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New Energy Development

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TABLE OF CONTENTS

1.	Introduction.....	1
1.1.	Purpose of this document.....	1
1.2.	The Proponent.....	1
2.	The proposal	1
2.1.	Site context.....	1
2.2.	Subject Land.....	2
2.3.	Proposal Description	7
3.	Proposal need and alternatives	7
3.1.	Proposal need	7
3.1.1.	Local benefits	8
3.1.2.	Site suitability	8
4.	Consultation.....	12
4.1.	Community and Stakeholder Engagement Strategy	12
4.2.	Consultation to date.....	13
5.	Planning considerations.....	19
5.1.	Key NSW Environmental Planning instruments	19
5.1.1.	Environmental Planning and Assessment Act 1979	19
5.1.2.	State Environmental Planning Policy (State and Regional Development) 2011	19
5.1.3.	State Environmental Planning Policy (Infrastructure) 2007	19
5.1.4.	Primary Production and Rural Development SEPP 2019.....	19
5.1.5.	Roads Act 1993.....	20
5.1.6.	Crown Lands Act 1989.....	21
5.1.7.	Biodiversity Conservation Act 2016	21
5.1.8.	Heritage Act 1977	21
5.2.	Local Instruments	22
5.2.1.	Yass Valley Local Environmental Plan 2013	22
5.3.	Commonwealth legislation	22
5.3.1.	Environmental Protection and Biodiversity Conservation Act 1999.....	22
5.3.2.	Native Title Act 1993.....	23
6.	Scoping Assessment	23
6.1.	Assessment of Key Issues	23
6.1.1.	Visual amenity	24
6.1.2.	Noise and vibration	30

6.1.3.	Aboriginal Heritage	30
6.1.4.	Biodiversity	31
6.1.5.	Land use compatibility	41
6.1.6.	Access and traffic	44
6.1.7.	Social and economic impacts	45
6.1.8.	Hydrology, groundwater and water quality	46
6.1.9.	Soil and landforms	48
6.2.	Other Environmental Issues	53
7.	Constraints Assessment	57
7.1.	Methodology	57
7.2.	Results	57
8.	Conclusion and Recommendations	60
9.	References	61
	Appendix A Site Photographs	A-I
	Appendix B Community and Stakeholder Engagement Plan	B-I

FIGURES

Figure 2-1	Location of the subject land	3
Figure 2-2	Lots and DP's within the subject land	4
Figure 2-3	Land zoning within and surrounding the subject land (NSW).	5
Figure 2-4	Land zoning surrounding the subject land (ACT).....	6
Figure 6-1	Sensitive receivers within 2 km of the subject land.	26
Figure 6-2	Sensitive receivers within 1km likely to have a view of the solar farm infrastructure.	27
Figure 6-3	Potential visual impact – initial viewshed modelling based on the concept layout	28
Figure 6-4	Topographic map (10m contours).....	29
Figure 6-5	Preliminary mapping of vegetation zones and Plant Community Types (PCTs)	40
Figure 6-6	Land use within and surrounding the subject land (NSW only).	43
Figure 6-7	Strahler stream orders within and surrounding the subject land.....	47
Figure 6-8	Australian Soil Classification (ASC) within and surrounding the subject land.	50
Figure 6-9	Land and Soil Capability classes within and surrounding the subject land.	51
Figure 7-1	Wallaroo Solar Farm constraints and indicative development footprint.....	59

TABLE

Table 3-1 Site selection criteria: preferable site conditions.	9
Table 3-2 Site selection criteria: areas of constraint.	10
Table 4-1 Consultation to date (consultation is ongoing).	13
Table 6-1 Distance between subject land and sensitive receivers likely to have a view of solar farm infrastructure within 1 km.	24
Table 6-2 Summary of vegetation zones and habitat across the subject land.	35
Table 6-3 Land use categories within the subject land (DPIE, 2013).	42
Table 6-4 Statistical overview of Orange, Wellington, Mullion Creek and Euchareena (ABS, 2016).	45
Table 6-5 Australian Soil Classification (ASC) relevant to the subject land.	49
Table 6-6 Land and Soil Capability (LSC) Classes within the subject land (OEH 2012).	49
Table 7-1 Environmental constraint definitions	57
Table 7-2 Environmental constraints for the subject land	57

ACRONYMS AND ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal heritage information management system
ASC	Australian Soil Classification
BC Act	Biodiversity Conservation Act 2016 (NSW)
BCD	Biodiversity Conservation Division, formerly OEH, DECCW
BDAR	Biodiversity Development Assessment Report
Biosecurity Act	Biosecurity Act 2015 (NSW)
CEC	Clean Energy Council
CIV	Capital Investment Value
Cwth	Commonwealth
DECCW	Refer to OEH, BCD
Development footprint	The area of the land that is directly impacted by the proposal infrastructure
DAWE	(Cwth) Department of Agriculture, Water and Environment (formally Department of Energy and Environment; DoEE)
DP&I	(NSW) Department of Planning and Infrastructure (now DPIE)
DPIE	(NSW) Department of Planning, Industry and Environment
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EES	Environment Energy and Science
EIA	Environmental impact assessment
EPBC Act	(Cwth) Environment Protection and Biodiversity Conservation Act 1999
EP&A Act	(NSW) Environmental Planning and Assessment Act 1979
ha	hectares
Heritage Act	(NSW) Heritage Act 1977

ISEPP	(NSW) State Environmental Planning Policy (Infrastructure) 2007
km	kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
LEP	Local Environment Plan
m	Metres
MW	Megawatt
NES	Matters of National environmental significance under the EPBC Act (c.f.)
NPW Act	National Parks and Wildlife Act 1974 (NSW)
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water
PCT	Plant Community Type
PV	Photovoltaic
RET	Renewable Energy Target
REZ	Renewable Energy Zone
SEARs	Secretary's Environmental Assessment Requirements
SEPP	(NSW) State Environmental Planning Policy
sp/spp	Species/multiple species
SSD	State Significant Development
Subject land	All lots that would be impacted by the proposal
TEC	Threatened Ecological Community

1. INTRODUCTION

1.1. PURPOSE OF THIS DOCUMENT

This Scoping Report has been prepared to support a request to the Department of Planning Infrastructure and Environment (DPIE) for the Secretary's Environmental Assessment Requirement (SEAR's) for the proposed Wallaroo Solar Farm. The SEAR's would guide the preparation of an Environmental Impact Statement (EIS) for the proposal, pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This Scoping Report provides a description of the Wallaroo Solar Farm proposal, including the site and its surroundings, the environmental planning pathway for approval and identification of key potential environmental issues that may be associated with the proposal.

1.2. THE PROPONENT

The Wallaroo Solar Farm is a joint venture project being proposed by New Energy Development and Univergy International.

New Energy Development is a renewable energy centric enterprise with operations in both Australia and South East Asia. The key market segments it operates within are;

- Utility Scale Solar Farm Asset Ownership through its first acquisition in December 2019 of a Solar Farm having a capacity of 4.77MW.
- Utility Scale Project Development. In Australia New Energy Development is currently involved in the development of twelve largescale solar farms with a combined generation capacity of 1.97GW.
- Largescale energy storage manufacturing. Through a joint venture with the US company Pathion Inc in the subsidiary Pathion Energy Australia.
- Largescale Solar Rooftop Engineering Procurement and Construction. Operating throughout South East Asia under the subsidiary PowerVault South East Asia.

Univergy is a Spanish-Japanese renewable energy developer company established in 2013 with presence in 18 countries and with a focus on integration and new business ideas:

- Univergy has developed in Japan over 1GW in solar projects and is the developer in over 2.6GW of solar projects worldwide. It has also diversified into Wind, Offshore wind and Biomass in countries Such as Spain, Japan and Vietnam.
- Univergy is also active in commercial and industrial roofs, agricultural applications of solar energy and has a R&D department promoting solutions that takes into account sustainability and renewable energies.

2. THE PROPOSAL

2.1. SITE CONTEXT

The proposed Wallaroo Solar Farm is located within the Yass Valley Local Government Area (LGA), which has a population of 16,142 people (ABS, 2016). The subject land is located in the locality of Wallaroo which has a population of 707 people (ABS, 2016).

The subject land is adjacent to the New South Wales (NSW) / Australian Capital Territory (ACT) border, with the ACT suburbs of Dunlop and MacGregor 550 m to 900 m from the subject land, respectively. Dunlop and

MacGregor are host to a range of facilities including primary schools, churches parks and reserves, sporting fields and playgrounds. A number of businesses are also located within Dunlop and MacGregor offering goods and services to the surrounding communities.

2.2. SUBJECT LAND

The Wallaroo Solar Farm subject land is approximately 391 ha in area and is located on Lot 1 DP544209 and Lot 2 DP602262. There are two established farms and residences within the subject land: Glenmore and Yarramlee. Two options are being considered for the connection to the existing electricity network, these are:

1. Preferred: A direct connection into the existing TransGrid 132kV line that runs through the site.
2. Alternative: An overhead transmission line would be constructed within the TransGrid easement of the existing 132 kV transmission line to connect to the Canberra Substation.

The main access to the subject land is via a access track which connects Wallaroo, NSW, to Dunlop, ACT located to the east of the subject land, the access track also forms part of the Bicentennial National Trail (proposed not to be obstructed by the project). The proposed project access is via Gooroomon Ponds Road via Wallaroo Road, located in Wallaroo NSW which leads to the northern portion of the subject land. The nearest major road is the Barton Highway, approximately 7.5 km north east of the subject land by road. The Barton Highway provides a connection between the ACT and the Hume Highway.

Under the Yass Valley Local Environmental Plan 2013, the subject land is located on land zoned as RU1 Primary Production (Figure 2-3). During a site inspection conducted on 20th and 21st January 2020, it was noted that much of the subject land has been extensively cleared of woody vegetation and has been highly modified by historical farming practices, including cultivation of land and pasture improvement.

Two named watercourses traverse the site and flow to the Murrumbidgee River which is located 3.1 to 4km west of the subject land including the 6th order Ginninderra Creek and 5th order Gooroomon Ponds.

