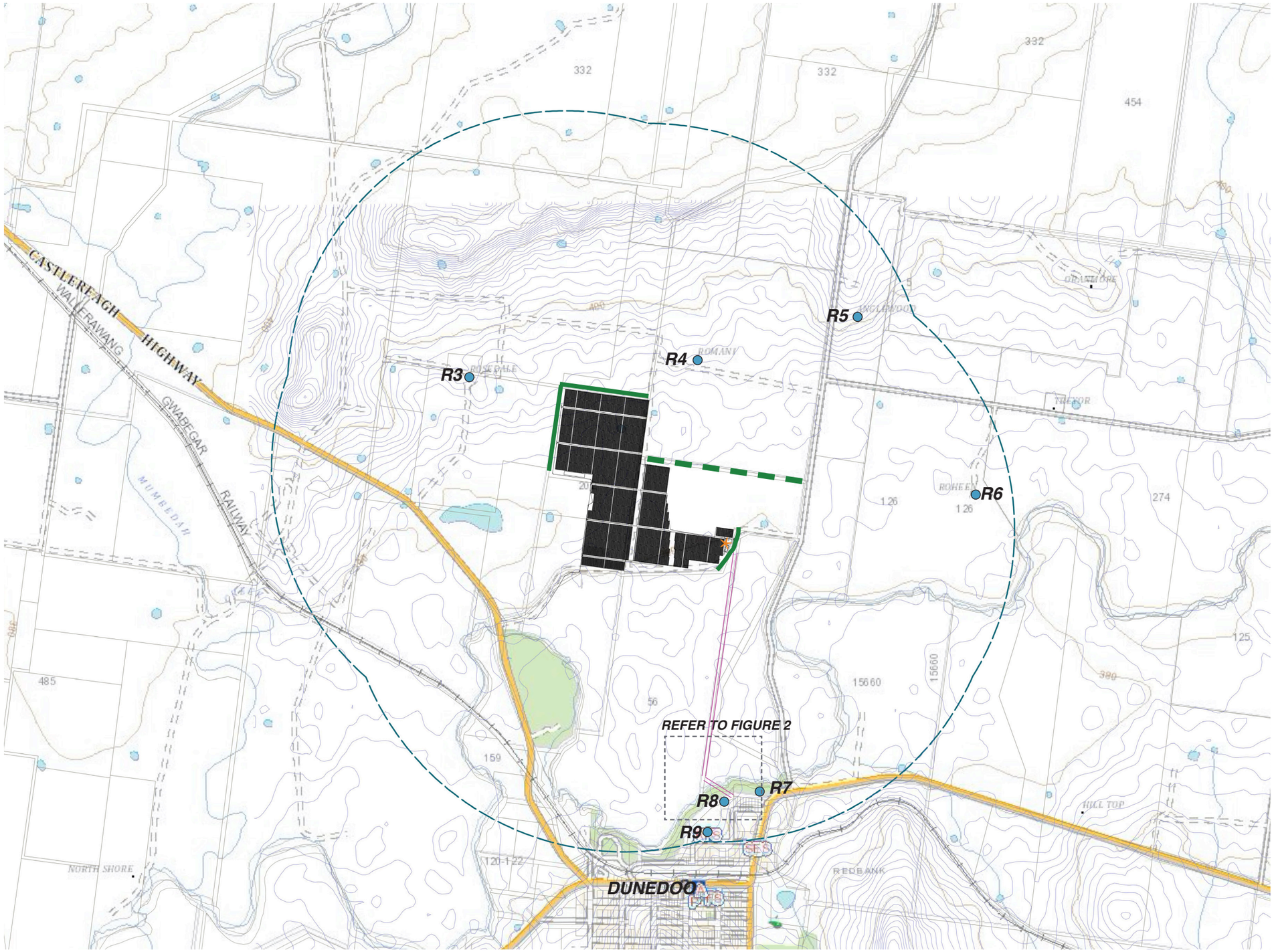
3. Recommend practical mitigation measures to reduce visual impacts.
Where deemed necessary, practical mitigation measures have been identified to assist in reducing the potential visual impact from each receiver.

Dwelling ID:	Name / Address:	Visual Impact Rating:	Mitigation Measures:	Visual Impact Rating (With Mitigation Measures):
R3	*'Rosedale'*	**MODERATE**	Screen planting at site	**NIL / LOW**
R4	*'Romani'*	**MODERATE**	Screen planting at site	**LOW**
R5	*'Anglewood'*	**MODERATE**	**N/A**	**NIL / LOW**
R6	*'Roheen'*	**LOW**	Screen planting at site	**NIL / LOW**
R7	*1 Evan Street, Dunedoo*	**NIL / LOW**	**N/A**	**NIL / LOW**
R8	*Nott Street, Dunedoo*	**LOW**	**N/A**	**NIL / LOW**
R9	*27 Nott Street, Dunedoo*	**LOW**	**N/A**	**NIL / LOW**

Table 2. Overview of Dwelling Assessment

2.0 Additional Dwelling Assessment

Figure 1. Receptors within 2000 m of the Project



LEGEND

- Selected Dwelling within 2000 m of Solar Farm
- 2 m Contour
- Lot Boundary
- Solar Panels
- 2000 m radius from Solar Panels
- Site Compound, Substation Location
- Transmission Line

SCREEN PLANTING:

As proposed in Moir LA LVIA (2020)

- Boundary Planting
- Fragmented Boundary Planting (Approx. 60% coverage to tie in with existing landscape character)

Dwelling R3 ‘Rosedale’

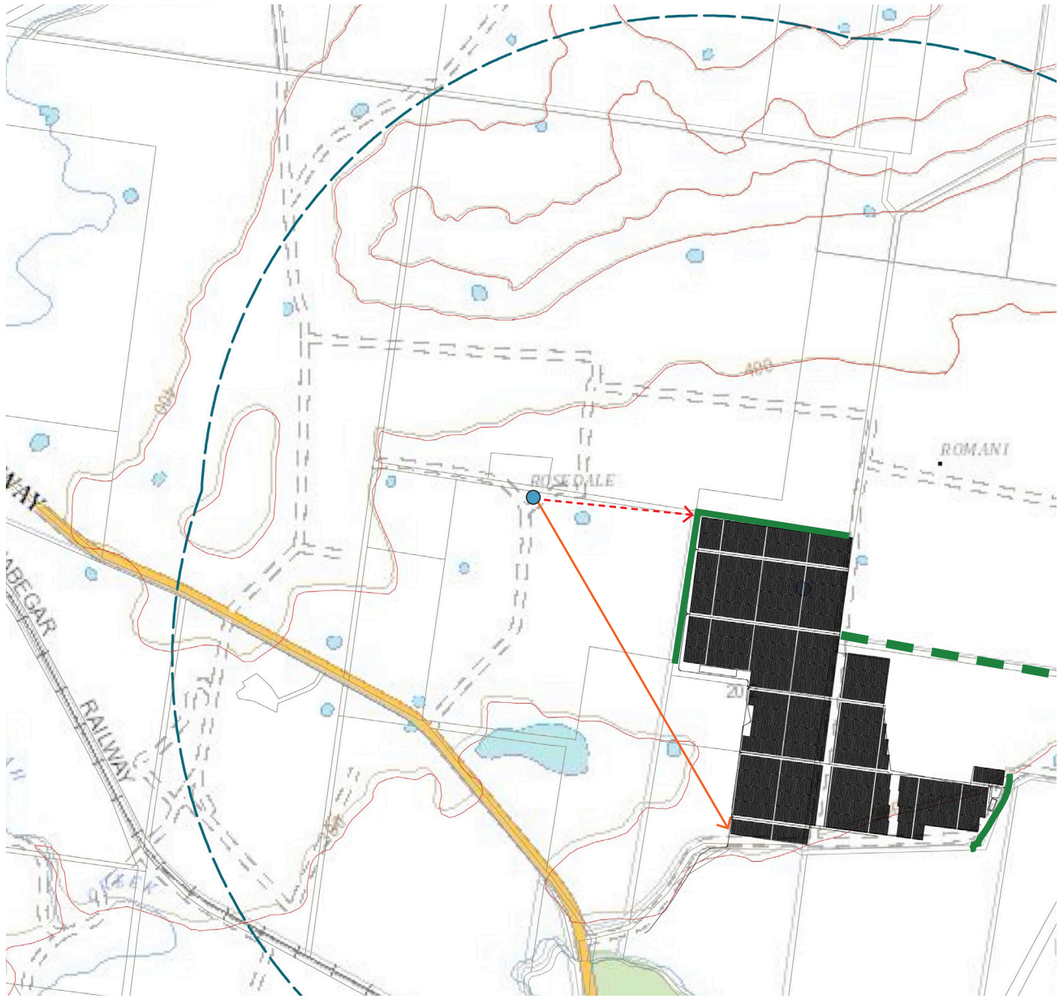
Dwelling R3:	
Distance to nearest panel:	664 m
Dwelling elevation:	395 m
Land Use:	Rural Dwelling
Visual Sensitivity:	High
Visual Effect:	Low / Moderate
Visual Impact Rating:	Moderate
Visual Impact Rating (With Mitigation):	Nil - Low

