Amendment Report

Blind Creek Solar Farm

October 2022

Project Number: 22-319

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Final v1.1	15/11/2022	Amanda Conley (minor edits)	Sarah HIllis	

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Acronyms and Abbreviations

AC	Alternating current
ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
BC Act	Biodiversity Conservation Act 2016 (NSW)
BCSF	Blind Creek Solar Farm
BESS	Battery Energy Storage System
BPL	Bushfire Prone Lane
CBSS	Community Benefit Sharing Scheme
CEMP	Construction environmental management plan
CHMP	Cultural Heritage Management Plan
CSES	Community and Stakeholder Engagement Strategy
Cwth	Commonwealth
DC	Direct current
DECCW	(Former) Department of Environment, Climate Change and Water (NSW) (now DPIE)
DEMP	Decommissioning Environmental Management Plan
DPE	Department of Planning and Environment (NSW) (formerly DPIE)
EIA	Environmental impact assessment
EIS	Environmental impact statement
EPC contractor	Engineering, Procurement and Construction contractor
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cwth)
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
ESD	Ecologically Sustainable Development
GMC	Goulburn Mulwaree Council

ha	hectares
Heritage Act	Heritage Act 1977 (NSW)
HVAS	Heavy Vehicle Access Study
ICHLZ	Indigenous Cultural and Heritage Learning Zone
km	kilometres
kV	Kilovolt
LGA	Local Government Area
LMP	Landscape Management Plan
m	metres
MW	Megawatt
NSW	New South Wales
NHVR	National Heavy Vehicle Regulator
OEH	(Former) Office of Environment and Heritage (NSW) (now EES)
OEMP	Operation Environmental Management Plan
OSOM	Over-size Over-mass
PV	Photovoltaic
RAP	Registered Aboriginal Party
SAII	Significant and Irreversible Impact
SSD	State Significant Development
TADPAI	Tarago and District Progress Association Inc
TIA	Traffic Impact Assessment
TfNSW	Transport for New South Wales
TL	Transmission line
VIA	Visual Impact Assessment
VPA	Voluntary Planning Agreement
VRZ	Vegetated Riparian Zone

Table of definitions

Applicant	Blind Creek Solar Farm Pty Ltd (BCSF Pty Ltd)
Project	Blind Creek Solar Farm (BCSF)
Subject Land	All lots affected by the development
Study area	The area surveyed for the assessment, prior to identifying the constraints and exclusions. The area is 1,225ha. Refer to Figure 1-2
Development site	The Development site is the area where development is proposed and where landowner consent (freehold and Crown land) has been obtained. The area is 1,026ha. Refer to Figure 1-2.
Development footprint	The uppermost area of land that would be directly impacted by the Project including solar arrays, perimeter fence, access roads, transmission line footprint and areas used to store construction materials and manage environmental impacts (including all temporary and permanent impacts). Approval is sought for this area, to enable micro-siting of infrastructure during post approval detailed design. The area is 682.5ha. Refer to Figure 1-2.

Executive Summary

Background

The Blind Creek Solar Farm is proposed within the Queanbeyan-Palerang Local Government Area (LGA); 30km northeast of Queanbeyan and 7km north of Bungendore, NSW, on the shores of Lake George. Accessed from Tarago Road, the site is an agricultural property with a long agricultural history of cropping, as well as sheep and cattle grazing. Nearby land uses include agriculture, residential development, two sand quarries, and Capital Wind Farm.

The Environmental Impact Statement (EIS) proposed the construction and operation of a solar photovoltaic (PV) energy generation facility with an estimated capacity of up to 350MWAC (420MWDC) including battery storage of nominally 300MW / 600MWh. The Project is classified as State Significant Development (SSD) under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The key environmental issues investigated in the EIS were visual amenity and glare, biodiversity, Aboriginal heritage, hydrology and flooding, noise and vibration, and traffic. The EIS was placed on public exhibition from Tuesday 7 June 2022 until Thursday 7 July 2022: www.planningportal.nsw.gov.au/major-projects/projects/blind-creek-solar-farm.

Proposed amendments

After consideration of public and agency submissions to the EIS, and more detailed development of the technical aspects of the Project, a number of amendments are proposed to the Project as described in the EIS. The proposed amendments include:

1. A commitment to royalty-per-tonne cargo payments to two local Councils to address the use of local roads, in response to Council submissions.
2. A commitment to a larger intersection treatment at the site access point, off Tarago Road, to improve safety.
3. A commitment to exclude solar module infrastructure within a corridor connecting the defined portion of Wrights Creek to the ephemeral wetland. The average exclusion will not be less than 40m each side of the creek bank (where defined) or nominal centreline where the bank is undefined (cables and tracks may cross this exclusion provided they are designed so they do not impede flows).
4. A commitment to enhance potential habitat and breeding areas for the White Fronted Chat.
5. Strengthening several mitigation measures which now specifically include the requirement for further agency or Council input in the detailed project planning, post approval.
6. A reduction of estimated construction water requirements and further information in relation to sourcing water for construction.
7. A commitment to exclude solar panels from elevated areas on or bordering Lot 17 DP535180 (above elevation 691m) to reduce visual impacts to receivers on Lake Road, and west of an established line of elm trees between Butmaroo Creek and the ephemeral wetland.

8. Increasing the number of inverter stations and transformers from 85 to 93.
9. Changing the requirement of the subdivision on Lot 17 DP 535180.
10. Decrease of the minimum panel spacing from 5.75m to 5.25m.

Evaluation of the updated Project

The report has assessed the impacts resulting from the amendments, which generally reduce impacts and provide more certainty with regard to the mitigation strategies proposed. The updated environmental evaluation of the Project, considering the amendments is summarised in Table 1 below.

Table 1 Updated environmental evaluation relevant to the Project as amended

Impact areas	
Biodiversity	A more specific threatened species mitigation strategy is now detailed. Areas that contain Scotch thistle are considered suitable habitat for the White-fronted chat. The loss of habitat due to construction will be replaced and enhanced with suitable native vegetation within the development site and managed in accordance with the final approved Biodiversity Management Plan.
Visual	The updated visual assessment indicates that the potential visual impact for nominated receivers is rated no higher than moderate-low. An updated Landscape Plan as part of the VIA is included, to ensure establishment of visual screening within three years of commencing operations.
Hydrology and Flooding	Further considerations have been given to Wrights Creek overland flow path to ensure an adequate flow corridor unimpeded by solar panel modules, in accordance with the *Guidelines for Controlled Activities on Waterfront Land*.
Aboriginal Heritage	No additional impacts are expected. Works can proceed with caution with consideration to the recommendations outlined in the main ACHA and Addendum ACHA due to no additional impacts expected. The overall impacts are in line with the conclusions of the original EIS.
Water Use and Water Quality	The revision of construction water requirements has resulted in an overall decrease of water use, from 250ML to 150ML. No significant impacts are expected as a result of the reduction. The overall impacts are in line with the conclusions of the original EIS.
Access and Traffic	The intersection plan (refer to Addendum TIA Appendix E.4) has been updated according to Figure A 28 of *Austroads Guide to Road Design Part 4* for the BAR with a design speed of 110kph. Table drains have been reinstated as part of the plan. This will improve traffic safety and management of the road asset.

Impact areas	
	The proposed intersection upgrades are entirely within the historically disturbed road reserve. No additional impacts (including biodiversity and heritage) will result. The Applicant now proposes to enter into a royalty agreement with appropriate councils for the construction impacts on council roads.
Noise	Operational noise modelling of amended Project showed predicted noise impacts are the same or lower that the noise impacts presented in the EIS. No significant impacts to surrounding receivers associated with noise outputs are expected. The overall impacts are in line with the conclusions of the original EIS.

The assessment and mitigation strategies underpinning the Project are also considered conservative where uncertainty is present:

- While the final detailed design stage is yet to be undertaken, all impacts will be required to be confined to the consented Development footprint.
- Where specific infrastructure parameters or construction programming is yet to be determined, a 'worst case scenario' is assumed.

In both cases above, the actual impacts are therefore expected to be less than what has been assumed and mitigated.

With reference to the *Large-Scale Solar Energy Guideline for State Significant Development* 2022 and the updated detailed environmental assessments, the Project as amended can be considered highly suitable to the areas proposed for development:

- There are limited receivers within 2km of the Development Site, and the distance from the closest receivers to the site has not changed as a result of this Amendment Report.
- Queanbeyan is the closest major regional centre to the Project (30km northwest), with the town of Bungendore being 7km south of the development footprint.
- The Project is not located on land classed as 1 to 4 under the LSC Scheme, nor is it classed Biophysical Strategic Agricultural Land (BSAL) or Critical Industry Clusters (CIC).
- Due to amendments being proposed and constrained to existing disturbance areas, it was determined that works are limited in their overall scope and impact footprint or are within areas containing significant levels of historical disturbance. As such, no additional impact as a result of the Amendments are expected to heritage items.
- The development footprint remains the same as the EIS. As such, assessment outcomes demonstrated within the EIS remain unchanged.
- Works will not be included within the riparian zone of any waterway in accordance with the *Guidelines for Controlled Activities on Waterfront Land*.
- No changes are proposed to the flood and bushfire potential of the Project Area.
- No changes are proposed to the haulage route or other infrastructure the Project Area.
- There are no additional approved solar energy developments compared to what is detailed in the EIS.
- There are no changes to land zoning outside of what is detailed in the EIS.

- There are no changes to view lines of particular significance compared to what is detailed in the EIS.
- There are no changes to existing potential screening compared to what is detailed in the EIS.

Overall justification for the Project

The justification for the Blind Creek Solar Farm remains consistent with the EIS. With reference to the Large-Scale Solar Energy Guidelines 2022, and the updated environmental assessments, the Blind Creek Solar farm remains highly suitable to the area proposed for development. In addition to responding comprehensively to environmental constraints mapping and submissions from the community, consideration has been given to the compatibility of the Project with the existing environment and land uses. This ensures that the intrusiveness of the construction and operation is minimised through due consideration of neighbouring landholders while maximising the viability of the Project and its contribution to meeting energy needs into the future. Considerations during initial site investigations to maximise solar energy generation included:

- Availability of suitable land (topography, aspect, presence of native vegetation)
- Compatibility of stakeholder's interests/ adjacent land use.
- Consideration for natural water movement across the site minimising impediment to waterflow during flooding events

In addition, due to the responses documented in this report to the public and agency submissions, the refinements proposed now:

- Provide increased certainty in relation to areas that will be impacted and areas that will be protected from impacts.
- Provide increased certainty in relation to areas that will not host solar array modules that may impact on the visual amenity.
- Provide increased certainty in relation to the management of environmental impacts.
- Improve traffic access and road asset management.

As detailed within the Submission Report, the Blind Creek Solar Farm would:

- **Generate electricity from a low-cost renewable source**
- **Provide storage in order to deliver electricity at high demand times, when roof top solar is unavailable**
- **Address Federal, state and local policies as well as international agreements in relation to reducing greenhouse gas emissions, global warming and the transition to greater renewable energy generation**
- **Supply the equivalent of approximately 124,155 residential dwellings**
- **Co-exist and compliment intensive sheep grazing and regenerative agriculture practices that will continue on the site**
- **Respond to input from the community and environmental specialists in order to maximise the benefits to the local community and minimise adverse environmental impacts during construction, operation and decommissioning**
- **Address the principles of ecologically sustainable development.**

These objectives align closely with Environmentally Sustainable Development (ESD), in their focus on the protection of natural resources and a better future of all Australians in the long-term. The

assessment integrates all significant socio-economic and environmental considerations and seeks to avoid any potential serious or irreversible environmental damage, based on a quantified assessment of risk. The assessment and mitigations underpinning the Project are highly conservative where uncertainty is present.

On balance this leads to a project that responds well not only to its environmental context but to its valued stakeholders in the local community, to which this project will generate a long-term positive contribution.

1. Introduction

1.1. The Applicants details

Blind Creek Solar Farm Development is the Applicant for the Project

ACN: 629 954 329

Address: 1279 Tarago Road, Bungendore NSW 2061

BCSF Pty Ltd was founded by local farmers with strong personal connections to the site and local community who then formed a partnership with renewable energy experts. At the heart of the Project is their desire to create a project that is visionary in every aspect including its approach to co-locating regenerative agriculture with solar, genuine community consultation and including their local community in the financial benefits.

The founders have led the community consultation for this Project and, together, the team has engaged specialists to inform the development of the Project and the mitigation of its impacts. The result is:

- A Project that responds to the issues raised by the community. This includes adjacent land holdings but also community members at some distance from the Project.
- A Project that responds to the environmental and archaeological values identified on the site. The areas that will be impacted exclude areas of high biodiversity, heritage and water catchment value.
- A Project that is compatible with current and proposed agricultural land use practices at the site. The 'Agri-solar' considerations include the height and spacing of solar panels, such that livestock grazing can be continued with the solar array and benefit from micro-climate effects, such as shading and soil moisture retention in summer.
- A Project that provides a meaningful contribution to the State's transition to renewable energy generation.

Following six months of discussions, Octopus Investments Australia Pty Ltd (Octopus) and the Clean Energy Finance Corporation (CEFC) invested in the Project via a joint venture (March 2022). The founders are very confident they have found a well-respected and socially conscious partner in Octopus and the CEFC whose values are exceptionally well aligned with their own and who shares their desire to continue developing the Project in this way. Octopus and CEFC have come together to form BCSF Pty Ltd (as trustee for the Blind Creek Solar Farm Trust), the Applicant.

1.2. Project background

The Project has reached the submissions phase of the development application, this phase will include the lodgement of a Submissions Report (NGH, 2022) and this Amendment Report. The Submissions Report responds to 59 submissions on the Blind Creek Environmental Impact Statement (EIS). A clear majority of these submission supported the development. This Section provides an overview of the EIS and the steps in the Blind Creek Solar Farm undertaken to date.

1.2.1. Previous steps in the assessment

To determine the most appropriate project, a Scoping Report (NGH, 2021) for the Study area was undertaken in the early planning stages to determine environmental constraints associated with the site[1]. The Scoping Report (NGH, 2021) was used to assist with developing the early solar farm layout and planning the detailed environmental assessment methodologies for the EIS. The Scoping Report was submitted to request the project-specific SEARS to guide the EIS for the Blind Creek Solar Farm. The SEARs were received for the Project on 11 February 2021.

The Blind Creek Solar Farm EIS was prepared in accordance with the Project-specific Secretary's Environmental Assessment Requirements (SEARs), issued on 11 February 2021. The key environmental issues investigated in the EIS were visual amenity and glare, biodiversity, Aboriginal heritage, hydrology and flooding, noise and vibration, and traffic. Detailed safeguards and mitigation measures were developed and included as commitments of the Project.

The EIS was placed on public exhibition from Tuesday 7 June 2022 until Thursday 7 July 2022: www.planningportal.nsw.gov.au/major-projects/projects/blind-creek-solar-farm.

1.2.2. The EIS Project overview

The proposed Blind Creek Solar Farm would be located within the Queanbeyan-Palerang Local Government Area (LGA); 30km northeast of Queanbeyan and 7km north of Bungendore, NSW, to the east of Lake George. Accessed from Tarago Road, the site is an agricultural property with a long agricultural history of cropping, as well as sheep and cattle grazing. Nearby land uses include agriculture, residential development, two sand quarries, and the existing Capital Wind Farm.

The Environmental Impact Statement (EIS) proposed the construction and operation of a solar photovoltaic (PV) energy generation facility with an estimated capacity of up to 350MWAC (420MWDC). It includes associated infrastructure, including grid connection and battery storage of nominally up to 300MW / 600MWh. The Project requires development consent under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The Project is classified State Significant Development (SSD) under the EP&A Act as it is development for the purpose of electricity generating works with a capital investment value of greater than $30 million (Schedule 1 (20)(a) of the *State Environmental Planning Policy (Planning Systems) 2021).*

The Project (as presented in the EIS) includes the following main infrastructure components:

- Approximately 850,000 PV single axis tracking solar modules (mounted on pile-driven foundations).
- Approximately 85 inverters and transformers.
- A Battery Energy Storage System (BESS) including nominally up to 300MW/600MWh of lithium-ion batteries with inverters.
- An onsite 330kV substation connected to the existing 330kV transmission line that passes through the site.
- Underground cabling to connect solar modules, combiner boxes, PCUs and batteries, data services and communications.

[1] Environmental constraints can be defined as factors which affect the 'developability' of a site and include physical, ecological, social and planning factors.

- Buildings to house a site office, switchgear, protection and control facilities, maintenance facilities, storage and staff amenities.
- A communications tower for high reliability grid operations.
- Internal tracks, new and upgraded sections totalling approximately 27km.
- Perimeter security fencing (if required), closed-circuit television (CCTV) and security lighting at the switching station, BESS and O&M building area, only.
- Stock fencing and water.
- Visual amenity plantings in specific locations[2].
- Site access intersection upgrades off Tarago Road.

Temporary construction facilities would include a laydown area with secure compound, construction site offices and amenities and car and bus parking areas for construction staff. The construction phase of the Project is expected to take approximately 12 to 18 months and the Project would have an operational life of nominally 35 years or more.

The Project would require subdivision of:

- Lot 17 DP535180, to separate the solar facility from residual agricultural land.
- Lot 1 DP456698, to separate connection assets that will become the property of TransGrid.

1.3. This Report

This Amendment Report has been prepared to set out in full, and assess where required, changes made to the project since the exhibition of the EIS. Proposed amendments are summarised in Section 1.4 and further detailed in Section 2 of this Amendment Report.

The report is guided by the *State significant development guidelines – preparing an amendment report* (DPIE, 2021), and is structured as follows:

- Sections 1.4 and 2 details the amendments
- Section 3 summarises the updated statutory context
- Section 4 details the community engagement relevant to the amendments taken since the exhibition of the EIS
- Section 5 provides an updated assessment of impacts based on all proposed amendments
- Section 6 provides an updated project justification.

1.3.1. Relationship to other reports

The Submissions Report has been completed and lodged concurrent with this Amendment Report. The Submissions Report contains the detailed responses to all submissions received during the EIS public exhibition and includes supporting information, where required. It also details further consultation undertaken since the EIS exhibition. It includes a:

- Specific response to each issue raised in the public submissions
- Specific response to each government agency issue raised.

[2] The visual amenity plantings are sometimes in no go areas, but specific protocols have been developed to ensure they are appropriate to the values of these areas

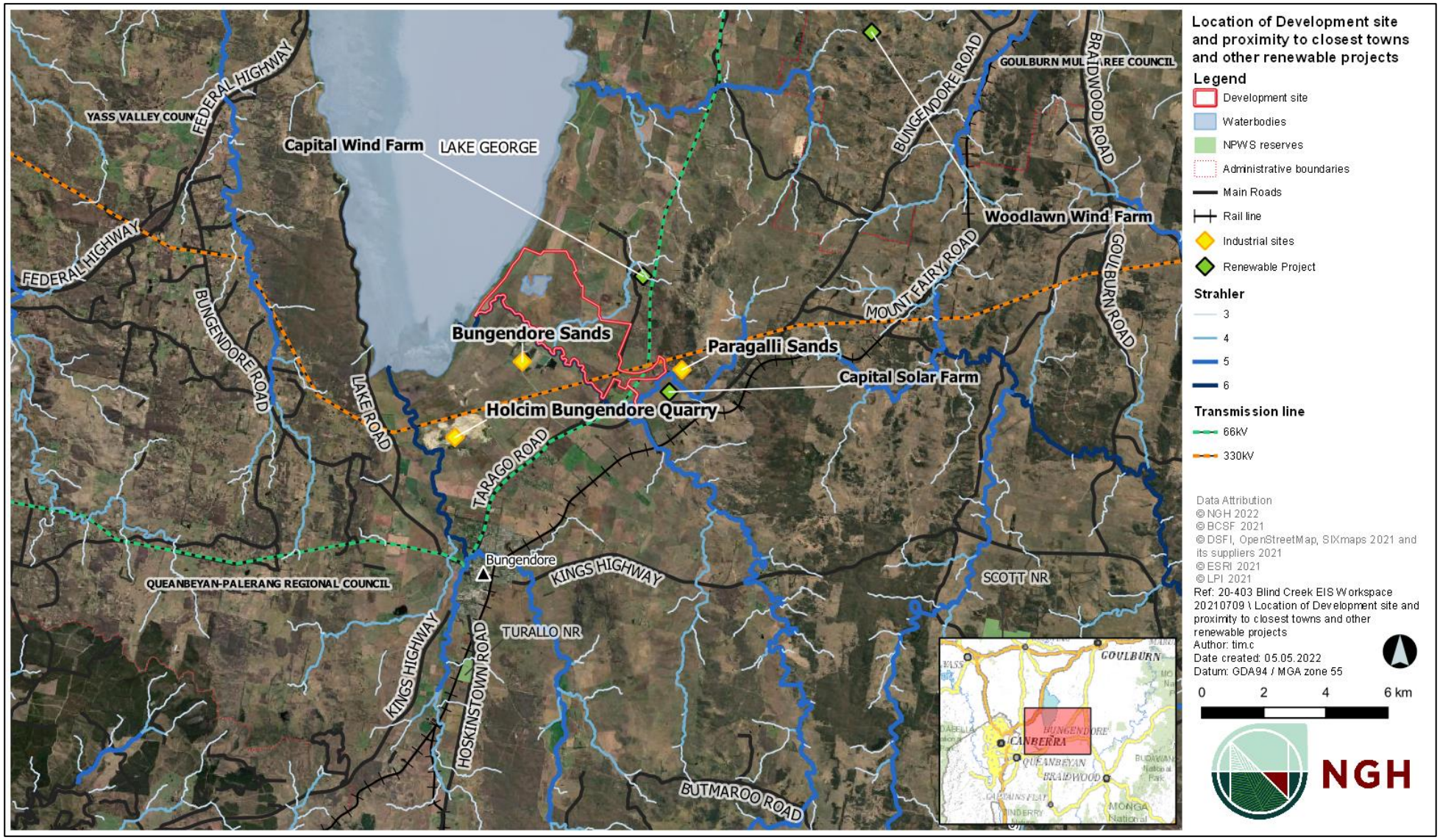

Figure 1-1 Locality and regional context of the proposed Blind Creek Solar Farm, as presented in the EIS

1.4. Proposed amendments

After consideration of public and agency submissions to the EIS, and more detailed development of the technical aspects of the Project, a number of amendments are proposed to the Project as described in the EIS. Proposed amendments to the Project include the following:

1. A commitment to royalty-per-tonne cargo payments to two local Councils to address the use of local roads, in response to Council submissions.
2. A commitment to a larger intersection treatment at the site access point, off Tarago Road, to improve safety.
3. A commitment to exclude solar module infrastructure within a corridor connecting the defined portion of Wrights Creek to the ephemeral wetland.
4. A commitment to enhance potential habitat and breeding areas for the White Fronted Chat.
5. Strengthening several mitigation measures which now specifically include the requirement for further agency or Council input in the detailed project planning, post approval.
6. A reduction of estimated construction water requirements and further information in relation to sourcing water for construction.
7. A commitment to exclude solar panels from elevated areas on or bordering Lot 17 DP535180 (above elevation 691m).