Several smaller 1st and 2nd order tributaries of Ginninderra Creek and Gooroomon Ponds also traverse the site.

During the site inspection conducted on the 20th and 21st January 2020, both Gooroomon Ponds and Ginninderra Creek had pools of water due to recent rain, however no flowing water was observed.

Two existing TransGrid 132 kV transmission lines and one 330 kV transmission lines traverses the south eastern portion of the subject land. These transmission lines connect to the Canberra Substation, which is located approximately 3 km south east of the subject land.

The subject land showing proximity to closest towns, land zoning and affected lot boundaries are shown in Figure 2-1, Figure 2-2 and Figure 2-3. Photographs of the subject land are provided in Appendix A.

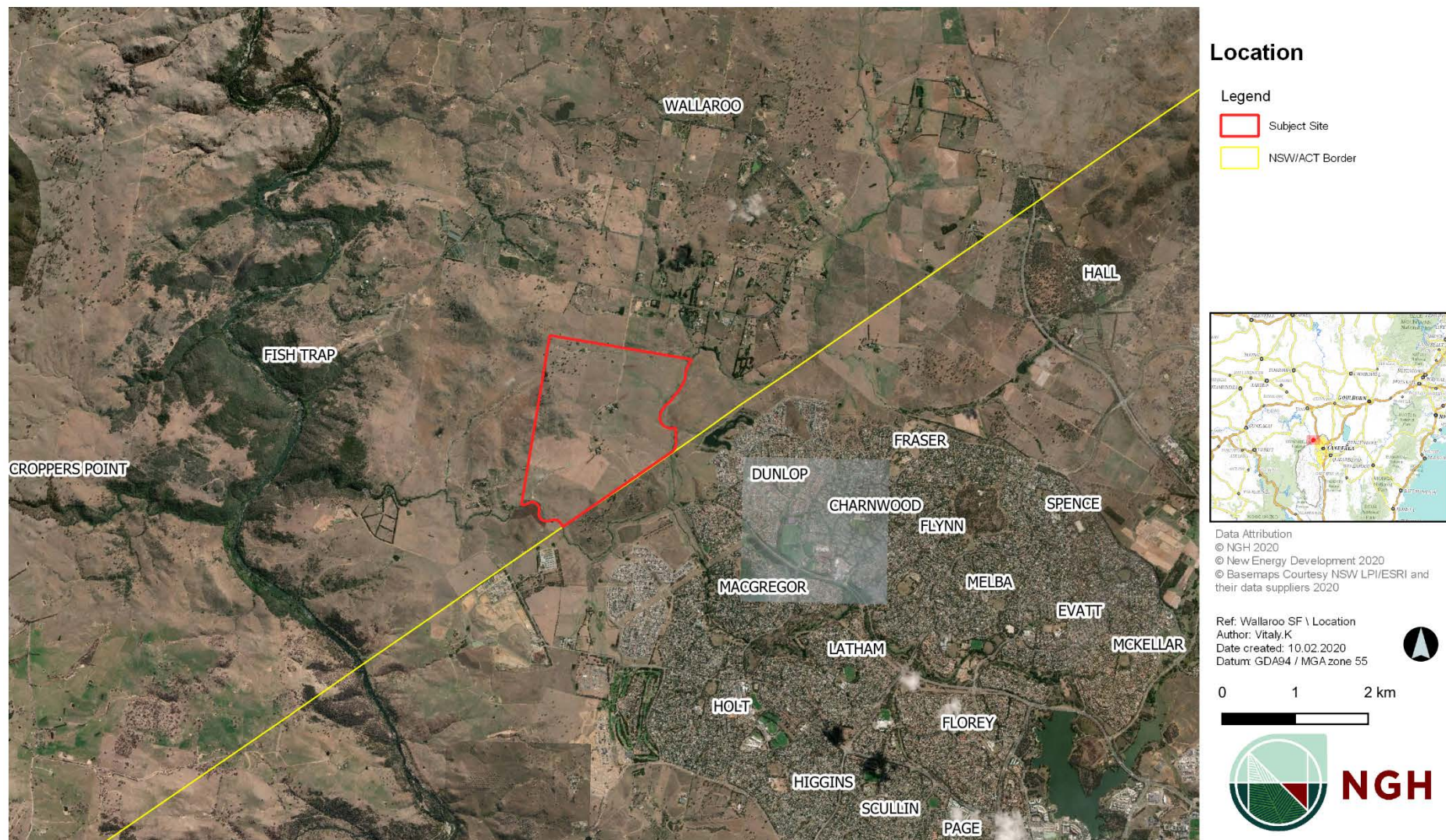


Figure 2-1 Location of the subject land



Figure 2-2 Lots and DP's within the subject land

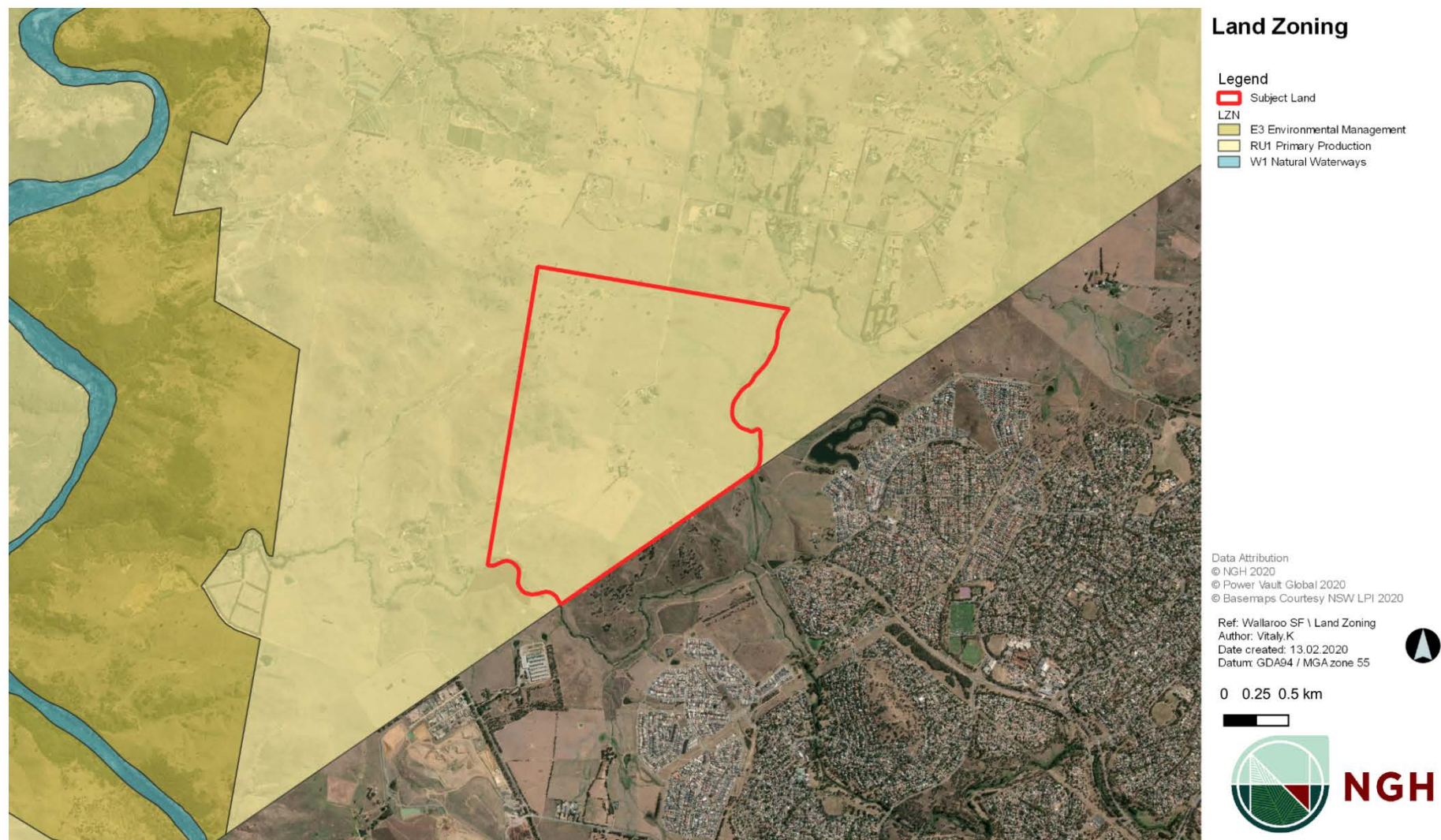


Figure 2-3 Land zoning within and surrounding the subject land (NSW).