Assessment Notes:

Dwelling R3 ‘Rosedale’ is located to the north west of the Proposed Solar Farm. The house appears to be orientated to the north. The Project is likely to be visible from Dwelling R3 to the south east. At its nearest point, the Project is 664 m to the east of the dwelling. The aerial image indicates vegetation close to the dwelling intervening with views to the Project. In accordance with the Study Method in the LVIA prepared by Moir LA the Visual Sensitivity is considered High due to the land use (Rural Dwelling) and close proximity to the Project. The Visual Effect has been assessed as low / moderate, resulting in a ***Moderate Visual Impact Rating.*** **Refer to Appendix A: Photomontage 02**

Mitigation Methods:

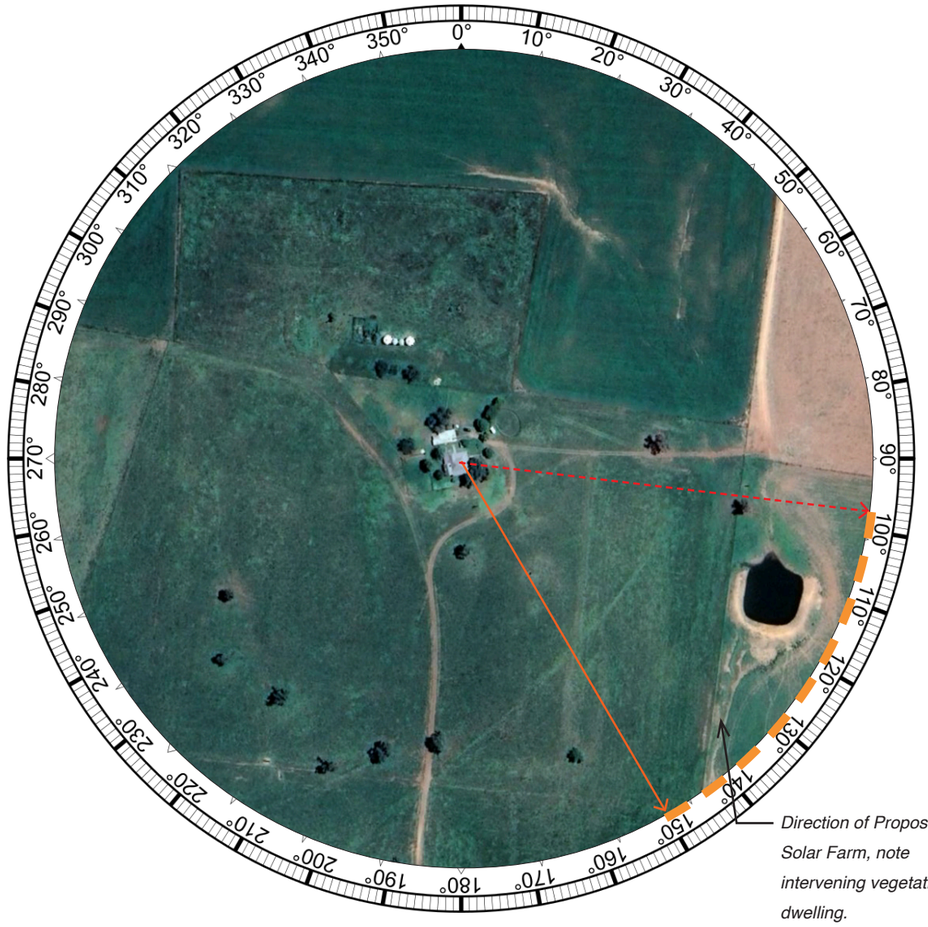
Existing vegetation to the south east of the dwelling is likely to fragment views to the Project. Proposed screen planting along the western edge of the Project will reduce the visual impact from the dwelling to ***nil-low*** (refer to Appendix A: Photomontage 02).



LEGEND

- Dwelling within 2000 m of Solar Farm
- Proposed Solar Panels
- Extent of Solar Panels visible from dwelling
- Direction of nearest Solar Panel
- Proposed screen planting at Dwelling
- Proposed boundary planting on Site
- Proposed boundary planting on Site

Dwelling R3



Direction of Proposed Solar Farm, note intervening vegetation at dwelling.

Source: Google Earth (Imagery Date: 01.13.2021)

Dwelling R4 ‘Romani’

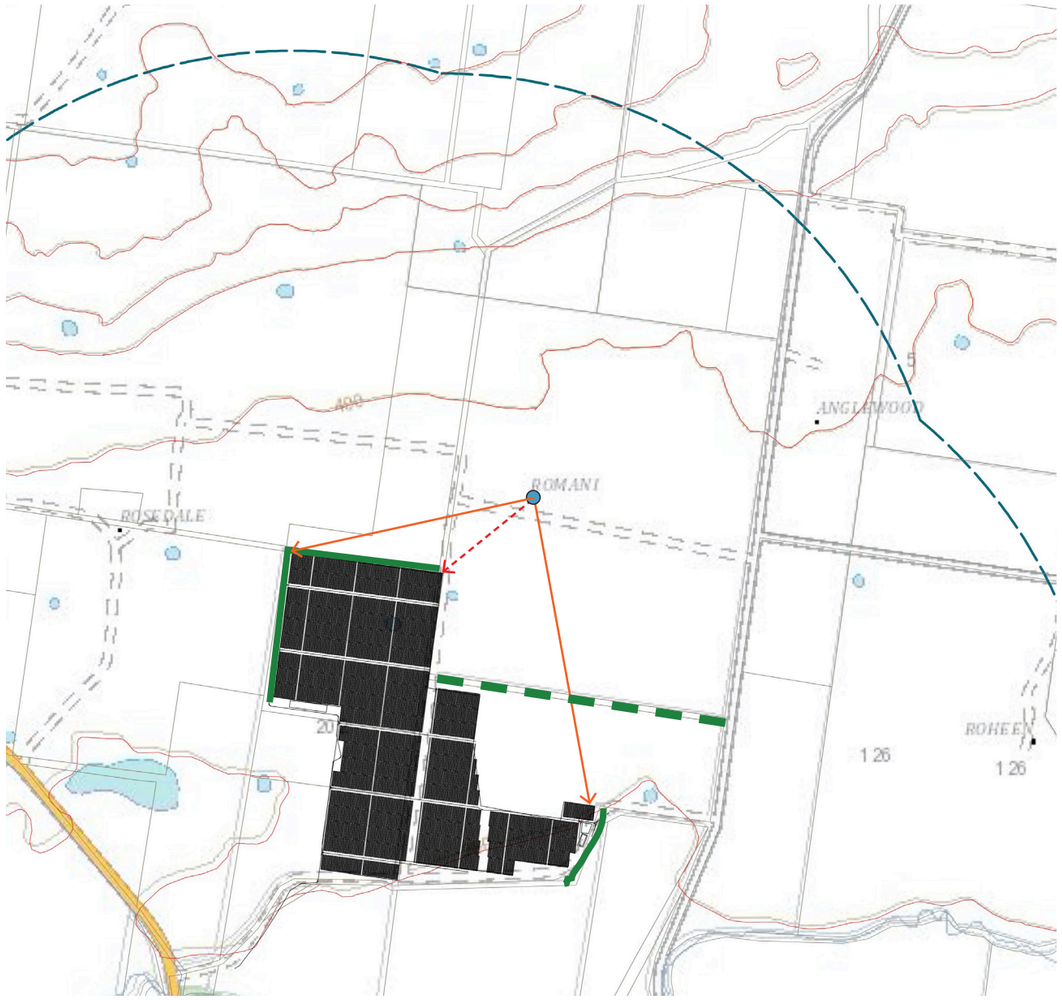
Dwelling R4:	
Distance to nearest panel:	346 m
Dwelling elevation:	391 m
Land Use:	Rural Dwelling
Visual Sensitivity:	High
Visual Effect:	Low / Moderate
Visual Impact Rating:	Moderate
Visual Impact Rating (With Mitigation):	Nil - Low

Assessment Notes:

Dwelling R4 is located to the north of the Proposed Solar Farm. The house appears to be orientated to the north. The Project is likely to be visible from Dwelling R4 to the south. At its nearest point, the Project is 346 m to the South West of the dwelling. There are some scattered trees between the dwelling at the Project, however views are generally uninterrupted to the south. In accordance with the Study Method in the LVIA prepared by Moir LA the Visual Sensitivity is considered High due to the land use (Rural Dwelling) and close proximity to the Project. The Visual Effect has been assessed as low / moderate, resulting in a ***Moderate Visual Impact Rating.*** The incorporation of screen planting would significantly reduce the potential visual impacts from Dwelling R4. **Refer to Appendix A: Photomontage 02**

Mitigation Methods:

Proposed screen planting along the northern boundary of the Project would reduce the potential visual impact rating (refer to Appendix A: Photomontage 02). Screen planting to the south of Dwelling R4 would provide an opportunity to significantly reduce potential visual impacts towards the Project (shown dashed yellow line on aerial image below).



