# Springdale Solar Farm

## Amendment Report

# Springdale Solar Farm

Amendment Report

Client: RES Australia Pty Ltd

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Prepared by

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# Quality Information

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# Table of Contents



**List of Figures**



**List of Tables**

# Acronyms and Abbreviations

| Acronym/Abbreviation | Term |
|---|---|
| AEP | Annual Exceedance Probability |
| DPIE | NSW Department of Planning, Industry, and Environment |
| EIS | Environmental Impact Statement |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| LGA | Local Government Area |
| kV | Kilovolt |
| NEM | National Electricity Market |
| m | metres |
| MWac | Megawatt alternating current |
| PCS | Power Conversion Stations |
| The proponent | RES Australia Pty Ltd. |
| PV | Photovoltaic |
| SCADA | Supervisory control and data acquisition |
| SSD | State Significant Development |

# 1.0 Introduction

## 1.1 Background

RES Australia Pty. Ltd (the proponent) is proposing the construction, operation and decommissioning of the Springdale Solar Farm near Sutton, NSW (the project). RES, the world's largest independent renewable energy company, announced its acquisition of the Springdale Solar Farm from Renew Estate (the former proponent) in March 2020 To allow for the transition of the project from the former proponent to RES, and to provide for an adequate project handover, the project has been temporarily on hold. The proponent has now undertaken a thorough review of the project and has consulted further with the NSW Department of Planning, Industry and Environment (DPIE), stakeholders and the community.

The project is classified as State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011* and requires development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). An Environmental Impact Statement (EIS) was prepared by AECOM Australia Pty Ltd (AECOM) to support the development application and assessed the environmental and social issues associated with the project. The EIS was submitted to DPIE and placed on public exhibition from 18 July 2018 to 29 August 2018. During the exhibition period, the public and government agencies were invited to make submissions. A total of 239 submissions were received by DPIE including four duplicates. Of these submissions, 226 were community submissions and 13 were agency submissions.

Following the close of the exhibition period, the proponent is required submit a Response to Submissions Report (RtS), detailing responses to issues raised in the submissions. The RtS may also assess and provide mitigation for minor changes to the project that have arisen during the submissions process, particularly those seeking to reduce potential adverse impacts of the project in response to submissions received. In this case it was agreed with DPIE that these proposed project changes would be brought out of the RtS into a separate project amendment report (this report). This would allow the changes to stand alone, demonstrating the commitment of the proponent to work with the community in managing impacts arising from the project.

As outlined in Chapter 3.0 of the EIS (Project description), the project description and associated assessment presented in the EIS is based on an indicative initial design. The initial design is subject to refinement as the project is further evaluated and consultation feedback is received. As such, subsequent to the EIS being exhibited, the proponent is proposing a number of design refinements to the project to manage potential impacts. This Amendment Report outlines these changes, provides and assessment of their impact and proposed further mitigation measured, as required. This report has been prepared in accordance with the EP&A Act and describes design refinements that:

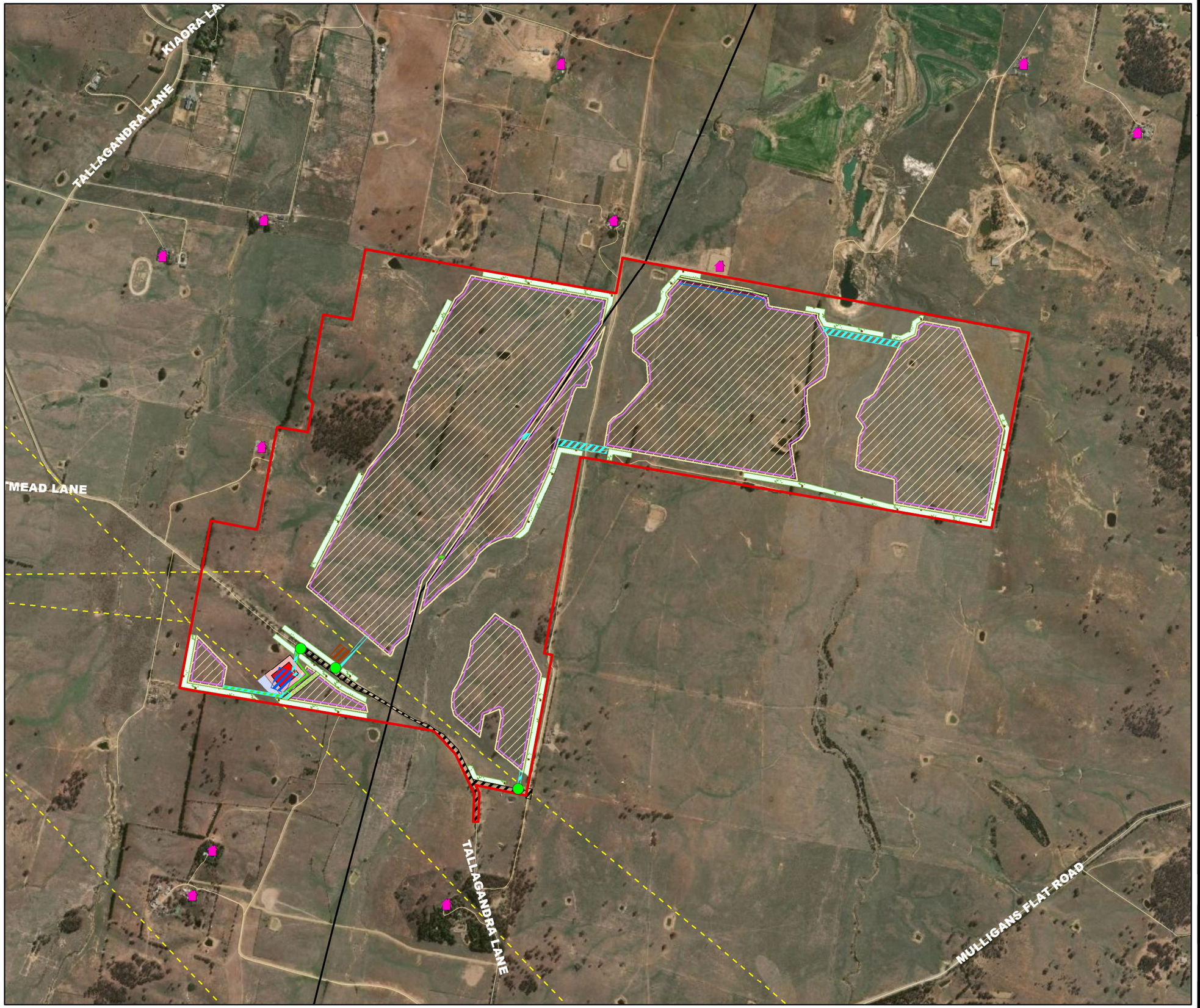
- Address issues raised during ongoing community and stakeholder consultation for the project, particularly with regard to visual impacts to nearby residential receivers and road users of Tallagandra Lane
- Aim to further reduce environmental impacts whilst maintaining the project's overall viability
- Address potential design and construction requirements, including design requirements received in consultation with TransGrid.

## 1.2 The project

This Amendment Report considers a number of proposed design refinements, shown on Figure 1.1 and comprising the following:

- **Removal of one development area** – one block of solar panels in the south eastern part of the site, to the south of Tallagandra lane, would be removed from the project design
- **Springdale Solar farm substation** - the solar farm's substation would be reoriented within the same location and an asset protection zone (APZ) would be included, as per TransGrid requirements. The associated subdivided lot will increase in size accordingly

- **Internal access tracks** – internal access tracks would be slightly realigned, with one additional access track crossing of the gas pipeline
- **Adjustment of one development area footprint and extension of screening vegetation** – The footprint of one development area would be relocated slightly south of the northern boundary of the Site to allow for the screening vegetation to be extended without impacting on any mapped Golden Sun Moth habitat
- **Extension of operational period** - the operational lifetime of the solar farm would be extended from 30 years to 35 years.




# SPRINGDALE SOLAR FARM

FIGURE 1.1

## LAYOUT AMENDMENTS

SOURCE DATA © NEW SOUTH WALES CROWN (SPATIAL SERVICES)

- SITE BOUNDARY
- ASSET PROTECTION ZONE
- SITE ENTRANCE
- CONTROL BUILDING AREA
- POTENTIAL ROAD SEALING / MAINTENANCE AREA
- INTERNAL ROAD AREA
- SOLAR FIELD AREA INCLUDING INTERNAL ROADS
- SUBSTATION AREA
- PROPOSED VEGETATION SCREENING
- NON-ASSOCIATED RESIDENCE
- ELECTRICITY TRANSMISSION LINE
- GAS PIPELINE

**REVISIONS**

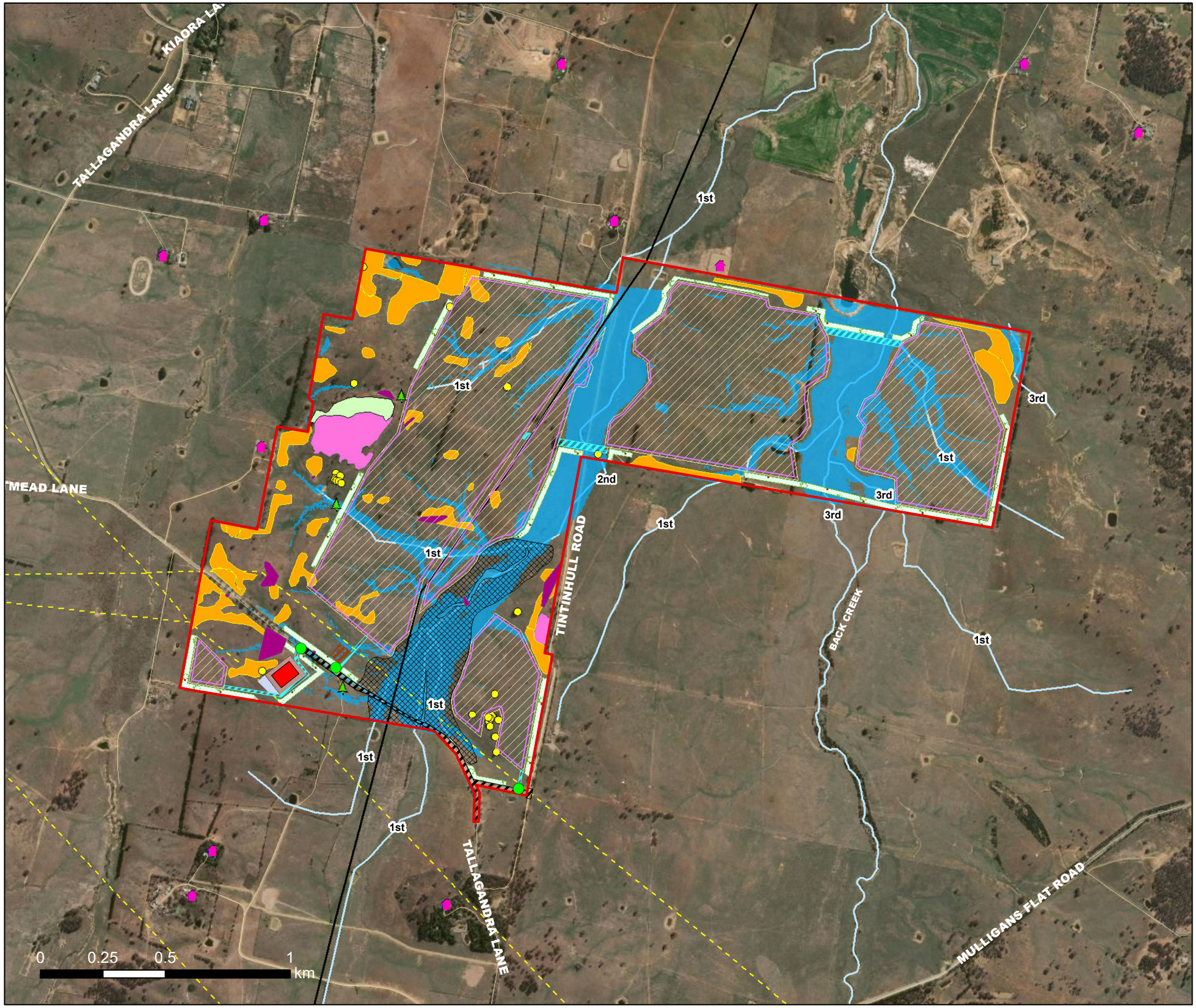
- REVISED ASSET PROTECTION ZONE
- REVISED PROPOSED VEGETATION SCREENING
- REVISED SOLAR FIELD AREA INCLUDING INTERNAL ROADS
- REVISED INTERNAL ROAD AREA
- REVISED SUBSTATION AREA
- SUBSTATION APZ
- TRANSGRID EASEMENT AREA