Additional amendments to the Project that are not a result of the submissions received on the EIS, rather a result of additional consultation and studies by the Applicant include:

8. Increasing the number of inverter stations and transformers from 85 to 93
9. Changing the requirement of the subdivision on Lot 17 DP 535180.
10. Decrease of the minimum panel spacing from 5.75m to 5.25m.

Refer to Table 1-1 and Figure 1-2 for a comparison of amendments to the Project and key site constraints.

Table 1-1 Comparison of amendments to the Project in terms of key parameters

	Scoping report	EIS Project	Amended Project	***Difference between EIS and Amended Project***
Proposed infrastructure				
Capacity of solar generation	350-400MW	Up to 350MW AC (420MW DC)	Up to 350MW AC (420MW DC)	***No change***
Development footprint area	1,183ha	680 to 700ha	682.5ha	***- 17.5ha****

	Scoping report	EIS Project	Amended Project	***Difference between EIS and Amended Project***
Exclusion zones				
High biodiversity values	-	46.06ha	46.06ha	***No change***
Waterways	-	4.2ha	57.2ha	***53.0ha***
High heritage values	-	479.6ha	479.6ha	***No change***
White Fronted Chat	-	-	33.86ha	***33.86ha***
Wrights Creek overland section	-	-	12.19ha	***12.19ha***
Visual offset	-	-	19.56ha	***19.56ha***
Water use requirements				
150ML	-	250ML for construction period	150ML for construction period	**-100ML**
200kL per year	-	200kL per year	200kL per year	***No change***

*The EIS presents a range of 680-700ha for the Development Footprint. Final calculation for the Development Footprint is 682.5ha

1.4.1. Justification of amendments

The proposed amendments represent:

- More certainty regarding the Project's commitment to repair damage that may be generated by construction traffic on Tarago Road, in the vicinity of the Project site
- Improved traffic safety outcomes, exceeding the best practice guidance provided by traffic specialists
- The detailed design will take into consideration the Non-riparian corridor works and activities averaging rule, thereby 50% of the outer riparian zone would be used for development with an equivalent area connected to the riparian corridor fully offset. The inner 50% of the riparian zone will be offset
- Greater opportunity for input of agencies as the Project moves forward into the detailed design and management stages
- Restore and protect 33.86 ha of White Fronted Chat breeding habitat
- More certainty regarding water use and supply options, and an overall reduction of 100ML of operational water
- Reduce visual impact for receivers along Lake Road.

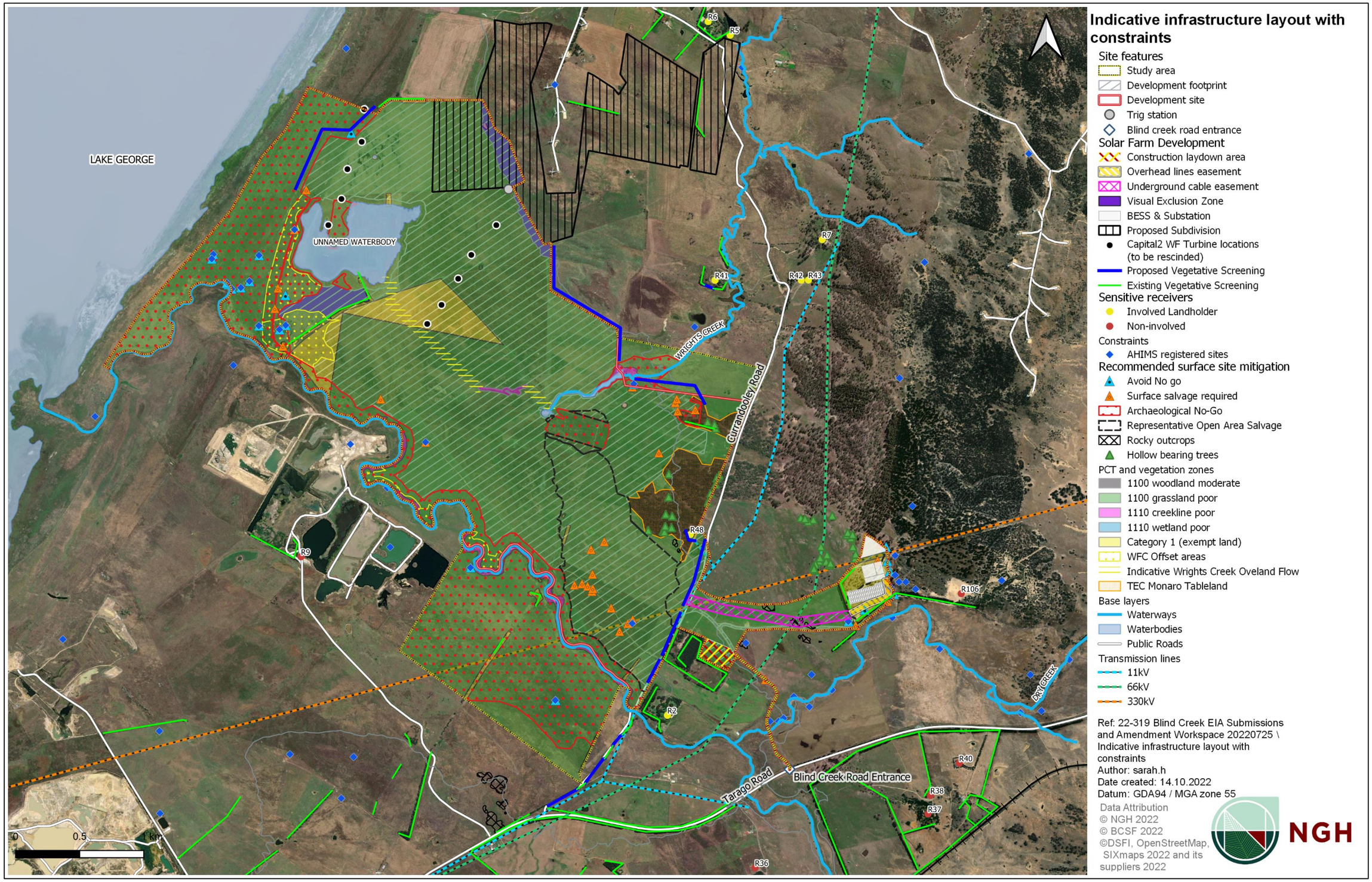

Figure 1-2 Indicative layout and site constraints (as amended)

1.5. Strategic context

1.5.1. Regional setting

The regional setting for the Project remains consistent with the EIS. A key feature summary of the Project as amended is detailed in Table 1-2 below:

Table 1-2 Key features summary of the Blind Creek Solar Farm

Blind Creek Solar Farm: Key features summary	
Nominal Capacity	Estimated capacity of up to 350MW AC (420MW DC)
Areas affected	Development Site approximately 1,026ha. Development footprint (the uppermost area of land that would be directly impacted by the Project); approximately 382.5ha.
Subdivision	The Project will require subdivision to separate a lot from the nearby Capital Wind Farm and 'shared network' assets. The remainder of the land is expected to be treated as a 'lease of premises' and will therefore not require subdivision.
Land zoning	Queanbeyan-Palerang Local Government Area (LGA), on land zoned RU1 Primary Production and C3 Environmental management.
Solar array	Single-axis tracking system with approximately 850,000 panels, up to **93** inverters and transformers in containers, distributed throughout the array, for power conversion.
Transmission line connections, substation and switchyard	To existing 330 kV transmission line that traverses the site, via a purpose-built on-site switchyard and adjacent substation (approximately 1ha). The substation will have a nominal transfer capacity of approximately 350MVA including up to 4 transformers.
Battery storage (BESS)	Li-ion battery cells with nominal capacity of 300MW and 2-hour duration, either grouped in containerised modules near the substation and / or distributed throughout the array.
Site access and intersection upgrades	Site access off Tarago Road (administered by Queanbeyan Palerang Regional Council) and Blind Creek Road Entrance (private road). A new left turn passing lane is required to allow passing traffic from Bungendore direction.
Internal tracks and waterway crossings	Approximately 6.6km of upgrades to existing tracks and approximately 20km of new internal tracks including use of Currandooley Road, and upgrades to the existing low-level crossing on Blind Creek (Bridge Creek) and a new crossing on Wrights Creek.
Ancillary facilities	Permanent operations and maintenance facility with staff amenities and vehicle parking; agricultural style fencing around the array and 2.3m high chain wire

Blind Creek Solar Farm: Key features summary	
	security fence around the substation. Night lighting around the buildings and substation, switched on for maintenance and emergency purposes only. Task lighting will be installed at power conversion units. CCTV security cameras at the entrance gate and around the substation and battery storage, and O&M facilities and office areas.
Construction timing and hours	Approximately 12 to 18 months (peaking during the initial 6 – 9 months). Standard construction hours: Monday to Friday 7am to 6pm, and Saturday 8am to 1pm. No work on Sundays and Public Holidays.
Operation timing and hours	Nominally 35 years. Future infrastructure upgrades may extend the operational life of the Project. The Project would operate continuously.
Decommissioning and rehabilitation	All infrastructure removed from the site including DC cabling and AC above-ground cabling. AC cabling buried deeper than 500mm would not be removed. The site would be rehabilitated to a safe, stable and non-polluting state, consistent with future land use requirements.
Employment	Up to approximately 300 full-time jobs during peak construction. Approximately 5 full-time equivalent jobs during operation.
Capital investment value	Estimated $503,679,005 million AUD

1.5.2. Policy context

The strategic policy context of the Project remains consistent with Chapter 2 (Strategic context) in the Blind Creek Solar Farm EIS (NGH, 2022). The passing of the **Climate Change Bill 2022** through the Australian Senate on 8 September 2022 serves to reinforce the importance of renewables projects such as the Blind Creek Solar Farm. The BCSF will contribute to Australia's greenhouse gas emissions reduction targets of a 43% reduction from 2005 levels by 2030 and net zero by 2050.

2. Descriptions of amendments

2.1. Summary of amendments

In response to the public and agency submissions, the Applicant has made minor amendments to the Project as originally described and assessed in the EIS. These reflect the Applicant's desire to respond to agency input as well as ensure social licence, responding to the local values identified as well as specific concerns raised by the community.

Specifically, the amendments now include:

1. A commitment to royalty-per-tonne cargo payments to two local Councils to address the use of local roads, in response to Council submissions
2. A commitment to a larger intersection treatment at the site access point, off Tarago Road, to improve safety
3. A commitment to exclude solar infrastructure within a corridor connecting the defined portion of Wrights Creek to the ephemeral wetland. The average exclusion will not be less than 40m each side of the creek bank (where defined) or nominal centreline where the bank is undefined. For the avoidance of doubt, cables and tracks may cross this exclusion provided they are designed not to impede flows
4. A commitment to enhance potential habitat and breeding areas for the White Fronted Chat
5. Strengthening several mitigation measures which now specifically include the requirement for further agency or Council input in the detailed project planning, post approval
6. A reduction of estimated construction water requirements and further information in relation to sourcing water for construction
7. A commitment to exclude solar panels from elevated areas on or bordering Lot 17 DP535180 (above elevation 691m) to reduce visual impacts to receivers on Lake Road, and west of an established line of elm trees between Butmaroo Creek and the ephemeral wetland.

Additional amendments to the Project that are not a result of the submissions received on the EIS, rather a result of additional consultation and studies by the Applicant include:

8. Increasing the number of inverter stations and transformers from 85 to 93
9. Changing the requirement of the subdivision on Lot 17 DP 535180
10. Decrease of the minimum panel spacing from 5.75m to 5.25m.

The amendments have not changed the expected impact area and capacity of the Project. The Applicant does not wish to reduce their overall proposed development footprint for the following reasons:

- Reducing the footprint on the proposed Wrights Creek flow path would limit the Applicant's ability to micro-position infrastructure, and allows for flexibility in design, in accordance with the *Guidelines for Controlled Activities on Waterfront Lands 2018.* In addition, the overall design has not been finalised. As such, the location of roads and cables is unknown.
- Reducing the footprint above 691 m within Lot 17 limits the Applicant's ability to design and install proposed perimeter roads, asset protection zones, boundary fencing etc.

As detailed within the Biodiversity Development Assessment Report (BDAR), reducing the size of the development footprint will bear no impact on the offset obligations or biodiversity impacts, as

the vegetation integrity score for the area is less than 15 or classified as Category 1 exempt lands. As such, no ecosystem credits are generated for the development footprint.

Refer to Table 1-1 and Figure 1-2 above for a comparison of amendments to the Project and key site constraints.

2.2. Detailed descriptions

2.2.1. A commitment to royalty payments to local Councils to address the use of local roads, in response to both local Council submissions

Submissions received on the EIS noted the poor quality of the road pavement within the Queanbeyan Palerang Regional Council (QPRC) and the Goulburn Mulwaree Council (GMC) Local Government Areas (LGA).

While the Traffic Impact Assessment (TIA) has determined the level of service is sufficient, in response to agency and community concerns regarding traffic, the Applicant now commits to providing a royalty payment based on construction traffic cargo weight on Tarago Road to address road pavement issues specifically. The final payment agreement will be developed in consultation with QPRC and GMC.

Mitigation Measures **AT5** and **AT6** (Appendix C) recommend the following:

- Prior to commencement of delivery of materials to Site, the Proponent shall undertake a Road Dilapidation Report of the sealed road between Tarago, Bungendore and the Site entrance within the GMC and QPRC areas. The Report shall assess the current condition of the road using a method agreed with the relevant road authorities. The final Report must be submitted to the relevant road authorities for information prior to the commencement of deliveries to Site.
- Within three months after the Project achieving Commercial Operation Date, the Proponent shall provide to the relevant road authorities (GMC and QPRC) a royalty payment to contribute to the upkeep of the Tarago Road between Tarago and the Site entrance. The payment shall be provided as a royalty per tonne of construction materials imported into the Site, at a rate to be agreed between the Proponent and the road authorities prior to commencement of delivery of materials to Site. The rate shall be based on the actual tonnage of materials delivered to the Site.

2.2.2. A commitment to a larger intersection treatment at the site access point, off Tarago Road, to improve safety

Following the TfNSW response to submissions, the intersection design at Tarago Road has been amended. TfNSW noted that the length of the BAR treatment should be extended to comply with Figure A 28 of Austroads Guide to Road Design Part 4. The length for the turning path (X) should be added and the tapers should be designed for a design speed of 110kph. In addition, the table drains on both sides of Tarago Road will need to be reinstated.

The plan has been updated according to Figure A 28 of Austroads Guide to Road Design Part 4 for a design speed of 110kph. The updated intersection design has been completed by PHL surveyors and included in Appendix E.3.

The proposed intersection upgrades are entirely within the historically disturbed road reserve. The Applicant has drafted a discussion paper on the historical disturbance of the intersection, detailed within Appendix E.5. No additional impacts to biodiversity will result from proposed works within the historically disturbed road reserve.

In addition, consultation with the Registered Aboriginal Parties (RAPs) has commenced to notify them of future potential works.

Updated recommendations have been adopted as new mitigation measure **AH11** and **AH13** (Appendix C).

2.2.3. A commitment to exclude solar infrastructure within the Wrights Creek overland flow path, creating an 80m wide unimpeded corridor

It was identified in the Hydrological and Hydraulic Analysis for the EIS (Footprint , 2022) that Wrights Creek does not have a defined channel through the site. It instead exhibits a dispersed flow that travels overland either to the northwest of site towards the wetland or southwest to Butmaroo Creek. Footprint (2022) concluded that two clear channels where present within the Project site which were excluded from the Development footprint.

During the submissions phase DPE Water provided the following response:

DPE Water acknowledge that Wrights Creek is a defined creek upstream of the site but does not have a defined channel (bed/banks or vegetation changes) through the site. The site serves as a broad drainage path to Butmaroo Creek/Lake George. DPE Water recommends that a designated flow path which does not contain solar arrays be provided through the site to allow for an unimpeded path flow downstream. The width of the flow path should give due consideration to the Guidelines for Controlled Activities on Waterfront Land (NRAR, 2018) *as well as site merits.*

The Applicant has now committed to designing the Project and presenting to DPE Water for comment in the detail design phase prior to construction:

- Provide a flow path for Wrights Creek, through the solar arrays to the identified wetland and beyond, which does not contain solar panels. This flow path is to be based on hydrology assessments to ensure the natural flow path is maintained in accordance with the Guidelines for Controlled Activities on Waterfront Land (NRAR 2018).
- The detailed design will take into consideration the Non-riparian corridor works and activities averaging rule, thereby 50% of the outer riparian zone would be used for development with an equivalent area connected to the riparian corridor fully offset. The inner 50% of the riparian zone will be offset.
- Subsurface access across the overland flow path will form a requirement of the Project.

An indicative flow path is shown in the Constraints Map (Figure 1-2) above.

The hydrology assessment and design of the overland flow path will be finalised in consultation with DPE Water and Fisheries through the detailed design process, prior to any construction. These requirements have been included as Mitigation Measures **H12** and **H14** (Appendix C).

2.2.4. A commitment to offset potential habitat and breeding areas for the White Fronted Chat

Due to timeline issues that do not allow for further targeted surveys for the White-fronted Chat during the breeding season (September to March) the updated BDAR and Biodiversity Management Plan (BMP) have adopted the following approach, in agreement with BCD, to White-Fronted Chat impacts.

1. Undertake immediate survey for the extent of Scotch Thistle within the Subject Land. This could be undertaken on foot, in vehicle or using a Remotely Piloted Aircraft System (RPAS) to maximise speed of survey.

2. Assume that all areas of Scotch Thistle are WFC breeding habitat

3. Develop a costed BMP which aims to restore at least an equivalent amount of White Fronted Chat breeding habitat within the Development Site but outside the Subject Land in the avoided areas such as –

- Butmaroo and Wright Creek riparian set back area,
- the remnant woodland (PCT 1100) at the eastern end of the Subject Land,
- the perimeter of the northern wetland and further north until the shore of Lake George.

Surveys for the extent of Scotch Thistle within the Subject Land were undertaken instead. All areas of Scotch Thistle were assumed as breeding habitat for the Chat. Survey of areas containing Scotch Thistle took place on 13 July 2022 by an NGH ecologist on foot and by vehicle using GPS tracking using binoculars to survey due to access issues.