LEGEND

- Dwelling within 2000 m of Solar Farm
- Proposed Solar Panels
- Extent of Solar Panels visible from dwelling
- Direction of nearest Solar Panel
- Proposed screen planting
- Proposed boundary planting on Site
- Proposed boundary planting on Site

Dwelling R4

Source: Google Earth (Imagery Date: 01.13.2021)

Dwelling R5 ‘Anglewood’

Dwelling R5:	
Distance to nearest panel:	1.609 km
Dwelling elevation:	402 m
Land Use:	Rural Dwelling
Visual Sensitivity:	High
Visual Effect:	Low
Visual Impact Rating:	Moderate
Visual Impact Rating (With Mitigation):	Nil - Low

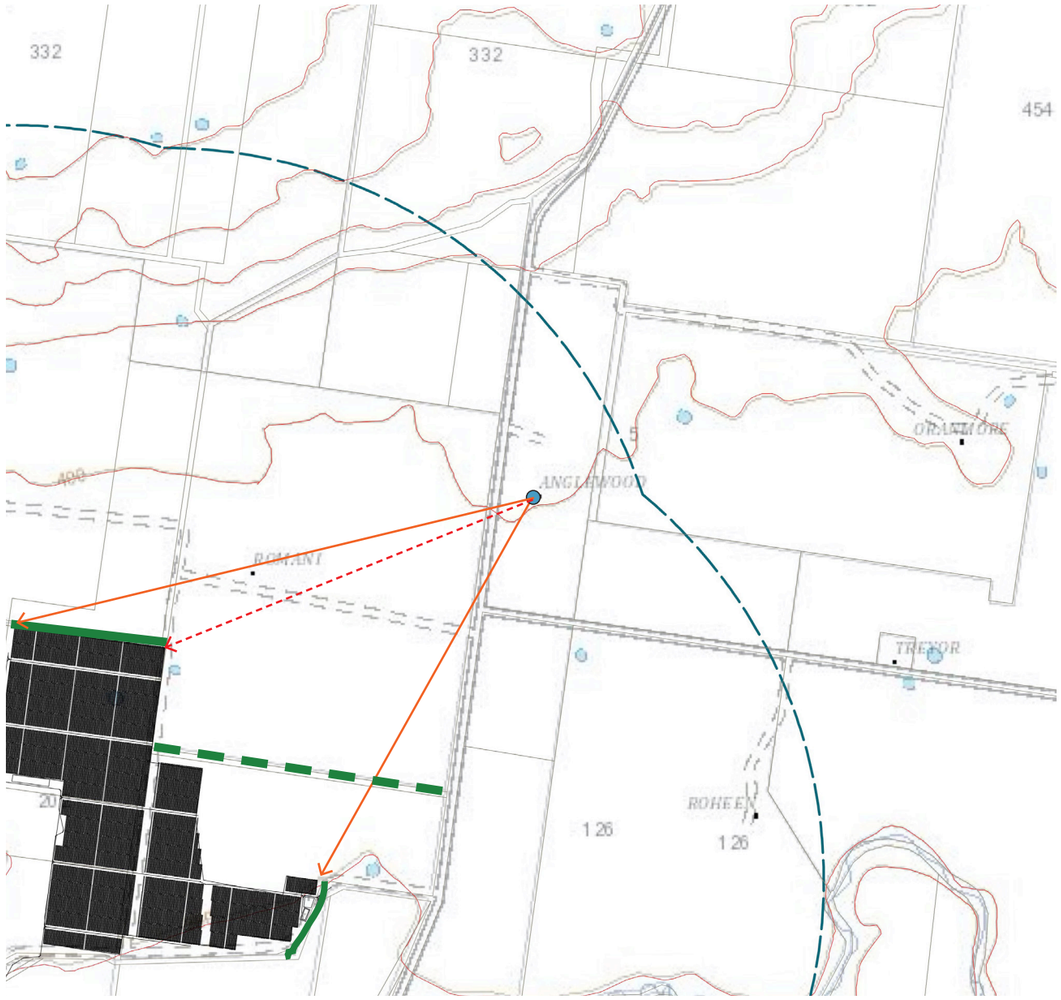
Assessment Notes:

Dwelling R5 is located to the north east of the Proposed Solar Farm. At its nearest point, the Project is 1.609 m to the South West of the dwelling. There are some scattered trees between the dwelling and the Project, along the eastern side of Digilah Road which may reduce the potential visibility to the Project.

In accordance with the Study Method in the LVIA prepared by Moir LA the Visual Sensitivity is considered High due to the land use (Rural Dwelling) and close proximity to the Project. The Visual Effect has been assessed as low, resulting in a ***Moderate Visual Impact Rating.***

Mitigation Methods:

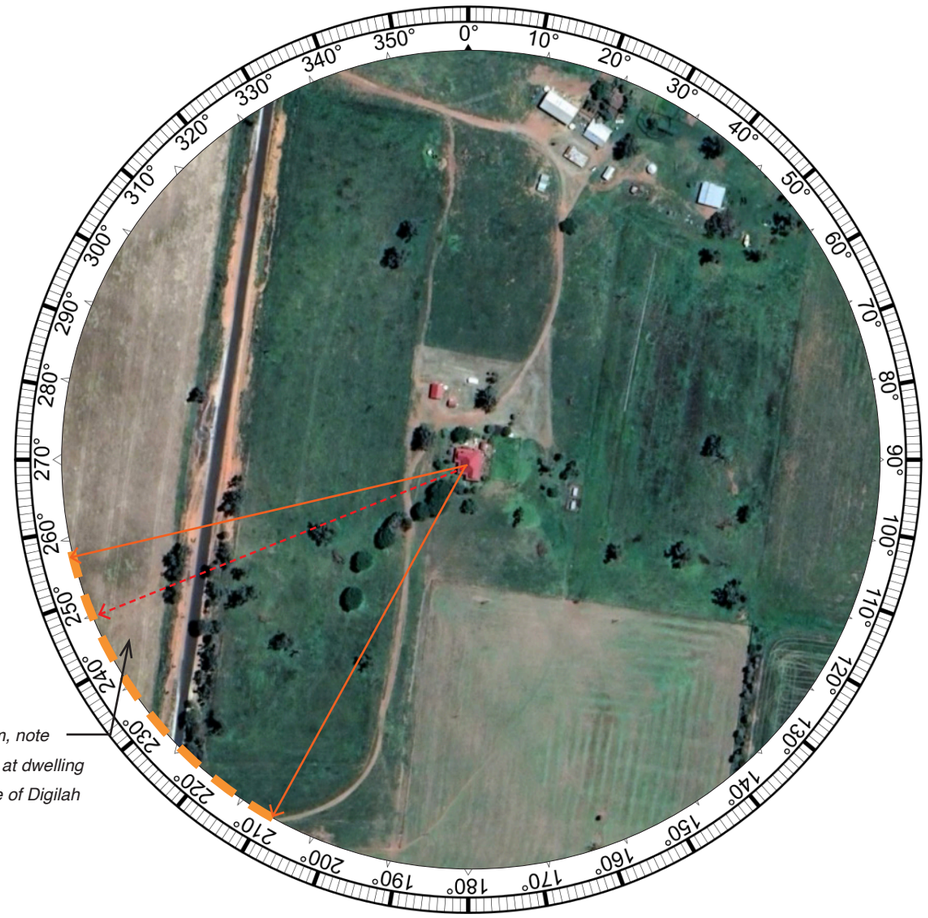
The proposed on site boundary planting to the north of the Solar Farm (as per Moir LA’s LVIA September 2020) will assist in screening views to the Project. In addition, the existing vegetation to the south west of the dwelling along the eastern side of Digilah Road would significantly reduce potential visual impacts. No further screen planting at the dwelling would be required.



LEGEND

- Dwelling within 2000 m of Solar Farm
- Proposed Solar Panels
- Extent of Solar Panels visible from dwelling
- Direction of nearest Solar Panel
- Proposed screen planting
- Proposed boundary planting on Site
- Proposed boundary planting on Site

Dwelling R5



Direction of Solar Farm, note intervening vegetation at dwelling and along eastern side of Digilah Road.