| LAYOUT DWG | T-LAYOUT NO. |
|---|---|
| N/A | N/A |

DRAWING NUMBER
**04317-RES-SOL-DR-PT-003**

**SCALE - 1:15,000 @ A3**

**PLANNING APPLICATION 2020**




# SPRINGDALE SOLAR FARM

FIGURE 1.2

## CONSTRAINTS AND LAYOUT PLAN - FINAL

SOURCE DATA © NEW SOUTH WALES CROWN (SPATIAL SERVICES)

- ASSET PROTECTION ZONE
- SITE BOUNDARY
- SITE ENTRANCE
- CONTROL BUILDING AREA
- POTENTIAL ROAD SEALING / MAINTENANCE AREA
- INTERNAL ROAD AREA
- SOLAR FIELD AREA INCLUDING INTERNAL ROADS
- SUBSTATION AREA
- SUBSTATION APZ
- TRANSGRID EASEMENT AREA
- PROPOSED VEGETATION SCREENING
- ABORIGINAL SITE BOUNDARY
- SCARRED TREE
- HOLLOW-BEARING TREE
- GOLDEN SUN MOTH HABITAT
- POTENTIAL STRIPED LEGLESS LIZARD HABITAT
- INTACT WOODLAND
- CRITICALLY ENDANGERED ECOLOGICAL COMMUNITY
- NON-ASSOCIATED RESIDENCES
- ELECTRICITY TRANSMISSION LINE
- GAS PIPELINE
- 1 IN 100 YEAR FLOOD PROFILE
- WATERWAYS

LAYOUT DWG: N/A

LAYOUT NO.: N/A

DRAWING NUMBER: **04317-RES-SOL-DR-PT-002**

**SCALE - 1:15,000 @ A3**

**PLANNING PERMIT APPLICATION**

## 1.3 Purpose of this report

The purpose of this Amendment Report is to:

- Describe and assess the proposed design refinements and identify any changes to the environmental management and mitigation measures that are proposed to minimise environmental impacts
- Inform key stakeholders and the community of the implications of the design refinements
- Assist decision-makers to evaluate the project.

The consolidated list of environmental management and mitigation measures described in the EIS are provided in Chapter 3.0.This tabulated list includes an outline of any mitigation or management measures that have been revised in response to environmental assessments that have occurred since the public exhibition of the EIS, including this Amendment Report and the RtS Report.

# 2.0 Design refinements

## 2.1 Removal of one development area

### 2.1.1 Description

Chapter 3.0 of the EIS (Project description) describes the location and extent of the solar panels as follows:

- The project would involve the installation of approximately 350,000 individual photovoltaic (PV) solar modules, arranged on tracking structures referred to as trackers or tracker tables
- The modules would extend up to 4 m above the natural ground level, depending on the tracking system manufacturer used
- Solar modules and trackers would be arranged into six power blocks of between 5.0 and 5.5 MVA, each with a centralised power conversion station, resulting in approximately 22 power conversion stations (PCS) throughout the extent of the project.
- Each PCS would be a containerised design, mounted on a concrete pad or piles, and would incorporate two inverters and a single transformer
- The power conversion stations have an indicative height of 3.5 m, and would have a total elevation of no more than 4 m above the natural ground level (including foundations)
- Each PCS would also contain the tracker controller units, Supervisory control and data acquisition (SCADA) system along with other automation and monitoring components
- All PCS would be interlinked via a buried 33 kV circuit for reticulation to the solar farm substation and switchyard.

Based on the feedback received from key stakeholders and ongoing design refinement, an opportunity has been identified to further reduce the potential environmental and community impact of the project. In this case, one of the development areas to the south of Tallagandra lane is proposed to be removed from the project design (Figure 1.1). This development area is approximately 2400 $m^2$ in area. The removal of this development area would also result in the removal of the following from the project:

- One PCS associated with this area (including concrete pad or piles, as well as the inverters and transformers themselves) would no longer be constructed
- A reduction in the extent of the security fencing and landscaping that would be located around this part of the Site
- Removal of the previously proposed buried 33 kV circuit to connect this area to the substation and switchyard
- Reconfiguration of the previously proposed internal access track that providing access to this area (discussed further in Section 2.4).

### 2.1.2 Potential environmental impacts

The removal of solar panels previously proposed in the southeast of the Site would result in the following changes to the construction impacts assessed in the EIS:

- Reduced potential for off-site impacts upon Aboriginal cultural heritage, noting the presence of an identified scar tree near this area
- The two nearest visual receptor viewpoints were re-assessed for this Amendment Report. The assessment found that visual impacts at receptor 4 (public road users on Tallagandra Lane) changed from moderate to moderate-low. Visual impacts at receptor 5 (the nearest private residence) changed from high-moderate to moderate.
- A minor reduction in the extent of vegetation clearance required for the project
- A minor reduction in extent of land that would be converted from agricultural land during the lifetime of the project

- Reduced exposure of soils during earthworks that may result in erosion and mobilisation of sediment into watercourses
- A minor reduction in potential for the contamination of surface and groundwater due to accidental spillages of chemicals used for construction and/or maintenance
- A minor reduction in potential for noise operational impacts arising from the previously proposed inverters, particularly for nearby receivers to the south of the Site
- A minor reduction in potential dust generating activities (including earthworks activities such as excavation and trenching as well as from vehicles movement on any unsealed roads during dry weather) resulting in a reduced potential for air quality impacts to nearby receivers
- A minor reduction in construction intensity generally, resulting in proportional reductions to noise, visual impact, air quality and traffic impacts
- Reduced potential for the introduction or spread of weeds during construction.

The removal of this development area to the south of Tallagandra Lane would reduce the potential impacts to the environment and community that were assessed in the EIS, as outlined above.

The environmental management and mitigation measures identified in Chapter 20.0 of the EIS and in Chapter 3.0 of this report remain relevant to the remaining development. As such, no changes to the management measures are proposed as part of this design amendment.

## 2.2 Adjustment of northern development area

Section 2.1.1 above provides a description of the location and extent of the proposed solar development area, as detailed in Chapter 3.0 of the EIS (Project description).

Since the public exhibition of the project, a new private residence has been developed on land located immediately north of the Site boundary. As this is a new dwelling that was constructed following the public exhibition of the EIS, the potential for visual impacts from the project was not assessed for this receptor as part of the original Landscape and Visual Assessment (LVIA). As such, the proponent has addressed the impact to this receptor within the LVIA addendum report which supports the RtS.

The results of the LVIA addendum concluded that due to the proximity of the new residence to the northern boundary of the project, potential visual impacts to this receptor would be high.

The proponent is committed to avoiding and minimising environmental impacts from the project as far as practicable during the design process. As such, the proponent has investigated potential design solutions to minimise the extent to which the new receptor would be impacted by the project. To this end, design changes have been implemented to directly address visual impacts to this receptor whilst maintaining the project's environmental commitments to preserving Golden Sun Moth habitat and maintaining the project's viability. Specifically, these changes include:

- A reduction in the extent of the developable area adjacent to this receptor, drawing back the development footprint approximately 20 m to the south, creating a gap of approximately 50 m between the nearest receptor and the solar array
- An extension to the proposed screening vegetation to the east, passing to the south of the existing golden sun moth habitat area along this northern boundary of the Site. This screening vegetation would be 10 metres in width and would extend approximately 300 metres further to the east beyond its previously proposed extent (see Figure 2.1, Figure 2.2 and Figure 2.3).