A BMP was then developed in consultation with BCD (Included in Appendix E-I), which aimed to restore at least an equivalent amount of White Fronted Chat breeding habitat within the Development Site but outside the Subject Land in the avoided areas around Butmaroo Creek and the perimeter of the northern wetland.

The BMP is currently drafted as a final copy for the purpose of this Amendment Report (Appendix E.1). The BMP will be updated to be in line with the Conditions of Consent, in consultation with BCD prior to any construction. Updated mitigation measures to address WFC breeding habitat requirements have been include as Mitigation Measures **B11** and **B15** (Appendix C).

2.2.5. Strengthening several mitigation measures which now specifically include the requirement for further agency or Council input.

As a result of submissions and additional consultation, the Applicant has committed to further agency, community, specialist or Council input into studies and/or management plans post-approval of the Project. The updated mitigation measures are detailed below in Table 2-1. New text is shown **in bold** and removed text shown with ~~strikethrough~~.

Table 2-1 Updated mitigation measures

No.	Mitigation measures	Phase
	Visual Amenity	
V1	A Landscape Management Plan (LMP) ~~is recommended~~ **will be developed in consultation with a landscape architect** to address the 'as built' visual impacts of the proposed solar farm. The plan ~~should~~ **will** include: • On-site vegetation screening generally in accordance with **plan presented in the Visual Impact Assessment, and the final constraints/layout map**. This would include details of selected species aimed at 'breaking up' not blocking views of onsite infrastructure. • ~~Vegetation screening along Butmaroo Creek would avoid Archaeological and ecological sensitive areas. Consultation with the RAPS will be undertaken to inform the location of this vegetation screening.~~ • **Vegetation screening along Butmaroo Creek will be in accordance with the Addendum ACHAR, including the**	Design Construction

No.	Mitigation measures	Phase
	following: • **A surface collection of registered Aboriginal objects and unexpected finds within the planting corridor must take place prior to any works taking place** • **The planting of native vegetation must be performed by hand and using hand tools to minimise the potential impacts to unrecorded Aboriginal objects.** • **The proponent should consider engaging representatives from the local Aboriginal community to be present or assist with the vegetation planting for screening and the White Fronted Chat habitat offset associated with the proposed Blind Creek Solar Farm.** • Location of planting locations, generally expected to be between the security fencing and the property boundary. • Band width, generally expected to be approximately 6m with three (3) rows of vegetation in high visual impact areas and two (2) rows in low / moderate visual impact areas. • Maintenance schedule for a period of 24 months. Maintenance should generally include the removal of weeds and replacement of dead or non-performing plants. • **Measures to ensure effective screening within three years of commencing operations.** The plan would be implemented nearing completion of construction and would be subject to agreement with the relevant landowner.	
AH12	**Where plantings are required for screening or as an offset habitat for the White Fronted Chat within the Development Site, the following is recommended:** **a) A surface collection of registered Aboriginal objects and unexpected finds within the planting corridor must take place prior to any works taking place** **b) The planting of native vegetation must be performed by hand and using hand tools to minimise the potential impacts to unrecorded Aboriginal objects.** **c) The proponent should consider engaging representatives from the local Aboriginal community to be present or assist with the vegetation planting for screening and the White Fronted Chat habitat offset associated with the proposed Blind Creek Solar Farm.** **Any unexpected finds collected during the surface collection or hand digging stages of the works should be held in temporary storage by NGH until the Proponent and the local Aboriginal community come to an agreement on how they should be managed.**	**Pre-construction** **Construction**

No.	Mitigation measures	Phase
H12	All proposed infrastructure associated with the proposed development should be setback from existing watercourses at the recommended riparian corridor widths specified in Table 1 of the Guidelines for Riparian Corridors on Waterfront Land (DPI Water, 2012) as provided below. **This takes into account riparian setbacks for Butmaroo Creek and the ephemeral wetland.** In accordance with the guidelines the width of the vegetated riparian zone (VRZ) should be measured from the top of the highest bank on both sides of the watercourse. **For the undefined overland section of Wrights Creek, a connection, free from solar panels shall be maintained between its defined section and the ephemeral wetland. Given the defined section of Wrights Creek is a 4th order stream, the average exclusion will not be less than 40m each side of the creek bank (where defined) or nominal centreline (where undefined), and in no place less than 20m (i.e. the non-riparian corridor works and activities averaging rule). For the avoidance of doubt, cables and tracks may cross this exclusion provided they are designed not to impede flow. Final design will be informed by a hydrology assessment to ensure the natural flow path is maintained. The final design will be developed in consultation with DPE Water prior to construction.**	Design Construction
AT5	**Prior to commencement of delivery of materials to Site, the Proponent shall undertake a Road Dilapidation Report of the sealed road between Tarago, Bungendore and the Site entrance within the Goulburn Mulwaree Council and Queyanbean-Palerang Regional Council areas. The Report shall assess the current condition of the road using a method agreed with the relevant road authorities. The final Report must be submitted to the relevant road authorities for information prior to the commencement of deliveries to Site.**	**Pre-construction** **Post-construction**
AT6	**Within three months after the Project achieving Commercial Operation Date, the Proponent shall provide to the relevant road authorities (Goulburn Mulwaree Council and Queanbean-Palerang Regional Council) a royalty payment to contribute to the upkeep of the Tarago Road between Tarago and the Site entrance. The payment shall be provided as a royalty per tonne of construction materials imported into the Site, at a rate to be agreed between the Proponent and the road authorities prior to commencement of delivery of materials to Site. The rate shall be based on the actual tonnage of materials delivered to the Site.**	**Pre-construction** **Post-construction**
AT6	**Prior to construction, the EPC Contractor is required to complete a Heavy Vehicle Access Study in consultation with QPRC and GMC.**	**Pre-construction**
S3	The Employment and Accommodation Strategy will provide further detail on	Design,

No.	Mitigation measures	Phase
	accommodation providers. The strategy will include engagement with accommodation providers to avoid negatively impacting on tourism opportunities and any vulnerable populations. **The Applicant will consult with QPRC during the development of the Employment and Accommodation Strategy, and throughout Project construction, to minimise adverse impacts on both the rental market, and on vulnerable populations who may be temporarily housed in short-term accommodation.**	Construction, Operation
S5	**Bungendore Sands Quarry are considered a key stakeholder in the project and will be included in future engagement activities.**	**Design** **Construction** **Operation**
BF17	**An Emergency Services Information Package (ESIP) be prepared in accordance with FRNSW fire safety guideline – Emergency services information package and tactical fire plans.**	**Pre-construction**

2.2.6. A downward revision of construction water requirements and further information in relation to sourcing water for construction.

Through further investigation by the Applicant and in response to submissions made by DPE Water the Applicant has revised and reduced their construction water requirements and identified two water sources that would be able to meet the water demand. Total construction water required has been revised from 250ML to 150ML over the 12-18month construction period.

The Applicant has discussed the feasibility of sourcing water from the Bungendore alluvial aquifer for the project with a licence holder that currently operates in the area. The licence holder confirmed availability of water under their licence, and is willing to provide water on commercial terms. The commercial provider has indicated that sufficient entitlement for construction could be supplied.

The maximum extraction from aquifer interference would be 150ML, if the aquifer is the only option used for water sourcing. A second water source has also been investigated. This water source is a dam owned by an involved landholder which has 40ML of capacity and located at -35.1365, 149.4770.

The proposed construction water intake does not exceed the entitlements of the water licence. As such, no additional impact assessment is required. The Project will no longer consider the establishment of a new bore to access water.

Ongoing water demand during the Operation of BCSF would require approximately 200 kL per year of non-potable water. This would be sourced from a rainwater tank attached to the O&M building. Water may be required to be sourced commercially in periods of drought.

2.2.7. A commitment to exclude solar panels from elevated areas on Lot 17 DP535180 (above elevation 691m) to reduce visual impacts to receivers on Lake Road.

The Applicant has also made a commitment to reduce potential visual impacts from Lake Road (which overlooks the lake), by avoiding placing panels above the 691m contour line in areas within or bordering Lot 17//535180 and west of the established Elms between the wetland and Butmaroo Creek. Refer to Figure 2-1 below.

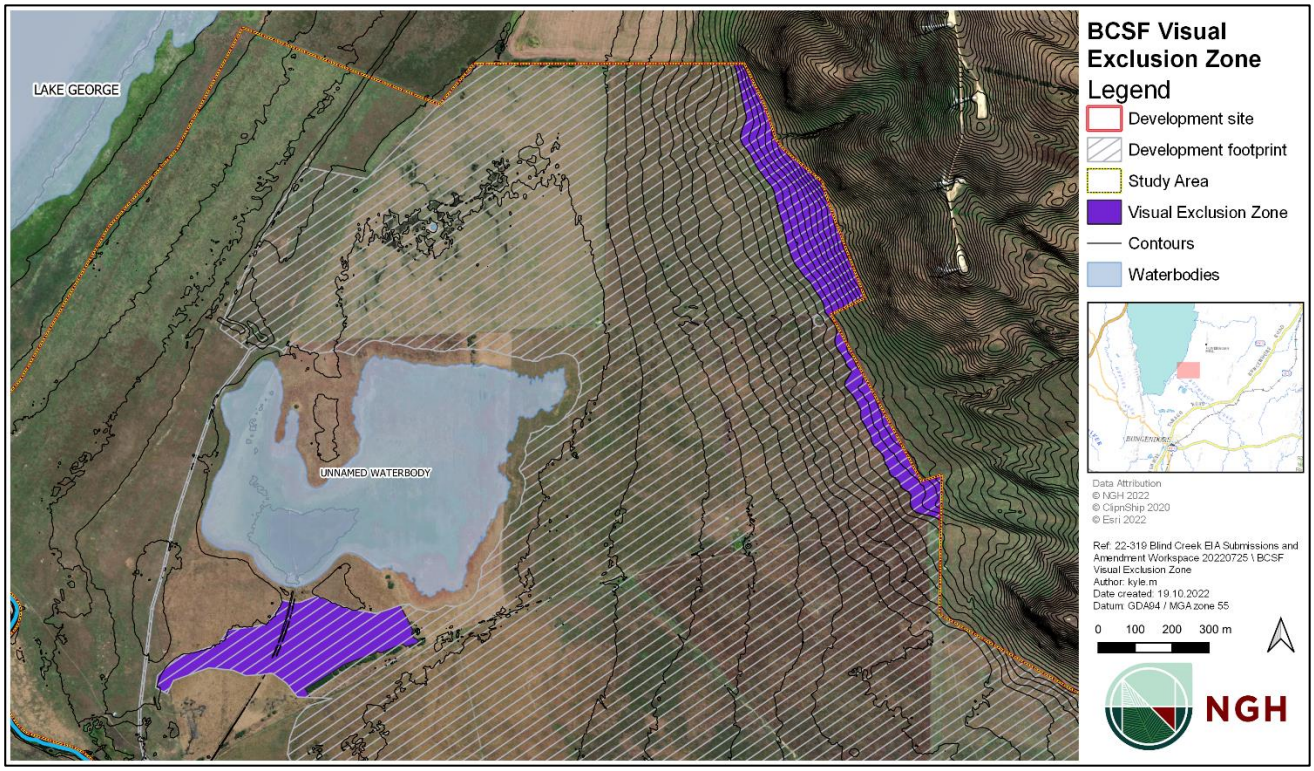

Figure 2-1 Visual exclusion zone

These amendments were proposed in consultation with landholders on Lake Road, with a view of Lake George.

2.2.8. Increased the number of inverters and PCUs

Through revision of detail design, the Applicant has revised the number of inverters from 85 to 93. With the increase in inverters, there is also an increase in batteries. The approved EIS included two strategies for batteries (refer Figure 1-2)

- array inclusion zone – batteries are included within the arrays and are DC coupled with each inverter
    - **Original EIS** 170
    - **Modification** 435
- Batteries contained within a single battery energy storage system
    - **Original EIS** 200 in battery energy storage system
    - **Modification** 512 in array inclusion zone

The outcome of the noise assessment indicates that the predicted noise impacts to the identified receiver locations with the alternative plant and equipment that the noise impact were found to be the same or lower level for all identified receiver locations (refer Appendix E.7).

2.2.9. Change subdivision requirements

The proposed subdivision on Lot 17 DP535180 has changed due to the requirements of the Landowner. It is now proposed to divide Lot 17 into two parcels:

- Lot 171 being 40.1 ha, and
- Lot 172 being 186.4 ha

The subdivision is required to separate out the leasing requirement for the Capital Wind Farm, who occupy a lease on the proposed Lot 171.

BCSF will occupy a lease for the area of the proposed Lot 172 within the Development Site boundary, being 39.5 ha.

As detailed within the EIS, the minimum lot size for land zoned RU1 is 40 hectares under the *Palerang Local Environmental Plan 2014* (Palerang LEP).

The subdivision plan in Figure 2-2 below and in Appendix E.7 shows Lot 17 DP 535180 to be subdivided into two lots, with the minimum lot size being greater than 40 hectares. As such, the subdivision is permitted with consent under the Palerang LEP. Pending approval of the Project, the subdivision would be administered through consultation with Queanbeyan-Palerang Regional Council.

2.2.10. Decrease minimum pitch/spacing of panels to 5.25m

Due to the introduction of the visual exclusion zones and the Wrights Creek overland flow path, it is potentially required to reduce the pitch/spacing of PV panels to 5.25m

This is required to ensure the viability of the Project, maintain the proposed capacity of 350MWAC, and due to advancing and more efficient technology coupled with refined detail design.

The Glint and Glare Assessment as presented in the EIS assumed a minimum pitch of 5.25m, with a maximum of 7.0m. As such, no additional assessment is required.

The Visual Impact Assessment (VIA) as presented in the EIS assumed a minimum pitch of 5.75m, with a maximum of 9.0m. The VIA has been updated to reflect the decrease in pitch, with no additional impacts expected (refer Appendix E.2).

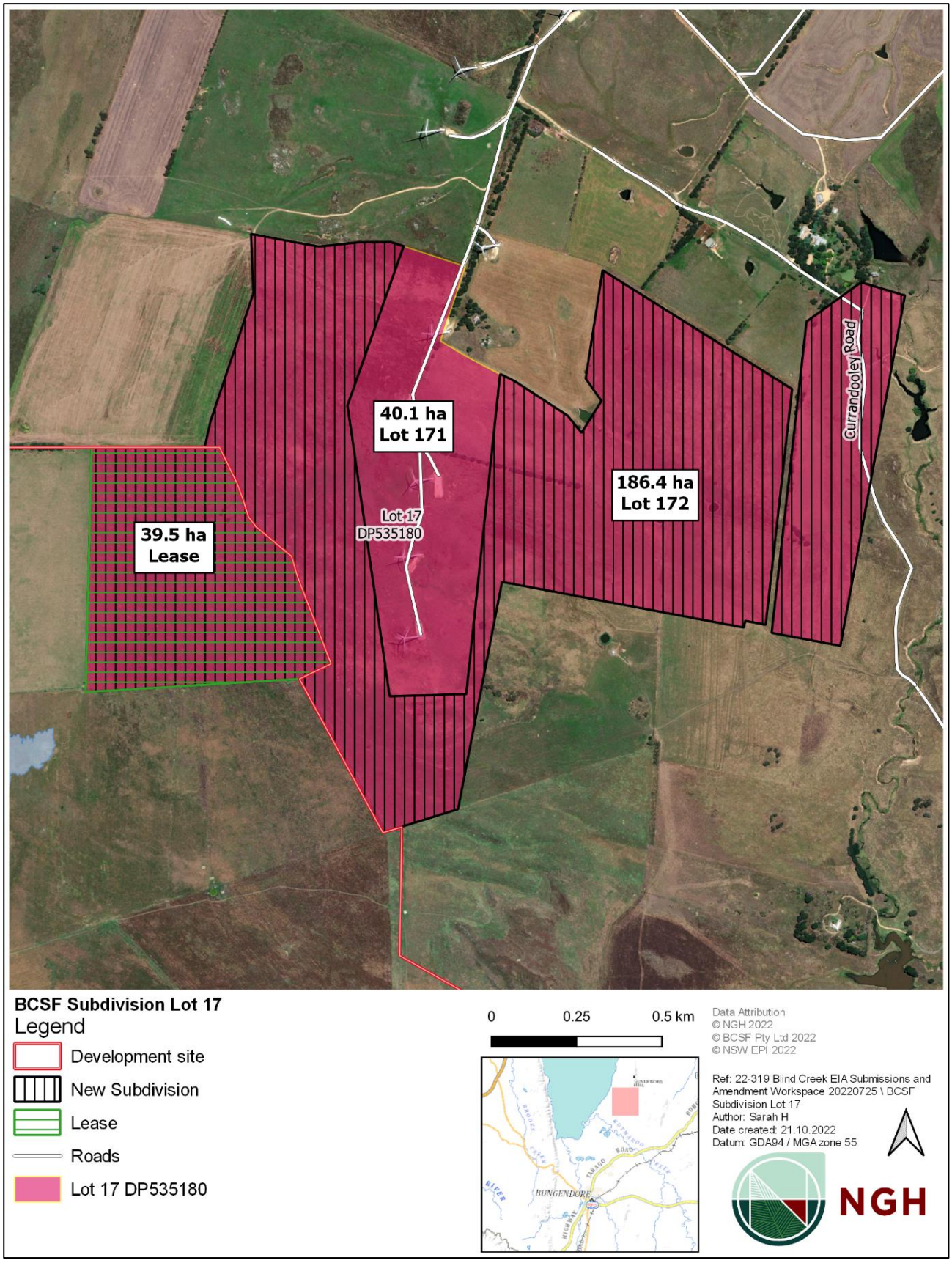

Figure 2-2 Subdivision Plan

3. Statutory context

The statutory context of the Project remains consistent with Section 5 Appendix C of the EIS (NGH, 2022), as summarised below:

Table 3-1 Summary of statutory context

Act	Approval Pathway
Environmental Planning and Assessment Act 1979 (EP&A Act)	Section 4.36 of the EP&A Act provides that a development would be State Significant Development (SSD) if it is declared to be SSD by a SEPP. Section 4.12 (8) of the EP&A Act requires an SSD DA to be accompanied by an EIS prepared in accordance with the EP&A Regulation. This EIS is intended to meet the objectives and assessment requirements of the EP&A Act, and the EP&A Regulation and *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP).
State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP)	Schedule 1 and Schedule 2 of the Planning Systems SEPP identifies development which is SSD due to the size, economic value or potential impacts of the development. Clause 20 of Schedule 1 of the Planning Systems SEPP defines SSD as including: *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:* *a) has a capital investment value of more than $30 million…*
State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP)	Part 2.3 Division 4 of Transport and Infrastructure SEPP relates to electricity generating works in any land in a prescribed rural, industrial or special use zone. The Land use zone of the Development site is RU1 and C3. RU1 is a prescribed zone. However, C3 is not a prescribed zone. The declaration of the Project as SSD extends to all parts of the Project. Section 2.121 of the Transport and Infrastructure SEPP requires certain developments to be referred to TfNSW. Electricity generation or solar energy systems are not included within the SEPP. However, the Project would result in the generation of fewer than 50 vehicles per hour during peak construction and operation. As such, the requirements under Section 2.121 of the SEPP do not apply.

4. Community engagement

All consultation undertaken with the community and government agencies since public exhibition of the EIS is documented within the Submissions Report. Only consultation specific to the amendments discussed in this report is extracted below.

4.1. Community consultation

Table 4-1 Outcomes of community consultation

Stakeholder group	Date	Consultation methods and outcomes
Open Day / site inspection	During EIS exhibition - 25 June 2022.	An open day was held on Saturday 25 June 2022 between 10am - 3pm, to give the local community another opportunity to visit the Project site and to get up to date information about the Project. All stakeholder neighbours who are part of the CBSS were invited. The open day was advertised by BCSF on 8 June in the Regional Independent / local paper as well as a media release issued by BCSF which also ran on 8 June. This issue of the Regional Independent also included the QPRC exhibition notice. A teacher from the local Bungendore primary school asked if we could involve school children in the pre-construction heritage survey. BCSF supports this idea of cultural sharing and agreed to progress with Indigenous Elders if the project is approved.
Near neighbour meetings		Three near neighbours (R36, R40, plus one property with no house) on the southern side of Tarago Road claim the project will impact on future rezoning and land values. Enquiries with QPRC indicate there are no plans to rezone this rural land.
Landowner - subdivision	During EIS exhibition	The Applicant has had discussions with the Landowner, who has requested a change to the subdivision.
CBSS recipients	During EIS exhibition	Discussion and finalisation of 36 CBSS stakeholder agreements / Deed Polls.
Clean Energy Council 2022 Awards	During EIS exhibition	BCSF was the 2022 recipient of the Clean Energy Council's Community Engagement Award (Clean

Stakeholder group	Date	Consultation methods and outcomes
		Energy Council Awards 2022 | Clean Energy Council) for its "***pioneering solar farm benefit sharing scheme and agrisolar initiatives***."