Source: Google Earth (Imagery Date: 01.13.2021)

Dwelling R6 ‘Roheen’

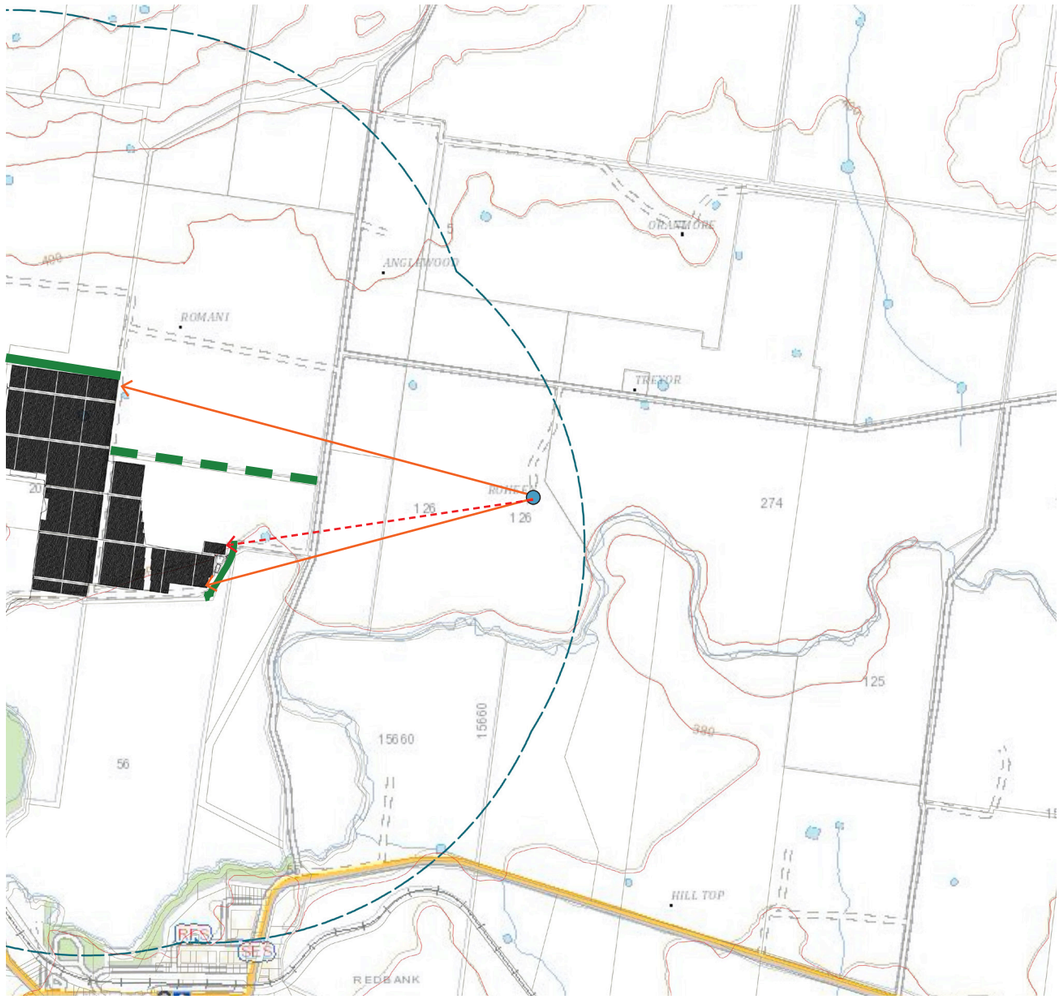
Dwelling R6:	
Distance to nearest panel:	1.753 km
Dwelling elevation:	384 m
Land Use:	Rural Dwelling
Visual Sensitivity:	High
Visual Effect:	Low
Visual Impact Rating:	Low
Visual Impact Rating (With Mitigation):	Nil - Low

Assessment Notes:

Dwelling R6 is located to the east of the Proposed Solar Farm. At its nearest point, the Project is 1.753 km to the West of the dwelling. There are some scattered trees between the dwelling at the Project. In accordance with the Study Method in the LVIA prepared by Moir LA the Visual Sensitivity is considered High due to the land use (Rural Dwelling) and close proximity to the Project. The Visual Effect has been assessed as low, resulting in a ***Low Visual Impact Rating.*** The incorporation of screen planting would significantly reduce the potential visual impacts from Dwelling R6.

Mitigation Methods:

On-site screen planting proposed along the eastern edge of the Project will significantly reduce potential visual impacts towards the Project. Once established, the visual impact rating would be reduced to ***nil - low***.



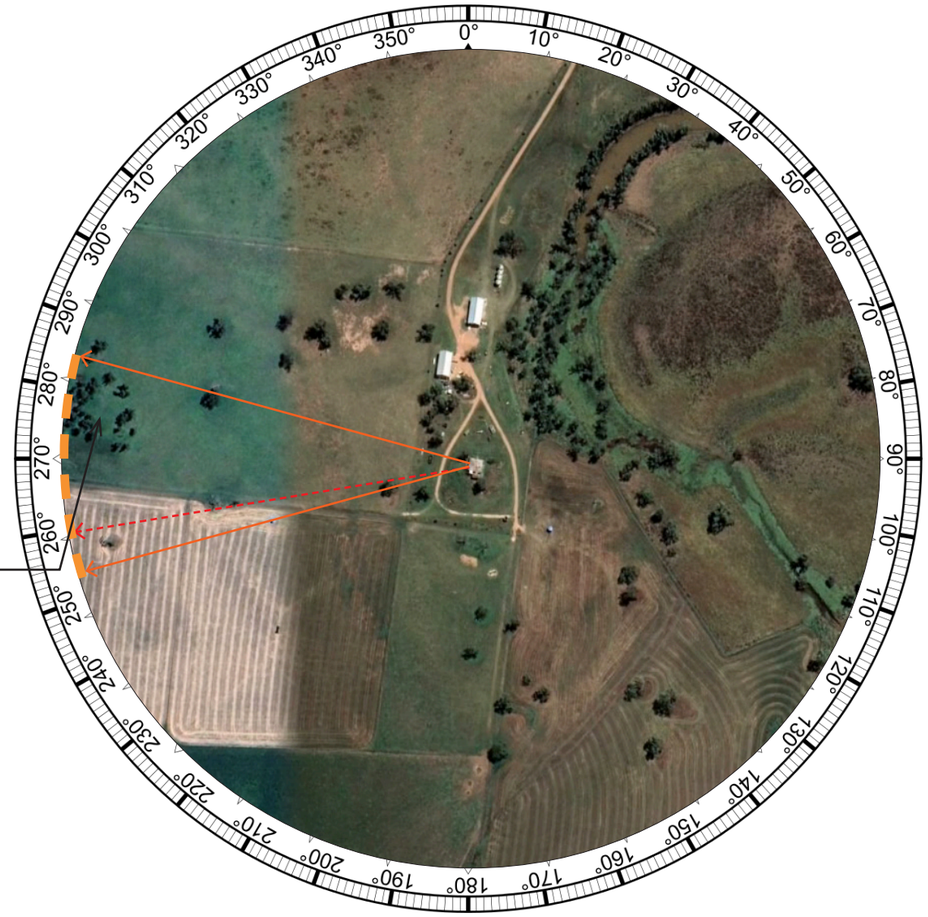
Dwelling R6

LEGEND

- Dwelling within 2000 m of Solar Farm
- Proposed Solar Panels
- Extent of Solar Panels visible from dwelling
- Direction of nearest Solar Panel
- Proposed screen planting
- Proposed boundary planting on Site
- Proposed boundary planting on Site

Direction of Solar Farm, note intervening vegetation to the west of the dwelling.

N



Source: Google Earth (Imagery Date: 01.13.2021)

Dwelling R7 ‘1 Evan Street, Dunedoo’