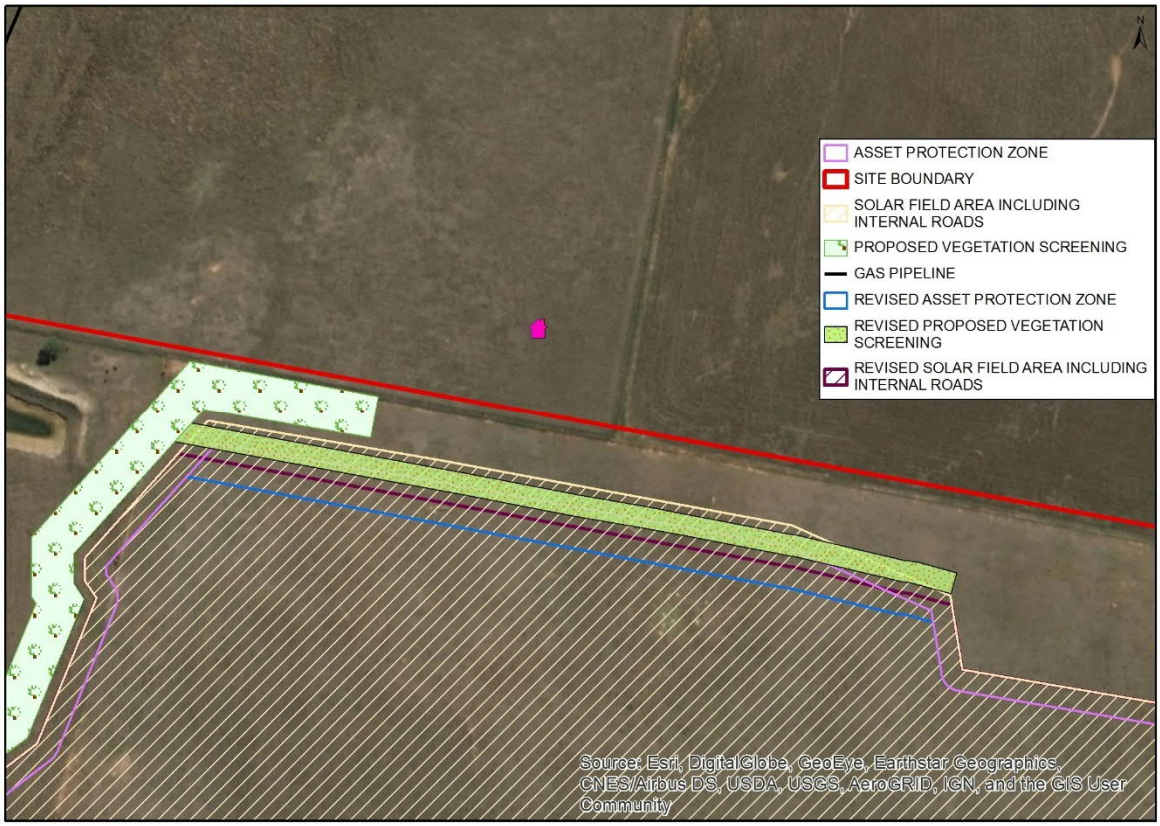



**Figure 2.1 Northern development area showing previous extent and proposed amendments**

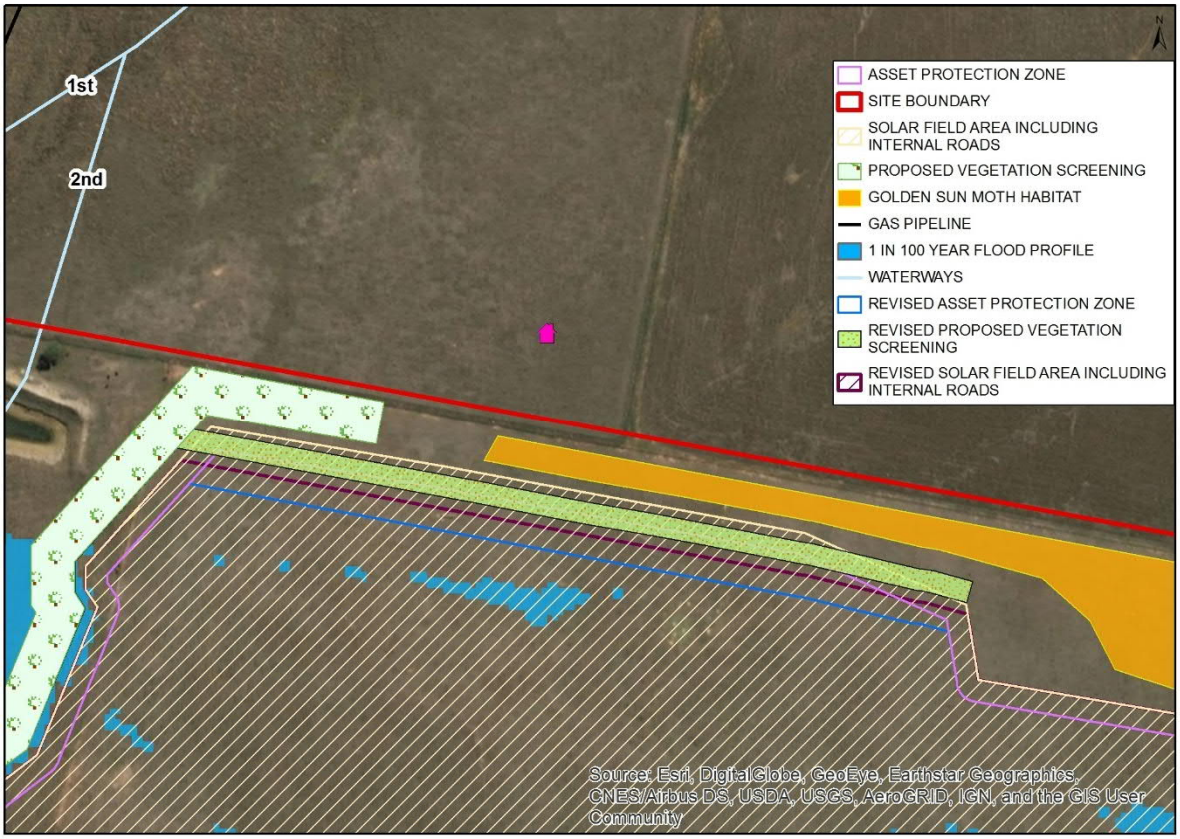



**Figure 2.2 Amended northern development area showing development constraints**

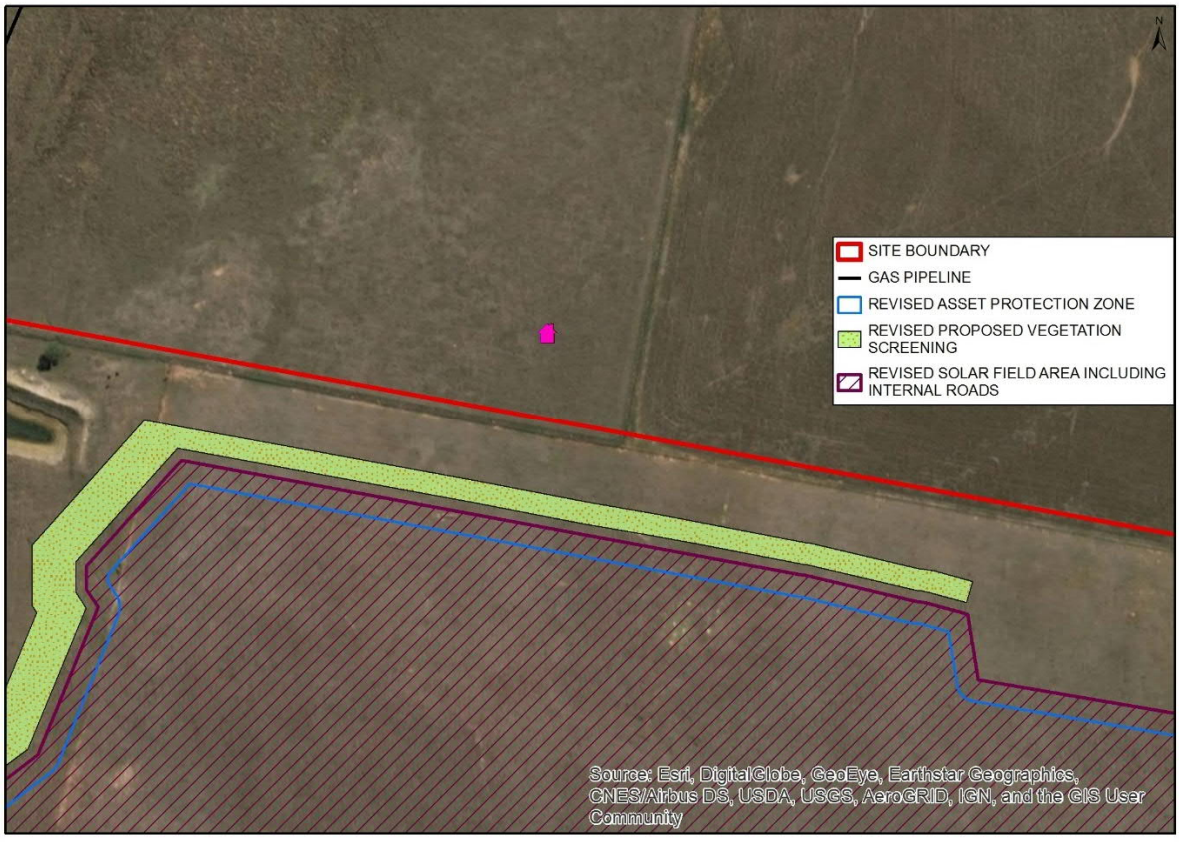



**Figure 2.3 Final amended northern development area**

### 2.2.1 Potential environmental impacts

The installation of screening vegetation for the project was assessed in the EIS. The extension of the screening vegetation in this location would not encroach on any mapped Golden Sun Moth habitat, and as such, additional adverse impacts to biodiversity would be avoided. On this basis, impacts to biodiversity as a result of the construction and operation of the project would remain consistent with the EIS. Therefore, no additional assessment is required and no changes to the environmental management and mitigation measures identified in Chapter 20.0 of the EIS and in Chapter 3.0 of this report would be required.

As discussed above, an LVIA addendum report has been prepared. This report assesses the extent to which the new receptor along this boundary would be affected by the project. The results of the LVIA addendum determined that should no design amendments be considered or implemented to avoid impacts; the project would result in a high visual impact to this receptor.

The provision of screening vegetation for the new residence would substantially reduce the visual impact of the project to this receptor. With the implementation of this additional screening vegetation, the potential visual impact to this receiver would be drop a moderate visual impact. The environmental management and mitigation measures identified in Chapter 20.0 of the EIS and in Chapter 3.0 of this report remain relevant and no new or revised environmental management and mitigation measures are required as a result of this change.

The construction and operation of the solar panels in this part of the Site was assessed in the EIS. The reconfiguration of this part of the development area would represent a minor design revision to the EIS. As such, it is considered that this minor adjustment would be inconsequential in terms of the potential to result in any environmental impacts that would be greater than, or different to those assessed in the EIS. Therefore, no additional assessment is required. A summary of the potential impacts of the construction and operation of the internal access tracks within the Site, as discussed in the EIS, is presented below:

- Increased movements of vehicles and people to the Site during the construction phase could result in the spreading weeds to and from the Site
- Potential impacts to surface waters could occur during the construction phase as a result of exposure of soils during earthworks which may result in erosion and mobilisation of sediment into watercourses. There is a minor potential for contamination due to accidental spillages of chemicals during construction and operation
- Increases in impervious surfaces associated with the substation would have the potential to minimally increase runoff volumes and flow rates which may result in minor increases in land and watercourse erosion
- Impacts to groundwater by contamination due to spillages of chemicals used for construction or operational activities
- General noise, air quality, traffic and visual impacts to nearby receivers during construction.

The environmental management and mitigation measures identified in Chapter 20.0 of the EIS and in Chapter 3.0 of this report remain relevant to this revised design. As such, no changes to the management measures are proposed as part of this design amendment.

## 2.3 Springdale Solar Farm substation

### 2.3.1 Description

Chapter 3.0 Project description of the EIS describes the Springdale Solar Farm substation as follows:

- In order to create a new lot for the proposed substation, Lot 209 DP754908 would be subdivided to create three new lots (as shown on Figure 12 of the EIS). The proposed substation lot will be owned by TransGrid
- In order to facilitate access for TransGrid to the substation, a 10 m right of way will be granted that will run south from Tallagandra Lane to the substation lot
- The substation would be constructed in association with the electrical switchyard

- The electrical switchyard and substation would contain the connection assets to enable the solar farm to connect to and export 100 Megawatt alternating current (MWac) into the National Electricity Market (NEM)
- The connection assets include the 132/33 kV transformer, 132 kV switchbays, 33 kV switchgear and associated infrastructure to facilitate the safe and reliable operation of the network, in line with the project generator performance obligations
- The transformer would be the largest single piece of plant on the Site and is likely to be an oil filled unit surrounded by appropriate aggregate bunding to contain the oil in the unlikely event of a leak
- The switchyard and substation would comply with TransGrid requirements, with an indicative combined footprint of approximately 50 m x 90 m. The design would include all facilities as required for the safe and reasonable operation by TransGrid or solar farm employees such as a control room, workspaces and toilet(s).