4.2. Agency consultation

Table 4-2 Outcomes of agency consultation

Agency stakeholder	Date	Consultation comments
Biodiversity Conservation Division (BCD)	Draft BMP sent to BCD on 29 August 2022 Amended draft BMP sent to BCD 01 September 2022 Response received 9 September 2022 Final BMP sent to BCD on 27 September 2022	The draft Biodiversity Management Plan (BMP) was sent to BCD on 29 August 2022, with an amended version sent on 1 September 2022. A response from BCD outlining deficiencies in the BMP was received on 9 September 2022. NGH addressed comment from BCD and sent the final BMP to DPE on 27 September 2022. See final BMP in Appendix E.1.
Queanbeyan Palerang Regional Council (QPRC)	Teams meeting 15 August 2022 Updated intersection treatment sent via email Draft RTS sent via email1 September 2022 Response received 6 September 2022 Email sent regarding royalty payment 19 September 2022	A TEAMs meeting between representatives from BCSF (the Applicant), Octopus, NGH and QPRC was conducted. The QPRC submission was discussed, point by point, with responses detailed in the RTS below. In addition, the Applicant offered to send the draft RTS to Council for their early consideration prior to formal lodgement and exhibition. A copy of the proposed intersection treatment was followed shortly via email. The Draft RTS was then sent to QPRC on 1 September via email for their early consideration. QPRC responded on 6 September, seeking clarification and correction of the location of the future investigation area for the Bungendore Structure Plan. The Applicant sent an email to QPRC on 19 September to detail the proposed royalty

Agency stakeholder	Date	Consultation comments
		payments for use of the roads, rather than completing a dilapidation report and road repair.
DPE water	Teams meeting 5 August 2022 Updated Project sent 30 August 2022 Response received 7 September 2022	A meeting was held between representatives from BCSF (the Applicant), NGH and DPE Water. It was accepted in the meeting that there was a historical error in the watercourse mapping in relation to Wrights Creek and flow into Butmaroo Creek. DPE Water accepted the overland nature of flow in the site from Wrights Creek to the northern wetland. However, DPE Water requested that the overland flow be treated like a 4th order stream in line with the Guidelines for Controlled Activities on Waterfront Lands and requested an 80m flow path from Wrights Creek to the wetland, free of all solar panels. It was noted on the day that this was not due to any geomorphological reasoning but purely administering the requirements of the guidelines. In response, the Applicant drafted an alternative approach, noting that its "*recommendation offers meaningful protection of Wrights Creek and its riparian zone".* As an alternative to DPE Water's recommendation to preserve an 80m wide pathway through the solar array free from solar panels, the Proponent proposed that an 0.9 km section of Wrights Creek could be fenced off to exclude livestock and is revegetated with native vegetation with the objective of improving the shape, stability (or geomorphic form) and ecological functions of the watercourse for the life of the project. This recommendation was sent to DPE Water and DPIE via email on 30 August 2022. A response was received on 7 September, stating the proposed alternative approach did not adequately address the recommendations for activities on waterfront land. DPE Water reiterated the requirement to provide an unobstructed flow path for Wrights Creek.
Goulburn Mulwaree Council (GMC)	Email sent regarding royalty payment 19 September 2022	The Applicant sent an email to GMC on 19 September to detail the proposed royalty payments for use of the roads, rather than

Agency stakeholder	Date	Consultation comments
	Response received 23 September 2022	completing a dilapidation report and committing to road repairs. A response received from GMC on 23 September was receptive to the concept of royalty payments. This aligns with similar arrangements BCSF have proposed to QPRC, although Council noted there will need to be an understanding of the road condition prior to construction commencing.

Registered Aboriginal Parties (RAPs)

Since the submission of the EIS and in preparation for the RTS and this AR, the RAPs for this Project were contacted notifying them of all the proposed amendments:

- On 1 September 2022, a letter to each RAP who registered their interest with the Blind Creek Solar Farm Project was sent a letter via email, notifying them of proposed amendments to the Project.
- On 27 September, and addendum to the Aboriginal Cultural Heritage Assessment Report, detailing the amendments, risk and updated mitigation measures were sent to the RAPs. The review period for the addendum closed 27 October 2022.

Consultation from some RAPs was received by the closing date. The RAPs that responded stated that they had no issues with the draft document and agreed with the recommendations. However requested they have the opportunity to gather resources that might be removed (i.e. soft bark eucalypts) from the development site.

Updated mitigation measures included in the RTS in response to the addendum ACHAR include:

- Vegetation screening along Butmaroo Creek will be in accordance with the Addendum ACHAR, including the following:
  - A surface collection of registered Aboriginal objects and unexpected finds within the planting corridor must take place prior to any works taking place
  - The planting of native vegetation must be performed by hand and using hand tools to minimise the potential impacts to unrecorded Aboriginal objects.
  - The proponent should consider engaging representatives from the local Aboriginal community to be present or assist with the vegetation planting for screening and the White Fronted Chat habitat offset associated with the proposed Blind Creek Solar Farm.
  - Where possible, consideration should be given to the request for collection of native vegetation that is to be removed as part of the project development.

The Applicant will continue to consult with the RAPs through the pre-construction and construction process

5. Assessment of impacts

5.1. Biodiversity

5.1.1. Background

Changes to assessment

In response to submissions, BCD highlighted issues surrounding the White Fronted Chat (WFC). These issues were addressed by NGH by undertaking the suggested surveys and assumptions suggested by BDC. These findings and plans are presented in the revised BDAR v1.2.

NGH prepared the Biodiversity Development Assessment Report (BDAR v1.2) of the Blind Creek Solar Farm (NGH, 2022), submitted to support the EIS (NGH, 2022). This BDAR did not include targeted surveys for the WFC and did not undertake surveys of the extended intersection treatment as Tarago Road. Following submissions received by BCD and TfNSW detailed in Section 2.2.2 and 2.2.4 changes to the assessment the BDAR has been updated and provided in Appendix E.1. (BDAR v2.0) Key revisions to the BDAR include:

- An updated targeted survey for the WFC, a new exclusion zone where their habitat will be retained and offset and Biodiversity Management Plan (BMP).
- Development of a Biodiversity Management Plan
- Vegetation planting has been devised in conjunction with RAP inclusion

The remaining content of the BDAR and the biodiversity impact assessment section of the EIS remain unchanged (NGH, 2022).

Statutory requirements

The assessment method used to update the biodiversity impact assessment is the Biodiversity Assessment Methodology (BAM) 2020, pursuant to the Biodiversity Conservation Act 2016. As required by the BAM, biodiversity impacts have been assessed through comprehensive mapping and assessment and for impacts that could not be avoided, an offset obligation is calculated.

An additional targeted field survey was undertaken for the WFC (in the form of Scotch Thistle habitat) on 13 July 2022.

All BCD comments provided during public exhibition are addressed in BDAR v.2.0.

5.1.2. Key findings on the assessment

- Construction of the solar farm will have a direct impact on the White Fronted Chat
- Areas with Scotch Thistle is assumed suitable breeding habitat
- 33.86ha of Scotch Thistles is identified within the development footprint
- Habitat enhancement activities will be of equal size outside the development footprint, but within the development site
- Enhanced habitat would be restored using hand tools and tube stock to minimise soil disturbance in sensitive areas.

White Fronted Chat survey

The White Fronted Chat was observed by qualified NGH ecologists and BCD representatives within the Development Site during November 2021. Due to timeframe constraints and in consultation with the BCD, it was concluded that all areas of Scotch Thistle can be assumed as breeding habitat for the Chat.

Scotch Thistle is an exotic annual species, and due to the survey occurring in winter, dead Scotch Thistle was viewed (Figure 5-1).

Figure 5-1 Photo of dead Scotch Thistle during July 2022 survey

Potential impact to the White-fronted Chat

Loss of breeding habitat may lead to decline in species. However, the Scotch Thistle is considered suitable habitat for breeding. There is 103.17 ha of land growing Scotch Thistle with 33.86 ha potentially impacted being occurring within the Development footprint. It is considered that the impact is minimal because habitat restoration activities are planned to enhance the habitat with native species on the subject land which is equivalent or larger in size than that being impacted. This is detailed as part of the updated BDAR in the Biodiversity Management Plan in Appendix E.1.

Vegetation impacts at the Tarago Intersection

The Blind Creek EIS included within its development footprint, a plan to upgrade an existing intersection on Tarago Road to include a basic left (BAL) turn treatment to augment the existing basic right (BAR) turn treatment. It was discovered in the submissions process that the existing

BAR design was non-compliant with Austroads guidelines and that the plans did not specifically note the retention of drainage features.

The Applicant prepares an intersection overview paper (Appendix E.5) showing that the small changes flowing from bringing the existing BAR into compliance are entirely within the historical disturbance footprint of the Tarago Road.

The site was not surveyed as part of the BDAR. However, based on NGH site visits (not survey), background searches and the results of the paper, the risk associated with biodiversity is considered to be low. As such, no further biodiversity works are proposed.

5.1.3. Updated mitigation measures

No.	Mitigation measure	Phase

B11	Preparation of a vegetation management plan to regulate activity in vegetation and habitat adjacent to the proposed development:
	• **Preparation of a management plan that would include protocols for:**
	• **Protection of native vegetation to be retained, particularly within the following areas:**
	  ○ **Remnant Monaro Tablelands Cool Temperate Grassy Woodlands at the eastern end of the Subject Land**
	  ○ **HBT's**
	  ○ **The wetland area at the north-western end of the Development Site**
	  ○ **The setback area from Butmaroo Creek**
	• **The installation of permanent fencing around areas of native vegetation to be retained**
	• **Best practice removal and disposal of vegetation cleared**
	• **Weed management**
	• **Unexpected threatened species finds**
	• **Exclusion of vehicles from sensitive areas**
	• **Rehabilitation of disturbed areas.**
	• **Addition of a Pest Action Management Plan (PAP) to manage predation and keep feral animals at low levels.**
		Construction

B15	**Implementation of a Biodiversity Management Plan to restore an equivalent amount of White-fronted Chat breeding habitat impacted by the Project:** • **Survey the extent of Scotch Thistle within the Subject Land to identity the exact area(ha) of White-fronted Chat breeding habitat being impacted.** • **Identify areas within the Subject Land which are not being impacted and establish an area of equivalent size to be used to restore White-fronted Chat breeding habitat.** • **Preparation of an adaptive Pest Action Management Plan (PAP) to regulate pest animal species and mitigate any potential**	Pre-construction Operation

No.	Mitigation measure	Phase
	impacts to the White Fronted Chat. • **Detail a monitoring plan in the BMP to assess the performance and effectiveness of the White-fronted Chat breeding habitat**	

5.2. Visual impact

5.2.1. Background

Changes to assessment

The purpose of the updated Visual Impact Assessment (VIA) and Addendum Glint and Glare Assessment was to address feedback from the public regarding concerns of actual impact from different viewpoints and who were signatories objecting to the visual impact assessment undertaken during the EIS. The updated VIA was formed around the addresses provided from the respondents and their proximity to the project.

The updated VIA also addresses the potential reduction in pitch/spacing between panels from 5.75m to 5.25m.

In addition, the Applicant was required to include a draft Landscape Plan to detail the planting schedule and measures to ensure effective screening within three years of commencing operations. This included screening for:

- Visual screening to east, north and west of the solar array;
- Visual screening along Butmaroo Ck; and
- White Fronted Chat offset areas.

Figures on pages 38 and 55 have been updated in the VIA, to show that the location of screening is within land owned by the associated receivers. This was to address comments from QPRC stating that the screening would not be in the control of the Proponent or landholder. The distances from VP02 to the site have also been updated. The project solar panel layout plan is indicative only and will be fine-tuned when development consent conditions and final design is known.

Statutory requirements

The initial VIA supports the EIS for the Project and was prepared in accordance with the SEARs issued by DPE. As discussed above, the updated VIA was prepared to address additional requirements from DPE and other submissions.

5.2.2. Key findings of the assessment

Theoretical visibility

This is based solely on topographic information and does not take into the account of the height and coverage of vegetation and buildings. It is therefore representing the worst-case scenario and in reality, the zone of visibility of the Blind Creek Solar Farm is far less than predicted.

Assessment of visual impact to public view points (unmitigated)

The VIA (Appendix E.2) identified 10 locations from public view locations. This impact assessment has found of the 10, six were classified as having a potential visible impact of negligible, one had a rating of low and, two had a rating of moderate – low, and one had a rating of moderate.

Overall, the Project will result in minor modification to the existing visual landscape. There are limited opportunities within the Study area to view the Project as a whole. Exiting landscape features, roadside vegetation and topography screen the Project from the majority of locations in the Study Area.

Assessment of visual impact to dwellings (unmitigated)

The VIA (Appendix E.2) assessed the viewpoints from 9 dwellings to ascertain the potential visual impact. Three were rated at negligible, three had a low rating and 3 had a moderate to low rating. It is acknowledged that visual impacts associated with the Project are likely to be higher during the construction phases and mitigated overtime with the implementation of measures to ultimately achieve a low or negligible visual impact level.

The highest potential visual impact is likely to be experienced from dwellings within close proximity to the Site. The visual mitigation measures including vegetation screening will assist in bringing the residual visual impact to low. The VIA clearly defines and demonstrated the potential visual impact from multiple viewpoints surrounding the Project.

The VIA as presented in the EIS assumed a minimum pitch of 5.75m, with a maximum of 9.0m. The VIA has been updated to reflect the decrease in pitch, with no additional impacts expected (refer Appendix E.2).

Cumulative impacts

Cumulative impacts have been assessed considering other solar farms in the region. Due to its relative isolation, it has been assessed as unlikely to have a cumulative impact as there are no opportunities to view this solar farm and others that are planned in succession or simultaneously. However, the succession of the approved windfarm and sand quarry could be considered to be transforming the existing landscape character.

Glint and glare assessment

Glint and glare have been assessed in response to considerations for future planning of residential areas as requested by Queanbeyan Palerang Regional Council.

The study concluded that the solar facility will have no impact in relation to reflective flare for future residential areas identified in the Bungendore Structure Plan 2048 due to the distance of these areas from the proposed facility and the position of these areas south of the facility in relation to incoming solar angles and their reflections (refer E-III).

The Glint and Glare Assessment as presented in the EIS assumed a minimum pitch of 5.25m, with a maximum of 7.0m. As such, no additional assessment is required in relation to reducing the pitch of panels.

Draft Landscape Plan

As detailed above, a draft Landscape Plan to detail the planting schedule and measures to ensure effective screening within three years of commencing operations has been prepared (Appendix E.2). This included screening for:

- Visual screening to east, north and west of the solar array;
- Visual screening along Butmaroo Ck; and
- White Fronted Chat offset areas.

It was determined as part of the Landscape Plan that nominated planting has the ability to achieve desired screening of the Project provided best industry standards and maintenance schedules have been followed. To achieve establishment within three (3) years of commercial operations commencing:

- Planting must be undertaken by an experienced landscape or bush regeneration contractor in consultation with local nurseries
- Procurement of stock must be of quality and from local nurseries where possible. Attention must be paid to procure best quality tubestock
- Maintenance schedules to be followed regularly to check for invasive pests, damage by stock, lack of watering, weeds and other best industry standard procedures
- In case of loss of tubestock, Contractor must advice and aim to procure similar species to replace lost tubestocks
- All trees and shrubs to have suitable tree guards installed to provide support during establishment
- Trees / shrubs to be planted in the first Autumn / Winter prior to commencing or during construction, therefore facilitating up to four (4) years of growth.

Plant species chosen for the visual screening were chosen based on the existing Plant Community Types (PCT) on site, the General Native Vegetation Profile for the Bungendore District, specialist input from a local Landscape Architect and known species available from local nurseries. Species selection is also proposed to be a mix of heights, with larger evergreen trees dominating the background, medium evergreen trees in the middle, and shrubs and groundcover scattered throughout. It is expected that the mid-stratum shrubs will be fast growing and dispersing, providing effective coverage prior to establishment of the larger evergreen trees.

Tube stock have been selected to be used as the primary source of vegetation screening, given they have proven to be a better alternative to established or more mature trees for screening for the following reasons:

- Tube stock have a faster growth rate. When comparing growth rates, tube stock will quickly outgrow a more mature planted tree and continue to grow at a faster rate.
- Tube stock have been tended to less, so are not accustomed to frequent watering or feeding. Therefore, there is greater success with less watering and fertiliser.
- Potted plants often fail because their root system has adapted to growth in a pot. Tube stock have better success at rooting than mature trees.
- Tube stock are available at larger quantities than mature trees. As such, a wider variety of species and more trees will be available for planting.
- Mature stock plantings lead to higher plant loss.

5.2.3. Updated mitigation measures

No.	Mitigation measure	Phase

V1	A Landscape Management Plan (LMP) **will be developed in consultation with a landscape architect** to address the 'as built' visual impacts of the proposed solar farm. The plan **will** include:
	• On-site vegetation screening generally in accordance with the detailed design plan. This would include details of selected species aimed at 'breaking up' not blocking views of onsite infrastructure.
	• **Vegetation screening along Butmaroo Creek will be in accordance with the Addendum ACHAR, including the following:**
	  • **A surface collection of registered Aboriginal objects and unexpected finds within the planting corridor must take place prior to any works taking place**
	  • **The planting of native vegetation must be performed by hand and using hand tools to minimise the potential impacts to unrecorded Aboriginal objects.**
	  • **The proponent should consider engaging representatives from the local Aboriginal community to be present or assist with the vegetation planting for screening and the White Fronted Chat habitat offset associated with the proposed Blind Creek Solar Farm.**
	• Location of planting locations, generally expected to be between the security fencing and the property boundary.
	• Band width, generally expected to be approximately 6m with three (3) rows of vegetation in high visual impact areas and two (2) rows in low / moderate visual impact areas.
	• Maintenance schedule for a period of 24 months. Maintenance should generally include the removal of weeds and replacement of dead or non-performing plants.
	• **Measures to ensure effective screening within three years of commencing operations.**
	The plan would be implemented nearing completion of construction and would be subject to agreement with the relevant landowner.
		Design
		Construction

5.3. Hydrology and flooding

5.3.1. Background

Changes to assessment

The assessment of hydrology presented in the EIS remains unchanged irrespective of any proposed amendments. However; in response to submission request from the DPE, the Applicant has made a commitment to exclude solar infrastructure within a corridor connecting the defined portion of Wrights Creek to the ephemeral wetland. The exclusion of the solar infrastructure within the Wrights Creek overland flow path is to ensure that a flow corridor unimpeded by solar panels in line with the *Guidelines for Controlled Activities on Waterfront Land 2018*. The final flow path and layout will be provided as part of the final design, in consultation with DPE Water.

Statutory requirements

All proposed infrastructure associated with the proposed development should be setback from existing watercourses at the recommended riparian corridor widths specified in Table 1 of the *Guidelines for Controlled Activities on Waterfront Land* (DPI NRAR 2018). In accordance with the guidelines the width of the vegetated riparian zone (VRZ) should be measured from the top of the highest bank on both sides of the watercourse.

5.3.2. Key findings of the assessment

The Applicant now commits to provide a flow path for Wrights Creek, through the solar arrays to the identified wetland and beyond, which does not contain solar panels. This flow path is to be based on hydrology assessments to ensure the natural flow path is maintained in accordance with the *Guidelines for Controlled Activities on Waterfront Land* (NRAR 2018). The amendments will ensure a unimpeded flow path from Wrights Creek to the ephemeral wetland.

The detailed design will take into consideration the Non-riparian corridor works and activities averaging rule, thereby 50% of the outer riparian zone would be used for development with an equivalent area connected to the riparian corridor fully offset. The inner 50% of the riparian zone will be offset.

The hydrology assessment and design of the overland flow path will be finalised in consultation with DPE Water through the detailed design process, prior to any construction. These requirements have been included as Mitigation Measure **H12**.

The amended measure **H14** also includes a commitment to send crossing designs to DPI Fisheries for review prior to construction.

5.3.3. Updated Mitigated measures

No.	Mitigation Measures	Phase

<table>
<tr>
<td>H12</td>
<td>All proposed infrastructure associated with the proposed development should be setback from existing watercourses at the recommended riparian corridor widths specified in Table 1 of the Guidelines for Controlled Activities on Waterfront Land (DPI Water, 2012) as provided below. This takes into account riparian setbacks for Butmaroo Creek and the ephemeral wetland. In accordance with the guidelines the width of the vegetated riparian zone (VRZ) should be measured from the top of the highest bank on both sides of the watercourse.