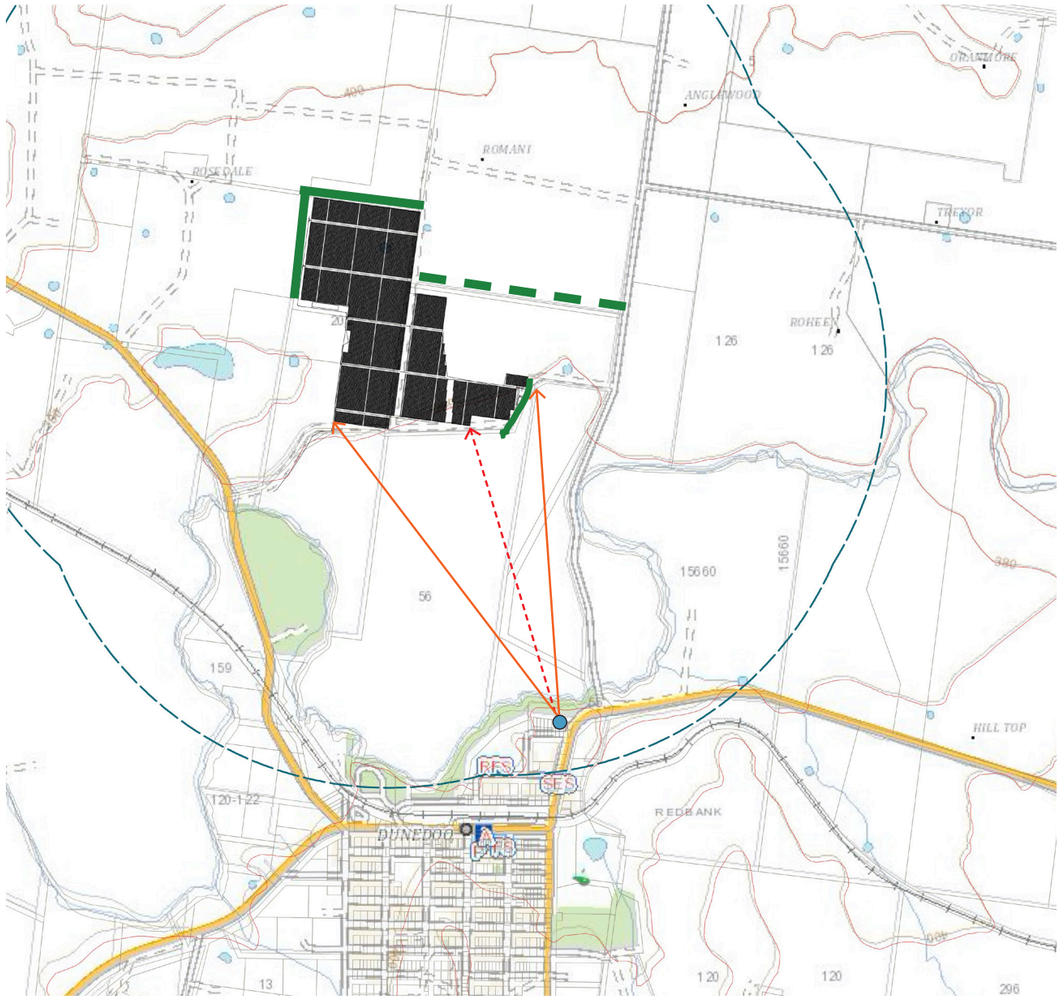
Dwelling R7:	
Distance to nearest panel:	1.743 km
Dwelling elevation:	387 m
Land Use:	Residential
Visual Sensitivity:	High
Visual Effect:	Nil - Low
Visual Impact Rating:	Nil - Low
Visual Impact Rating (With Mitigation):	Nil - Low

Assessment Notes:

Dwelling R7 is located to the south of the Proposed Solar Farm, to the north of Dunedoo at Evan Street. At the nearest point, the Solar Panels associated with the Project are 1.743 km to the north of the dwelling. The proposed substation expansion is likely to be screened by the existing vegetation on the eastern side of the substation and will therefore result in no visual impact. There are some scattered trees between the dwelling at the Solar Farm Site. In accordance with the Study Method in the LVIA prepared by Moir LA the Visual Sensitivity is considered High due to the land use (Residential) and close proximity to the Project. The Visual Effect has been assessed as nil / low, resulting in a ***Nil / Low Visual Impact Rating.*** The incorporation of screen planting would significantly reduce the potential visual impacts from Dwelling R7.

Mitigation Methods:

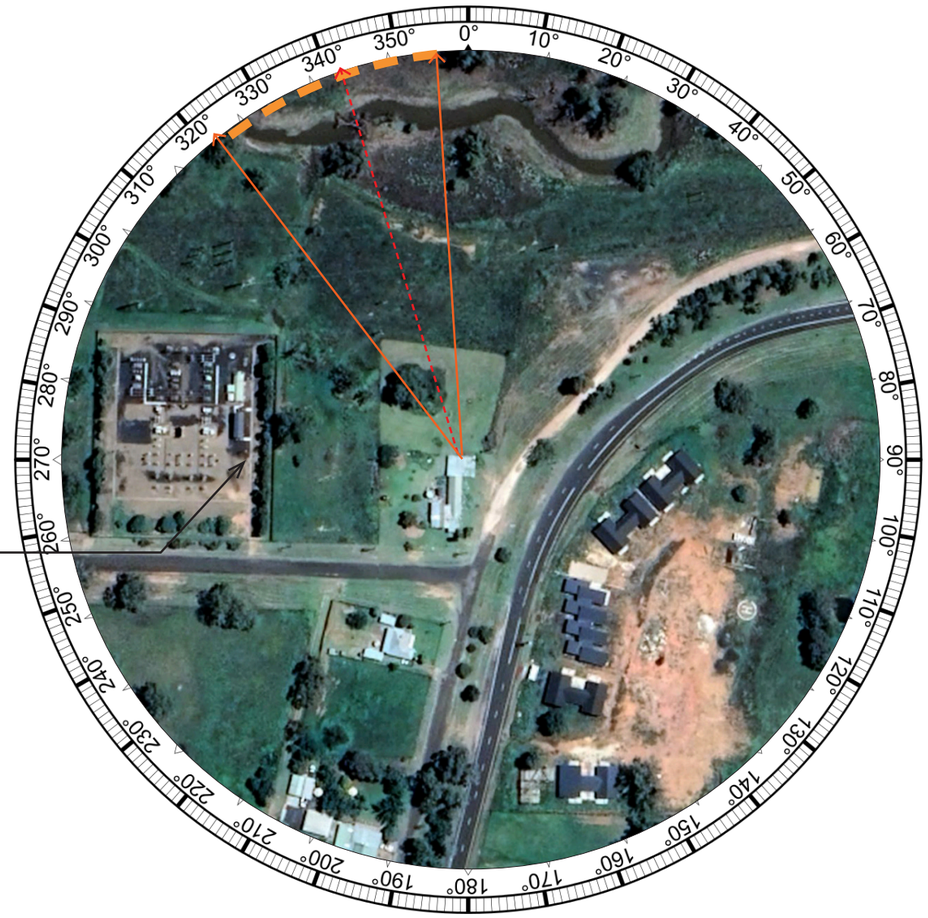
Existing scattered vegetation to the north of the dwelling associated with the Talbragar River and to the south of All Weather Road is likely to fragment views to the Project from this dwelling. No further screen planting will be necessary to reduce visibility from this location.



LEGEND

- Dwelling within 2000 m of Solar Farm
- Proposed Solar Panels
- Extent of Solar Panels visible from dwelling
- Direction of nearest Solar Panel
- Proposed screen planting
- Proposed boundary planting on Site
- Proposed boundary planting on Site

Existing vegetation to the east of the existing substation will screen views to the expansion of the substation from Dwelling R7



Dwelling R7

Source: Google Earth (Imagery Date: 01.13.2021)

Dwelling R8 ‘Nott Street, Dunedoo’

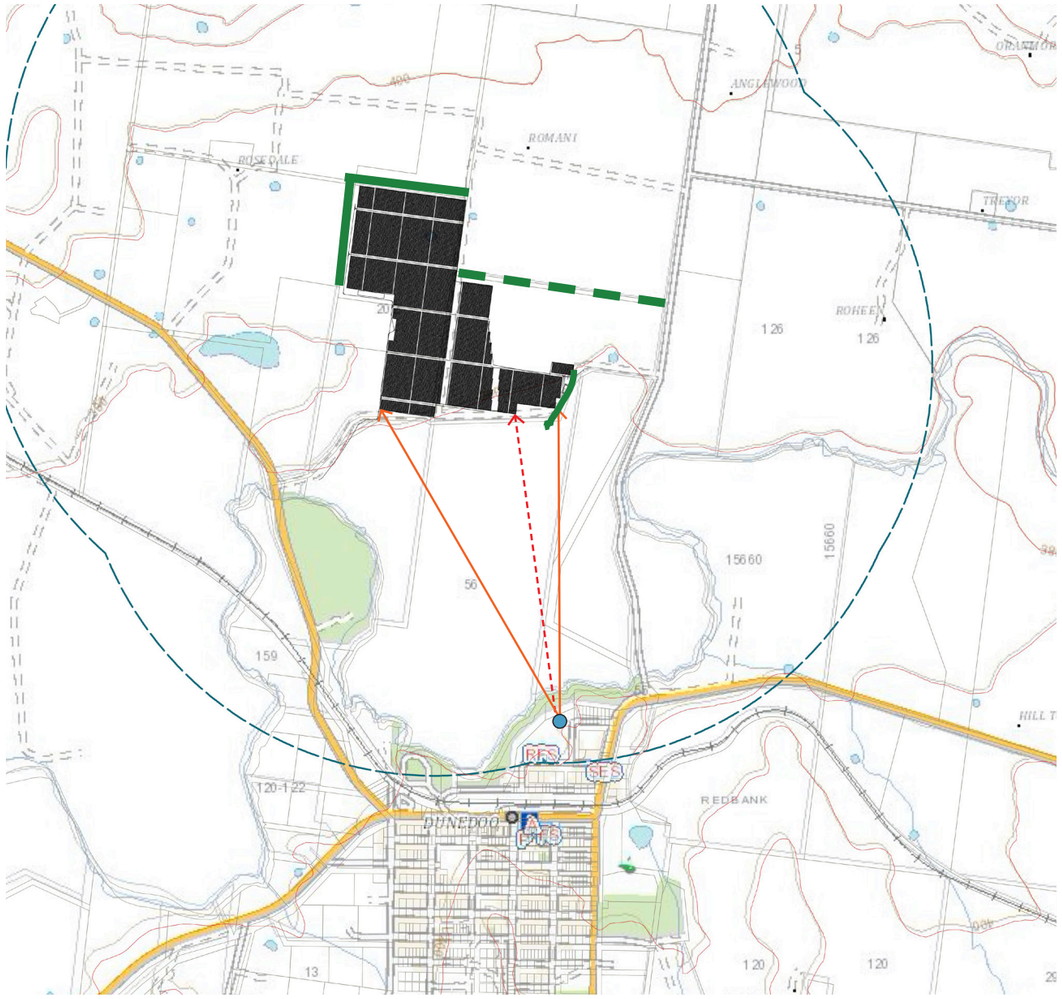
Dwelling R8:	
Distance to nearest panel:	1.788 km
Dwelling elevation:	383 m
Land Use:	Residential
Visual Sensitivity:	High
Visual Effect:	Nil - Low
Visual Impact Rating:	Low
Visual Impact Rating (With Mitigation):	Nil - Low