The substation would also include an associated asset protection zone (APZ), which is an area around the facility cleared of mid-storey and canopy vegetation to reduce the risk of fire damaging the substation. The new lot created by subdivision to accommodate the substation will increase in size to accommodate the new APZ.

Based on the feedback received from key stakeholders and ongoing design refinement, an opportunity has been identified to further reduce the potential environmental and community impact of the project. In this case the location and size of the Springdale Solar Farm substation has been revised as follows:

- The APZ for the substation will be increased in response to inputs received from TransGrid
- The substation would be slightly reorientated to avoid the APZ encroaching on existing Golden Sun Moth habitat
- As part of the realignment, the substation would be relocated slightly north of its indicative location described in the EIS.

The size and location of the electrical switchyard would not change, nor would the connection assets located within the electrical switchyard and substation. The provision of facilities for workers, including a control room, workspaces and toilet(s) would also remain the same. As the substation would be constructed within the switchyard, the combined footprint would remain approximately 50 m x 90 m, with the facility remaining within the same location. Lot 209 DP754908 would still be subdivided to create three new lots to facilitate the substation, though the main substation lot would be larger than previously provided (see Figure 2.5 and Figure 2.5).

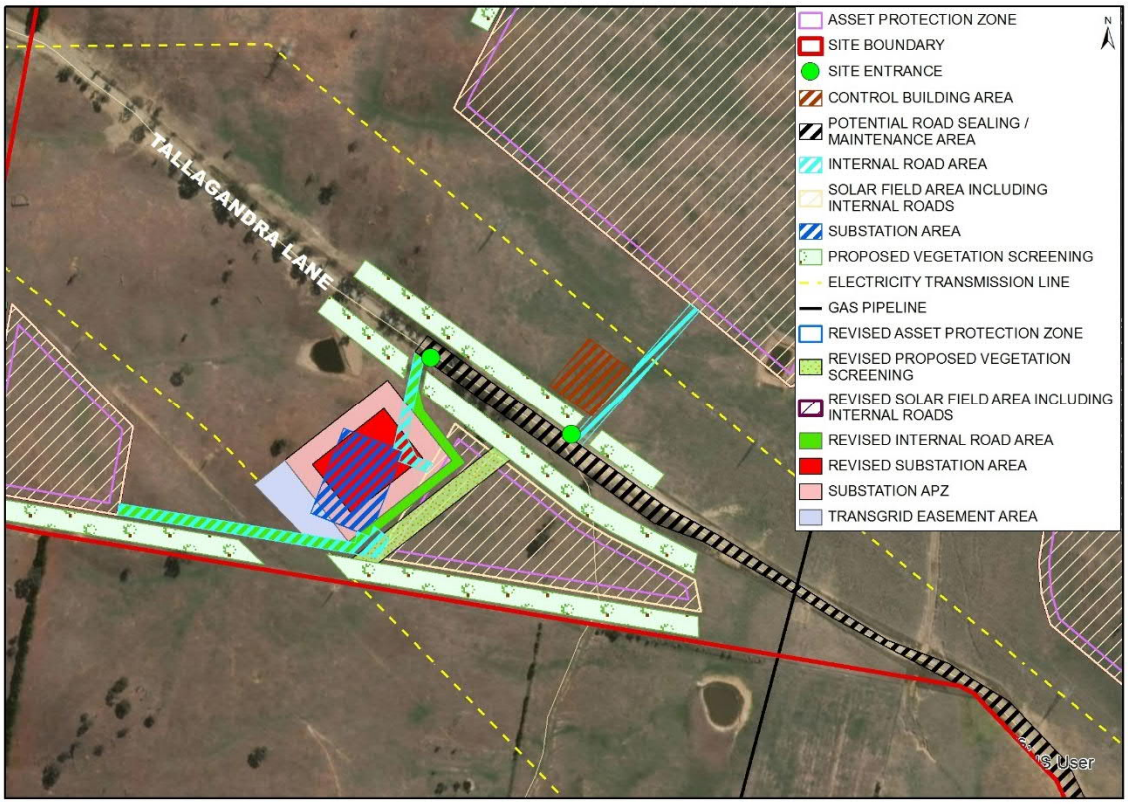



**Figure 2.4 Amended layout of substation and southern development area showing development constraints**

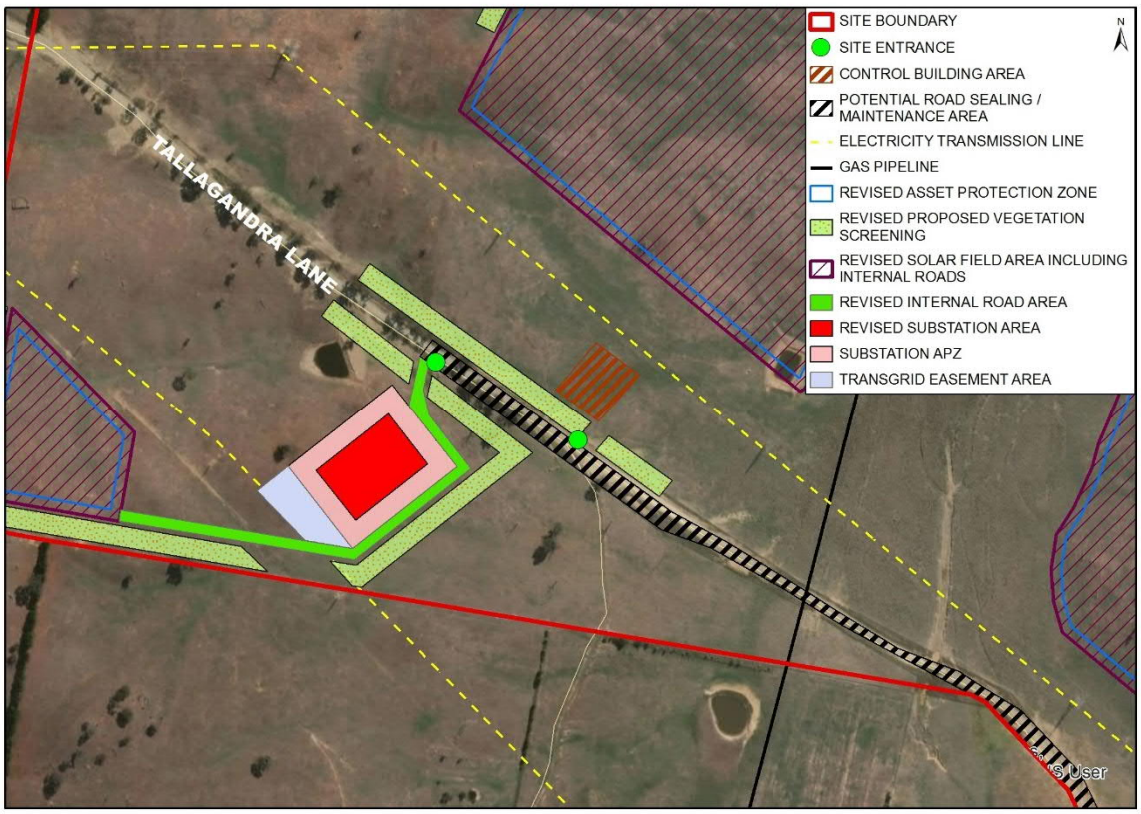



**Figure 2.5 Final amended layout of substation and southern development area**

### 2.3.2 Potential environmental impacts

It is considered that the minor adjustments to the location and size of the substation as described above would be inconsequential in terms of the potential for the change to result in any environmental impacts that would be greater than, or different to those assessed in the EIS. This is particularly the case given that the combined footprint of the electrical switchyard and substation would remain unchanged in terms of both size and general location. Therefore, no additional assessment is required. A summary of the potential impacts of construction and operation of the substation, as discussed in the EIS, is presented below:

- Increased movements of vehicles and people to the Site during the construction phase could result in the spreading weeds to and from the Site
- The construction and operation of the electrical switch-yard and substation would result in a moderate change in the existing landscape character, given the size and uncharacteristic form of the solar array within the open rural landscape setting. The installation of screening vegetation would assist to reduce this impact
- The two nearest visual receptor viewpoints were re-assessed for this Amendment Report. The assessment found that visual impacts at receptor 4 (public road users on Tallagandra Lane) changed from moderate to moderate-low. Visual impacts at receptor 5 (the nearest private residence) changed from high-moderate to moderate.
- Localised temporary lighting may be required to ensure safe conduct of the maintenance work, and sensor security lighting would be installed at the substation. This may result in minor short term and temporary night lighting impacts to nearby receivers when there is activity in the area immediately around the substation
- Potential impacts to surface waters could occur during the construction phase as a result of exposure of soils during earthworks which may result in erosion and mobilisation of sediment into watercourses. There is a minor potential for contamination due to accidental spillages of chemicals during construction and operation
- Increases in impervious surfaces associated with the substation would have the potential to minimally increase runoff volumes and flow rates which may result in minor increases in land and watercourse erosion
- Impacts to groundwater by contamination due to spillages of chemicals used for construction or operational activities
- General noise, air quality, traffic and visual impacts to nearby receivers during construction
- During construction and operation, agricultural activities would cease in the area of the substation. This would represent a change to existing land use, however, land use conflicts are expected to be minor.

The revised location of the substation has been set outside the 1% Annual Exceedance Probability (AEP) flood extent. This is consistent with the initial design of the substation as described in the EIS.

As the proposed amendments to the size and location of the substation would not alter the potential impacts of the construction and operation of as described in the EIS for the substation, no changes to the management measures set forth in Chapter 20.0 of the EIS and Chapter 3.0 of this report are proposed.

## 2.4 Internal access tracks

### 2.4.1 Description

Chapter 3.0 of the EIS outlines that the Project would include five main internal all-weather access tracks, tracks between the solar arrays and tracks connecting the development areas to public roads.(see Figure 1.1). As described in the EIS, internal access tracks that are not required as part of the operational phase of the project would be removed and the ground made good following construction.

Based on ongoing design refinement and opportunities to further minimise potential environmental impacts, the design of the access tracks that would be constructed on the Site have been revised as follows:

- One access tracks to the south of Tallagandra Lane would be reconfigured
- A second operational east-west internal access road is proposed in the centre of the Site.