Table 1. Recommended riparian corridor (RC) widths
<table><tr><th>Watercourse type</th><th>VRZ width
(each side of watercourse)</th><th>Total RC width</th></tr><tr><td>1st order</td><td>10 metres</td><td>20 m + channel width</td></tr><tr><td>2nd order</td><td>20 metres</td><td>40 m + channel width</td></tr><tr><td>3rd order</td><td>30 metres</td><td>60 m + channel width</td></tr><tr><td>4th order and greater (includes estuaries, wetlands and any parts of rivers influenced by tidal waters)</td><td>40 metres</td><td>80 m + channel width</td></tr></table>
For the undefined overland section of Wrights Creek, a connection, free from solar panels shall be maintained between its defined section and the ephemeral wetland. Given the defined section of Wrights Creek is a 4th order stream, the average exclusion will not be less than 40m each side of the creek bank (where defined) or nominal centreline (where undefined), and in no place less than 20m (i.e. the non-riparian corridor works and activities averaging rule). For the avoidance of doubt, cables and tracks may cross this exclusion provided they are designed not to impede flow. Final design will be informed by a hydrology assessment to ensure the natural flow path is maintained. The final design will be developed in consultation with DPE Water prior to construction.</td>
<td>Design
Construction</td>
</tr>
<tr>
<td>H14</td>
<td>Any road crossing of existing watercourses associated with the proposed development should be of the type defined in Table 2 of the Guidelines for Riparian Corridors on Waterfront Land (DPI Water, 2012) and Guidelines for Laying Pipes and Cable in Watercourses on Waterfront Land (NSW DPI, 2012). All</td>
<td>Design
Construction</td>
</tr>
</table>

	crossings will be designed in consultation with DPI Fisheries. Based on a preliminary assessment under the Strahler System defined in the Guidelines for Riparian Corridors on Waterfront Land (DPI Water, 2012) all three watercourses of the Development site would be classified as having a stream order of four or greater.	

5.4. Aboriginal heritage

5.4.1. Background

Changes to assessment

The purpose of the Heritage addendum was to provide an assessment of three proposed works that were not assessed as a part of the original ACHA by NGH (2022). These three works are either limited in their overall scope and impact footprint or are within areas containing significant levels of historical disturbance. The additional works are as follows:

1. Plantings to screen the solar farm from neighbours.
2. Revegetation of certain areas to accommodate the habitat of the vulnerable bird, the White Fronted Chat (WFC).
3. Extension of the proposed intersection area of Tarago Road and the entrance to the proposed solar farm.

The additional works each have the potential to impact on both recorded and unrecorded Aboriginal heritage within their respective areas. As a result, their potential impacts were assessed in the Heritage Addendum Report.

Statutory requirements

Part 6 of the NPW Act concerns Aboriginal objects and places and various sections describe the offences, defences and requirements to harm an Aboriginal object or place. The main offences under section 86 of the NPW Act are:

- A person must not harm or desecrate an object that the person knows is an Aboriginal object.
- A person must not harm an Aboriginal object.
- For the purposes of this section, "circumstances of aggravation" are:
    - that the offence was committed in the course of carrying out a commercial activity, or
    - that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.
- A person must not harm or desecrate an Aboriginal place.

Section 89A of the Act also requires that a person who is aware of an Aboriginal object must notify the Director-General in a prescribed manner. In effect this section requires the completion of an AHIMS site card for all sites located during heritage surveys.

The consultation with Aboriginal stakeholders for this project was undertaken in accordance with Section 60 of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2019* and following the process outlined in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRP).

5.4.2. Key findings of the assessment

The key findings of the assessment were encompassed number of considerations including

- Background Aboriginal heritage research into the area
- Assessment of Landscape
- Land use and disturbance assessment
- Consideration of the impact of the proposed works
- Results of the NGH 2022 ACHA, and
- Legislative context for the development Project.

All works associated with Visual Screen Vegetation Planting or planting for Habitat for the White-Fronted Chat can proceed. The proposed revegetation for visual screening or habitat will follow a strict planting strategy designed to reduce the potential impacts on Aboriginal heritage. The proposed methodology for planting to maintain the integrity of Aboriginal heritage will include:

- All planting is to be undertaken on-foot and by hand using an experienced landscape contractor in consultation with local nurseries
- Plantings will:
    - Be native species that are associated with the relevant PCT
    - Be either tall shrubs or small trees for visual screening, or tall shrubs and ground vegetation for WFC habitat
    - Be mixed and offset to produce a heterogenous mix of planting
    - Minimise use of large spreading trees that may impact road user safety
    - Be placed further from the road where larger species are used
    - Be watered and maintained during establishment

Further detail of the steps for revegetation can be found in section 6.1.1 of the addendum ACHAR.

Adherence to the steps detailed in the addendum ACHAR for revegetation for screening and habitat purposes in certain areas within the Development Site by hand avoids the unnecessary impacts that would have occurred if heavy machinery was used. While the use of hand tools to manually plant saplings will still cause some localised disturbance, it is preferable to the more significant disturbances that would be caused by machine-assisted planting.

All works associated with the intersection upgrade along Tarago Road and the main entrance road for the proposed Blind Creek solar farm can proceed with caution within the existing road reserve.

The addendum assessment only considered the areas where the proposed additional works will take place, the remainder of the Development Site has already been assessed within the main ACHA. It should be noted that whilst the ground disturbance of the additional works assessed in the addendum report include the relative small, discrete impacts associated with hand planting over a large area, the activity still presents a cumulative impact. While a large number of hand plantings represent a likelihood of impacting upon archaeological deposits and artefacts, the

impact will be limited enough and spread over the area that it is not considered to represent total harm. All excavated material will be used to backfill holes within their respective landforms.

NGH have assessed that the archaeological record in this region will not be severely compromised by the development of this particular solar farm proposal if appropriate mitigation measures are followed as outlined within the addendum report and the main ACHA. The overall cumulative impact on the archaeological record for the region has been managed through the measures outlined in the main ACHA and mitigation measures noted in this report and in the addendum ACHA report.

Based on an assessment of the project, the location and previous level of disturbance, the proposed additional works can proceed with caution with consideration to the recommendations outlined in the main ACHA (Appendix H of the EIS) and Addendum ACHA (refer Appendix E.6) with the following recommendations:

- Further archaeological assessment would be required if the Project activity extends beyond the area assessed in this report. This would include consultation with the registered Aboriginal parties and may include further field survey.
- All works must be constrained to the areas of existing disturbance and any activity proposed outside of the current assessment area should also be subject to an addendum Aboriginal heritage assessment.

5.4.3. Updated mitigates measures

No.	Mitigation measures	Phase
AH11	**All works associated with the intersection upgrade along Tarago Road and the main entrance road for the proposed Blind Creek solar farm can proceed with caution within the existing road reserve. Any works outside of the proposed intersection design will be subject to further assessment.**	**Pre-construction** **Construction**
AH12	**Where plantings are required for screening or as an offset habitat for the White Fronted Chat within the Development Site, the following is recommended:** **a) A surface collection of registered Aboriginal objects and unexpected finds within the planting corridor must take place prior to any works taking place** **b) The planting of native vegetation must be performed by hand and using hand tools to minimise the potential impacts to unrecorded Aboriginal objects.** **c) The proponent should consider engaging representatives from the local Aboriginal community to be present or assist with the vegetation planting for screening and the White Fronted Chat habitat offset associated with the proposed Blind Creek Solar Farm.** **Any unexpected finds collected during the surface collection or hand digging stages of the works should be held in temporary storage by NGH until the Proponent and the local Aboriginal community come to an agreement on how they**	**Pre-construction** **Construction**

No.	Mitigation measures	Phase
	should be managed.	
AH13	**All works must be constrained to the areas of existing disturbance and any activity proposed outside of the current assessment area should also be subject to an addendum Aboriginal heritage assessment.**	**Pre-construction** **Construction** **Operation** **Decommissioning**
AH14	**Where possible, consideration should be given to the request for collection of native vegetation that is to be removed as part of the project development.**	**Pre-construction**

5.5. Water use and water quality

5.5.1. Background

Changes to assessment

The Water use and Water Quality assessment presented in the EIS remains except for construction water usage and further identification of water sources (refer to Section 2.2.6)

Statutory requirements

Under the EP&A Act section 4.41(g), SSDs do not require a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the Water Management Act 2000.

The EIS noted that a permit for aquifer interference as per section 4.41(g) of the EP&A Act would be required to penetrate the aquifer if the establishment of a new groundwater bore as needed to supply water for the Project, however this would not be proposed as a water supplier has been contacted that holds the relevant permits for water extraction.

5.5.2. Key findings of the assessment

As discussed in Section 2.2.6 total construction water required has been revised from 250ML to 150ML over the 12-18month construction period, and water sources have been identified that would be able to facilitate this requirement. Two water supply sources have been identified. The first is through direct purchase through a commercial provider that is licensed and willing to offer water for the Project. The licenced commercial provider sources their water from the Bungendore alluvial aquifer. The second option if required is a dam owned by an involved landholder which has 40ML of capacity and located at -35.1365, 149.4770. Water is readily available for the Project as outlined above. A revised water souring section is presented below, however impacts to water sources due to the Project remain negligible.

Water sourcing

The Bungendore Alluvial Groundwater Aquifer water source has 4 Water Access licences with a yearly available water value of 766ML. The maximum water required for the Project (150ML) is 20% of the available yearly alluvial aquifer resource. In the 2022-2023 water use for the year was 13.5ML from the allocations, which represented 1.8% of the available aquifer water. The impact of drawing the 150ML for 1 year is minor as over 616ML of remaining water is available for other users assuming construction does not occur alongside drought conditions. This option is presented as a feasible contract that could be taken on, however during the post approval stage other water contractors may be considered.

The upper estimates for construction water above assume drought conditions, where water use may increase particularly with increased requirement for dust management and track construction. Given the construction period of 12-18 months and minimal water use required for construction, this is considered low risk. But if water becomes hard to source during such periods, polymer dust suppression can be used as an alternative to water trucks but is not preferred by the Proponent.

Impacts on water use during decommissioning would be similar in nature but of a lesser volume to those during construction. They are considered low risk and manageable.

5.5.3. Updated mitigates measures

There are no updated mitigation measures associated with Water use and water quality.

5.6. Access and traffic

5.6.1. Background

The Transport for NSW (TfNSW) submission noted that the length of the Basic Auxiliary Right (BAR) turning treatment should be extended to comply with Figure A 28 of *Austroads Guide to Road Design Part 4*. The length for the turning path (X) should be added and the tapers should be designed for a design speed of 110kph. In addition, it was noted that the table drains on both sides of Tarago Road will need to be reinstated.

In addition, submissions received on the EIS noted the poor quality of the road pavement within the Queanbeyan Palerang Regional Council (QPRC) and the Goulburn Mulwaree Council (GMC) Local Government Areas (LGA).

5.6.2. Key findings of the assessment

Intersection treatment

A plan has been updated according to Figure A 28 of *Austroads Guide to Road Design Part 4* for the BAR with a design speed of 110kph. Table drains have been reinstated as part of the plan. The updated intersection design has been completed by PHL Surveyors and included in Appendix E.3.

The proposed intersection upgrades are entirely within the historically disturbed road reserve. The Applicant has drafted a discussion paper on the historical disturbance of the intersection, detailed within Appendix E.5. No additional impacts to biodiversity will result from proposed works within the historically disturbed road reserve.

In addition, consultation with the Registered Aboriginal Parties (RAPs) has commenced to notify them of future potential works. As detailed within the Submissions Report:

- A letter to each RAP who registered their interest with the Blind Creek Solar Farm Project was sent a letter via email, notifying them of proposed changes to the Project on 1 September 2022.
- The Addendum Aboriginal Cultural Heritage Assessment Report (ACHAR) was provided to the RAPs, (Appendix E.6) detailing all amendments that were not included in the original ACHAR on 29 September 2022. The review period for the RAPs ended on Thursday 27th October 2022.

As detailed within Section 5.4 below and Appendix E.6 (in reference to the Addendum ACHAR), impacts will be confined to the existing road corridor and will not include undisturbed sensitive archaeological landforms. It is therefore concluded that the proposed intersection upgrades have a negligible potential to impact on Aboriginal heritage and that no further mitigations measures are required for these works.

Based on an assessment of the project, the location and previous level of disturbance, the proposed additional works can proceed with caution with consideration to the recommendations outlined in the main Aboriginal Cultural Heritage Assessment (NGH 2022, see Section 1.3) and with the following recommendations (specific to the intersection upgrade):

1. All works associated with the intersection upgrade along Tarago Road and the main entrance road for the proposed Blind Creek solar farm can proceed with caution within the existing road reserve. Any works outside of the proposed intersection design will be subject to further assessment.
3. All works must be constrained to the areas of existing disturbance and any activity proposed outside of the current assessment area should also be subject to an addendum Aboriginal heritage assessment.

These updated recommendations have been adopted as new mitigation measure **AH11** and **AH13** (Appendix C).

Further archaeological assessment would be required if the Project activity extends beyond the area assessed in this report. This would include consultation with the registered Aboriginal parties and may include further field survey.

Royalties

Whilst the Traffic Impact Assessment (TIA) has determined the level of service is sufficient, in response to agency and community concerns regarding traffic, the Applicant now commits to providing a royalty payment based on construction traffic volumes on Tarago Road to address road pavement issues specifically. The final payment agreement will be developed in consultation with QPRC and GMC.

These updated recommendations have been adopted as new Mitigation Measures **AT5**, **AT6** and **AT7** (Appendix C).

5.6.3. Updated mitigation measures

Additional mitigation measures for Aboriginal Heritage related impact are captured above in Section 5.4.3. Mitigation measures in relation to royalties payments and maintenance of roads are detailed below.

No.	Mitigation measures	Phase
AT5	**Prior to commencement of delivery of materials to Site, the Proponent shall undertake a Road Dilapidation Report of the sealed road between Tarago, Bungendore and the Site entrance within the Goulburn Mulwaree Council and Queyanbean-Palerang Regional Council areas. The Report shall assess the current condition of the road using a method agreed with the relevant road authorities. The final Report must be submitted to the relevant road authorities for information prior to the commencement of deliveries to Site.**	**Pre-construction** **Post-construction**
AT6	**Within three months after the Project achieving Commercial Operation Date, the Proponent shall provide to the relevant road authorities (Goulburn Mulwaree Council and Queanbean-Palerang Regional Council) a royalty payment to contribute to the upkeep of the Tarago Road between Tarago and the Site entrance. The payment shall be provided as a royalty per tonne of construction materials imported into the Site, at a rate to be agreed between the Proponent and the road authorities prior to commencement of delivery of materials to Site. The rate shall be based on the actual tonnage of materials delivered to the Site.**	**Pre-construction** **Post-construction**
AT7	**Prior to construction, the EPC Contractor is required to complete a Heavy Vehicle Access Study in consultation with QPRC and GMC.**	**Pre-construction**

5.7. Noise

5.7.1. Background

Advancing and more efficient technology coupled with refined detail design has led to a change in inverter and associated battery energy storage solutions. With this change, a noise assessment was undertaken by specialists in this field to ensure that the project was still compliant with industry standards and the EIS.

5.7.2. Key findings of the assessment

Noise modelling of the predicted operational scenario for the modification compared to the EIS showed that the predicted noise impacts to the identified receiver locations with the alternative plant and equipment selection are the same or lower that the noise impacts presented in the EIS Noise Assessment. The project noise trigger levels are still exceeded at the two (2) associated receivers as identified in the EIS and comply for all non-associated receivers' locations for all locations for all time periods.

Therefore, the change in the plant and equipment would not increase noise impacts to the identified receiver locations when compared to the noise impacts presented in the EIS Noise Assessment.

The assessment conducted as part of this amendment report, has not indicated any change to conditions of consent.

5.7.3. Updated mitigation measures

There are no updated mitigation measures associated with the increased number of PCUs.

6. Justification

6.1. Evaluation, subsequent to Project changes

6.1.1. Updated assessment and outcomes now achieved

In response to the public and agency comments and ongoing consultation with surrounding receivers, the proposed Blind Creek Solar Farm has made substantive changes to the project as described in the EIS. The result is an updated Project description and accompanying environmental commitments which demonstrate the Project's desire to develop a Project that responds to local values and concerns.

The updated environmental assessment of the Project's key impacts are summarised in Table 6-1 below.

Table 6-1 Updated assessment outcomes achieved

Impact areas	
Biodiversity	In response to submissions, BCD highlighted issues surrounding the White Fronted Chat (WFC). These issues were addressed by NGH by undertaking the suggested surveys and assumptions suggested by BDC. These findings and plans are presented in the revised BDAR x1.2. A more specific threatened species mitigation strategy is now detailed. Areas that contain Scotch thistle are considered suitable habitat for the White-fronted chat. The loss of habitat due to construction will be replaced and enhanced with suitable native vegetation within the development site and managed in accordance with the final approved Biodiversity Management Plan. There are changes to **B11** and the inclusion of a new mitigation measure (**B15**) specifically to the management of the White-fronted Chat.
Visual	The updated visual assessment indicates that the potential visual impact for nominated receivers is rated no higher than moderate-low. An updated Landscape Plan as part of the VIA is included, to ensure establishment of visual screening within three years of commencing operations. One mitigation measure (**V1**) has been updated to reflect changes to the landscape management plan to address the 'as built' visual impacts of the solar farm.
Hydrology and Flooding	The assessment of Hydrology and flooding is presented as delivered in the EIS. However, further considerations have been given to Wrights Creek overland flow path is to ensure that a flow corridor unimpeded by solar panels in accordance with the *Guidelines for Controlled Activities on Waterfront Land*. Two mitigation measures were updated to reflect these considerations,

Impact areas	
	H12 and **H14**.
Aboriginal Heritage	A Heritage addendum was provided to assess three proposed works that were not assessed as a part of the original ACHA. These three works are either limited in their overall scope and impact footprint or are within areas containing significant levels of historical disturbance. Based on an assessment of the project, the location, and previous level of disturbance, the proposed additional works can proceed with caution with consideration to the recommendations outlined in the main ACHA and Addendum ACHA due to no additional impacts expected. No significant impacts are expected. The overall impacts are in line with the conclusions of the original EIS. RAPs that responded to the Addendum ACHAR requested they have the opportunity to gather resources that might be removed (i.e. soft bark eucalypts) from the development site. Three new mitigation measures, **AH11**, **AH12, AH13** and **AH14** are now included. Refer to Appendix C.
Water Use and Water Quality	The revision of construction water requirements has resulted in an overall decrease of water use, from 250ML to 150ML. No significant impacts are expected as a result of the reduction. The overall impacts are in line with the conclusions of the original EIS. There are no updated mitigation measures associated with Water use and water quality.
Access and Traffic	The intersection plan has been updated according to Figure A 28 of *Austroads Guide to Road Design Part 4* for the BAR with a design speed of 110kph. Table drains have been reinstated as part of the plan. The updated intersection design has been completed by PHL surveyors and included in Appendix E.3. The proposed intersection upgrades are entirely within the historically disturbed road reserve. The Applicant has drafted a discussion paper on the historical disturbance of the intersection, detailed within Appendix E.5. No additional impacts to biodiversity will result from proposed works within the historically disturbed road reserve. Consultation with RAP's has indicated that no additional mitigation measures are required, and no further assessment is needed if the construction stays within the approved footprint and disturbed road corridor. The Applicant would be entering a royalty's agreement with appropriate councils.

Impact areas	
	There are three updated mitigation measures, **AT5**, **AT6** and **AT7** In addition, there are two related new mitigation measures captured within 5.4, **AH11** and **AH13**.
Noise	Noise modelling of the operational scenario for the modification compared to the EIS showed that the predicted noise impacts to the identified receiver locations with the alternative infrastructure selection and increase in numbers are the same or lower that the noise impacts presented in the EIS No significant impacts to surrounding receivers associated with noise outputs are expected. The overall impacts are in line with the conclusions of the original EIS. There are no updated mitigation measures associated with noise.
Land Use	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Soils and Landforms	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Historic Heritage	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Social and Economic	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Bushfire	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Hazardous materials	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Electric and magnetic fields	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Air quality and climate	No change from the EIS, with all risks manageable. No additional mitigation measures included.
Resource use and waste generation	No change from the EIS, with all risks manageable. No additional mitigation measures included.

Impact areas	
Cumulative impacts	No change from the EIS, with all risks manageable. No additional mitigation measures included.

The table above demonstrates the reduced impacts of the updated Project. The assessment and mitigation strategies underpinning the Project are also considered conservative where uncertainty is present:

- While the final detailed design stage is yet to be undertaken, all impacts will be required to be confined to the consented Development footprint; all assessments are based on this 'worst-case' impact footprint. They include all potential impacts, temporary and permanent. They include room to establish all required environmental controls.
- Where specific infrastructure parameters or construction programming is yet to be determined, a 'worst case scenario' is assumed, for example hydrological, visual, noise and traffic modelling, so the mitigation is precautionary and robust.