Assessment Notes:

Dwelling R8 is located to the south of the Proposed Solar Farm, to the north of Dunedoo at River Street. At the nearest point, the Solar Panels associated with the Project are located 1.788 km to the north of the dwelling. The house appears to be orientated to the north west. There are some scattered trees between the dwelling at the Solar Farm Site. The proposed substation expansion is likely to be noticeable from this dwelling, however screen planting proposed in Section 4.0 of this Addendum would significantly reduce potential visual impacts once established. In accordance with the Study Method in the LVIA prepared by Moir LA the Visual Sensitivity is considered High due to the land use (Residential) and close proximity to the Project. The Visual Effect has been assessed as nil / low, resulting in a ***Low Visual Impact Rating.*** The incorporation of screen planting would significantly reduce the potential visual impacts from Dwelling R8.

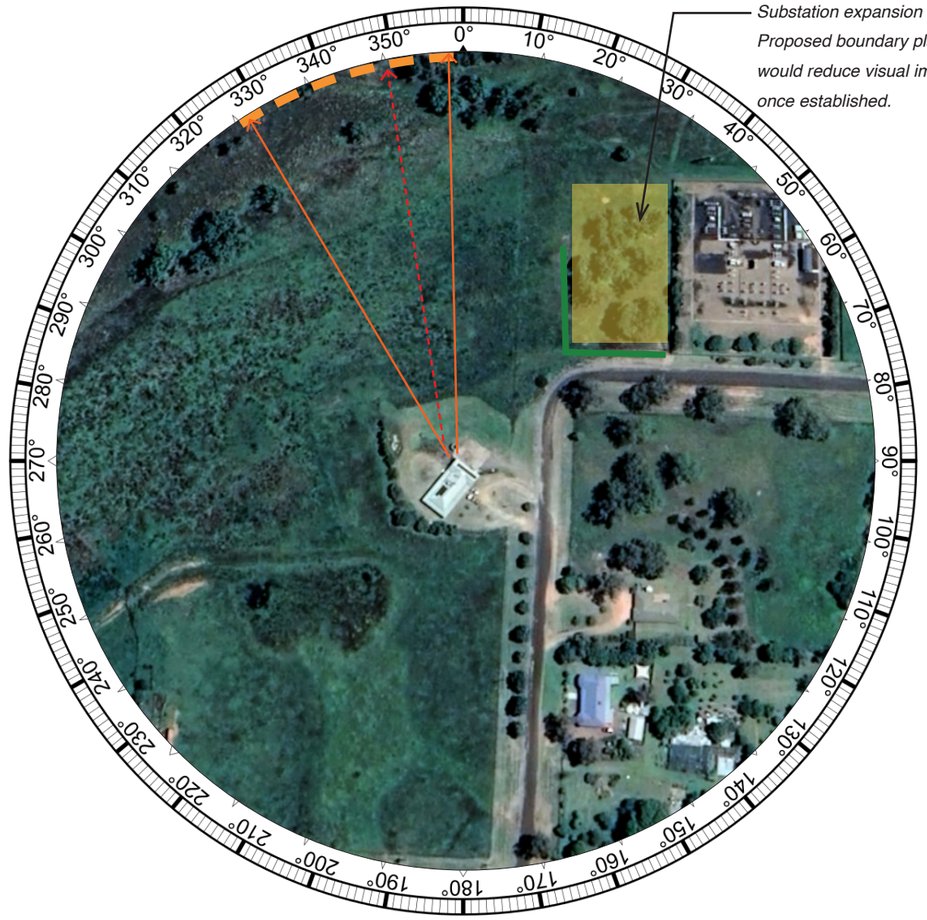
Mitigation Methods:

Existing scattered vegetation to the north of the dwelling associated with the Talbragar River and to the south of All Weather Road is likely to fragment views to the Solar Farm Project from this dwelling. The expansion of the substation is likely to be noticeable from this dwelling, however as boundary planting (proposed in Section 4.0 of this Addendum) establishes over time, and by minimising the clearance of existing vegetation where possible the potential visual impact would be sufficiently reduced.



LEGEND

- Dwelling within 2000 m of Solar Farm
- Proposed Solar Panels
- Extent of Solar Panels visible from dwelling
- Direction of nearest Solar Panel
- Proposed screen planting
- Proposed boundary planting on Site
- Proposed boundary planting on Site



Dwelling R8

Source: Google Earth (Imagery Date: 01.13.2021)

Dwelling R9 ‘27 Nott Street, Dunedoo’

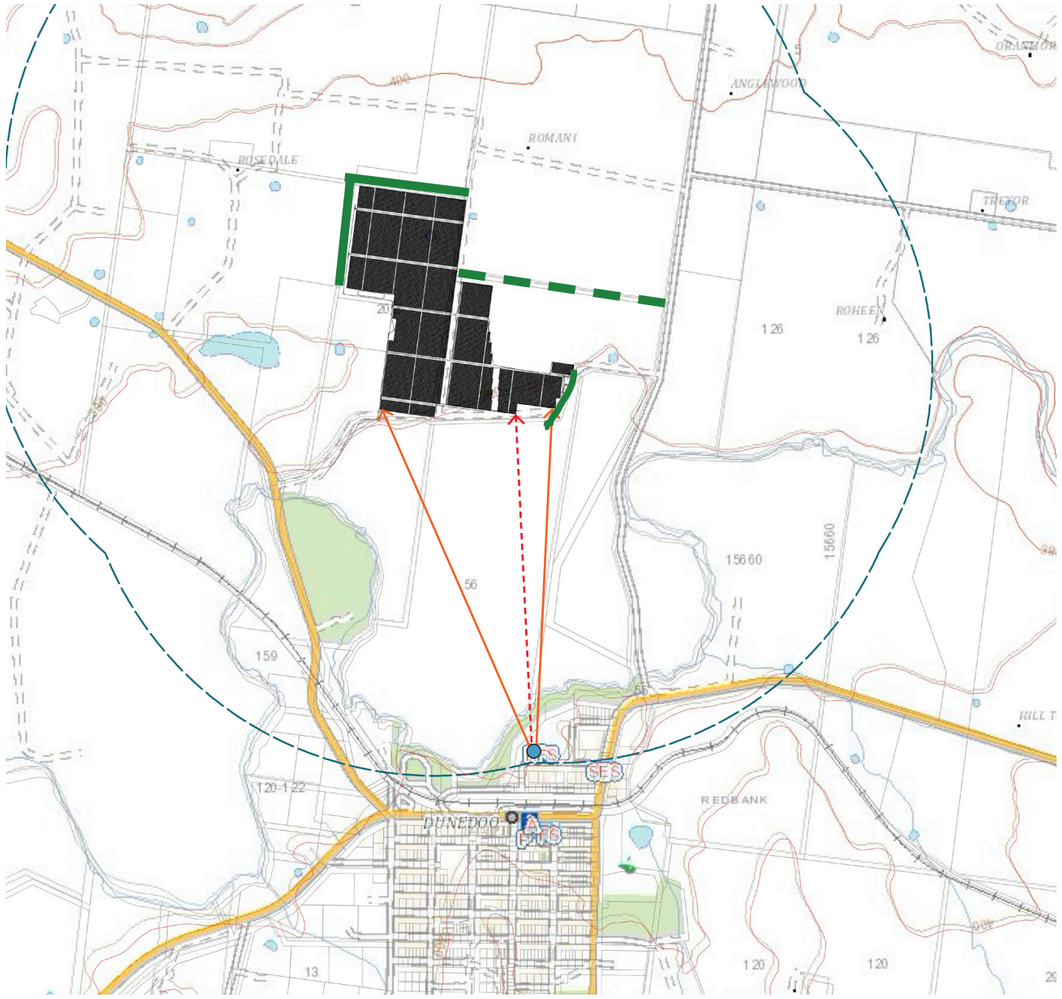
Dwelling R9:	
Distance to nearest panel:	1.949 km
Dwelling elevation:	384 m
Land Use:	Residential
Visual Sensitivity:	High
Visual Effect:	Nil - Low
Visual Impact Rating:	Low
Visual Impact Rating (With Mitigation):	Nil - Low