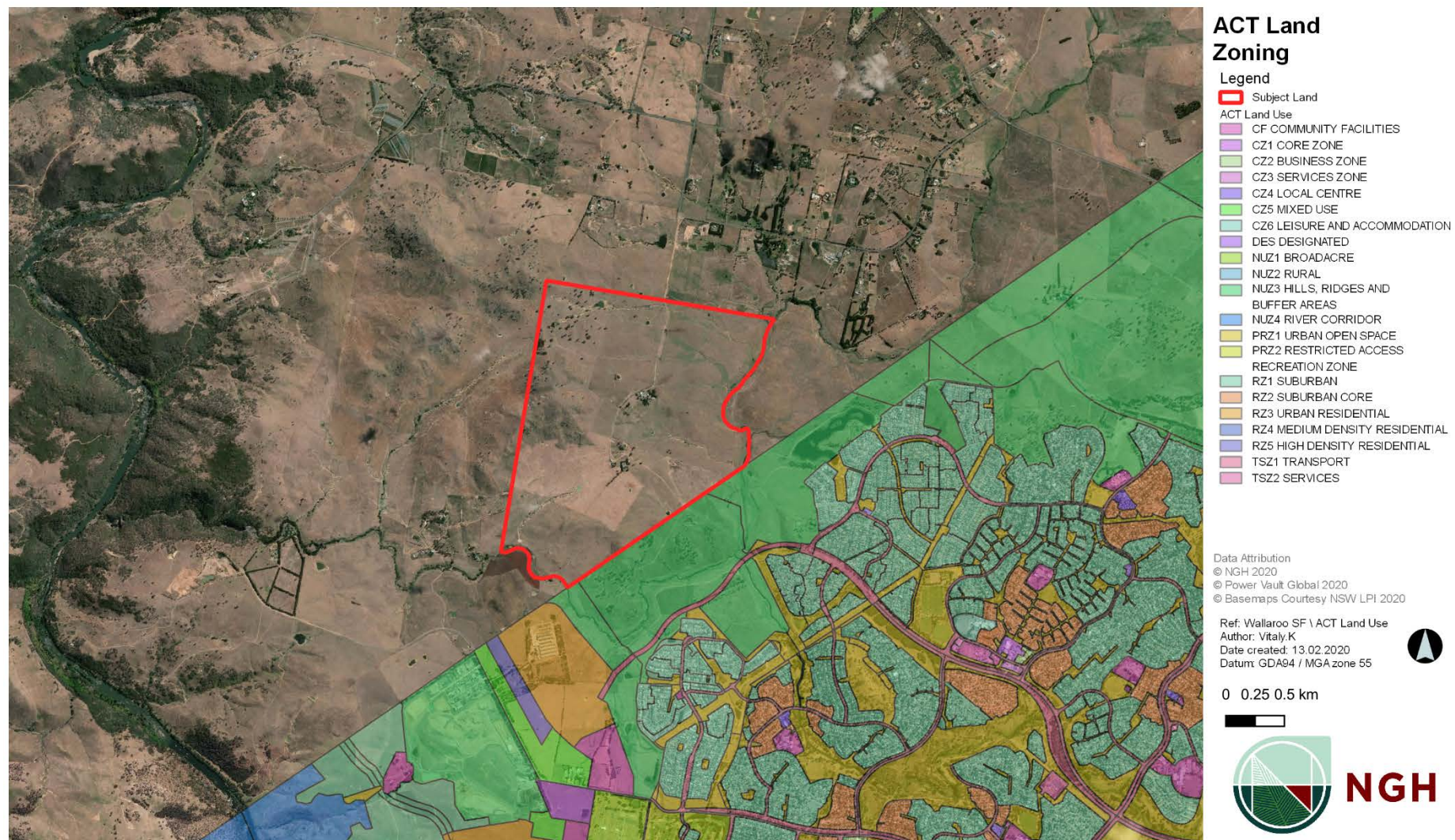


Figure 2-4 Land zoning surrounding the subject land (ACT).

2.3. PROPOSAL DESCRIPTION

The Wallaroo Solar Farm would involve the construction, operation and decommissioning of a photovoltaic (PV) solar facility with a capacity of up to 100 MW AC (100 MW DC) that would supply electricity to the national electricity grid. The subject land is a maximum of about 391 ha with the area of solar arrays and associated infrastructure anticipated to occupy approximately 209 ha (development footprint). This would include an onsite substation and a battery storage facility with a proposed storage capacity of 10MW (20 MWh) and has the capacity to be expanded up to 75MW (150MWh).

The proposal is likely to include the following infrastructure:

- 40 inverters
- 261,000 PV modules
- 20 Energy Storage containers distributed throughout the facility (10MW/20MWh)
- Internal access tracks between 3.5m-5m wide
- 2 watercourse crossings for internal access tracks
- Car parking
- Site office
- Water storage.

The subject land boundary and indicative development footprint is provided in Figure 7-1. Detailed site investigations undertaken during assessment, planning and design stages would inform the layout.

The construction phase is expected to take approximately 9-12 months, with peak construction taking around 6 months. It is anticipated that the Wallaroo Solar Farm would operate for 30 years, after which time the solar farm would be decommissioned. The decommissioning phase would involve removal of all above ground infrastructure and return of the site to its existing land capability.

The capital investment value (CIV) of the Wallaroo Solar Farm is approximately \$170 million (including approximately \$15 million for the battery storage component). A detailed CIV report would be prepared as part of the development application process, which would confirm the capital investment value (CIV).

3. PROPOSAL NEED AND ALTERNATIVES

3.1. PROPOSAL NEED

Renewable energy represents the lowest-cost type of new energy generation that can be constructed and currently contributes to 21% of total electricity generation in Australia; 0.8% of which is generated by large-scale solar PV (CEC, 2019). As of March 2019, 14,841 MW of renewable energy projects were under construction or financially committed in Australia, providing 13,233 jobs and \$24.5 billion of investment. The Wallaroo Solar Farm proposal would support long term and stable energy policies such as the Renewable Energy Target (RET) which encourages investment in large-scale renewable power stations to achieve 33,000 gigawatt hours of additional renewable electricity generation by 2020; the target remains the same from 2020 through to 2030. Although the RET has been reached, it continues to provide a framework for investment in renewable energy. The proposal would provide an alternative power generation source resulting in the potential to benefit the Australian community by reducing average household electricity bills and power disruptions.

Specific to Australia's commitments, the Wallaroo Solar Farm proposal would provide the following benefits:

- Reduced greenhouse gas emissions, contributing to meeting our international climate commitments.
- Aid the transition towards cleaner electricity generation.
- Direct contribution to the Renewable Energy Target (RET).

The proposal is also consistent with the current goals and targets for renewable energy generation in NSW. These include:

- Goal 22 of the NSW 2021: A plan to Make NSW Number One (NSW Government 2011):
 - Contribute to the national renewable energy target [i.e. 20% renewable energy supply] by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources.
- Goal 1 and specifically direction 6 of the South East and Tablelands Regional Plan 2036 (NSW Government 2017):
 - Position the region as a hub of renewable energy excellence.
- Contributing to achieving the NSW target of zero net emissions by 2050, specifically Stage 1: 2020–2030 aiming to fast-track a 35% emissions reduction over the next decade and prepare the State to take further action in the decades to follow (NSW Government 2020).
- Consistent with the NSW Electricity Strategy (NSW Government, 2019), that outlines the NSW Governments plan for reliable, affordable and sustainable electricity.

A legally binding and universal agreement on climate was reached at the 2015 Paris Climate Conference, with the aim of keeping global warming below 2°C, by reducing greenhouse gas emissions. Australia has committed to reducing greenhouse gas emissions by aiming for the following targets:

- 5% below 2000 levels by 2020.
- 26 to 28% below 2005 levels by 2030.
- Net zero emissions in the second half of this century.

The proposed Wallaroo Solar Farm would contribute to Australia's effort in helping meet these targets.

3.1.1. Local benefits

During construction, approximately 200 jobs would be created along with an additional 5 jobs during operation. The proposal would create local employment and economic stimulus in Wallaroo and nearby suburbs of the ACT. These areas would provide accommodation, food, fuel and trade equipment and services, mostly during the construction phase. During operation of the solar farm, economic benefits would be less, focussing on monitoring and inspections, maintenance, repair and upgrade of infrastructure, much of which is likely to be provided by the local labour force.

3.1.2. Site suitability

The Large Scale Solar Energy Guidelines for State Significant Development (DPE, 2018) notes the importance of demonstrating the suitability of the selected solar farm location and outlines key constraints that should be identified and considered. This process allows the opportunity to avoid or minimise negative impacts at the outset. Design and assessment of the proposal can then be undertaken with a focus on mitigating and managing unavoidable impacts. Table 3-1 and Table 3-2 outline the suitability of the subject land for the proposed solar farm.

Table 3-1 Site selection criteria: preferable site conditions.

Preferable site condition	Applicability to the proposal
Optimal solar resources	The site has good solar exposure measuring 17.4MJ/m ²
Suitable land	Areas of gently undulating land which is suitable for proposed infrastructure.
Local impacts minimised	Early community engagement currently underway.
Capacity to rehabilitate	Pile driven array mounts are proposed resulting in minimal ground disturbance. Groundcover beneath panels would be retained and managed. Grazing, if undertaken, would be managed to protect the groundcover.
Proximity to electrical network	Existing transmission line connection options within the subject land. The Canberra Substation is located approximately 3 km south of the subject land.
Connection capacity	Sufficient available connection capacity. Through consultation with Transgrid it has been identified that the project will not be required to augment the electricity network and will not face generation constraints. With more and more renewable energy projects injecting power into the Australian electricity grid, it is now known one of the most important parts of the of these projects was to consider the ideal project size along with the location of the point of connection being the Canberra Substation. The objective was to ensure that electrical losses within the electricity network were balanced against having a project size with attractive economies of scale. Losses within the National Electricity Market (NEM) comprise Marginal Loss Factor (MLF) and the Distribution Loss Factor (DLF), which are largely dependent on the following aspects: Coincidence of loads and energy consumed within the network.

Preferable site condition	Applicability to the proposal
	• Magnitude and time of the day that power is produced by the solar farm. • Coincidence of power produced by other generators within the network. • Proximity of loads and other generators to the solar farm and efficiency of the grid to transfer power flows. The factors are rare and the site meets this criteria at an extremely high level.

Table 3-2 Site selection criteria: areas of constraint.

Areas of constraint	Applicability to the proposal
Native vegetation	Two thirds of the site has been extensively cleared of woody vegetation and has been highly modified by historical farming practices. The remaining third has been modified but supports scattered eucalypt trees supporting hollows and is found in the north western corner of the site or confined to large hill tops and steep mountainous land. Section 6.1.1 considers biodiversity of the subject land.
Potential residences	5 residences are located within 500 m, and 635 within 1 km. Some screening is provided by existing vegetation and topography, however 37 of the residences within 1 km are likely to have some view of the solar farm infrastructure. Visual amenity is considered in Section 6.1.1 and noise and vibration are considered in Section 6.1.2.
Waterways	Two named watercourses traverse the site ranging from 5th to 6th order. A number of 1st and 2nd order tributaries of the named watercourses traverse the site. Hydrology, groundwater and water quality are considered in Section 6.1.5.