### 2.4.2 Potential environmental impacts

The construction and operation of the internal all-weather access tracks was assessed in the EIS. The reconfiguration of the access track south of Tallagandra Lane and the proposed provision of a second operational internal access track within the centre of the site would represent a minor design revision to the EIS. As such, it is considered that these minor adjustments would be inconsequential in terms of the potential to result in any environmental impacts that would be greater than, or different to those assessed in the EIS. Therefore, no additional assessment is required.

A summary of the potential impacts of the construction and operation of the internal access tracks within the Site, as discussed in the EIS, is presented below:

- Increased movements of vehicles and people to the Site during the construction phase could result in the spreading weeds to and from the Site
- Potential impacts to surface waters could occur during the construction phase as a result of exposure of soils during earthworks which may result in erosion and mobilisation of sediment into watercourses and contamination due to accidental spillages of chemicals used in the construction process
- Increases in impervious surfaces associated with the access tracks has the potential to result in a minor increase in runoff volumes and flow rates which may result in increased land and watercourse erosion
- Impacts to groundwater by contamination due to spillages of chemicals used for construction or maintenance activities and the operation of vehicles and machinery on the internal access tracks
- General noise, air quality, traffic and visual impacts to nearby receivers during construction.

The reconfiguration of one internal access track to the south of Tallagandra Lane would not increase the potential impacts to the environment and community that were assessed in the EIS, as outlined above. The addition of the internal access track in the centre of the Site would not increase the magnitude of the potential impacts of the construction and operation of as described in the EIS. On this basis the environmental management and mitigation measures identified in Chapter 20.0 of the EIS and in Chapter 3.0 of this report remain relevant and no changes to these measures are proposed as part of this design amendment.

## 2.5 Extension of operational period

### 2.5.1 Description

The EIS for the project describes that the operational lifetime of the solar farm would be approximately 30 years. The proponent proposes to adjust the operational lifetime of the solar farm to 35 years.

### 2.5.2 Potential environmental impacts

The EIS considers the full scale of impacts associated with the operation of the solar farm. These operational impacts are considered in a sense that is not limited by time. That is, these impacts are considered, and mitigated, on an ongoing basis without requiring that they cease at a certain point to avoid the impact crossing any environmental or community threshold. As such, the extension of the life of the project by an additional five years would not result in any greater intensity of impact, only the extension in the duration of these impact - which would already be within the bounds of environmental and community acceptability. Impacts for which an extension in duration may be relevant include:

- Land use – the site would return to agricultural production later

- Noise, visual and traffic impact – impacts associated with these issues, whilst heavily mitigated by noise screens and screening vegetation, would persist for an additional period

The extension of the life of the project would also provide the following benefits:

- An extension of the period for the site to remain under reduced agricultural intensity, allowing to it to rehabilitate further from decades of grazing
- An extension to the growing period of landscape planting, providing for continued visual screening, contribution to the landscape value of the area, as well as an increase in microhabitat complexity and 'stepping stone' refuges for native wildlife moving across the region
- An extension in the duration of operational jobs offered by the solar farm with flow on benefits to the local and regional community. There would be up to 10 permanent operational staff posted at the facility at any one time to monitor and manage site activities and systems. This would reduce after the two year defect liability period to five personnel for the remainder of the operational phase. It is anticipated that workers for the operational phase of the project would be sourced from the local community where possible.
- Ongoing benefits to local businesses for the supply of equipment, materials and services required for the ongoing operation of the Site. This would have an ongoing positive impact for the local economy.
- Ongoing supply of low-cost energy to the region, reducing energy price pressures on industry and households and reducing loss factors in the region. The project will have the potential to generate at least 100 MWac of electricity with minimal water use, air pollution and waste generation throughout its 35 year lifespan. This increase in renewable energy would reduce the National Energy Market's dependence upon fossil fuels and mitigate climate change.

The project would still be decommissioned in accordance with the detail provided in the EIS. This would remove all above-ground infrastructure and rehabilitate the Site to a suitable condition. This would leave the site in a condition near to its current state, which would be suitable for future agricultural activities such as grazing.

On this basis of the above no additional assessment of impacts is required in addition to that presented in the EIS. As such, no changes to the management measures outlined in Chapter 20.0 of the EIS and Chapter 3.0 of this report are proposed.

# 3.0 Environmental management and mitigation measures

As discussed above, the proposed changes to the project would not result in any impacts greater than or different to those described in the EIS such that any changes to the management and mitigation measures provided in the EIS would be required.

As such the environmental management and mitigation measures provided in the EIS are reproduced Table 1 for reference only.

It is noted that a number of changes to the environmental management and mitigation measures provided in the EIS have been made in the preparation of the RtS report. Where new commitments have been added or new text has been added to an existing measure within the RtS, it appears as bold text. Where a commitment has been deleted or text from the commitment deleted within the RtS, it appears as strikethrough text.