Assessment Notes:

Dwelling R9 is located to the south of the Proposed Solar Farm, to the north of Dunedoo at Nott Street. At the nearest point, the Solar Panels associated with the Project are located 1.949 km to the north of the dwelling. The house appears to be orientated to the street. There are scattered trees between the dwelling at the Solar Farm Site. The proposed substation expansion is likely to be noticeable from this dwelling, however screen planting proposed in Section 4.0 of this Addendum would significantly reduce potential visual impacts once established. In accordance with the Study Method in the LVIA prepared by Moir LA the Visual Sensitivity is considered High due to the land use (Residential) and proximity to the Project. The Visual Effect has been assessed as nil / low, resulting in a ***Low Visual Impact Rating.*** The incorporation of screen planting would significantly reduce the potential visual impacts from Dwelling R9.

Mitigation Methods:

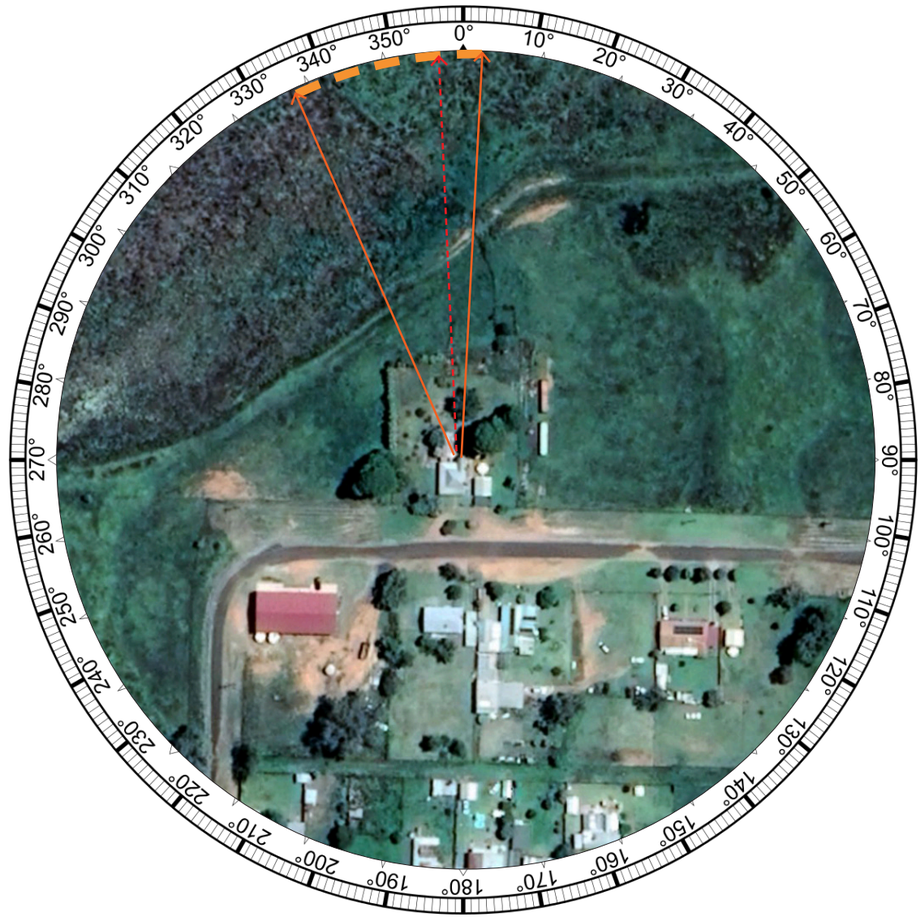
Existing scattered vegetation to the north of the dwelling associated with the Talbragar River is likely to fragment views to the Solar Farm Project from this dwelling. The expansion of the substation is likely to be noticeable from this dwelling, however as boundary planting (proposed in Section 4.0 of this Addendum) establishes over time the potential visual impact would be significantly reduced. No further screen planting is likely to be necessary to reduce visibility from this location.



LEGEND

- Dwelling within 2000 m of Solar Farm
- Proposed Solar Panels
- Extent of Solar Panels visible from dwelling
- Direction of nearest Solar Panel
- Proposed screen planting
- Proposed boundary planting on Site
- Proposed boundary planting on Site

Dwelling R9



Source: Google Earth (Imagery Date: 01.13.2021)

3.0 Assessment of Ancillary Infrastructure

3.1 On-Site Ancillary Structures

On-site ancillary structures include the following:

- ***On-site Substation***
- ***Communications Tower***
- ***Operations and Maintenance Buildings***
- ***Synchronous condenser***
- ***Battery Storage***

The location for ancillary structures was selected to reduce potential visual impacts on surrounding residences. An assessment of the on-site ancillary structures determined there are limited opportunities to view the structures due to the relatively isolated location. A number of existing farm structures are an existing element in the landscape. The proposed ancillary structures are in keeping with the scale and appearance of these structures.

The following mitigation measures would reduce potential visual impacts resulting from ancillary structures:

Screen planting:
Mitigation methods outlined in the LVIA (September 2020) proposed landscape buffer planting to the east of ancillary structures. Due to the low scale of these elements, vegetation screening is an effective method to reduce potential visual impacts resulting from the ancillary structures.

Material and colour selection:
Consideration should be given to controlling the type and colour of building materials used. Where possible a recessive colour palette is to be used which blends into the existing landscape.

Design considerations:
- Avoidance of unnecessary signage on fences, logos etc.
- Any proposed buildings to be sympathetic to existing architectural elements in the landscape.
- Minimise cut and fill and loss of existing vegetation throughout the construction process.
- Avoid unnecessary lighting.

3.2 Off Site Ancillary Structures

Transmission Lines

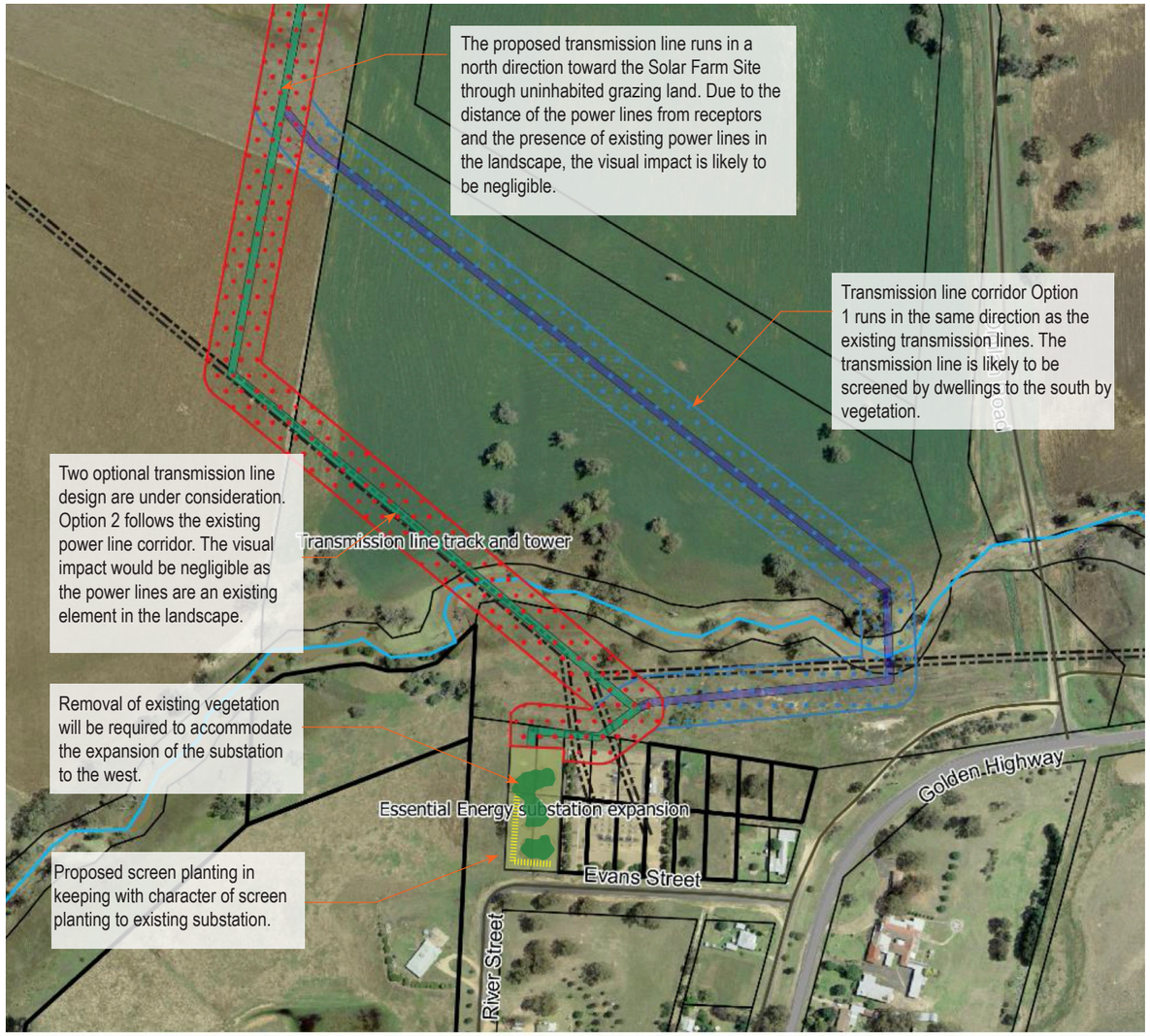
Proposed transmission lines run in a generally south direction from the Site to the substation site at Evan Street (northern edge of Dunedoo township). The transmission lines run through uninhabited grazing land, approximately 300 m to the west of Digilah Road. Transmission lines are an existing element in the landscape and are unlikely to be noticeable to motorists travelling along Digilah Road.