Areas of constraint	Applicability to the proposal
Aboriginal/Heritage significance	A basic AHIMS search identified two items within the subject land, but no Aboriginal places. Further investigation is required to determine Aboriginal/Heritage significance. Aboriginal heritage is considered in Section 6.1.3. Non-indigenous heritage database searches returned no items of significance within the subject land. Non-indigenous heritage is considered in Section 6.2.
Important agricultural land	There is no Biophysical Strategic Agricultural Land (BSAL) within the subject land. The majority of the subject land is mapped within the Land and Soil Capability Assessment Scheme state-wide mapping as Class 4 (moderate capability) and some as Class 7 (very low capability). Land use compatibility is considered in Section 6.1.5. Soils and landforms are considered in Section 6.1.9.
Residential zones	No residential zones are associated with the subject land. Land zoning of the site is RU1 and considered compatible with solar development. The land within the ACT immediately adjacent to the subject land is zoned NUZ3 (hills, ridges and buffer areas). Dunlop and Macgregor are located within close proximity of the subject land with areas zoned RZ1 (Residential Suburban). Section 6.1.5. considers zoning.
Resource developments	There are no mineral exploration licences associated with the subject land. Land use compatibility is discussed in Section 6.1.5

4. CONSULTATION

4.1. COMMUNITY AND STAKEHOLDER ENGAGEMENT STRATEGY

A Community and Stakeholder Engagement Strategy (CSEP) has been developed for the proposed Wallaroo Solar Farm (Appendix B).

The aim of the plan is to:

1. Identify effective methods to inform the community about the WSF proposal.
2. Facilitate engagement with the community. This includes allowing meaningful contributions from the community into the environmental assessment and project development.
3. Obtain social license to operate from the local community. This will allow for good long-term relationships with community stakeholders

The CSEP identifies:

- Community stakeholders for the project.
- Issues / risks related to the engagement of each stakeholder group.
- A consultation strategy for each issue / risk.
- A set of appropriate consultation activities against the project development time line.

Effective engagement requires an understanding of community stakeholders and prioritisation of perceived issues. It also relies the community understanding the proposal in order for the community to contribute effectively. The focus of the consultation plan will be on providing this understanding and engagement.

This plan has been developed to coincide with the early planning and assessment stages of the Wallaroo Solar Farm proposal and continue throughout the assessment stage. If the proposal is approved, consultation will also be required to continue into the assessment, construction and operational phases of the project. These phases will require a new or updated strategy in order to reflect any changes to engagement objectives but also the increasing knowledge gained about the community. At this stage, only pre approval project stages are addressed in the consultation strategy.

Consultation with Representative Aboriginal Parties will occur as part of the Aboriginal Heritage assessment that will be carried out as part of the preparation of the EIS but has not yet commenced.

Note: New Energy Development and NGH will continue to undertake consultation for the project, subject to NSW and ACT health directions. Alternative methods to engage the community will be used where required and will be detailed in the EIS.

4.2. CONSULTATION TO DATE

Table 4-1 Consultation to date (consultation is ongoing).

Key stakeholder	Date	Consultation undertaken (and responses where raised).
Yass Valley Council	25/06/2020	New Energy Development introduced the company and Wallaroo Solar Farm project. Explained the project aim for a low impact development and inclusion of co-existence with existing uses (i.e. agriculture). Explained current consultation stage for scoping to seek feedback on the proposal for inclusion in the scoping report. No formal minutes were taken/provided. Yass Valley Council followed up with documents that should be considered in the EIS as follows: 1. Yass Valley Settlement Study 2036 (can be accessed under the Strategies Tab) https://www.yassvalley.nsw.gov.au/our-services/planning-and-building/controls-policies-and-strategies/ 2. DA-POL-20 Community Enhancement Fund (under the Policies Tab on the link below) https://www.yassvalley.nsw.gov.au/our-services/planning-and-building/controls-policies-and-strategies/ 3. Renewable Energy Policy (can be accessed under the Strategic & Environmental Planning Tab) https://www.yassvalley.nsw.gov.au/our-council/council-documents/policies/ 4. Aboriginal Cultural Values Assessment Report (can be accessed under the Photographs, Drawings, Studies Tab 50 Ginninderry-Cultural-Values-Assessment-Report-v2.pdf) http://leptracking.planning.nsw.gov.au/proposal/details.php?rid=5724 The discussion included some feedback on key issues which will be incorporated into the EIS assessment including: • Traffic noise and large vehicle management, specifically, impacts to residents of Wallaroo and cumulative impacts with traffic entering and leaving the ACT. • The project being a 'border' project, specifically, why this location is necessary. • Visual assessment and further construction analysis will be important.

Key stakeholder	Date	Consultation undertaken (and responses where raised).
		Project benefits for NSW and the local community of Wallaroo. Additional parties were recommended be contacted for consultation and have been added to the consultation plan. NGH has included additional actions in the consultation plan and would follow up with Yass Valley Council as the EIS process progresses.
ACT Environment, Planning and Sustainable Development Directorate Impact Assessment team	29/05/2020 Attendees: Tom Neilson (Assistant Director Impact Assessment and Business Improvement) Brad Maxwell (Development Assessment Officer)	New Energy Development introduced the company and Wallaroo Solar Farm project. Explained the project aim for a low impact development and inclusion of co-existence with existing uses (i.e. agriculture). Sought initial feedback on the proposal and ACT planning requirements or specific matters to be addressed, specifically if any works ended up being proposed within the ACT. EPSDD feedback: - If the transmission line is to be located within the ACT the following issues will need to be detailed: location, voltage, line type, construction methodology. 132kv transmission line could trigger an EIS (Separate to NSW process). - Where works are outside the easement (and within the ACT) the high risk factors are: - Jarramallee offset site – for the Lawson development. - Natural Temperate Grassland and golden sun moth present. - Aboriginal Cultural Heritage impacts. - Commonwealth EPBC process could be run concurrently and cover cross border issues. - The proposed alignment is either within or close to a future urban area: - Suburban Land Agency joint venture (Riverview group). - EPSDD Impact team recommended consultation with these groups as well as other ACT government agencies.
TransGrid	N/A	Transgrid identified that the project will not be required to augment the electricity network and will not face generation constraints.

Key stakeholder	Date	Consultation undertaken (and responses where raised).
Nearby landowners (near neighbours and landowners within ~1.5km)	Posted (addressed mail) 29/05/2020 and 17/06/20 Unaddressed Delivery: Week of 08/06/2020	Two feedback forms had been received by post at the time of finalising this report. 1 return to sender was received and one objection. 27 electronic feedback forms (completed on www.wallaroosolarfarm.com.au website) have been received so far and key points have been summarised below: What do you value most about the local area: • Open spaces and sweeping uninterrupted westerly views • The rural views with simple beauty • Clean crisp air, no pollutants. • The diversity. Not only within the people, but also using the available resources and land within our community. • The mountain scenery, bush land. • The locals, the fishing, good walks and nature parks. • This area is open and scenic and there is lots of potential for the solar farms to be built with the Wallaroo region. • Wallaroo is a beautiful little pocket of Australia. The farm will help the economy without negative impact to the environment or locals • The community, it's very friendly. • It's very refreshing area. Good for walks with family. • Local views are very important, so surveys and or feedback is essential. • Great walking and riding paths that connect local areas will be adversely impacted but acceptable if access to connecting paths between these areas is retained • The openness and isolation, feeling of solitude, natural beauty of the plains in the area. Positive feedback in relation to solar energy included comments such as: • Wallaroo NSW is in my opinion a great location for the proposal • Solar farms are good for supplementing the base loads of electricity currently produced by other types of power generation. If however the solar farm has battery storage added then it has the advantage of supplying

Key stakeholder	Date	Consultation undertaken (and responses where raised).
		power to the grid also by night. When it is in close proximity to an urban area there are minimal transmission losses as opposed to transmitting power over long distances. • The more renewable energy we produce the cheaper our electricity bills will become. • With visual screening and the use of the land for agriculture as well as solar it will benefit the community greatly • It will create more jobs within our community. • 100% renewable energy for Canberra, more local solar farms are very important for the region, not just purchasing power from wind farms and solar farms abroad. • It is good to see the site being put to such good use as developing a solar farms. It will create jobs whilst being an excellent facility for boosting the energy grid. • Canberra has a beautiful environment. Smog free clean fresh air. This project will help keep it that way • Solar farms are really great as they using natural resources to produce electricity. The look of them is pretty amazing as they are directed to the sun and there are numerous solar panels in a farm. • Solar is win-win. It's good for the environment and a cheaper alternative in the long run • It looks like it is near existing infrastructure and away from dense population, isn't that what it is all about? Looks like a great opportunity to power more homes with RE • Having lived in Europe for five years I can foresee the concern some people hold in Australia on the visual impact of solar will be overcome once we realise the benefits and it becomes normal. When I see a solar farm it puts a smile on my face to think about the positive impact it has on our planet for future generations to come. We are the custodians of this planet for the next gen and I believe solar is one way we can preserve and enrich the future viability of our planet for our children. Concerns or comments to consider moving forward were received and included: • This should be located elsewhere. • While I agree with renewable energy, I think it's terrible to have it so close to residential properties. Impacts to property values. • How will emissions from solar farms affect humans. • Impacts on open space and uninterrupted views. • Glint and glare – ensure this does not impact their property.

Key stakeholder	Date	Consultation undertaken (and responses where raised).
		- Concerns are just safety. - Talk to the people who are affected and the locals in the area. - environmental impacts are addressed and mitigated - I am interested to understand whether local walkers and riders will continue to have access to the path/track that runs along the two fence lines between the two lots where the solar farm is located. Not sure if this area is actually the bicentennial trail in that location. I would be very unhappy to lose this public amenity. - I would encourage you to consider how to have people look upon a solar farm they drive past as I do, proud that Australians are going to lead the way in preserving this planet through renewable resources - Dunlop and MacGregor suburbs are family suburbs where walking / hiking and cycling are popular activities. The Dunlop pond and park are areas frequented by families for recreational activities. The countryside is what attracts many residents to live in these suburbs. In other countries solar farms are built far from residential areas so why is this farm being built so close to homes? - This area abounds with bird life and is a breeding ground for many species. New Energy Development has commenced contacting by phone those wishing to discuss the proposal further and arranged web based conferences when requested. Consultation with the community will continue as the EIS process progresses, including newsletters, emails and meetings (virtual or face to face where current health requirements allow). It is noted that the studies proposed would provide opportunity to address both the positive comments and concerns raised about the proposal.
DPIE	Early discussions	General discussion about the concept and need to lodge scoping report and the need for future consultation with the ACT Government.
Special interest groups	via email 15/06/2020 and 16/06/2020	Riverview Group Ginniderry Conservation Trust

Key stakeholder	Date	Consultation undertaken (and responses where raised).
		Riverview group asked to be contacted directly by phone. New Energy Development called on 17/06/20 to discuss the proposal, specifically, about the future visual impact assessment. Ginniderry Conservation Trust asked to be kept up to date on the progress of the proposal.
Other stakeholders	Other ACT Government Agencies via email 15/06/2020	ACT Suburban Land Agency. ACT Conservator of Flora and Fauna Email sent 15/06/20 introducing the proposal and providing an update on progress of the application. No responses had been received at the time of finalising this report.