**Table 1 Summary of management and mitigation measures**

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | **Biodiversity** | | | |
| **B1** | Implementation of a Biodiversity Management Plan to include the following mitigation measures. | ✓ | ✓ | |
| **B2** | Establishment of fenced buffer areas (nominally 50 m) around retained GSM habitat, with fencing maintained throughout the construction phase of the project. | ✓ | | |
| **B3** | Establishment of fenced buffer areas (nominally a 50m buffer) around GSM habitat located within the development envelope until the area is required for solar array construction. | ✓ | | |
| **B4** | Establishment of a GSM habitat conservation zone measuring no less than 60 hectares throughout the western portion of the Site (see Figure 1.1 for an indicative layout). | ✓ | ✓ | |
| **B5** | Implementation of a GSM Management Plan to maintain preferred conditions for the species. This plan would cover the whole Site but would have particular reference to the GSM conservation area and three western solar field areas (including the two solar fields containing GSM habitat). | ✓ | ✓ | |
| **B6** | All Site fencing should be specified allow passage of adult GSM throughout the Site. | | ✓ | |
| **B7** | Discontinuation of pasture improvement practices throughout the Site including within the GSM habitat conservation zone. | ✓ | ✓ | |
| **B8** | Cease superphosphate application and sowing of pasture species in GSM conservation zone and in the development envelope | ✓ | ✓ | |
| **B9** | Stocking rates should be reduced within the Site after completion of construction. | | ✓ | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| **B10** | Maintain tussock level between 3 and 15 cm with regulated grazing, with short height achieved by October before the GSM flying period, and lighter grazing from November to January if season is dry. | ✓ | ✓ | |
| **B11** | Implementation of pest and weed prevention and management measures within the Site including the continued control of broad-leaved weeds in GSM conservation zone and in the development envelope. | ✓ | ✓ | |
| **B12** | Avoid creating unnecessary shading or barriers to GSM movement with landscaping or structures. | ✓ | ✓ | |
| **B13** | All landscaping should be sited so as to avoid or minimise shading of mapped GSM habitat. | ✓ | ✓ | |
| **B14** | Establishment of a woodland enhancement zone for woodland areas in the west of the Site (see Figure 1.1). | ✓ | ✓ | |
| **B15** | Pre-clearing inspections of hollow bearing trees to be removed to ensure the absence of roosting/breeding threatened species. Any native vertebrate fauna present within hollow trees should be managed to minimise the risk of mortality or injury. Undertake tree clearing in accordance according to best practise principles. | ✓ | ✓ | |
| **B16** | Installation of nest boxes within preferred breeding trees for Superb Parrots within the Site where trees do not already contain hollows. The number of nest boxes should be at least twice that of the existing number of hollows appropriate for Superb Parrot breeding that are to be removed by the project as determined via a final survey of hollow trees prior to clearing. A nest box management plan is to be included within the BMP. | ✓ | ✓ | |
| **B17** | Landscape planting should preference endemic tree and shrub species to compensate for loss of foraging habitat due to the removal of trees. | | ✓ | |
| **B18** | Vehicles should remain on designated roads and tracks whenever practicable. Signposting and driver education during the induction process and in ongoing project discussions should be implemented. | ✓ | ✓ | |
| **B19** | Establishment and regular maintenance of erosion and sediment controls during construction and until excavated areas are vegetated. | ✓ | ✓ | |
| **B20** | Appropriate on-site management and removal of all rubbish from the Site. | ✓ | ✓ | |
| | **Aboriginal heritage** | | | |
| **AH1** | Further avoid and/or minimise impacts to identified Aboriginal heritage sites at the detailed design stage as best practicable. | ✓ | | |
| **AH2** | Preparation of a detailed Aboriginal Cultural Heritage Management Plan (ACHMP) for the project in consultation with RAPs and to the satisfaction of OEH and DP&I. The ACHMP shall include a strategy for | ✓ | | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | the management of known and potential Aboriginal heritage resource as well as identified cultural values.<br><br>The ACHMP should contain procedures for consultation and involvement of RAPs in the management of Aboriginal cultural heritage values within the Site. In addition, the ACHMP would include details of proposed mitigation and management strategies of all Aboriginal sites, procedures for the identification and management of previously unrecorded sites, details of an appropriate long term management for any Aboriginal objects salvaged, details of an Aboriginal cultural heritage awareness program for all contractors and personnel associated with construction activities and compliance procedures.<br><br>The key elements of the ACHMP are:<br><br>• Archaeological salvage programme<br>• Conservation of non-impacted sites<br>• Aboriginal cultural heritage awareness training<br>• Management of any previously unrecorded archaeological evidence identified during operation<br>• Management of potential human remains in the event of discovery during the life of the project<br>• AHIMS site cards<br>• Aboriginal site database<br><br>The above elements are detailed further in the following mitigation and management measures. | | | |
| **AH3** | Undertake a comprehensive archaeological salvage programme prior to ground disturbance which incorporates:<br><br>• Surface collection of the three impacted open artefact sites (i.e., SSF-IA1-17, SSF-AS2-17, and SSF-AS4-17) of low scientific significance.<br><br>• A landscape-based program of archaeological excavation across selected areas of low and high Aboriginal archaeological sensitivity within the Site, as determined through consultation with RAPs.<br><br>All archaeological salvage works should be undertaken by a combined field team of archaeologists and RAP field representatives. Post-salvage work for the surface collection and excavation components of the archaeological salvage program should, at minimum, include:<br><br>• The analysis and cataloguing of all recovered Aboriginal objects (e.g., stone artefacts, hearth stones) by a suitably qualified person or persons<br><br>• The submission, where deemed appropriate by a qualified archaeologist and/or geomorphologist, of excavated charcoal | ✓ | | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | samples for conventional or Accelerator Mass Spectrometry (AMS) radiocarbon dating<br>• The submission, where deemed appropriate by a qualified geomorphologist, of excavated sediment samples for Optically Stimulated Luminescence (OSL) dating<br>• The submission, where deemed appropriate by a qualified archaeologist, of a selection of stone artefacts for functional use-wear/residue analysis; and<br>• The submission, where deemed appropriate by a qualified archaeologist, of a selection of non-artefactual rock samples to a qualified geologist for the purposes of raw material identification.<br>The ACHMP for the project should include a detailed research design for the surface collection and excavation components of the salvage program.<br>All Aboriginal objects salvaged as part of the archaeological salvage program should be curated in an appropriate manner, as determined through consultation with RAPs, OEH and DP&I during preparation of the ACHMP. Temporary off-site storage of salvaged objects should be allowed for the purposes of analysis and recording.<br>Aboriginal Site Impact Recording (ASIR) forms for all salvaged sites should be submitted to OEH at the completion of the salvage program. | | | |
| **AH4** | All Aboriginal sites not impacted by the project but within the Site should be conserved *in-situ* (i.e.:SSF-IA2-17, SSF-IA3-17, SSF-IA4-17, SSF-AS1-17, SSF-AS3-17, SSF-AS5-17, SSF-AS6-17, SSF-AS7-17, SF-AS8-18, SSF-ST1-17, SSF-ST2-17, SSF-ST3-17).<br>Potential scarred tree sites should be protected via permanent stock-proof fencing and appropriate associated signage. Site fencing is to be erected after consultation with a qualified archaeologist and RAP representatives. All relevant staff and contractors are to be made aware of the nature and locations of all sites as well as Renew Estate's legal obligations with respect to them. Protected sites would need to be identified on all relevant site plans. Details for the care of protected sites should be incorporated into the ACHMP. | ✓ | | |
| **AH5** | An Aboriginal cultural heritage awareness training package should be developed in consultation with RAPs for use throughout the life of the project, and completed prior to the commencement any ground disturbance works. The training programme shall cover:<br>• Maintaining a register of all persons who completed the training throughout the life of the project.<br>• Training should be mandatory for all staff and contractors whose roles may reasonably bring them into contact with Aboriginal sites and/or involve consultation with local Aboriginal community | ✓ | ✓ | ✓ |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | members. Training should also be offered on a voluntary basis to all other staff and contractors.<br>All standard site inductions should include an Aboriginal cultural heritage component. At a minimum, this should outline current protocols and responsibilities with respect to the management of Aboriginal cultural heritage within the Site, provide an overview of the diagnostic features of potential Aboriginal site types (e.g., scarred trees) and procedures for reporting the identification of Aboriginal archaeological sites. | | | |
| **AH6** | Provisions regarding the appropriate management action(s) for previously unrecorded Aboriginal archaeological evidence identified within the Site throughout the operational life of the project should be incorporated into the ACHMP. Management action(s) should vary according to the type of evidence identified, its significance (both scientific and cultural) and the nature of potential impacts. | ✓ | ✓ | ✓ |
| **AH7** | In the event that potential human skeletal remains are identified within the Site at any point during the life of the project, the following standard procedure (New South Wales Police Force 2015; NSW Health 2008) should be followed.<br>• All work in the vicinity of the remains should cease immediately;<br>• The location should be cordoned off and the NSW Police notified.<br>• If the Police suspect the remains are Aboriginal, they would contact the OEH and arrange for a forensic anthropologist or archaeological expert to examine the Site.<br>Subsequent management actions would be dependent on the findings of the inspection undertaken under Point 3.<br>• If the remains are identified as modern and human, the area would become a crime scene under the jurisdiction of the NSW Police;<br>• If the remains are identified as pre-contact or historic Aboriginal, OEH and all RAPs are to be formally notified in writing. Where impacts to exposed Aboriginal skeletal remains cannot be avoided an appropriate management mitigation strategy would be developed in consultation with OEH and RAPs;<br>• If the remains are identified as historic non-Aboriginal, the Site is to be secured and the NSW Heritage Division contacted; and<br>• If the remains are identified as non-human, work can recommence immediately. | ✓ | ✓ | ✓ |
| **AH8** | AHIMS sites cards shall be completed and submitted to OEH:<br>• For all newly recorded sites within the Site at the completion of the assessment. | ✓ | ✓ | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | • In the event that a previously unidentified Aboriginal site is discovered within the Site at any point during the operational life of the project, as promptly as possible in accordance to timing protocols the are included in the ACHMP. | | | |
| **AH9** | Establish a comprehensive Aboriginal site database for the Site upon commencement of the project which would, at a minimum, contain the name, type, size (where applicable), MGA coordinates and status of all Aboriginal sites within and directly adjacent to the Site.<br>The database should be regularly updated throughout the operational life of project. Printed site lists and maps should be made available to RAPs upon request. | ✓ | ✓ | ✓ |
| **AH10** | Continued communication with the RAPs for the SSF project should be carried out. RAPs should be informed of any major changes the project design or extension, further investigations or finds. | ✓ | ✓ | |
| | **Landscape and visual** | | | |
| **V1** | The following would be further considered as part of the detailed design of the project:<br>• Refinement in the design and layout which may assist in the mitigation of bulk and height of proposed structures<br>• A review of materials and colour finishes for selected components in keeping with the surrounding landscape including the use of non-reflective finishes to structures. | ✓ | | |
| **V2** | Finalise the draft Landscape Plan (Appendix A of the LVIA) in consultation with the most affected visual receptors and other stakeholders, and implement this plan during construction. | ✓ | | |
| **V3** | The following would be implemented during construction as far as practicable:<br>• Minimise tree removal where possible<br>• Retention of grass cover wherever possible<br>• Avoidance of temporary light spill beyond the construction site where temporary lighting is required<br>• Rehabilitation of disturbed areas<br>• Protection of endemic vegetation within the project where retained. | ✓ | | ✓ |
| **V4** | The following would be implemented during operation as far as practicable:<br>• Ongoing maintenance and repair of constructed element<br>• Long term maintenance of screen planting to maintain visual filtering and screening of external views where appropriate. | | ✓ | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | **Water** | | | |
| **W1** | Prepare and Erosion and Sediment Control Plan (ESCP) in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004). This plan would be implemented in advance of site disturbance and be updated as required as work progresses. The ESCP would include, at minimum, the following provisions:<br>• Install erosion and sediment controls prior to and during construction<br>• Regularly inspect and maintain erosion and sediment controls, particularly following large rainfall/wind events<br>• Ensure vehicles, plant and equipment leave the Site in a clean condition to minimise mobilisation of sediment onto adjacent roads<br>• Soil handling and stockpiling procedures<br>• Identify exclusion zones to limit disturbance<br>• Stabilise and rehabilitate disturbed areas as soon as practicable<br>• Procedures for the testing, treatment and discharge of construction waste water to be established and implemented where appropriate. | ✓ | | ✓ |
| **W2** | Prepare a CEMP that ensures:<br>• All retained farm dams and associated drainage infrastructure to be maintained in a functional condition<br>• Incidental spills would be intercepted by active spill management practices<br>• Storage of hazardous materials such as oils, chemicals and refuelling activities would occur in bunded areas<br>• All works within waterfront land (as defined in the WM Act) to be undertaken in accordance with the Controlled Activities on Waterfront Land guidelines (DPI 2012).<br>• Procedures for the testing, treatment and discharge of construction waste water to be established and implemented where appropriate.<br>• Groundcover to be maintained where practicable and be re-established as soon as practicable on disturbed areas<br>• Installation of any permanent scour protection measures required for the operational phase as soon as practicable<br>• All construction staff to be engaged through toolbox talks or similar with appropriate training on water management practices<br>• All water required for site activities during construction and operation to be imported to site. | ✓ | | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | • Flood impacts would be managed by locating temporary site compounds, stockpiles and storage areas outside the 1% AEP flood extent where practicable. | | | |
| **W3** | Prepare an O&M Plan for the operational phase that covers:<br>• Standard operating procedures for chemical storage and use, and emergency spill management<br>• Conducting toolbox talks or training on water management practices<br>• Groundcover to be maintained between and under all solar panel arrays | | ✓ | |
| **W4** | Potential operational flood impacts would be dealt with as part of the design including:<br>• The substation would be located outside the 1% AEP flood extent<br>• The control building would be set outside 1% AEP flood depths of >0.25m, which is the maximum depth beyond which is deemed by Renew Estate as an unacceptable risk<br>• Solar arrays would be set outside 1% AEP flood depths of >0.4m, which is the maximum depth beyond which is deemed by Renew Estate as an unacceptable risk to the asset<br>• Access roads required within the 1% AEP flood extent would be constructed close to existing ground levels where practicable | ✓ | | |
| | **Land** | | | |
| **L1** | Preparation of a CEMP that incorporate the following measures:<br>• A site access protocol that lists relevant landholder's contact details and includes measures to minimise adverse impacts, such as driving carefully to minimise disturbance to surrounding livestock, crops and pastures and minimising dust generation.<br>• The timing of construction activities<br>• An unexpected finds protocol for the event that any contamination is discovered during construction works.<br>• The location of any temporary access roads to minimise the impacts to neighbouring agricultural activities and soils<br>• Incorporation of pest and weed management measures in the Biodiversity Management Plan including measures for identification, management and ongoing monitoring of weeds on the Site.<br>• A spill response plan to be implemented during both construction and operation to reduce the potential for contamination. The plan shall include: | ✓ | | ✓ |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | - Management of any potential contaminants on-site<br>- Mitigate and manage soil contamination by fuels, lubricants or other chemicals in accordance with EPA protocols<br>- Prevent contaminants affecting waterways, dams and adjacent pasture. | | | |
| **L2** | Preparation of an Erosion and Sediment Control Plan (ESCP) in accordance with the *Managing Urban Stormwater: Soils & Construction* (Landcom 2004) (Blue Book) that include provisions to:<br>• Install erosion and sediment controls (if required) prior to and during construction<br>• Regularly inspect erosion and sediment controls, particularity following large wind or rainfall events<br>• Minimise tracking of sediment from vehicles, plant and equipment on to surrounding roads<br>• During excavation, separate topsoils and subsoils to ensure they are replaced in their natural configuration.<br>• Stockpile topsoil appropriately to minimise weed infestation and maintain soil organic matter, soil structure and microbial activity<br>• Minimise the total area of disturbance from excavation and compaction<br>• Further soil management measures to ensure the future viability of the Site for agricultural production, including guidance on:<br>- Optimisation and recovery of useable subsoil and topsoil<br>- Establishment of effective soil amelioration procedures<br>- Separate storage of topsoil and subsoil to ensure that soil is replaced in the right order to avoid unnecessary impact on soil and the existing vegetation structure.<br>- Where disturbance or stripping of soil is required, an ameliorant such as gypsum could be applied to manage soil sodicity and provide for effective rehabilitation outcomes. | ✓ | | ✓ |
| **L3** | Preparation and implementation of an OEMP to reduce the impact of the proposed project on:<br>• Land and soil capability within the Site<br>• Neighbouring agricultural operations<br>• Regional biosecurity (pest and weed management)<br>• Erosion<br>The OEMP would cover: | | ✓ | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | • Sheep grazing as a means of vegetation maintenance and weed control throughout the life of the project<br>• Restricting vehicle movements to formed access tracks.<br>• Retaining ground cover beneath the PV solar panels to manage erosion, weed infestation and surface water runoff.<br>• Procedures for waste materials to be removed from the Site regularly and the Site kept in a clean and orderly condition in order to deter potential pest animals.<br>• A targeted pest management program (as necessary). | | | |
| **L4** | Rehabilitation of the Site to its original condition as best practicable following decommissioning | | | ✓ |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | **Noise and vibration** | | | |
| **NV1** | Prepare a Noise Management Plan that specifies:<br>• Appropriate plant and equipment should be selected for each task to minimise the noise contributions<br>• Turn off plant that is not being used where practicable<br>• Ensure plant is regularly maintained, and repair or replace equipment that becomes more noisy<br>• Noisier activities to be scheduled during less noise sensitive periods<br>• Use non-tonal reversing alarms where practicable<br>• Wherever feasible, turning circles should be created at the end points of vehicle work legs, which should allow trucks to turn and avoid the need for reversing<br>Emphasis should be placed during driver training and site induction sessions on the potential adverse impact of reversing alarms and the need to minimise their use. | ✓ | | ✓ |
| **NV2** | Consider using bored piling for construction works where practicable | ✓ | | |
| **NV3** | Incorporate barriers, attenuators, acoustic louvres and mufflers as best practicable. | ✓ | | ✓ |
| **NV4** | Inverters to be selected with maximum sound power levels of less than 92 dB(A) with no tonal characteristics, if practicable. Inverters would be located as far as practicable from residential dwellings. | ✓ | ✓ | |
| **NV5** | Inverters identified as requiring noise mitigation in Appendix B of the Noise and Vibration Impact Assessment (Appendix G of this EIS) should utilise a 2 m high, three sided “horse-shoe” shaped noise walls. The noise walls should be orientated with the open side facing away from the nearest noise sensitive receivers. | ✓ | ✓ | |
| | **Non-Aboriginal Heritage** | | | |
| **HH1** | In the event that unexpected historic finds are identified during construction, all works should immediately cease. The following procedure guides the management of unexpected and previously unidentified finds during the course of operations. Finds includes artefact scatters (glass, animal bone, ceramic, brick, metal, etc.), building foundations and earthworks of unknown origin. The procedures are:<br>• All work in the area is to cease immediately<br>• Alert the Project Manager to the find<br>• If necessary, protect the area with fencing<br>• Engage a suitably qualified archaeologist to undertake an assessment of the find/s | ✓ | | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | • The assessment should be undertaken using the guidelines *Assessing Significance for Historical Archaeological Sites and 'Relics'* (NSW Heritage Branch, 2009)<br>• On the advice of the archaeologist, if necessary, prepare an Impact Assessment and Research design and methodology to submit to the Heritage Branch<br>• Undertake the archaeological mitigation in accordance with the prepared documents and the permit/exception issued by the Heritage Branch; and<br>Once the Site has been mitigated to the satisfaction of the archaeologist and the Heritage Branch, works may resume in the area. | | | |
| **HH2** | In the event of discovery of human remains the following procedure shall be implemented:<br>• All work in the vicinity of the remains should cease immediately<br>• The location should be cordoned off and the NSW Police notified<br>• If the Police suspect the remains are Aboriginal, they would contact the Office of Environment and Heritage and arrange for a forensic anthropologist or archaeological expert to examine the Site and implement mitigation measure AH7.<br>• If the remains are identified as modern and human, the area would become a crime scene under the jurisdiction of the NSW Police<br>• If the remains are identified as historic non-Aboriginal, the Site is to be secured and the NSW Heritage Division contacted; and<br>If the remains are identified as non-human, work can recommence immediately. | ✓ | | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | **Traffic and transport** | | | |
| **T1** | Preparation of a Traffic Management Plan in consultation with the YVC, RMS and other authorities prior to construction that covers:<br>• Programmes for monitoring road traffic conditions, to repair damage exacerbated by construction traffic<br>• The designated routes of construction traffic to the Site<br>• Carpooling. Shuttle bus arrangements to minimise vehicle numbers throughout construction and decommissioning<br>• Consideration for cumulative impacts with any nearby developments<br>• Scheduling delivery of major components where possible to minimise safety risks to other road users including avoiding major deliveries during school pick-up and drop-off times<br>• Temporary traffic controls such as signage, speed restrictions and traffic safety flagmen as necessary to ensure safety of all road users and the public.<br>Procedure for monitoring traffic impacts and adapting controls to minimise impacts traffic risks. | ✓ | | ✓ |
| **T2** | Implementation of a communication and consultation strategy with stakeholders including RMS, emergency services, local stakeholders (landholders and business owners) regarding changes to roads uses during construction and decommissioning. RMS and YVC should also be consulted on the access route, particularly regarding the delivery of the transformer to the Site. | ✓ | | ✓ |
| **T3** | Implementation of a complaints management system as part of the CEMP to ensure any community concerns regarding traffic are addressed effectively and promptly. | ✓ | ✓ | ✓ |
| | **Bushfire** | | | |
| **BF1** | A Bushfire Management Plan would be developed covering all phases of the development. This plan would outline relevant protocols, practices and other measures to minimise the risk of bushfire and to outline appropriate emergency actions should one occur. | ✓ | ✓ | ✓ |
| **BF2** | All electrical equipment would be designed in accordance to applicable ANZ engineering design standards, industry codes and best practice standards. Installation, operation and maintenance work shall be carried out by competent persons. | ✓ | | |
| **BF3** | Buildings would be designed to comply with the national Construction Code (formerly the Building Code of Australia). | ✓ | | |
| **BF4** | Safety management processes/ system covering:<br>• Induction training to all personnel and contractors on fire risk, do's and don't's, prevention and emergency response | ✓ | ✓ | ✓ |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| | • Safety hazards including bushfire and control measures<br>• Preparation and implementation of job specific SWMS<br>• Emergency preparedness and response<br>• Policies and procedures to control hot works, prohibition of smoking on-site, fuel storage, use of flammable materials and use of machinery and vehicles. | | | |
| **BF5** | Implement a Hot Work Permit system that would ensure:<br>• hot works are restricted to the maintenance workshop as best practicable<br>• stringent control of all hot works (cutting, grinding, welding, etc.), by prescribing pre-requisites and implementing specific control measures<br>• fire extinguishers would be made available during all hot works.<br>• effective implementation by all parties including contractors throughout the life of the project. | ✓ | ✓ | ✓ |
| **BF6** | Designating a site safety management representative on-site who would:<br>• Be responsible for implementation of safety requirements, mitigation and management measures and emergency response procedures related to bushfires<br>• Consult with the local RFS regarding bushfire management requirements<br>• Be the point of contact onsite to assist RFS and emergency services if there is a fire on-site. | ✓ | ✓ | ✓ |
| **BF7** | Effective communication to ensure fire incidents are communicated quickly including:<br>• Use of mobile phones, with emergency communication contacts on a speed dial<br>• Use of two way radio<br>• Fire Danger Warning signs located at the entrance to the Site<br>• Signs clearly showing locations of onsite SWMS and fire access tracks | ✓ | ✓ | ✓ |
| **BF8** | Slashing of vegetation prior to construction activities and to maintain fuel loads. | ✓ | ✓ | |
| **BF9** | Grazing by sheep stocked at suitable levels so as to maintain a low level of vegetation whilst minimising erosion throughout the lifespan of the project. | ✓ | ✓ | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| **BF10** | The NSW RFS be provided with a contact for the SSF project, during construction and operation. | ✓ | ✓ | ✓ |
| **BF11** | Maintain access and egress roads to the Site free from being blocked by parked vehicles or other items so as to be readily accessible by emergency services at all times and prevent entrapment of personnel in the event of a bushfire. | ✓ | ✓ | ✓ |
| **BF12** | Training for personnel covering fire prevention, using fire extinguishers and emergency response procedures/ drills. | ✓ | ✓ | ✓ |
| **BF13** | Seek 'mutual assistance' agreement with local property owners to use dams as water sources in the event of an emergency. | ✓ | ✓ | ✓ |
| **BF14** | Suitable and adequate emergency response equipment shall be provided and maintained on-site during the construction of the project. This would include fire extinguishers and 20,000 litre static water supply that would be installed at the early part of the construction phase and maintained throughout the life of the project. Equipment lists shall be detailed in the SWMS, Bushfire Management Plan and hot work permits. | ✓ | ✓ | ✓ |
| | **Electromagnetic fields** | | | |
| **E1** | All electrical equipment would be designed in accordance to ANZ engineering design specification, industry codes and best practice standards. Installation, operation and maintenance work shall be carried out by competent persons. | ✓ | | |
| **E2** | All relevant TransGrid and other procedures in relation to high voltage installation and operation would be adhered to throughout the life of the project. Public access to the Site would be restricted throughout the life of the project and all power stations, the substation and switchyard would be kept locked. | ✓ | ✓ | |
| | **Socio-economics** | | | |
| **S1** | The project would aim to give preference to local workers and suppliers of construction materials and equipment where practicable. | ✓ | ✓ | |