Substation
The existing substation will be extended to the west to accommodate the Project (see Figure 2). The removal of vegetation may result in a visual impact during the construction phase to a low number of residences on Evan Street and River Street. Over time as proposed buffer planting to the south and west is established the substation would not be noticeable from surrounding residences and road users.

Example of landscape screening along the boundary of a substation - Rothbury NSW

3.0 Assessment of Ancillary Infrastructure

Figure 2. Substation and Transmission Line



4.0 Mitigation Measures

The proposed screen planting outlined in the LVIA along the Project boundary will reduce the visual impact of the Project. In circumstances where a dwelling is subject to a level of visual impact that requires further mitigation, screen planting is an option proposed to assist in mitigating views of solar farm from residential properties. As the viewing location of the proposal would be generally fixed there is opportunity to significantly reduce potential visual impact from the proposal.

In order to achieve visual screening planting between the intrusive element and the dwelling, screen planting could be undertaken in consultation with the relevant landowners to ensure that desirable views are not inadvertently eroded or lost in the effort to mitigate views of the Project.

An example of how screen planting could be used to mitigate potential views towards the Project has been illustrated on the Dwelling Assessments. Note this is an example only and a detailed analysis would be required to determine the extent of visibility, existing planting and orientation of the residence.

Considerations:

It is recommended the following is considered:

- Sufficient size stock to ensure plants establish well before construction of proposed Solar Farm.
- Assistance with planting and maintenance of proposed plantings (if required) until well established. This includes watering as required and replacement of any failed trees.
- Recommended evergreen species that reach a minimum height required to sufficiently screen the Project
- Tree trunk protection to prevent damage to plant stock due to animals.

It is recommended plant species selection is to undertaken in discussion with the landowner and local wholesale nursery and / or landscape contractor to suit local conditions.

APPENDIX A
Photomontages

Photomontage 01: Dwelling R4

Photomontage 01

180° Existing View

180° Proposed View

Photomontage 01: Dwelling R4

Photomontage 01: Cropped 60° of Proposed View

Photomontage 01: Dwelling R4

Photomontage 01

180º Proposed View with on site screen planting as per LVIA

180º Proposed View with on site screen planting as per LVIA and additional screen planting at dwelling

Photomontage 02: Dwelling R3

Photomontage 02

180° Existing View

180° Proposed View

Photomontage 02: Dwelling R3

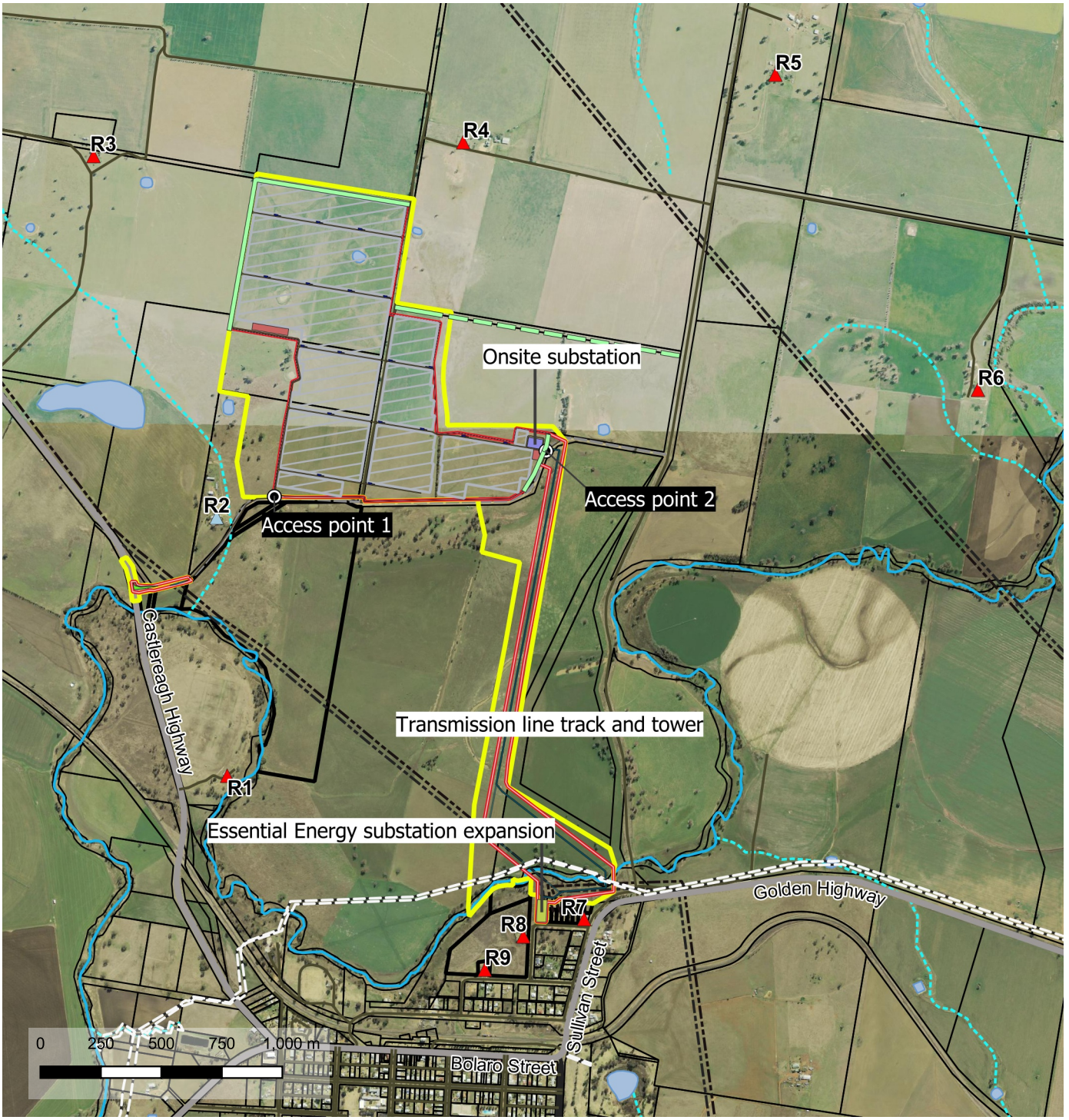
Photomontage 02: Cropped 60° of Proposed View

Photomontage 02: Dwelling R3

Photomontage 02

180° Proposed View with on site screen planting as per LVIA

Appendix E Updated Site Infrastructure Plan



Indicative infrastructurelayout
- Fence
- Road
- Site compound
- Solar array
- Substation
- Transformer
- Transmission line track and tower

- Essential Energy substation expansion
- Batter
- Road pavement
- Passing bay

Roads
- Local road
- Primary road
- SubArterialRoad

- Track-Vehicular
- Development site
- Subject land

Lot boundary
- Surveyed boundary
- LPI approx boundary
- Farm dam

Waterway
- Non Perennial
- Perennial

- Existing transmission line

Receivers
- Involved receiver
- Receiver
- Site access points
- Existing gas main (indicative)
- Indicative Screening

Data Attribution
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© Basemap and topographic features: Land and Property Information 2020

Ref: 17-362 Dunedoo Solar Farm 8.1.2020 \ Figure x x Environmental constraints 210602 LT
Author: lewis.t
Date created: 03.06.2021
Datum: GDA94 / MGA zone 55

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