5. PLANNING CONSIDERATIONS

5.1. KEY NSW ENVIRONMENTAL PLANNING INSTRUMENTS

5.1.1. Environmental Planning and Assessment Act 1979

Development in NSW is subject to the requirements of the Environmental Planning and Assessment Act 1979 (EP&A Act) and its associated regulations. Environmental planning instruments prepared pursuant to the Act set the framework for approvals under the Act. The Wallaroo Solar Farm proposal would be assessed under Part 4 of the EP&A Act.

5.1.2. State Environmental Planning Policy (State and Regional Development) 2011

Clause 20 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 states that the following is considered a State Significant Development:

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 Wallaroo Solar Farm proposal would have a capital investment cost estimate of more than \$30 million, and would be classified as "State Significant Development" under Part 4 of the EP&A Act.

State Significant Developments are major projects which require approval from the NSW Minister for Planning, Industry and Environment. While the Minister for Planning, Industry and Environment is the consent authority for State Significant Development, the Minister may delegate the consent authority function to the Independent Planning Commission of NSW (IPCN), the Secretary or to any other public authority.

An EIS is required to be prepared in accordance with the requirements of the Secretary's Environmental Assessment Requirements (SEARs) of Department of Planning, Industry and Environment. In determining the SEARs, the Secretary must consult with relevant public authorities and would have regard to the need to assess key issues raised by those public authorities.

5.1.3. State Environmental Planning Policy (Infrastructure) 2007

Clause 34(1) of State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) provides that development for the purpose of electricity generating works may be carried out by any person with consent on the following land—(b) in any other case—any land in a prescribed rural, industrial or special use zone. The land is zoned RU1, a prescribed rural zone.

The proposal is being proposed on land zoned as RU1 Primary Production and is therefore permissible with consent.

5.1.4. Primary Production and Rural Development SEPP 2019

The Rural Lands SEPP 2008 has been repealed and replaced by the Primary Production and Rural Development SEPP 2019. The aims of this new Policy are as follows (those in **bold** being relevant to the proposal):

- a) **to facilitate the orderly economic use and development of lands for primary production,**
- b) **to reduce land use conflict and sterilisation of rural land by balancing primary production, residential development and the protection of native vegetation, biodiversity and water resources,**
- c) **to identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations,**
- d) to simplify the regulatory process for smaller-scale low risk artificial waterbodies, and routine maintenance of artificial water supply or drainage, in irrigation areas and districts, and for routine and emergency work in irrigation areas and districts,
- e) **to encourage sustainable agriculture,** including sustainable aquaculture,
- f) to require consideration of the effects of all proposed development in the State on oyster aquaculture,
- g) to identify aquaculture that is to be treated as designated development using a well-defined and concise development assessment regime based on environment risks associated with site and operational factors.

Note: Clause 9 Savings provision relating to development applications of the SEPP does not apply to SSD.

Specific to this proposal, it is anticipated that:

- The land capability of the site would be retained for future agricultural or alternative use, with reference to base line soil testing and rehabilitation commitments post decommissioning.
- For the operational life of the solar farm, the resting / shading impacts of the solar farm combined with operational management to protect groundcover may actually improve soil health and capability, in comparison to current agricultural activities, particularly in drought conditions.
- The site is sufficiently small that it does not represent a significant proportion of the local agricultural economy and would therefore not affect harvest logistics in the locality.
- The economic benefits and diversification of income streams for involved landowners and the region will out weight the current agricultural activities, in terms of employment during operation and other economic stimulus, occurring mostly during construction.
- Operational amenity impacts are not likely to be incompatible with adjacent land uses, in comparison to existing disturbance regimes.

The proposal is considered compatible with the relevant aims of this policy.

5.1.5. Roads Act 1993

The Roads Act 1993 (Roads Act) provides for the classification of roads and for the declaration of the Roads and Maritime Services (RMS) and other public authorities as road authorities for both classified and unclassified roads. It also regulates the carrying out of various activities in, on and over public roads.

Intersection treatments and road upgrades may be required to obtain site access. Final access will be determined by further traffic investigations. Additional approval from the roads authority (RMS and/or Yass Valley Council; Section 138 permit) is expected to be required to carry out road upgrades. Access and traffic are discussed further in Section 6.1.6.

5.1.6. Crown Lands Act 1989

The objective of the Crown Lands Act is to ensure that Crown land is managed for the benefit of the people of New South Wales. The Crown Lands and Water Division (DPIE) is responsible for the sustainable and commercial management of Crown land. This involves the management of state-owned land, linking with other agencies, local government, the private sector and communities to provide social and economic outcomes for NSW. Council is appointed Trustee for Crown Lands. Section 11 of Crown Lands Act 1989 sets out principles for Crown land management including:

- Environmental protection principles be observed in relation to the management and administration of Crown land.
- The natural resources of the Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible.
- Public use and enjoyment of appropriate Crown land be encouraged.
- Where appropriate, multiple use of Crown land be encouraged.

There is no Crown land within the subject land, however Crown waterways border the subject land along the eastern and southern boundaries. A title search/deposited plan search would confirm if any 'paper roads' are present within the subject land. For any works within crown land, consultation would be required with Crown Lands and Water Division (DPIE) Crown lands permits would be investigated as part of the EIS.

5.1.7. Biodiversity Conservation Act 2016

The Biodiversity Conservation Act 2016 relates to the conservation of biodiversity.

The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community consistent with the principles of the ecological sustainable development (ESD).

The Act contains provisions relating to flora and fauna protection (repealing parts of the National Parks and Wildlife Act 1974), threatened species and ecological communities listing and assessment (repealing the Threatened Species Conservation Act 1995 and section 5A of the EP&A Act), a Biodiversity Offsets Scheme (BOS), a single Biodiversity Assessment Method (BAM), calculation and retirement of biodiversity credits and biodiversity assessment and planning approvals. It also requires specific consideration of irreversible impacts. The proposal would likely impact on native vegetation and biodiversity values. Given the newness of this act and complicating factors including drought, consultation with DPIE - Biodiversity Conservation Division (BCD) (formerly Office of Environment and Heritage OEH) would be undertaken as required during the assessment of the project.

5.1.8. Heritage Act 1977

The Heritage Act 1977 aims to conserve heritage values. The Act defines 'environmental heritage' as those places, buildings, works, relics, moveable objects and precincts listed in the Local or State Heritage Significance. A property is a heritage item if it is listed in the heritage schedule of the local Council's Local Environmental Plan or listed on the State Heritage Register, a register of places and items of particular importance to the people of NSW. Under Section 4.41 of the EP&A Act, an approval under Part 4 or a permit under Section 139 of the Heritage Act 1977 would not be required for a State Significant Development.

The potential to impact environmental heritage is discussed in Section 6.2 of this report. Consultation would be undertaken with Yass Valley Council and the assessment would be undertaken in accordance with OEH guidelines for Assessing Heritage Significance (Heritage Office 2001).

5.2. LOCAL INSTRUMENTS

5.2.1. Yass Valley Local Environmental Plan 2013

The subject land is located within the Yass Valley LGA. The subject land is subject to the provisions of the Yass Valley Local Environmental Plan 2013, and is zoned as RU1 Primary Production. The objectives of this zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To protect and enhance the biodiversity of Yass Valley.
- To protect the geologically significant areas of Yass Valley.
- To maintain the rural character of Yass Valley.
- To encourage the use of rural land for agriculture and other forms of development that are associated with rural industry or that require an isolated or rural location.
- To ensure that the location, type and intensity of development is appropriate, having regard to the characteristics of the land, the rural environment and the need to protect significant natural resources, including prime crop and pasture land.
- To prevent the subdivision of land on the fringe of urban areas into small lots that may prejudice the proper layout of future urban areas.

Electricity generation is prohibited within this land zoning, however the ISEPP, which prevails over the local provisions, allows the development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. The land is zoned RU1, a prescribed rural zone.

5.3. COMMONWEALTH LEGISLATION

5.3.1. Environmental Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is administered by the Commonwealth Department of the Environment and Energy (DoEE). Under the EPBC Act, if the Minister determines that an action is a 'controlled action' which would have or is likely to have a significant impact on a Matter of National Environmental Significance (MNES) or Commonwealth land, then the action may not be undertaken without prior approval of the Minister.

The EPBC Act identifies the following nine MNES:

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

Actions that adversely affect these matters may be deemed to be a 'controlled action' under the Act.

A search of the Commonwealth Protected Matters Search Tool (undertaken on 8th January 2020) identified four wetlands of international importance, the closest being the Hattah-kulkyne lakes, located approximately 500 – 600 km upstream of the subject land.

The search results identified no World Heritage Properties or National Heritage Place within a 10 km radius of the subject land.

Three threatened ecological communities (TEC) were identified; Alpine Sphagnum Bogs and Associated Fens (Endangered), Natural Temperate Grassland of the South Eastern Highlands (Critically Endangered) and White Box – yellow Box – Blakely's Red Gum Grassy Woodland and Derived native Grassland (Critically Endangered).

Thirty-six threatened species and 13 migratory species were returned from the Protected Matters Search.

At this stage a significant impact on an MNES and the requirement to refer the proposal under the EPBC Act is not considered likely.