In both cases above, the actual impacts are therefore expected to be less than what has been assumed and mitigated.

6.1.2. Updated evaluation of site suitability

With reference to the *Large-Scale Solar Energy Guideline for State Significant Development* 2022 and the updated detailed environmental assessments, the Project can be considered highly suitable to the areas proposed for development.

Table 6-2 Evaluation of site suitability

Site constraints / factor	Outcome
Nearby residences	There are limited receivers within 2km of the Development Site, and the distance from the closest receivers to the site has not changed as a result of this Amendment Report. However, the view from a number of receivers along Lake Road of solar infrastructure, i.e. where PV infrastructure has been removed from the areas bordering Lot 17 DP535180 (above elevation 691m) and west of the established elms has resulted in reducing their overall view of the Project. Assessment outcomes demonstrated within the EIS remain the same. Due to the low-lying site and low profile infrastructure, in combination with the low number of near residences, the Project has been able to demonstrate: • No greater than low visual impact for any non-associated receiver • No greater than low glare impact for any non-associated receiver • No greater than low noise impact for any non-associated receiver The impacts have been found acceptable and manageable for all areas assessed by the EIS and this Amendment Report.

Site constraints / factor	Outcome
Rural villages and urban land	Queanbeyan is the closest major regional centre to the Project (30km northeast), with the town of Bungendore being 7km south of the development footprint. As detailed above, there is low visual, noise and glare impact associated with near residences. This includes the rural township of Bungendore and proposed expansion areas to the north-east of the village.
Important agricultural land and soil capability (LSC) class	The Project is not located on land classed as 1 to 4 under the LSC Scheme, nor is it classed Biophysical Strategic Agricultural Land (BSAL). The Development site is made up of the following classes under the LSC Assessment Scheme: • Class 5 – 81.297 ha • Class 6 – 944.589 ha Assessment outcomes demonstrated within the EIS remain the same.
Indigenous and non-indigenous heritage items	Due to amendments being proposed and constrained to existing disturbance areas, it was determined that works are limited in their overall scope and impact footprint or are within areas containing significant levels of historical disturbance. As such, no additional impact as a result of the Amendments are expected. The proposed additional works can proceed with caution with consideration to the recommendations outlined in the main ACHA and Addendum ACHA with the following recommendations: • Further archaeological assessment would be required if the Project activity extends beyond the area assessed in this report. This would include consultation with the registered Aboriginal parties and may include further field survey. • All works must be constrained to the areas of existing disturbance and any activity proposed outside of the current assessment area should also be subject to an addendum Aboriginal heritage assessment.
Threatened species	The development footprint has not decreased as a result of this Amendment Report. As such, assessment outcomes demonstrated within the EIS remain the same. However, the Applicant has now committed to restore and protect 33.86 ha of WFC breeding habitat to offset removal of Scotch Thistle, as detailed within the draft BMP and Landscape Plan (refer Appendix E.1 and E.2) outside of the development footprint.

Site constraints / factor	Outcome
Watercourses	The Applicant has committed to the following within the detail design phase prior to construction: • Provide a flow path for Wrights Creek, through the solar arrays to the identified wetland and beyond, which does not contain solar panels. This flow path is to be based on hydrology assessments to ensure the natural flow path is maintained in accordance with the Guidelines for Controlled Activities on Waterfront Land (NRAR 2018). • The detailed design will take into consideration the Non-riparian corridor works and activities averaging rule, thereby 50% of the outer riparian zone would be used for development with an equivalent area connected to the riparian corridor fully offset. The inner 50% of the riparian zone will be offset. • Subsurface access across the overland flow path will form a requirement of the Project. An indicative flow path is shown in the Constraints Map (Figure 1-2) above. The hydrology assessment and design of the overland flow path will be finalised in consultation with DPE Water through the detailed design process, prior to any construction. These requirements have been included as Mitigation Measure **H12**.
Flood and bushfire prone land	No changes are proposed to the flood and bushfire potential of the Project Area. Assessment outcomes demonstrated within the EIS remain the same.
Existing infrastructure	No changes are proposed to the haulage route or other infrastructure the Project Area. As detailed above, the design plan for Tarago Road has been updated according to Figure A 28 of *Austroads Guide to Road Design Part 4* for the BAR with a design speed of 110kph. Table drains have been reinstated as part of the plan. Assessment outcomes demonstrated within the EIS remain the same.
Existing and approved solar energy developments in the area	There are no additional approved solar energy developments outside of what is detailed in the EIS. Assessment outcomes demonstrated within the EIS remain the same.
Land use zoning	There are no changes to land zoning outside of what is detailed in the EIS. Assessment outcomes demonstrated within the EIS remain the same.

Site constraints / factor	Outcome
View lines of particular significance	There are no changes to view lines of particular significance outside of what is detailed in the EIS. Clarification has been sought on the location of the proposed Bungendore Estate, which has been clarified within the Scoping Report. Assessment outcomes demonstrated within the EIS and the Scoping Report remain the same.
Existing potential visual screening	There are no changes to existing potential screening outside of what is detailed in the EIS. Assessment outcomes demonstrated within the EIS remain the same.

6.1.3. Project objectives and alignment with Environmentally Sustainable Development (ESD)

Ecologically Sustainable Development (ESD) involves the effective integration of social, economic and environmental considerations in decision-making processes. In NSW, the concept has been incorporated into legislation including the EP&A Act, the EP&A Regulation and the *Protection of the Environment Administration Act 1991* (NSW).

As detailed within the Submission Report and based on the likely costs and benefits of the proposed solar farm, the Project is considered to comply with the principles of ESD. ESD principles and their relationship to the design, construction and ongoing operations of the Project are identified in Table 6-3. The aims, structure and content of this EIS have incorporated these ESD principles. The mitigation measures in Appendix C provide an auditable set of environmental management commitments to these parameters. Based on the social and environmental benefits accruing from the Project at a local and broader level, and the assessed impacts on the environment and their ability to be managed, it is considered that the Project would be ecologically sustainable within the context of ESD.

Table 6-3 Assessment of the Project against the principals of ESD

Assessment of the Project against the principles of ESD
(a) The precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by: *(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and* *(ii) an assessment of the risk-weighted consequences of various options.*
The precautionary principle has been adopted in the assessment of impact of the Project; with

Assessment of the Project against the principles of ESD
first preference given to avoiding and minimising environmental impacts (as described in Section 3 of the EIS (NGH , 2022)). The impacts of the construction of the solar farm at the site are likely to be reasonably predictable and carry low levels of uncertainty and risk. Based on field surveys and assessments, the works would be unlikely to result in irreversible environmental damage. The development would have an operational life of nominally 35 years or more and would be highly reversible. A 'worst case' impact assessment has been undertaken to account for any uncertainty in the final impact footprint.
(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.
The Project would not diminish long term ecological or agricultural productivity, biological resources or future land use options at the site. At the end of the operating life of the solar farm, the above-ground infrastructure would be removed (to a depth of 500mm or less) to restore former land use potential, agricultural productivity and land use and planning options at the site. Soil values would be restored with reference to the results of a pre-works baseline soil survey. The Project would provide a significant environmental benefit by producing sustainable energy, reducing the reliance on fossil fuels which threatens the well-being of current and future generations through climate change. In contrast to non-renewable energy sources, the solar farm would not emit carbon dioxide, airborne particulates or other pollutants. At the end of its operational life, the Project would not require expensive and difficult land remediation or leave a legacy of toxic waste to be stabilised and stored.
I conservation of biological diversity and ecological integrity— namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration.
Layout planning and mitigation measures have been adopted to avoid or mitigate any impacts which would affect the long-term viability of populations of all native species at and around the site, particularly threatened species and communities. These measures include avoiding and protecting natural areas and habitats on the site. It is noted that climate change is a key global threat to many species and communities, and that the Project would contribute to the abatement of carbon emissions from the electricity sector in Australia.
(d) improved valuation, pricing and incentive mechanisms— namely, that environmental factors should be included in the valuation of assets and services, such as: *(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement, and* *(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste, and* (iii) *environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

Assessment of the Project against the principles of ESD
The Project would provide for the increased penetration of renewable energy into the energy market. The BESS would use the market to regulate the storage and release of energy based on prevailing demand. To date the environmental and social costs of electricity generation have not been fully measured or incorporated into wholesale or retail electricity pricing. The long-term external costs of carbon-intensive energy sources in terms of climate change in particular have not been factored into prices. For each kilowatt hour of electricity generated over the lifetime of a solar farm, it has an emissions footprint of 6 grams of CO2 equivalent (gCO2e/kWh). In contrast, coal has an emissions footprint of 109 gCO2e/kWh (Evans, 2017). External costs are similarly not included in calculations of Levelised Cost of Electricity (LCOE) - the discounted lifetime cost of ownership and use of a generation asset expressed in cost per MWh. In terms of life cycle energy consumption, the 'energy payback time' for polycrystalline PV modules has been estimated at one (1) year for a solar installation in Southern Europe (refer to Section 9.11 of the EIS (NGH , 2022)).

6.2. Benefits and costs to the Project

6.2.1. Original justification for the Project

The original justification from the EIS remains relevant to this Amendment Report. The Blind Creek Solar Farm would result in numerous benefits, local and regional. The Project's objectives centre on the development of a viable and acceptable renewable energy generation facility that will provide a meaningful contribution to the state's transition to renewable energy technologies. It aims to ensure continued agricultural land use and maximises positive community and environmental outcomes. Specifically, the Blind Creek Solar Farm would:

- Generate electricity from a low-cost renewable source
- Provide storage in order to deliver electricity at high demand times, when roof top solar is unavailable
- Address Federal, state and local policies as well as international agreements in relation to reducing greenhouse gas emissions, global warming and the transition to greater renewable energy generation
- Supply the equivalent of approximately 124,155 residential dwellings.
- Co-exist and compliment intensive sheep grazing and regenerative agriculture practices that will continue on the site
- Respond to input from the community and environmental specialists in order to maximise the benefits to the local community and minimise adverse environmental impacts during construction, operation and decommissioning.

The Blind Creek Solar Farm would be an important part of building the regional skill base for this and other large solar projects to follow. It will assist to diversify the regional employment sector. It will build renewable specific skills such as electrical and civil engineering. As well, it will boost the existing service sector through the provision of recreation and accommodation services.

Significant financial and social benefits to the host communities of solar farms occur in the form of community sponsorships. The Project involves a scheme to share financial rewards with identified neighbours as far as 6.5km with visual or other verified impacts. Financial contributions are also made to local council, which will directly support local community projects and services.

6.2.2. Benefits of the amended Project

As detailed above, the amended Project provides:

- More certainty regarding the Project's commitment to repair damage that may be generated by construction traffic on Tarago Road, in the vicinity of the Project site
- Improved traffic safety outcomes, exceeding the best practice guidance provided by traffic specialists
- The detailed design will take into consideration the Non-riparian corridor works and activities averaging rule, thereby 50% of the outer riparian zone would be used for development with an equivalent area connected to the riparian corridor fully offset. The inner 50% of the riparian zone will be offset
- Greater opportunity for input of agencies as the Project moves forward into the detailed design and management stages
- Restore and protect 33.86 ha of WFC breeding habitat
- More certainty regarding water use and supply options, and an overall reduction of 100ML of operational water
- Reduce visual impact for receivers along Lake Road.

6.2.3. Costs of not proceeding

The consequences of not proceeding with the proposed Blind Creek Solar Farm would result in:

- Loss of opportunity to reduce GHG emissions and move towards cleaner renewable electricity generation.
- Loss of a renewable energy supply that would assist in reaching the NSW renewable energy targets.
- Loss of additional electricity generation and supply into the National grid.
- Loss of social and economic benefits created through the provision of direct and indirect employment opportunities during the construction and operation of the solar farm
- Loss of a potential economic boost to the community through a Community Benefit Sharing Scheme
- Loss of an opportunity for Indigenous People and the wider community to reconnect with the lake and facilitate the education of cultural heritage.

6.3. Ability to be approved

The Blind Creek Solar Farm would result in numerous benefits, local and regional. At a time of crisis in the energy network, it forms an important part of NSW and Australia's transition to renewable energy generation, offering a more sustainable future.

The Project meets relevant planning requirements and is consistent with the principles of ESD, which have been incorporated in the design, and will be incorporated into construction, ongoing operations and decommissioning of the development.

The environmental values at this site are well understood, based on field surveys and specialist modelling outputs. To address inevitable areas of uncertainty, conservative approaches have been adopted. The updated specialist studies have informed the amended layout as well as the strategies that will management the impacts during design, construction and operation and decommissioning. The result is a Project that responds well to its natural and cultural context as well as specific community expectations. The benefits of the Project clearly outweigh the costs of not developing the project.

On balance, the Project is considered appropriate:

- To the site's environmental constraints, avoiding high value areas and including long reaching mitigation strategies that will benefit the broader area in the longer term.
- To the site's resources, maximising renewable energy generation alongside existing agricultural and quarry operations.
- To the site's location where it will supply nearby population centres.
- To meeting global state and local policy targets to reduce in global greenhouse gas emissions.
- To the community's expectations.

It meets all relevant planning provisions and guidelines and is considered justifiable and acceptable.

7. References

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Appendix A Updated project description

Appendix B Updated statutory compliance table

Category	Statutory requirements	Relevance to Project
Power to grant consent	*State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP) Environmental *Planning and Assessment Act 1979* (EP&A Act).	Section 4.36 of the EP&A Act provides that a development would be State Significant Development (SSD) if it is declared to be SSD by a SEPP. Section 4.12 (8) of the EP&A Act requires an SSD DA to be accompanied by an EIS prepared in accordance with the EP&A Regulation. This EIS is intended to meet the objectives and assessment requirements of the EP&A Act, and the EP&A Regulation and Planning Systems SEPP. Section 20 of Schedule 1 of the Planning Systems SEPP states that the following is considered a SSD: *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:* *(a) has a capital investment value of more than $30 million, or* *(b) has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.'* The Project would have a capital investment cost estimate of more than $30 million. Therefore, the Project is classified as "State Significant Development" under division 4.7 of the EP&A Act.
Permissibility	State Environmental Panning Policy (Transport and Infrastructure) 2021 (TISEPP) Palerang Local Environmental Plan 2014 (Palerang LEP)	Part 2.3 Division 4 of the TISEPP relates to electricity generating works in any land in a prescribed rural, industrial or special use zone. The Development site traverses land zoned as RU1 Primary Production and C3 Environmental Management under the Palerang LEP. RU1 is a prescribed zone. However, C3 is not a prescribed zone. The declaration of the Project as SSD extends to all parts of the Project. Section 2.121 of the TISEPP requires certain developments to be referred to TfNSW. Electricity generation or solar energy systems are not included within the SEPP. However, the Project would

Category	Statutory requirements	Relevance to Project
		result in the generation of fewer than 50 vehicles per hour during peak construction and operation. As such, the requirements under Section 2.121 of the SEPP do not apply.
Other approvals	*Roads Act 1993* (Roads Act), *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), *Environmental Planning and Assessment Act 1979* (EP&A Act), Environmental Planning and Assessment Regulation 2021, *Crown Lands Management Act 2016* (CLM Act), State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP), *Heritage Act 1977, Water Management Act 2000* (WM Act), *National Parks and Wildlife Act 1974* (NPW Act), *Fisheries Management*	**Approvals and licences** • Section 4.42 of the EP&A Act states "*An authorisation of the following kind cannot be refused if it is necessary for carrying out State significant development that is authorised by a development consent under this Division and is to be substantially consistent with the consent*": Consent under section 138 of the Roads Act for road upgrades to the public road network. • An easement, licence or permit under division 5.6 of the CLM Act will be attained through consultation with DPE • If works are required, approval from the relevant roads authority would be sought under section 138 of the Roads Act. • A Water Access Licence under Section 56 of the Water Management Act 2000 for river offtake would be attained prior to the works.

Category	Statutory requirements	Relevance to Project
	Act 1994 (FM Act)	
Mandatory matters for consideration		The following key Commonwealth, State and Local legislative and policy instruments are applicable to the Project: <u>Commonwealth</u> • EPBC Act • *Native Title Act 1993* <u>NSW</u> • EP&A Act • Planning Systems SEPP • TISEPP • Hazards and Resilience SEPP • State Environmental Planning Policy (Primary Production) 2021 • **State Environmental Planning Policy (Resources and Energy) 2021** • Roads Act • CLM Act • NPW Act • WM Act • *Heritage Act 1977* • *Biodiversity Conservation Act 2016* (BC Act). <u>Local instruments</u> • Palerang Local Environmental Plan 2014 (Palerang LEP)

Category	Statutory requirements	Relevance to Project
		• Palerang Development Control Plan 2015

Appendix C Updated table of mitigation measures

In response to community and agency submissions and as a result of more intensive investigations in several areas, a number of changes to the safeguards and mitigation measures detailed in the EIS are now proposed. The table below provides the full list of safeguards and mitigation measures. New text is shown **in bold** and removed text shown with ~~strikethrough~~. The table below provides the full list of safeguards and mitigation measures as amended.

No.	Mitigation measures	Phase
	Visual Amenity	

V1	A Landscape Management Plan (LMP) ~~is recommended~~ **will be developed in consultation with a landscape architect** to address the 'as built' visual impacts of the proposed solar farm. The plan ~~should~~ **will** include:
	• On-site vegetation screening generally in accordance with **plan presented in the Visual Impact Assessment, and the final constraints/layout map**. This would include details of selected species aimed at 'breaking up' not blocking views of onsite infrastructure.
	• ~~Vegetation screening along Butmaroo Creek would avoid Archaeological and ecological sensitive areas. Consultation with the RAPS will be undertaken to inform the location of this vegetation screening.~~
	• **Vegetation screening along Butmaroo Creek will be in accordance with the Addendum ACHAR, including the following:**
	  • **A surface collection of registered Aboriginal objects and unexpected finds within the planting corridor must take place prior to any works taking place**
	  • **The planting of native vegetation must be performed by hand and using hand tools to minimise the potential impacts to unrecorded Aboriginal objects.**
	  • **The proponent should consider engaging representatives from the local Aboriginal community to be present or assist with the vegetation planting for screening and the White Fronted Chat habitat offset associated with the proposed Blind Creek Solar Farm.**
	• Location of planting locations, generally expected to be between the security fencing and the property boundary.
	• Band width, generally expected to be approximately 6m with three (3) rows of vegetation in high visual impact areas and two (2) rows in low / moderate visual impact areas.
	• Maintenance schedule for a period of 24 months. Maintenance should generally include the removal of weeds and replacement of dead or non-performing plants.
	• **Measures to ensure effective screening within three years of commencing operations.**
		Design
		Construction

No.	Mitigation measures	Phase
	The plan would be implemented nearing completion of construction and would be subject to agreement with the relevant landowner.	
V2	To ensure that the screen planting integrates into the existing landscape character, the bands will be planted with fast growing small trees and bushes, and low-lying vegetation to ensure a naturalistic effect whilst providing habitat and movement corridors for the native fauna.	Design
V3	Consult with landowners where landscaping has been proposed, in order to receive their feedback and adjust the mitigation measures accordingly.	Design
V4	Plantings from the following species will be selected, as they match the Plant community type generally present at the site: • *Eucalyptus pauciflora* 12m. • *Eucalyptus mannifera* 10-20m. • *Eucalyptus viminalis* 50m. • *Eucalyptus stellulata* 15m. • *Casuarina cunninghamiana* 10-15m. • *Cassinia aculeata* 1.0-2.6m. • *Hakea laurina* 5m. • *Dodonea viscosa subsiata* 2m.	Design
V5	Consideration will be given to the colours, type and height of the PCUs, the battery facility, O&M facility buildings and storage shed to ensure minimal contrast and to help blend into the surrounding landscape to the extent practicable.	Design
V6	Existing vegetation generally present around the site, and specifically to the eastern and southern boundary will be mostly retained and protected to maintain the existing level of screening.	Design Construction
V7	External lighting would be installed to comply with Australian/New Zealand Standard AS/NZS 4282:2019 – Control of Obtrusive	Design