| No | Mitigation and Management Measures | Construction | Operation | Decommissioning |
|---|---|---|---|---|
| **S2** | Community consultation would be undertaken in accordance to the Community and Stakeholder Consultation Plan which shall include communication with local communities and stakeholders:<br>• to provide updated information regarding the project, including information regarding the project's program and proposed construction activities, potential impacts to nearby sensitive receivers and potential changes to local traffic conditions<br>• provide information regarding employment and business opportunities; and<br>• as a channel to receive queries, complaints and grievances. | ✓ | ✓ | ✓ |
| | **Waste** | | | |
| **W1** | A Waste Management Plan which identifies all waste streams and specifies management measures covering collection, handling, transportation, recycling and disposal would be incorporated in the CEMP. An environmental audit shall be carried out at the completion of the construction stage to verify all waste has been properly disposed prior to the final payment being released to the contractor(s). | ✓ | | ✓ |
| **W2** | A waste management policy/ procedure/ plan shall be developed and implemented to ensure compliance to waste management legislative requirements, guidelines and best management practices throughout the operation and decommissioning phases. All waste shall be collected, properly stored and recycled or disposed at facilities licensed by the local council. | | ✓ | |
| | **Air Quality** | | | |
| **A1** | The CEMP and DEMP shall include procedures to minimise and mitigate dust generation. The measures shall include:<br>• Use water trucks for dust suppression throughout the construction and decommissioning phases particularly in the vicinity of adjacent residential dwellings.<br>• All disturbed areas shall be re-vegetated as soon as practicable to minimise exposed areas<br>• Vehicle speed limits shall be controlled to minimise dust from vehicle movement | ✓ | | ✓ |
| **A2** | The CEMP and DEMP shall include procedures and best management practices to minimise emissions from vehicles and site machinery used at the project site. This shall include carrying out inspections and maintenance of all vehicles, plant and equipment to ensure they are operating efficiently. | ✓ | | ✓ |

# 4.0 Conclusion

In response to ongoing design development, construction planning and community and stakeholder consultation, the proponent proposed the following design refinements to the project:

- Removal of one development area to the south of Tallagandra Lane
- Adjustment of the northern development area to allow for an extension to screening vegetation
- Changes to the location and size of Springdale Solar farm substation
- Changes in the configuration of internal access tracks
- Extension of the operational life of the project by five years.