5.3.2. Native Title Act 1993

The Native Title Act 1993 provides a legislative framework for the recognition and protection of common law native title rights. Native title is the recognition by Australian law that Indigenous people had a system of law and ownership of their lands before European settlement. Where that traditional connection to land and waters has been maintained and where government acts have not removed it, the law recognises this as native title.

People who hold native title have a right to consult or continue to practise their law and customs over traditional lands and waters while respecting other Australian laws. This could include visiting to protect important places, making decisions about the future use of the land or waters, hunting, gathering and collecting bush medicines. Further, when a native title claimant application is registered by the National Native Title Tribunal, the people seeking native title recognition gain a right to consult or negotiate with anyone who wants to undertake a project on the area claimed.

The subject land's historic ownership records and land management practices have almost certainly extinguished native title. Where native title does exist in relation to the subject land, New Energy Development would comply with the provisions of the *Native Title Act 1993*.

6. SCOPING ASSESSMENT

6.1. ASSESSMENT OF KEY ISSUES

Based on preliminary site assessment and desktop review, a summary of the key environmental issues of relevance to the site and its development is provided below. These include:

- Visual amenity
- Noise and vibration
- Aboriginal Heritage
- Biodiversity
- Land use compatibility
- Access and traffic
- Social and economic impacts
- Hydrology, groundwater and water quality
- Soil and landforms

6.1.1. Visual amenity

The suburbs of Dunlop and MacGregor, ACT, are located approximately 550 m and 750 m south east of the subject land, at the closest points. The rural farms of Wallaroo range from 550 m to 3 km north and north-east of the subject land. Five potential receivers occur within 500 m of the subject land, two of which are involved landowners. Another 635 potential receivers occur within 1km of the subject land, and 4373 potential receivers within 2km of the subject land. The closest receiver to the solar farm subject land is 211 m to the west (R3)

In relation to visual impacts, aerial imagery shows a high density of sensitive receivers to the south of the subject land in the localities of Dunlop and MacGregor in the ACT. Receivers located on the northern fringes of these suburbs are likely to have a view of the solar farm infrastructure, including those located on:

- James Harrison Street and Percy Begg Circuit in Dunlop; and
- Hilda Kincaid Crescent and Refshauge Crescent in Macgregor.

There is some existing vegetation and topographical screening for receivers, and many residents are likely to have boundary fencing which may obstruct views of the solar farm. Detailed assessment of visual impacts in the EIS would be based on the viewshed mapping undertaken Figure 6-3 (developed from topography and does not account for structures, vegetation that screen the site etc that would be ground truthed as part of the detailed assessment to determine the likely impact) and include transparent systematic assessment of the receivers potential for impact which would provide more detail in relation to the likelihood of these receivers having a view of solar farm infrastructure and what mitigation measures could be implemented. Where required, photo montages and specialist advice from a suitably qualified consultant, i.e. landscape architect, will be sought regarding potential solutions to mitigate the likely visual impacts for highly impacted receivers. A topographic map is also provided at Figure 6-4 to show the landforms within and around the site.

The locations of nearby receivers within 2 km have been mapped in Figure 6-2. The locations of receivers likely to have a view of the solar farm infrastructure have been detailed in Table 6-1 and Figure 6-2.

Table 6-1 Distance between subject land and sensitive receivers likely to have a view of solar farm infrastructure within 1 km.

Receiver ID	Distance from subject land (m)	Receiver ID	Distance from subject land (m)
R3	211	R21	733
R4	449	R22	746
R5	519	R23	750
R6	526	R24	757
R7	548	R25	762
R8	563	R26	766

Receiver ID	Distance from subject land (m)	Receiver ID	Distance from subject land (m)
R9	568	R27	768
R10	586	R28	774
R11	589	R29	779
R12	604	R30	784
R13	606	R31	792
R14	607	R32	792
R15	628	R33	808
R16	641	R34	812
R17	647	R35	840
R18	674	R36	842
R19	685	R37	862
R20	698		

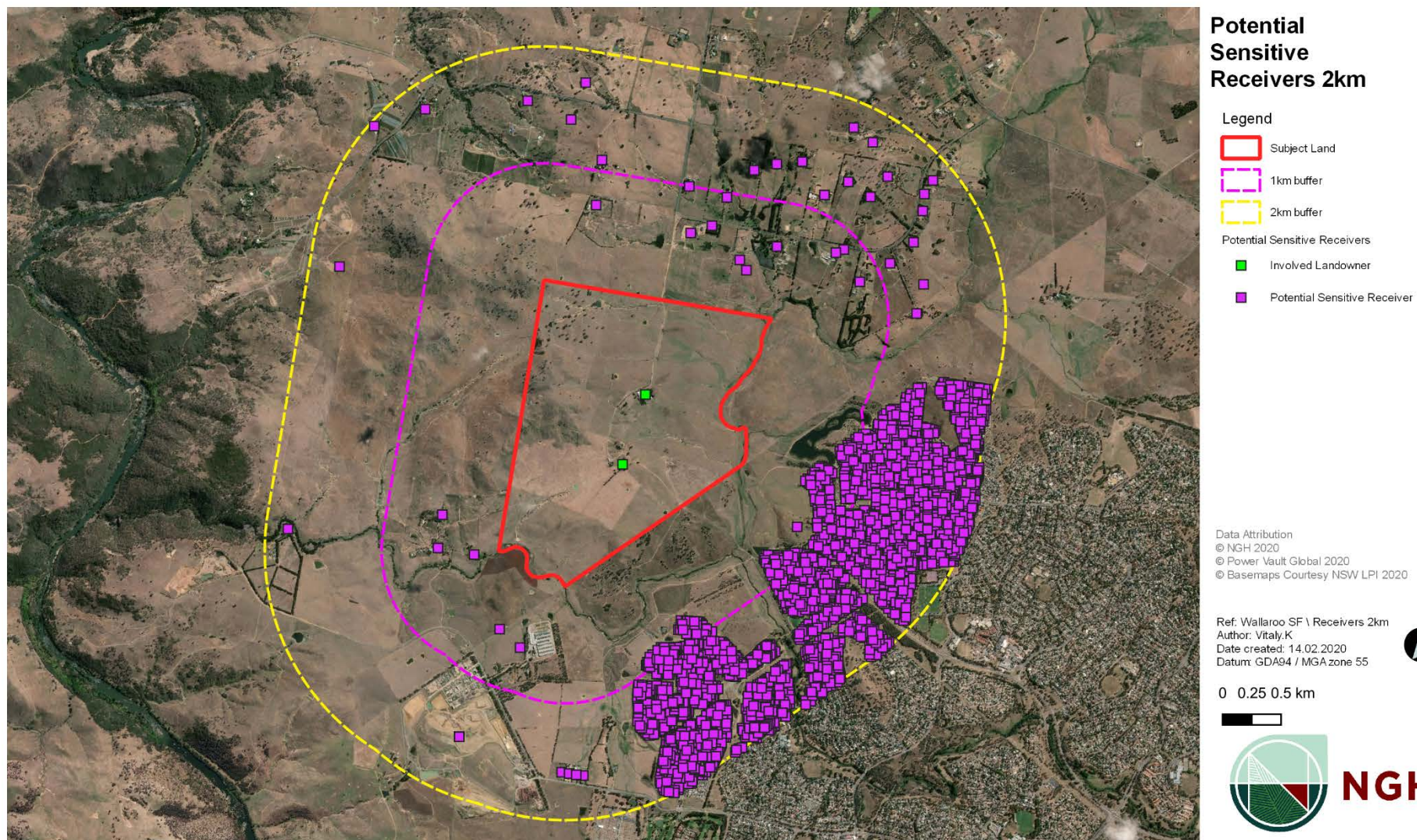


Figure 6-1 Sensitive receivers within 2 km of the subject land.