No.	Mitigation measures	Phase
	Effects of Outdoor Lighting, or its latest version. All external operational lighting would be low intensity lighting (except where required for safety or emergency purposes) and would not shine above the horizontal.	Operation
	Reflective Glare	
R1	General methods to reduce visual impact of buildings will centre on the colour and materials of infrastructure, to reduce the overall visual contrast and reflectivity of the Project.	Design Construction
R2	Back-Tracking software can address all of the identified potential reflection glare and/or visibility during operational, specifically, by avoiding the horizontal position of panels at the very start and end of each day. The precise limiting angle should be established during commissioning.	Operation
R3	Avoid very low tilt angles either East or West.	Construction Operation
R4	Potential glare conditions at ID7 and 8 will be addressed via vegetation screening or avoid low angle fixed tilt east (avoid tilt position less than 25 degrees east).	Design Construction
R5	Lighting design AS 4282-1997 *Control of the Obtrusive Effect of Outdoor Lighting* will be implemented for lighting at the Project. • Lights will be directed downward as much as possible and luminaires that are designed to minimise light spill will be used, e.g., full cut-off luminaires where no light is emitted above the horizontal plane, ideally keeping the main beam angle less than 70°. Less spill-light means that more of the light output can be used to illuminate the area and a lower power output can be used, with corresponding energy consumption benefits, but without reducing the illuminance of the area. • Wherever possible use floodlights with asymmetric beams that permit the front glazing will be kept at or near parallel to the surface being lit.	Design Operation

No.	Mitigation measures	Phase
	Biodiversity	**Phase**
B1	Preparation and implementation of a Biodiversity Management Plan (BMP) for the site to include: • How to remove and dispose of vegetation and topsoil containing weeds declared under the *Biosecurity Act 2015* during and after construction. • Identification and protection of biodiversity exclusion zones during construction and operation.	Pre-construction Construction Operations
B2	Instigating clearing protocols including pre-clearing surveys, daily surveys and staged clearing, the presence of a trained ecologist or licensed trained spotter catcher during clearing events, construction and maintenance activities for human-made structures and non-native vegetation.	Pre-construction Construction
B3	Relocating habitat features (fallen timber, hollow logs and embedded rock) from within the Development footprint.	Pre-construction Construction
B4	Induct all staff prior to construction to identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance: ○ Staff training and site briefing to communicate environmental features to be protected and measures to be implemented. ○ Approved clearing limits to be clearly delineated with temporary fencing or similar prior to construction commencing. ○ No stockpiling or storage within dripline of any mature trees. No stockpiling or storage within riparian buffers.	Pre-construction Construction
B5	Adopt clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, removal of native vegetation by chainsaw, rather than heavy machinery, is preferable in situations where partial clearing is proposed: • Documented clearance protocols to mark and protect vegetation to be retained. • Use handheld machinery where possible and have elevated work platform check hollows prior to tree felling.	Pre-construction Construction
B6	Use noise barriers, or daily/seasonal timing of construction and operational activities to reduce impacts of noise.	Construction
B7	Light shields or daily/seasonal timing of construction and operational activities to reduce impacts of light spill.	Construction

No.	Mitigation measures	Phase
B8	Using adaptive dust management and monitoring programs to control air quality.	Construction Operations
B9	Install temporary fencing to protect significant environmental features such as riparian zones, karst, caves, rock outcrops and water bodies: • Prior to construction commencing, exclusion fences and signage would be installed around identified exclusion zones.	Pre-construction Construction
B10	Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas.	Construction Operations

B11	Preparation of a vegetation management plan to regulate activity in vegetation and habitat adjacent to the proposed ~~Project~~ development:
	• **Preparation of a management plan that would include protocols for:**
	• **Protection of native vegetation to be retained, particularly within the following areas:**
	  ○ **Remnant Monaro Tablelands Cool Temperate Grassy Woodlands at the eastern end of the Subject Land**
	  ○ **HBT's**
	  ○ **The wetland area at the north-western end of the Development Site**
	  ○ **The setback area from Butmaroo Creek**
	• **The installation of permanent fencing around areas of native vegetation to be retained**
	• **Best practice removal and disposal of vegetation cleared**
	• **Weed management**
	• **Unexpected threatened species finds**
	• **Exclusion of vehicles from sensitive areas**
	• **Rehabilitation of disturbed areas.**
		Construction

B12	Scheduling the timing of construction activities to avoid critical life cycle events (e.g. timing construction activities to avoid migratory species on site, or using the site).	Construction

No.	Mitigation measures	Phase
B13	Using sediment barriers and spill management procedures to control the quality of water runoff released from the site into the receiving environment.	Construction
B14	Ecological restoration, rehabilitation actions and/or maintenance of retained native vegetation on, or adjacent to, the Development footprint.	Construction
B15	**Implementation of a Biodiversity Management Plan to restore an equivalent amount of White-fronted Chat breeding habitat impacted by the Project:** • **Survey the extent of Scotch Thistle within the Subject Land to identity the exact area(ha) of White-fronted Chat breeding habitat being impacted.** • **Identify areas within the Subject Land which are not being impacted and establish an area of equivalent size to be used to restore White-fronted Chat breeding habitat.** • **Detail a monitoring plan in the BMP to assess the performance and effectiveness of the White-fronted Chat breeding habitat**	**Pre-construction** **Operation**
	Aboriginal Heritage	
AH1	The proponent must prepare a Cultural Heritage Management Plan (CHMP) to outline management steps and requirements for ongoing management of cultural heritage values within the construction, operation and decommissioning stages of the project. The CHMP may include some of the following elements, with agreement of relevant stakeholders. • Management of known sites, • Management of high sensitivity areas excluded from the project footprint, • Management of unexpected finds, and • Ongoing consultation and engagement with the local Aboriginal community.	Pre-construction Construction Operation Decommissioning
AH2	All cultural material recovered from the subsurface testing programme which is currently in temporary care at the NGH Canberra office be reburied in accordance with Requirement 26 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* in an appropriate location within the Development site as agreed with the registered Aboriginal parties. The reburial location must be submitted to the AHIMS database and will not be impacted in the future.	Pre and post construction

No.	Mitigation measures	Phase
AH3	Any recorded surface artefacts that cannot be avoided by the Development footprint must be salvaged by community collection prior to the commencement of ground disturbing works. The collection and relocation of the artefacts should be undertaken by an archaeologist with representatives of the registered Aboriginal parties in accordance with Requirement 26 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. The map shown in the ACHAR must be used as a guide for undertaking community collections. The artefacts should be collected and moved to a safe area within the property that will not be subject to any ground disturbance.	Pre-construction
AH4	All objects salvaged must have their reburial location submitted to the AHIMS database. An Aboriginal Site Impact Recording Form must be completed and submitted to AHIMS following harm for each site collected or destroyed from salvage and/or construction works.	Post construction
AH5	A Cultural Smoking Ceremony should be considered if requested by the Aboriginal community to take place to cleanse any artefacts salvaged during the reburial.	Pre-construction
AH6	Representative subsurface salvage excavations should be undertaken within the following landforms where significant ground disturbance works such as cabling or infrastructure is proposed. • Elevated Sand Body. • Undulating Plains. • Creek Terrace. The excavations would be undertaken within relatively undisturbed deposits (or deposits assumed to be undisturbed) and be aimed at retrieving important scientific information about the nature and age of the sites. The detailed research aims should be guided by those identified in this assessment and other researchers. This includes detailed analysis of the stone artefact technology and landuse.	Pre-construction
AH7	A selection of salvaged artefacts could be stored securely on-site (within the Cultural Learning Zone, for example) for easy access by the local Aboriginal community for education and cultural purposes such as Open Days, (contingent upon the consensus of comments received from RAPs on this ACHA report).	Pre-construction
AH8	The Proponent continue to consult with the Aboriginal community should the Project receive approval regarding any conditions of	Pre-construction

No.	Mitigation measures	Phase
	consent concerning Aboriginal cultural heritage.	Construction Operation Decommissioning
AH9	In the event that human remains are discovered during the works, all work must cease in the immediate vicinity. Heritage NSW and the local police should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal. Should the remains be identified as Aboriginal in origin, Heritage NSW will identify the appropriate course of action.	Pre-construction Construction Operation Decommissioning
AH10	Any changes to the proposed Development footprint that has not been assessed by this report should be subject to further assessment.	Pre-construction Construction Operation Decommissioning
AH11	**All works associated with the intersection upgrade along Tarago Road and the main entrance road for the proposed Blind Creek solar farm can proceed with caution within the existing road reserve. Any works outside of the proposed intersection design will be subject to further assessment.**	**Pre-construction** **Construction**
AH12	**Where plantings are required for screening or as an offset habitat for the White Fronted Chat within the Development Site, the following is recommended:** **d) A surface collection of registered Aboriginal objects and unexpected finds within the planting corridor must take place prior to any works taking place** **e) The planting of native vegetation must be performed by hand and using hand tools to minimise the potential impacts to unrecorded Aboriginal objects.** **f) The proponent should consider engaging representatives from the local Aboriginal community to be present or**	**Pre-construction** **Construction**

No.	Mitigation measures	Phase
	assist with the vegetation planting for screening and the White Fronted Chat habitat offset associated with the proposed Blind Creek Solar Farm. **g) Any unexpected finds collected during the surface collection or hand digging stages of the works should be held in temporary storage by NGH until the Proponent and the local Aboriginal community come to an agreement on how they should be managed.**	
AH13	**All works must be constrained to the areas of existing disturbance and any activity proposed outside of the current assessment area should also be subject to an addendum Aboriginal heritage assessment.**	**Pre-construction** **Construction** **Operation** **Decommissioning**
AH14	**Where possible, consideration should be given to the request for collection of native vegetation that is to be removed as part of the project development.**	**Pre-construction**
	Hydrology	
H1	Ensure appropriate erosion and sediment controls are incorporated into the design and should be implemented before works commence and maintained for the duration of the construction and until soil is stabilised after construction.	Design Construction Operations Decommissioning
H2	The Flood Response Plan prepared as part of the Emergency Response Plan would include: • Detail who will be responsible for monitoring the flood threat and how this is to be done. • Detail specific response measures to ensure site safety and environmental protection. • Outline a process for removing any necessary equipment and materials offsite and out of flood risk areas (i.e. rotate array modules to provide maximum clearance of the predicted flood level).	Construction Operations Decommissioning

No.	Mitigation measures	Phase
	• Consider site access in the event that some tracks become flooded. • Establish an evacuation point. • Define communication protocols with emergency services agencies.	
H3	All buildings and structures (including solar arrays) associated with the Project should be located outside high hazard areas (H5 and above) where they may be vulnerable to structural damage and have significant impact on flood behaviour.	Design Construction
H4	The finished floor level of all buildings should be a minimum of 500mm above the 1% AEP flood level, whilst critical infrastructure such as the electrical substation, control room and battery storage areas (i.e. BESS infrastructure) should be a minimum of 500mm above the PMF flood level in the adjacent Blind Creek.	Design Construction
H5	For proposed crossing structures over any watercourses that will likely be rendered impassable during significant flood events it is recommended that: • Flood warning signs and flood level indicators should be placed on each approach to the proposed crossings. • A Business Floodsafe Plan be prepared for the development to ensure the safety of employees during flood events in general accordance with the NSW SES “Business Floodsafe Toolkit and Plan”	Design Construction
H6	For solar tracking modules, the tracking axis should be located above the 1% AEP flood level plus 500mm freeboard, and the modules rotated to the horizontal during significant flood events to provide maximum clearance to the predicted flood level.	Design Construction
H7	Where located in the floodplain the solar array mounting piers should be designed to withstand the forces of floodwater (including any potential debris loading) up to the 1% AEP flood event, giving regard to the depth and velocity of floodwaters. Post development 1% AEP flood levels and velocities are shown in the EIS.	Design Construction
H8	All electrical infrastructure, including power conversion stations (PCUs) and the proposed substation, should be located above the 1% AEP flood level plus appropriate freeboard (minimum 500mm).	Design Construction

No.	Mitigation measures	Phase
H9	Where electrical cabling is required to be constructed below the 1% AEP flood level it should be capable of continuous submergence in water.	Design Construction
H10	Wherever possible security fencing within the floodplain should be avoided or minimised. Where required security fencing should be constructed in a manner which does not adversely affect the flow of floodwater and should be designed to withstand the forces of floodwater or collapse in a controlled manner to prevent impediment to floodwater.	Design Construction
H11	Any fencing across Butmaroo, Blind and Wrights Creeks should be avoided in preference to creating separate fenced compounds on either side of the creeks.	Design Construction
H12	All proposed infrastructure associated with the proposed development should be setback from existing watercourses at the recommended riparian corridor widths specified in Table 1 of the Guidelines for Riparian Corridors on Waterfront Land (DPI Water, 2012) as provided below. **This takes into account riparian setbacks for Butmaroo Creek and the ephemeral wetland.** In accordance with the guidelines the width of the vegetated riparian zone (VRZ) should be measured from the top of the highest bank on both sides of the watercourse.	Design Construction

<table>
<tr><th>No.</th><th>Mitigation measures</th><th>Phase</th></tr>
<tr><td></td><td>
Table 1. Recommended riparian corridor (RC) widths
<table>
<tr><th>Watercourse type</th><th>VRZ width
(each side of watercourse)</th><th>Total RC width</th></tr>
<tr><td>1st order</td><td>10 metres</td><td>20 m + channel width</td></tr>
<tr><td>2nd order</td><td>20 metres</td><td>40 m + channel width</td></tr>
<tr><td>3rd order</td><td>30 metres</td><td>60 m + channel width</td></tr>
<tr><td>4th order and greater (includes estuaries, wetlands and any parts of rivers influenced by tidal waters)</td><td>40 metres</td><td>80 m + channel width</td></tr>
</table>
For the undefined overland section of Wrights Creek, a connection, free from solar panels shall be maintained between its defined section and the ephemeral wetland. Given the defined section of Wrights Creek is a 4th order stream, the average exclusion will not be less than 40m each side of the creek bank (where defined) or nominal centreline (where undefined), and in no place less than 20m. For the avoidance of doubt, cables and tracks may cross this exclusion provided they are designed not to impede flow. Final design will be informed by a hydrology assessment to ensure the natural flow path is maintained. The final design will be developed in consultation with DPE Water prior to construction.
</td><td></td></tr>
<tr><td>H13</td><td>Non-riparian corridor works may be authorised in the outer riparian corridor, so long as where appropriate 50 percent of the outer vegetated riparian zone width may be used for non-riparian uses including asset protection zones, recreational areas, roads, development lots and infrastructure. However, an equivalent area connected to the riparian corridor must be offset on the site and the inner 50 percent of the vegetated riparian zone must be fully protected and vegetated with native endemic riparian plant species.</td><td>Design
Construction</td></tr>
</table>

No.	Mitigation measures	Phase
H14	Any road crossing of existing watercourses associated with the proposed development should be of the type defined in Table 2 of the Guidelines for Riparian Corridors on Waterfront Land (DPI Water, 2012) and Guidelines for Laying Pipes and Cable in Watercourses on Waterfront Land (NSW DPI, 2012). All crossings will be designed in consultation with DPI Fisheries. Based on a preliminary assessment under the Strahler System defined in the Guidelines for Riparian Corridors on Waterfront Land (DPI Water, 2012) all three watercourses of the Development site would be classified as having a stream order of four or greater.	Design Construction
H15	Within the floodplain access roads should be constructed as close to natural ground levels as possible so as not to form an obstruction to floodwaters, unless otherwise supported by modelling to demonstrate no adverse flooding impacts during the detailed design phase. The surface treatment of roads should be designed giving regard to the velocity of floodwaters to minimise potential for scouring during flood events, which could include the use of stabilised gravels or grassed surfaces for roads within the floodplain.	Design Construction
H16	Any areas of existing erosion within the proposed Development footprint should be appropriately treated prior to the erection of solar array modules to ensure their ongoing stability. For further information refer to Saving Soil: A Landowners Guide to Preventing and Repairing Soil Erosion, NSW DPI (2009) available at https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/270881/saving-soil-complete.pdf	Construction
	Noise and vibration	
N1	A Noise Management Plan (NMP) would be developed as part of the CEMP. The plan would include, but not be limited to: • Use less noisy plant and equipment where feasible and reasonable. • Plant and equipment will be properly maintained. • Use and maintain ‘noise control’ or ‘silencing’ kits fitted to machines to ensure they perform as intended. • Strategically position plant on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel.	Construction Decommissioning

No.	Mitigation measures	Phase
	• Avoid any unnecessary noise when carrying out manual operations and when operating plant. • Any equipment not in use for extended periods during construction work will be switched off • Implement a complaints procedure to manage noise complaints that may arise from construction activities. Each complaint will need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits. • Establish good relations with people living in the vicinity of the site at the beginning of Project. Keep people informed, deal with complaints seriously and expeditiously. The community liaison member of staff should be adequately experienced.	
N2	Potential noise impacts to associated receivers R2 and R48, will be managed in consultation with the homeowner and may include the following: • Time restrictions and/or providing periods of respite for residents, where feasible and reasonable e.g., between 10am and 3pm (with one-hour break for lunch between 12pm and 1pm). • Allowing the construction activities to proceed, despite the noise exceedance, may be the preferred method in order to complete the works expeditiously, with noise exceedances occurring over only two to three days. • These residents will be consulted to determine appropriate respite periods and will be notified of the potential noise impact during this time period so that they can organise their day around the noisy period.	Construction
N3	Works will be undertaken during standard working hours only (except for works that can be performed without noise nuisance): No work on Sundays or public holidays. Construction • Monday – Friday 7am to 6pm. • Saturday 8am to 1pm. • No work on Sundays or public holidays. Operation • Monday – Friday 7am to 6pm. • Saturday 8am to 1pm.	Construction Operation Decommissioning
N4	All staff on-site should be informed of procedures to operate plant and equipment in a quiet and efficient manner where possible.	Construction

No.	Mitigation measures	Phase
		Operation Decommissioning
	Access and Traffic	
AT1	A Traffic Management Plan (TMP) will be developed as part of the CEMP, OEMP and DEMP, in continued consultation with Council and TfNSW. The plan would include: • Neighbours of the solar farm will be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access. • Loading and unloading is proposed to occur within the work area. No street or roads will be used for material storage at any time. • All vehicles will enter and exit the site in a forward direction. • Management of vehicular access to and from the site is essential in order to maintain the safety of the general public as well as the labour force. The following code is to be implemented as a measure to maintain safety within the site: o Utilisation of only the designated transport routes. o Construction vehicle movements are to abide by finalised schedules as agreed by the relevant authorities. o Heavy vehicle movements occur outside of times when school buses will be present on Tarago Road. • Implementation of a proactive erosion and sediment control plan for on-site roads, hardstands and laydown areas. • All permits for working within the road reserve will be received from the relevant authority prior to works commencing. • A map of the primary haulage routes highlighting critical locations. • An induction process for vehicle operators and regular toolbox meetings. • A complaint resolution and disciplinary procedure. • Local climatic conditions that may impact road safety of employees throughout all project phases (e.g., fog, wet and significant dry, dusty weather).	Preconstruction Construction Decommissioning
AT2	TfNSW education staff will be invited to provide information, guidance and discussion on fatigue management and road safety to site staff.	Preconstruction Construction Decommissioning

No.	Mitigation measures	Phase
AT3	Stakeholders including TfNSW, Queanbeyan-Palerang Regional Council, local landholders and emergency services will continue to be consulted during construction and decommissioning to advise of any changes to road use and conditions.	Construction Decommissioning
AT4	The intersection of Blind Creek Road Entrance + and Tarago Road will be upgraded to accommodate a BAL treatment to allow B-Doubles to exit the track to the north.	Pre-construction
AT5	**The Applicant will enter into a royalty payment, to be developed in consultation with QPRC and GMC based on construction traffic volumes on Tarago Road.**	**Pre-construction** **Post-construction**
AT6	**Prior to construction, the EPC Contractor is required to complete a Heavy Vehicle Access Study in consultation with QPRC and GMC.**	**Pre-construction**
	Land Use	
L1	Consultation would be ongoing with TransGrid regarding connection to the substation and design of electricity transmission infrastructure.	Preconstruction
L2	Consultation with adjacent landowners, to minimise impact of the Project on adjacent agricultural activities and access.	Preconstruction Construction
L3	Construction, operation and decommissioning to operate in accordance with the Traffic Management Plan (TMP), to minimise dust generation and disturbance to livestock.	Construction Operation Decommissioning
L4	Relevant landholders and residents would be consulted and notified to minimise, where possible, the noise, dust, traffic and other disturbance impacts.	Preconstruction Construction