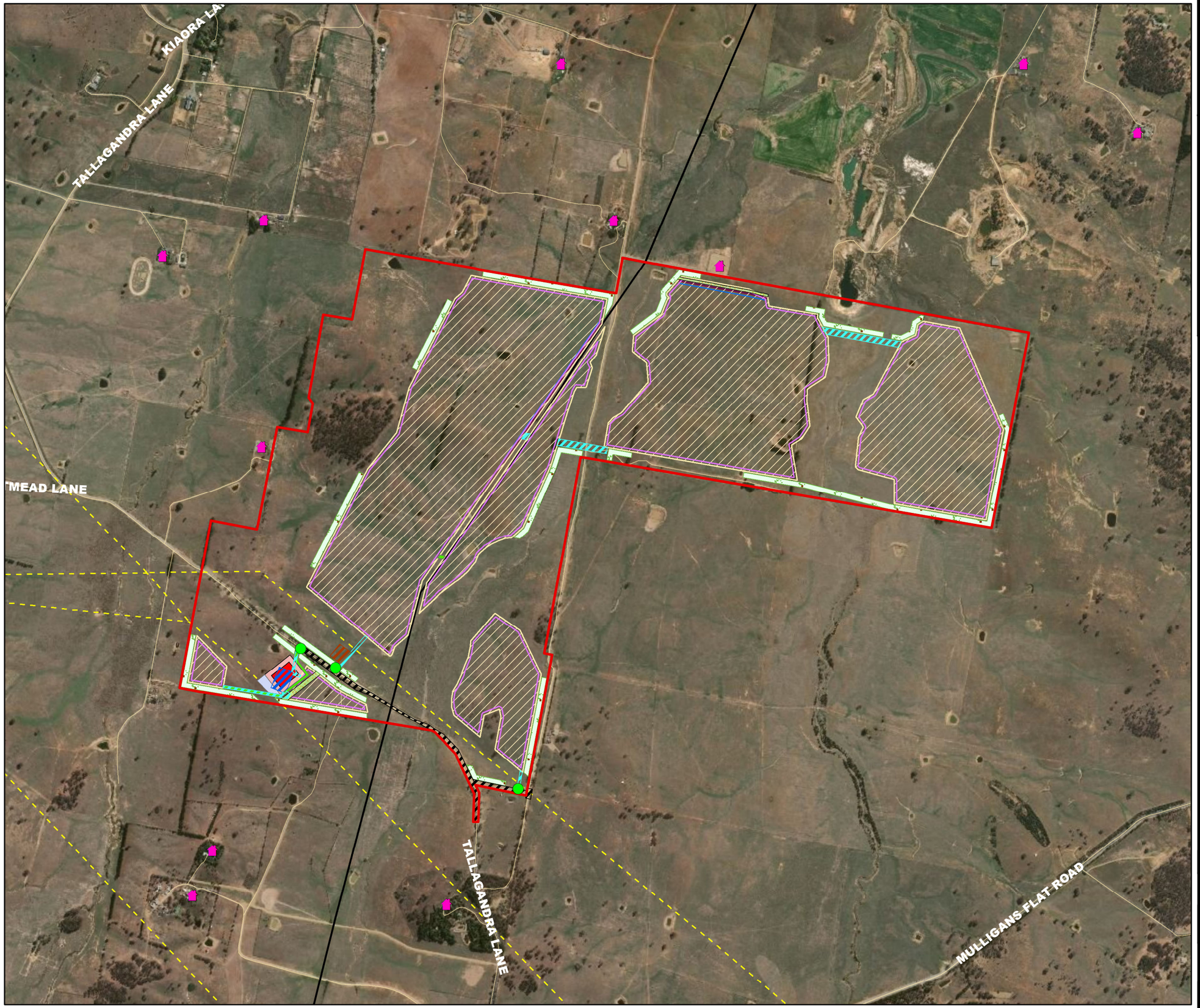
This Amendment Report has determined that these proposed design refinements would generally result in a decrease in the intensity and scale of environmental and amenity impacts associated with the development. Providing the environmental management and mitigation measures described in Section 3.0 are implemented the environmental impacts associated with the Project are considered manageable.

# 5.0 References

AECOM, 2018. Springdale Solar Farm Environmental Impact Statement. Prepared on behalf of Renew Estate Pty Ltd.

AECOM, 2020. Springdale Solar Farm Response to Submission Report. Prepared on behalf of RES Australia Pty Ltd.

# Appendix A: Site plans




# SPRINGDALE SOLAR FARM

## LAYOUT AMENDMENTS

SOURCE DATA © NEW SOUTH WALES CROWN (SPATIAL SERVICES)

- SITE BOUNDARY
- ASSET PROTECTION ZONE
- SITE ENTRANCE
- CONTROL BUILDING AREA
- POTENTIAL ROAD SEALING / MAINTENANCE AREA
- INTERNAL ROAD AREA
- SOLAR FIELD AREA INCLUDING INTERNAL ROADS
- SUBSTATION AREA
- PROPOSED VEGETATION SCREENING
- NON-ASSOCIATED RESIDENCE
- ELECTRICITY TRANSMISSION LINE
- GAS PIPELINE

**REVISIONS**

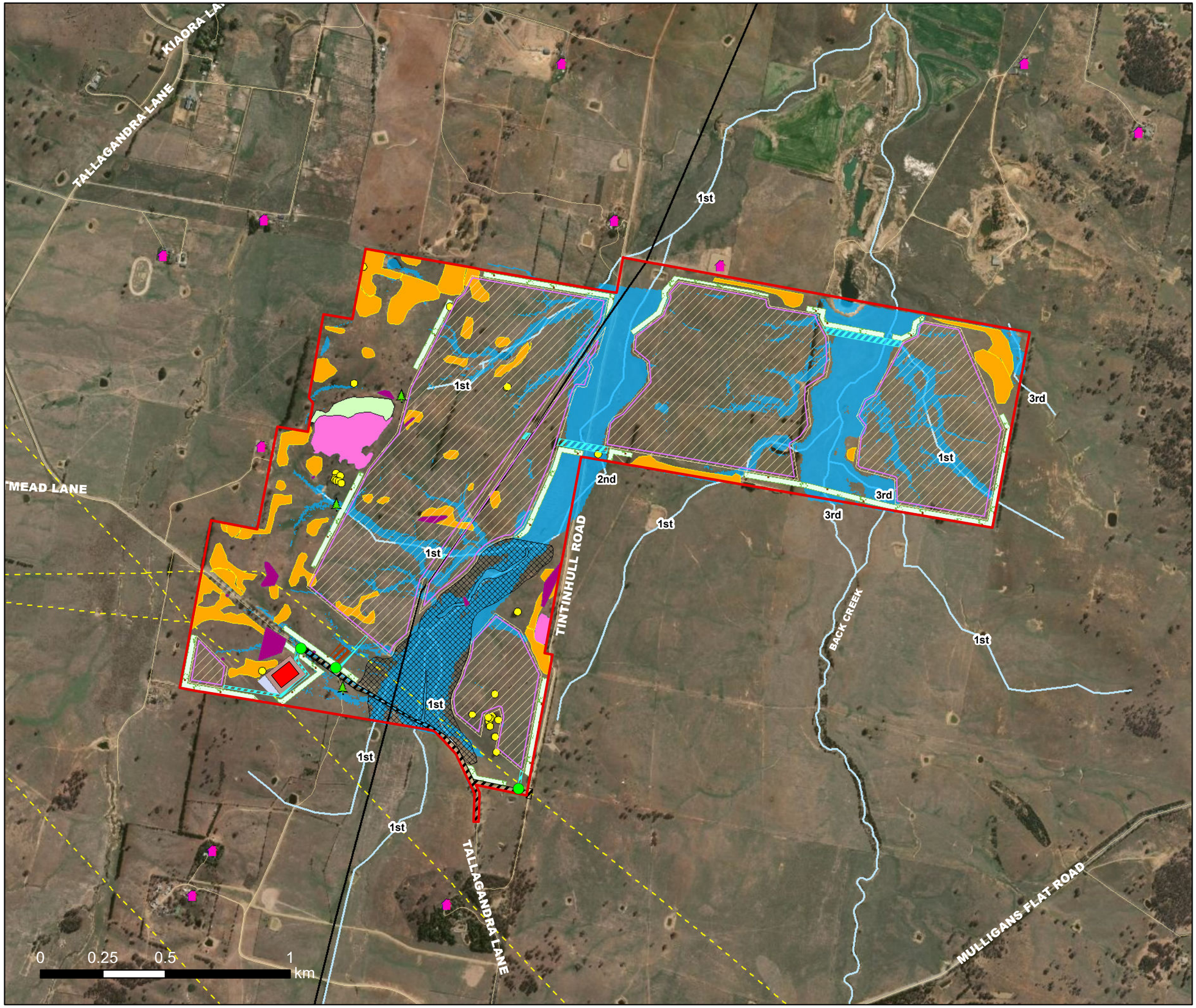
- REVISED ASSET PROTECTION ZONE
- REVISED PROPOSED VEGETATION SCREENING
- REVISED SOLAR FIELD AREA INCLUDING INTERNAL ROADS
- REVISED INTERNAL ROAD AREA
- REVISED SUBSTATION AREA
- SUBSTATION APZ
- TRANSGRID EASEMENT AREA

| LAYOUT DWG | T-LAYOUT NO. |
|---|---|
| N/A | N/A |

DRAWING NUMBER
**04317-RES-SOL-DR-PT-003**

**SCALE - 1:15,000 @ A3**

**PLANNING APPLICATION 2020**




# SPRINGDALE SOLAR FARM

## CONSTRAINTS AND LAYOUT PLAN - FINAL

SOURCE DATA © NEW SOUTH WALES CROWN (SPATIAL SERVICES)

- ASSET PROTECTION ZONE
- SITE BOUNDARY
- SITE ENTRANCE
- CONTROL BUILDING AREA
- POTENTIAL ROAD SEALING / MAINTENANCE AREA
- INTERNAL ROAD AREA
- SOLAR FIELD AREA INCLUDING INTERNAL ROADS
- SUBSTATION AREA
- SUBSTATION APZ
- TRANSGRID EASEMENT AREA
- PROPOSED VEGETATION SCREENING
- ABORIGINAL SITE BOUNDARY
- SCARRED TREE
- HOLLOW-BEARING TREE
- GOLDEN SUN MOTH HABITAT
- POTENTIAL STRIPED LEGLESS LIZARD HABITAT
- INTACT WOODLAND
- CRITICALLY ENDANGERED ECOLOGICAL COMMUNITY
- NON-ASSOCIATED RESIDENCES
- ELECTRICITY TRANSMISSION LINE
- GAS PIPELINE
- 1 IN 100 YEAR FLOOD PROFILE
- WATERWAYS

| LAYOUT DWG | LAYOUT NO. |
|---|---|
| N/A | N/A |

DRAWING NUMBER
**04317-RES-SOL-DR-PT-002**

**SCALE - 1:15,000 @ A3**

**PLANNING PERMIT APPLICATION**