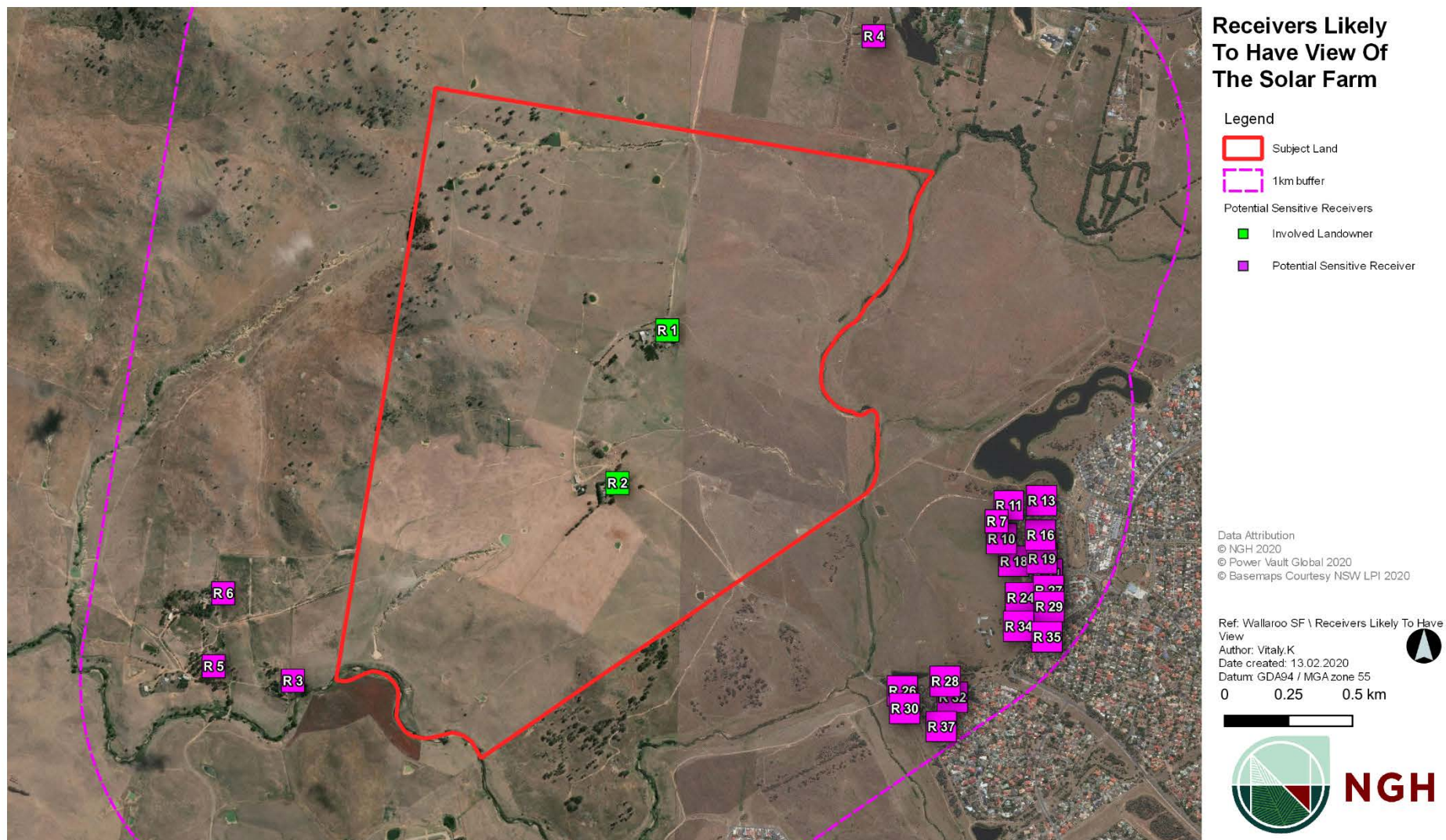


Figure 6-2 Sensitive receivers within 1km likely to have a view of the solar farm infrastructure.

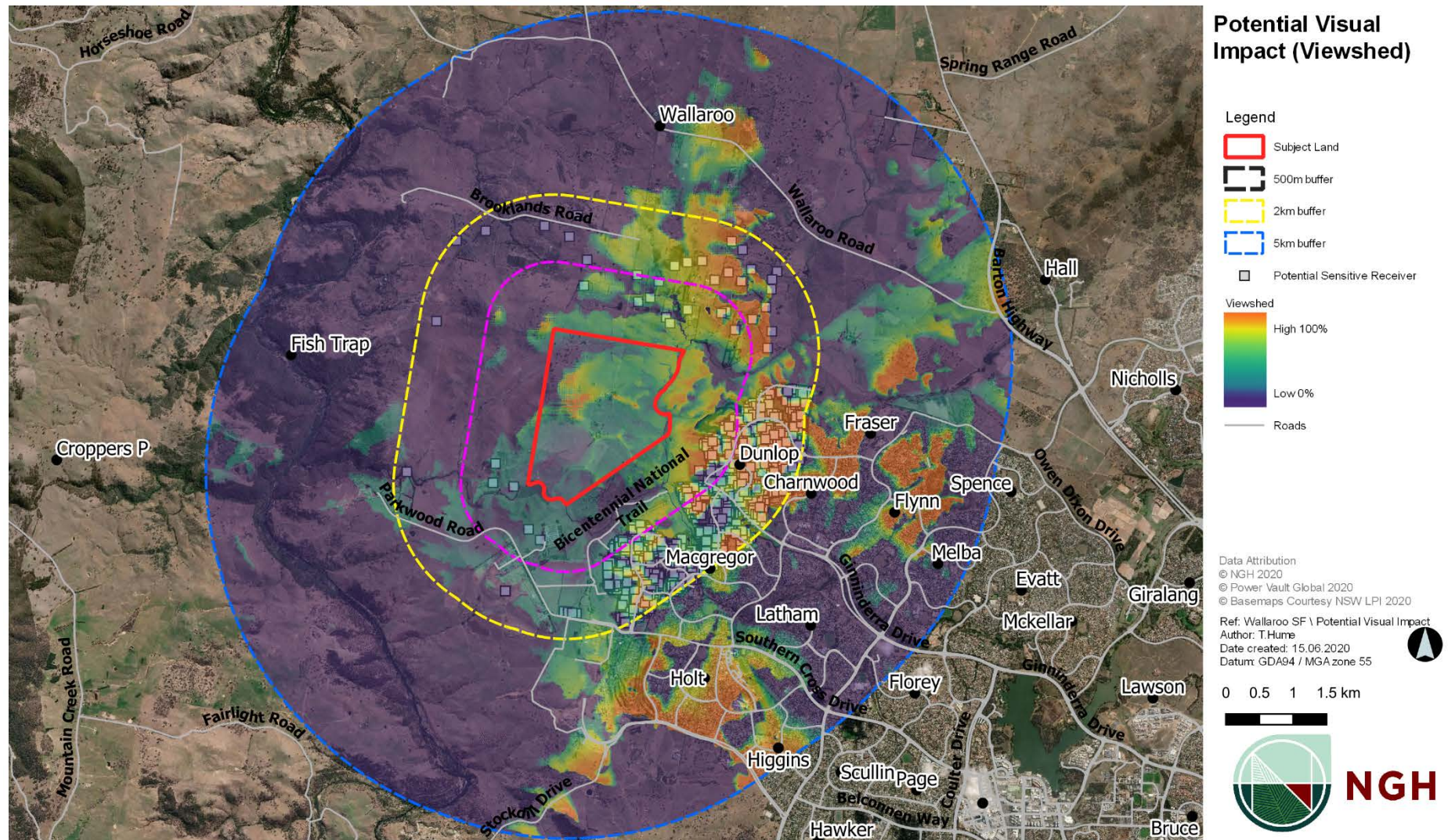
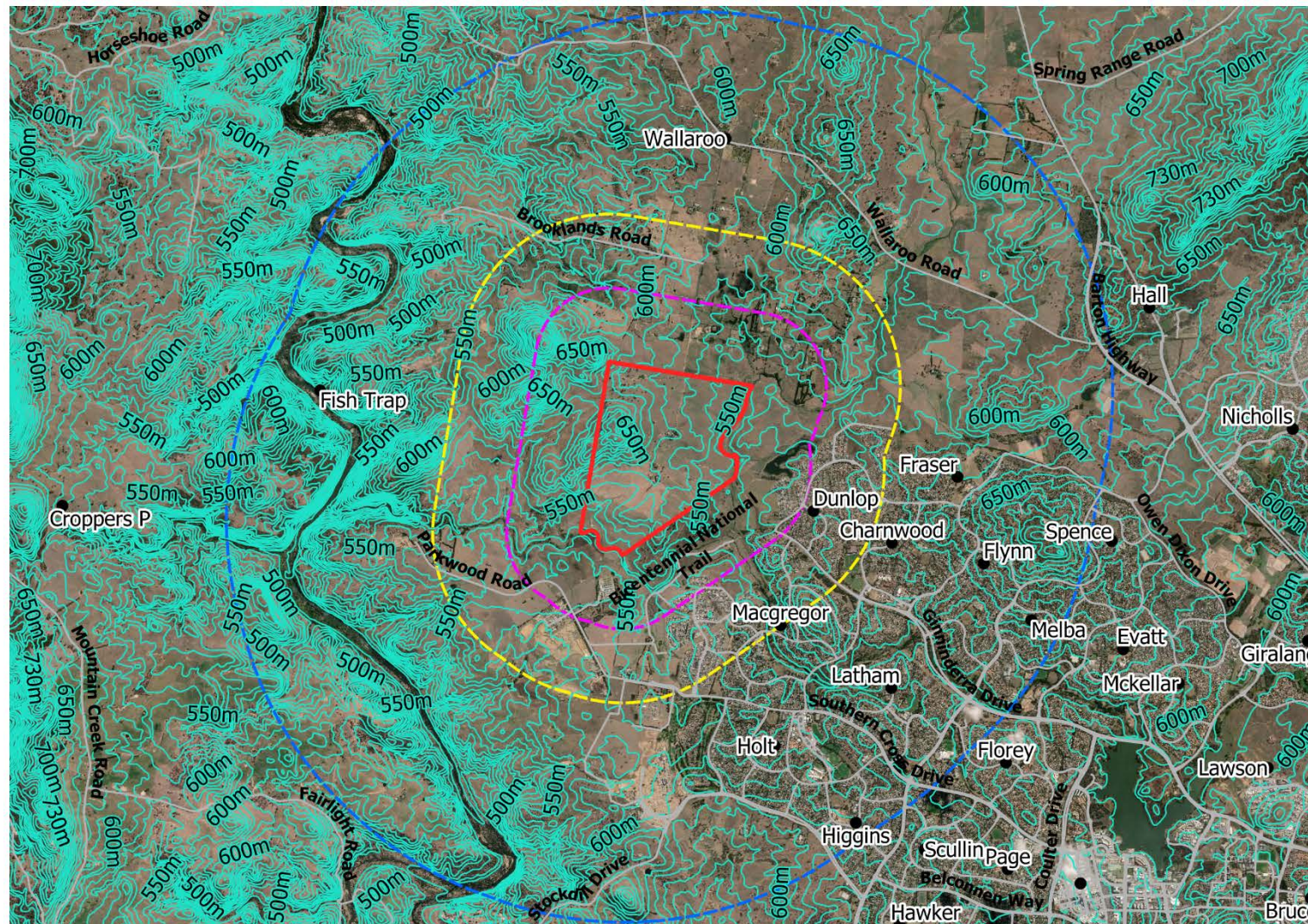


Figure 6-3 Potential visual impact – initial viewshed modelling based on the concept layout



Topography (10m)

Legend

- Subject Land
- 500m buffer
- 2km buffer
- 5km buffer
- Roads
- 10m Contours

Data Attribution
 © NGH 2020
 © Power Vault Global 2020
 © Basemaps Courtesy NSW LPI 2020
 Ref: Wallaroo SF \ Topography
 Author: Vitaly K
 Date created: 25.08.2020
 Datum: GDA94 / MGA zone 55



0 0.5 1 1.5 km



NGH

Figure 6-4 Topographic map (10m contours)

Constraints and need for further assessment

Aerial imagery and desktop analysis indicates 35 uninvolved residences within 1km are expected to have some views of the solar farm infrastructure (this will be subject to further investigation and ground truthing and consideration of mitigation measures and consultation where required). An assessment of the level of visual impact would be undertaken as part of the EIS process and would include a review of the viewshed analysis (refer to Figure 6-3), as it is noted that the modelling shows views up to 4km from the site. Photo montages will be prepared for the development, particularly to verify the potential for high impacts.