No.	Mitigation measures	Phase
L5	Underground cabling and other works to remain in situ following decommissioning of the solar farm would be installed deeper than 500mm to allow cultivated cropping to resume following decommissioning.	Decommissioning
L6	Prior to construction, a license will be applied for to allow construction to commence within Crown roads on the Development site.	Preconstruction
L7	Consultation with representatives from nearby Major Projects, including Capital Wind Farm, Woodlawn Wind Farm, and Woodlawn Bioreactor would be undertaken to ensure cumulative traffic and pressure on local services are managed adequately.	Preconstruction Construction
L8	A Decommissioning Environmental Management Plan (DEMP) would be prepared and submitted to DPE for approval prior to decommissioning. The DEMP would include a Site Rehabilitation Plan covering: • Criteria and indicators for the restoration of land capability and agricultural potential based on pre-works soil survey results. • Details of rehabilitation actions such as removal of infrastructure, remediation of soils, reinstatement of dams and irrigation/drainage channels as required, reinstatement of property boundaries and establishment of suitable groundcover vegetation on bare areas. • A monitoring and assessment process to demonstrate that the target state has been achieved. • An expected timeline for the rehabilitation program.	Pre-decommissioning
	Soils and Landforms	
S1	The solar array would be designed and installed to optimise the capacity of the solar array and maintain perennial groundcover (subject to climatic conditions). Groundcover management details (including any stocking levels etc) and rehabilitation of civil work completed during construction are to be included in the Construction Environmental Management Plan and Operational Environmental Management Plan.	Preconstruction Construction Operation
S2	A Construction Environmental Management Plan (CEMP) would be implemented to manage runoff, soil erosion and sedimentation and pollution risks at the site. The CEMP would be prepared in accordance with the 'Blue Book' Volume 1 Managing Urban Stormwater: Soils and Construction (Landcom 2004), Volume 2A Installation of Services (DECC 2008a) and	Pre-construction Construction

No.	Mitigation measures	Phase
	Volume 2C Unsealed Roads (DECC 2008b).	
S3	As part of the CEMP, a Soil and Water Management Plan (incorporating a Site Drainage Plan and Erosion and Sediment Control Plan) would be prepared, implemented and monitored during the Project to minimise soil and water impacts. These plans would include provisions to: • Install, monitor and maintain erosion controls. • Identify and protect sensitive features such as native vegetation, dams and water courses. • Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads. • Manage topsoil: in all excavation activities, separate subsoils and topsoils to restore natural soil profiles and assist revegetation, guided by the findings of the pre-works soil survey. Topsoils stockpiled for extended periods would be managed to avoid contact with overland runoff, minimise weed risks, and maintain soil organic matter, soil structure and microbial activity. • Minimise the area of disturbance from excavation and compaction and rationalise vehicle movements to minimise soil impacts. • Ensure any discharge of water from the site is managed to ensure ANZECC (2000) water quality criteria are met as far as practicable, ensure excavations are not scheduled when heavy rainfall events are predicted, or soils are saturated.	Pre-construction Construction
S4	Prior to commencement of construction, representative soil samples would be gathered as part of a specialist soil survey to establish baseline data on the existing agronomic characteristics of the soil. The survey would include sampling and analysis for soil texture and structure, nutrients, acidity, salinity, sodicity, dispersion and organic matter.	Pre-construction
S5	The Spill and Contamination Response Plan prepared as part of the Emergency Response Plan would include measures to: • Respond to the discovery of existing contaminants at the site (e.g., Pesticide containers or asbestos), including stop work protocols and remediation and disposal requirements. • Manage the storage of any potential contaminants on-site. • Mitigate the effects of soil and water contamination by fuels or other chemicals (including emergency response and EPA notification procedures). • Ensure that machinery and materials arrive on site in a clean and secure condition. • Prevent contaminants affecting adjacent pastures, water courses, dams and native vegetation.	Construction Operation Decommissioning

No.	Mitigation measures	Phase
	• Monitor and maintain spill equipment including spill kits in relevant machinery. • Induct and train site staff. • Detail fuels, chemicals, and liquids storage locations that are at least 50m from any waterways or drainage lines, in an appropriate bunded area. • Disposal process for contaminated materials.	
S6	If earthworks during construction have a likelihood of impacting potential NOA, an Asbestos Management Plan (AMP) is to be prepared prior to construction for identified or suspected areas of naturally occurring asbestos mapped by NSW Department of Planning, Industry & Environment. The AMP is to include the items outlined in the NSW SafeWork Naturally occurring asbestos factsheet, www.safework.nsw.gov.au.	Pre-construction Construction
S7	Any development that intersects mapped moderate to high salinity, a salinity soil survey is required.	Pre-construction
S8	Sodic soil amendment should be applied where sodic soils are present. Treatment with Gypsum should be applied. The application rate should be determined following soil testing (Clay content, ECEC and EC), and should be at a minimum rate of 10t/ha.	Pre-construction
S9	An unexpected finds protocol is to be prepared prior to construction including actions to be undertaken if contaminated soils and/or water are encountered during construction.	Pre-construction Construction
	Water use and water quality	
W1	The Spill and Contamination Response Plan prepared as part of the Emergency Response Plan would include measures to: • Respond to the discovery of existing contaminants at the site (e.g., Pesticide containers or asbestos), including stop work protocols and remediation and disposal requirements. • Manage the storage of any potential contaminants on-site. • Mitigate the effects of soil and water contamination by fuels or other chemicals (including emergency response and EPA notification procedures). • Ensure that machinery and materials arrive on site in a clean and secure condition.	Construction Operation Decommissioning

No.	Mitigation measures	Phase
	• Prevent contaminants affecting adjacent pastures, irrigation channels, dams and native vegetation. • Monitor and maintain spill equipment including spill kits in relevant machinery. • Induct and train site staff. • Detail fuels, chemicals, and liquids storage locations that are at least 50m from any waterways or drainage lines, in an appropriate bunded area. • Disposal process for contaminated materials.	
W2	If the substation is oil-cooled, the layout, design, size etc of the oil containment bunding and drainage would comply with the relevant standards and guidelines. The bund would be regularly inspected and cleaned, including removal of rainwater.	Pre-construction Construction Operation
W3	A Soil and Water Management Plan will be developed to incorporate the following: • That no detergents or other chemicals would be added to the solar panel cleaning water. • Specify concrete washout process and location. • Specify the procedures for testing, treatment and discharge of construction wastewater. • Detail staff training required.	Construction Operation
W4	If a new bore is to be constructed, the construction and maintenance of the groundwater extraction bore will be in accordance with the Minimum Construction Requirements for Water Bores in Australia (3rd edition) produced by the National Uniform Drillers Licencing Committee (NUDLC). The minimum requirements for consideration include: • Only a licensed driller shall carry out the bore installation works and shall be present at all times during bore construction activities. • The bore design should aim to ensure the protection of the groundwater resource from surface contamination. The headworks and casing are sealed so that there is no potential for flow outside the casing. • To minimise the possibility of contaminating the bore and any surrounding bores, the new bore should be located away from existing bores, surface water sources and any sources of pollution (e.g., dairies, septic tanks and absorption trenches, refuse dumps, landfill, effluent discharges from drainage ditches, cattle/stock dips). • Chemicals and other drilling fluid additives that could leave a residual toxicity should not be added to any drilling fluids or	Pre-Construction Construction Operation Decommissioning

No.	Mitigation measures	Phase
	cement slurries (i.e., grouts) used to drill and complete any water bore.	
W5	If ground water is to be used, a Groundwater Management Plan would be incorporated into the CEMP to manage impacts. This would be informed by onsite survey by an appropriately trained expert and include: • Pollution controls. • Management of dewatering.	Pre-Construction
W6	If possible, a dedicated refuelling area near to the servicing area should be established. Refuelling areas will be communicated to all site personnel by signs and notice boards.	Construction Operations Decommissioning
	Historic heritage	
HH1	Stock fence around the Trig Station It is recommended that a stock fence be installed along the proposed buffer around the Trig Station. There is currently no protection from live stock.	Pre-construction
HH2	Archival Recording of the Trig Station A photographic archival recording of the Trig Station shall be prepared in accordance with Heritage NSW guideline, Photographic Recording of using Film or Digital Capture (2006). The photographic recording will include additional research to confirm the existence of other Trig Station or markers within or in proximity to the Development site. The photographic recording shall include photos, descriptions and a brief historical account of these identified survey markers and their relationship to each other.	Pre-construction
HH3	Implement an Unexpected Finds Procedure Should historical archaeological materials be uncovered while undertaking works to develop the Blind Creek Solar Farm, all activities must stop and Heritage NSW be immediately notified. An appropriately qualified archaeologist should also be consulted for the purpose of implementing best practice protection and conservation measures while the relevant approvals are	All stages

No.	Mitigation measures	Phase
	obtained.	
	Social and economic	
S1	The Local Industry Participation Plan will focus on maximising the involvement of local people and businesses in the Project. It will: • Include specific focus on people and businesses within the Queanbeyan-Palerang LGA, but also the ACT, and the wider regional area. • Consider specific opportunities for Aboriginal people and businesses, women, and young people. • Include culturally sensitive Aboriginal employment goals for workers and university graduates, and protocols and systems to ensure Aboriginal employment does not conflict with cultural obligations. The plan should be developed in partnership with the key local economic development stakeholders in the region (e.g., the Industry Capability Network, NSW Training Services, Regional Development Australia, Queanbeyan-Palerang Regional Council, Bungendore Chamber of Commerce and Industry, and Queanbeyan Business Chamber). It will assess the feasibility to support local schools in science and engineering studies through a partnership. The plan would outline mechanisms that will be used to ensure that local people and businesses are given full, fair, and reasonable opportunity to participate in the Project. It will also detail how the proponent will link in at the local level with government and agency support programs that assist people and businesses improve their capacity and capability.	Design, Construction, Operation
S2	The Local Procurement Policy will outline the proponent's commitment to providing local and regional businesses the opportunity to supply goods and services to meet Project needs during all phases of the Project. This will be developed through consultation with key local economic development stakeholders (e.g., the Industry Capability Network, Regional Development Australia, Queanbeyan-Palerang Regional Council). It will give Aboriginal businesses full and fair opportunities to supply goods and services. The Local Procurement Policy will include the requirements of a Local Contractor Day, giving local contractors the opportunity to register their interest and participate in the Project.	Design, Construction, Operation
S3	The Employment and Accommodation Strategy will provide further detail on accommodation providers. The strategy will include engagement with accommodation providers to avoid negatively impacting on tourism opportunities and any vulnerable	Design, Construction, Operation

No.	Mitigation measures	Phase
	populations. **The Applicant will consult with QPRC during the development of the Employment and Accommodation Strategy, and throughout Project construction, to minimise adverse impacts on both the rental market, and on vulnerable populations who may be temporarily housed in short-term accommodation.**	
S4	Develop the CBSS in partnership with residents. The intention is to create a fund that can support very localised and meaningful community development or other neighbourhood-level initiatives that have strong resident support, throughout the life of the Project. The proponent will consider the need for a greater level of clarity on the rationale for benefit sharing and the way the CBSS has been structured.	Design Construction Operation
S5	**Bungendore Sands Quarry are considered a key stakeholder in the project and will be included in future engagement activities.**	**Design** **Construction** **Operation**
	Bushfire	
BF1	Copper conductors would be used where necessary to electrically bond the metal structures to earth to protect personnel and equipment in the event of lightning strikes and electrical faults.	Design
BF2	Dangerous or hazardous materials would be stored and handled in accordance with AS1940-2004: *The storage and handling of flammable and combustible liquids*.	Construction Operation Decommission
BF3	Develop a Bushfire Emergency Management and Operations Plan to include but not be limited to: • Specific management of activities with a risk of fire ignition (hot works, vehicle use, smoking, use of flammable materials, blasting). • Incorporation of fire safety and response in staff and contractor induction, training, OHS procedures and Work Method Statements.	Construction Operation Decommission

No.	Mitigation measures	Phase
	• Designation of a staff safety officer tasked with ensuring implementation of the plan and regular liaison with firefighting agencies including emergency access to site. • Document all firefighting resources maintained at the site with an inspection and maintenance schedule. • Monitoring and management of vegetation fuel loads. • A communications strategy incorporating use of mobile phones, radio use (type, channels and call-signs), Fire Danger Warning signs located at the entrance to the site compounds, emergency services agency contacts. In developing the Bushfire Emergency Management and Operations Plan, NSW RFS and Fire and Rescue NSW would be consulted on the volume of water supplies, fire-fighting equipment maintained on-site, fire truck connectivity requirements, emergency access points, proposed APZ and access arrangements, communications, vegetation fuel levels and hazard reduction measures.	
BF4	An APZ buffer of minimum 10m would be maintained from the outside edge of the Project infrastructure. Additionally, where remnant or planted woody vegetation is present within the Development footprint, an APZ buffer of minimum 20m would be maintained between this vegetation and solar farm infrastructure. An APZ comprising of crushed gravel (20m in width) would be maintained between the substation and hazard vegetation Average grass height within the APZ buffer (adjacent solar array perimeter) would be maintained at or below 10 centimetres on average in the lead-up to and throughout the October - April fire season. APZs would meet the specifications of Appendix 4 of PBP. Land outside designated APZs, including beneath the solar array, would be maintained by intensive rotational grazing.	Construction Operation Decommission
BF5	The project would include a defendable space around the permitter of the solar array area that permits unobstructed vehicle access: • 20m around woody vegetation. • 10m around grassland.	Design Operation
BF6	The overhead powerlines to the TransGrid transmissions lines at the site would be managed by maintaining appropriate vegetation clearance limits to minimise potential ignition risks, in accordance with the *ISSC 3 Guideline for Managing Vegetation Near Power Lines.*	Operation

No.	Mitigation measures	Phase
BF7	Appropriate fire-fighting equipment would be held on site to respond to any fires that may occur at the site during construction. This equipment would include fire extinguishers, a 1000 litre water cart (fitted with suitable hosing, fittings and diesel fire-fighting pump) retained on site on a precautionary basis, particularly during any blasting and welding operations. Equipment lists would be detailed in Work Method Statements. A 20,000-litre non-combustible water storage tank, with a 65mm Storz outlet with a ball valve fitted to the outlet, would be provided close to the entrance of the substation. A 100,000-litre tank close to the entrance of the solar array area and a second 100,000-litre tank within the solar array area would be provided, each with 20,000-litres reserved for firefighting purposes with a 65mm Storz outlet and ball valve fitted to the outlet	Construction Operation Decommission
BF8	The NSW RFS and Fire and Rescue NSW would be provided with a contact point for the solar farm, during construction and operation.	Construction Operation
BF9	Following commissioning of the solar farm, the local RFS and Fire and Rescue brigades would be invited to an information and orientation day covering access, infrastructure, firefighting resources on-site, fire control strategies and risks/hazards at the site.	Operation
BF10	All internal access tracks would comply with the requirements of property access roads in accordance with Table 5.3b of the PBP. All access and egress tracks on the site would be maintained and kept free of parked vehicles to enable rapid response for firefighting crews and to avoid entrapment of staff in the case of bushfire emergencies. Access tracks would be constructed as through roads as far as practicable. Dead end tracks would be signposted and include provision for turning firefighting vehicles.	Construction Operation Decommission
BF11	A Hot Works Permit system would be applied to ensure that adequate safety measures are in place. Fire extinguishers would be present during all hot works. Where practicable hot works would be carried out in specific safe areas (such as the Construction Compound temporary workshop areas).	Construction Operation Decommission
BF12	Machinery capable of causing an ignition would not be used during bushfire danger weather, including Total Fire Ban days.	Construction

No.	Mitigation measures	Phase
		Operation Decommission
BF13	Prior to operation of the solar farm, an Emergency Response Plan (ERP) would be prepared in consultation with NSW RFS and Fire and Rescue NSW. This plan must include but not be limited to: • Specifically addresses foreseeable on site and off site fire events and other emergency incidents. • Risk control measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the PV system (either in its entirety or partially, as determined by risk assessment). • Outline other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site. • Two copies of the ERP are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s. • Once constructed and prior to operation, the operator of the facility would contact the relevant local emergency management committee (LEMC). • **Be in accordance with Hazardous Industry Planning Advisory Paper 1. Emergency Planning (HIPAP no. 1).**	Operation
BF14	Fire risk mitigation associated with the lithium-ion BESS would include: • Selecting a BESS unit with: o Enclosures which protect the system from weather and extreme heat, solar degradation, dust, and animals. Of course these must be fit for the local conditions. o Cooling systems able to handle the local conditions. o Battery management systems to monitor for faults, automatically respond and alert staff. o Fire suppression systems, if effective. • Appropriate fire risk reduction including o Strictly adhere to the manufacturer's requirements on installation and testing. o Carefully handle the BESS during transport and installation to avoid mechanical damage. o Locating the BESS as far as practicable from any sensitive receptors or large stands of vegetation. o Provide adequate clearance between battery containers and/or install fire rated walls to avoid or delay fire spread.	Operation

No.	Mitigation measures	Phase
	○ Provide adequate access/egress for installation, maintenance and fire response. ○ Provide an Asset Protection Zone to reduce the risk of fire spreading to or from the BESS. In the case of a centralised (AC coupled) this should be a 10m radius around the installation of a vegetation free surface such as crushed gravel. • Facilitation (including funding) of first responder training in the management of LiB fires at the site for local brigades. • Preparation of a BESS specific section within the Battery Fire Response Plan, under the Bushfire Emergency Management and Operations Plan, in consultation with fire authorities, fire suppression experts and in reference to relevant standards and guidelines.	
BF15	A Fire Safety Study (FSS) will be undertaken and developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper No. 2 (HIPAP No.2) , HIPAP No. 4 and consultation with FRNSW prior to commencement of construction. The FSS will consider the limited operational capacity of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety dependence.	Pre – Construction
BF16	Ensure the battery cooling systems are fully -tested when installed.	Construction
BF17	**An Emergency Services Information Package (ESIP) be prepared in accordance with FRNSW fire safety guideline – Emergency services information package and tactical fire plans.**	**Pre-construction**
	Hazardous materials and development	
PHA1	Dangerous or hazardous materials would be stored and handled in accordance with AS1940-2004: *The storage and handling of flammable and combustible liquids* and the ADG code where relevant.	Construction Operation Decommissioning
PHA2	Protocols would be developed for lithium-ion battery storage, maintenance, and incident response to mitigate Li-ion fire risks.	Construction Operation Decommissioning

No.	Mitigation measures	Phase
PHA3	The transportation of new and waste lithium-ion batteries would comply with the requirements of the Dangerous Goods Code, including specific 'special provisions' and 'packing instructions' applying to the transportation of Li-ion batteries.	Construction Operation Decommissioning
PHA4	Preparation of a specific Battery Fire Response Plan, under the general Fire Response Plan, in consultation with fire authorities, fire suppression experts, and in reference to relevant standards and guidelines.	Construction Operation Decommissioning
PHA5	The results of this PHA should be used as inputs into other safety studies required including: • Fire Response Plan. • Evacuation Plan. • Spill and Contamination Response Plan. **The PHA will be updated and submitted with the detailed design once battery technology has been confirmed.**	**Pre-construction** Construction Operation Decommissioning
	EMF	
E1	All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia.	Preconstruction Construction
E2	All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required and would aim to minimise EMFs.	Preconstruction Construction
	Air quality	
AQ1	The CSES will be implemented to promote information sharing for air quality and include: • Notification of relevant stakeholders.	Preconstruction/ Construction/

No.	Mitigation measures	Phase
	• An accessible complaints process with a timely response protocol.	Decommissioning
AQ2	Dust control measures, including on site access roads, will be specified in the CEMP and DEMP and may include water applications or other means as required.	Construction/ Decommissioning
AQ3	Idling for more than 5 minutes is prohibited. Lorries and trucks engines would be turned off.	Construction/ Decommissioning
AQ4	Vehicle loads of material which may create dust or litter would be covered while using the public road system.	Construction/ Decommissioning
AQ5	All vehicles and machinery used at the site would be in good condition, fitted with appropriate emission controls and comply with the requirements of the POEO Act, relevant Australian standards and manufacturer's operating recommendations. Plant would be operated efficiently and turned off when not in use.	Construction/ Decommissioning
AQ6	Fires and material burning would be prohibited in the Development site.	Construction/ Decommissioning
	Resource use and waste generation	
R1	A Waste Management Plan (WMP) would be developed to minimise waste, including: • Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. • Quantification and classification of all waste streams. • Provision for recycling management on-site. • Provision of toilet facilities for on-site workers and identify that sullage would be disposed of (i.e., pump out to local sewage treatment plant). • Tracking of all waste leaving the site. • Disposal of waste at facilities permitted to accept the waste.	Construction/ Operation/ Decommissioning

No.	Mitigation measures	Phase
	• Requirements for hauling waste (such as covered loads).	
R2	A septic system would be installed and operated according to the Queanbeyan Palerang Regional Council regulations.	Construction/ Operation

Appendix D Engagement appendices

Appendix E Supporting information

E.1 Updated BDAR

E.2 Updated VIA

E.3 Updated Glint and glare assessment

E.4 Updated TIA and BAR treatment

E.5 Disturbance Report – Tarago Road

E.6 Addendum heritage report

E.7 Addendum Noise Report