The EIS would also consider the potential for the solar farm to affect local landscape character. Consultation will be undertaken broadly to understand the local values of the area, including visual characteristics valued by the community. Additional engagement with specific affected residences identified as likely to have a view of solar farm infrastructure would be undertaken to identify the nature and significance of impacts and the need for mitigation measures.

Mitigation of low-profile solar farm infrastructure in low relief landscapes is generally highly feasible. Visual impacts attenuate rapidly with distance in these cases and vegetation screening can be highly effective. For Wallaroo Solar Farm visual impacts are considered a moderate to high constraint where elevated views of the site are available, providing a more extensive view of the project. Detailed investigations and early consultation with affected landowners regarding mitigation is required and may lead to on-property screening. The focus of the mitigation would be on higher elevation, close proximity residences where the results may be used to inform site layout or screening strategies.

6.1.2. Noise and vibration

The subject land is located on rural land. The main sources of background noise would include traffic noise from the Wallaroo Road and Gooroomon Ponds Road and routine agricultural machinery operation. Two dwellings (R1 and R2) are present within the subject land and 5 potential residences are within 500 m of the subject land. These receivers would be sensitive to increased noise and vibration. 635 sensitive receivers are located within 1 km of the subject land and may also be sensitive to increased noise and vibration.

Construction vehicles and machinery during the construction phase would be most relevant in contributing to noise and vibration impacts. During the operation of the solar farm, noise levels would likely be reduced, as agricultural machinery would largely cease. Noise would be generated from the solar tracking system (if a tracking system is decided upon) as well as the substation and switchgear and any maintenance works undertaken at the site.

Constraints and need for further assessment

A construction and operational noise and vibration assessment will be undertaken as part of the EIS to assess potential noise impacts for affected residents. The report would include an assessment of road traffic noise and onsite monitoring to establish baseline noise levels. The assessment will be undertaken in accordance with the Interim Construction Noise Guideline (DECC, 2009), NSW Noise Policy for Industry (EPA, 2017), Assessing Vibration: A Technical Guideline (DECC, 2006) and NSW 'Road Noise Policy' (DECCW, 2011). Measures to minimise noise impacts would be recommended for the construction and operation of the proposal.

6.1.3. Aboriginal Heritage

A basic search of the Aboriginal Heritage Information Management System (AHIMS) on 16 January 2020 identified 67 Aboriginal sites and no Aboriginal places between -35.2116, 148.9606 and -35.1718, 149.0236

with a 50 m buffer. There have been two items recorded to date within the proposal site. Recorded AHIMS sites are shown in Figure 7-1.

Waterways can be an important landscape feature and indicate greater potential for significant sites. Two named watercourses and 8 unnamed tributaries traverse the subject land.

Constraints and need for further assessment

Risk in relation to Aboriginal heritage would need to be confirmed based on an onsite assessment. Consultation with registered stakeholders is an important part of the assessment process. The Ngunnawal people are the traditional custodians of the ACT and surrounding regions.

Historical farming practices, including ploughing and landforming, may damage Aboriginal heritage sites of significance in these areas but they may also make more sites visible, bringing them to the surface. Areas near waterways within the subject land, such as along Gooromon Ponds and Ginninderra Creek and their tributaries, are likely to have a higher potential for significance. An Aboriginal Cultural Heritage Assessment (ACHA) will be required and would include field assessment and consultation to confirm these significance levels. Any Aboriginal heritage sites, objects and places identified would be a moderate to high constraint, requiring mitigation to manage impacts.

If any Aboriginal Heritage sites are identified that may be potentially affected by the proposal, mitigation measures would be determined in accordance with the Guide to Investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH 2011). In most cases, small buffer exclusion zones or more likely a salvage program is sufficient to manage impacts.

6.1.4. Biodiversity

Approach

Ecological values of the subject land were investigated at a high level. This has included the following information sources:

- Existing threatened species listings under the BC Act and EPBC Act.
- Existing records of threatened species sightings in the subject land, as recorded in the BioNet Database (OEH).
- Department of Environment Protected Matters Search Tool (nationally threatened species listed under the EPBC Act).
- Areas of outstanding biodiversity value declared under the BC Act 2016.
- A site inspection, undertaken on the 20th and 21st January 2020 by an NGH senior ecologist.

Background searches

Existing threatened species listings

The EPBC search (undertaken on 8th January 2020, with a 10km buffer of the site) identified three TECs, 36 threatened species and 13 migratory species. A search of the Bionet Atlas, (undertaken on 8th January 2020, with a 10km buffer of the site), lists 28 threatened species.

Threatened species and communities with the potential to occur on the subject land include:

- 15 bird species
 - o Black Falcon, *Falco subniger*

- o Brown Treecreeper, *Climacteris picumnus victorae*
- o Diamond Firetail, *Stagonopleura guttata*
- o Dusky Woodswallow, *Artamus cyanopterus cyanopterus* (identified during site inspection)
- o Flame Robin, *Petroica phoenicea*
- o Gang-gang Cockatoo, *Callocephalon fimbriatum*
- o Hooded Robin, *Melanodryas cucullata cucullata*
- o Little Eagle, *Hieraaetus morphnoides*
- o Painted Honeyeater, *Grantiella picta*
- o Regent Honeyeater, *Anthochaera phrygia*
- o Scarlet Robin, *Petroica boodang*
- o Speckled Warbler, *Chthonicola sagittata*
- o Spotted Harrier, *Circus assimilis*
- o Superb Parrot, *Polytelis swainsonii*
- o Varied Sittella, *Daphoenositta chrysoptera*
- 3 frog species
 - o Green and Golden Bell Frog, *Litoria aurea*
 - o Booroolong Frog, *Litoria booroolongensis*
 - o Yellow-spotted Tree Frog, *Litoria castanea*
- 1 insect
 - o Golden Sun Moth, *Synemon plana*
- 4 mammals
 - o Large-eared Pied Bat, *Chalinolobus dwyeri*
 - o Spotted-tail Quoll, *Dasyurus maculatus maculatus*
 - o Koala (combined populations of Qld, NSW and the ACT), *Phascolarctos cinereus*
 - o Grey-headed Flying fox, *Pteropus poliocephalus*
- 7 plants
 - o Black Gum, *Eucalyptus aggregata*
 - o Button Wrinklewort, *Rutidosia leptorrhynchoides*
 - o Cotoneaster Pomaderris, *Pomaderris cotoneaster*
 - o Hoary Sunray, *Leucochrysum albicans* var. *tricolor*
 - o Small Purple-pea, *Swainsona recta*
 - o Tarengo Leek Orchid, *Prasophyllum petilum*
 - o Yass Daisy, *Ammobium craspedioides*
- 2 reptiles

- o Pink-tailed Worm-lizard, *Aprasia parapulchella*
- o Striped Legless Lizard, *Delma impar*

The Dusky Woodswallow was observed during the site inspection and the closest record returned from database searches is 200 m from the site for this species.

The Golden Sun Moth has a high potential to occur on site given it has been recorded as close as 40 m to the subject land. The following species are considered to have moderate potential to occur on site, based on their habitat requirements. The distance from their nearest record to the subject land is listed after their name: Brown Treecreeper (5.7 km), Diamond Firetail (200 m), Little Eagle (3.5 km), and Pink-tailed Legless Lizard (2.2 km).

Site inspection

A site inspection of the subject land was undertaken by a senior ecologist on the 20th and 21st of January 2020. The site inspection included identifying biodiversity constraints over the site, and also providing basic vegetation type stratification within the subject land. Plant community types (PCTs) were determined based on the presence of diagnostic species via rapid assessment and recording of the top three dominant species of trees, shrubs and groundcovers (where present) within the zone. No floristic plots or targeted surveys were undertaken.

Vegetation and fauna habitat

The eastern two thirds of the proposal site are in a rural landscape grazed by sheep and horses located on mild slopes, rolling hills. Where active agriculture occurs, there is a noticeable absence of native trees and ground cover and is highly modified by historical farming practices. These paddocks contained some exotic trees like Willow (*Salix spp*) and Pines (*Pinus radiata*), especially around farming infrastructure. Sheep were grazing on the northern lot and horses were grazing on the southern lot at the time of inspection.

Most of the ground (approximately 70-95%) was bare at the time of inspection due to severe drought and grazing pressure making it difficult to identify dominant groundcovers. Dominant groundcover species included exotic species such as Goose grass (*Eleusine tristachya*), Phalaris (*Phalaris aquatica*) and Long Storkbill (*Erodium Botrys*). Woody weeds observed throughout this area included Willow (*Salix spp*), Pine (*Pinus radiata*), Hawthorn (*Cretagious spp*), Briar (*Rosa rubiginosa*). Non-woody weeds included Vipers Bugloss (*Echium vulgare*), Spear Thistle (*Cirsium vulgare*), Saffron Thistle (*Carthamnus lanatus*) and Illyrian Thistle (*Onopodum Illyricum*).

The remaining one third of the proposal site contains native vegetation on steeper land where senescent eucalypt trees are scattered 50 - 100 m apart from each other. Approximately half of the trees contained hollows and therefore of high conservation value to hollow dependant fauna. Groundcover between trees shows signs of disturbance by farming activities, but to a lesser extent as there is a higher cover abundance of native grasses throughout. Some evidence of past contouring around the trees could be detected. Grazing sheep were observed within some paddocks.

Blakely's Red Gum (*Eucalyptus blakelyi*) is the dominant eucalypt species observed in this area. There was the occasional Yellow Box (*E. melliodora*) confined to foot slopes and Red Stringybark (*E. macrorhyncha*) confined to the highest parts of the area.

Small isolated areas of native groundcover persist in the site, however, greater than ninety percent of the ground was devoid of plant cover with the remaining 10% containing native cover. Some native grasses persisted and included Spear Grass (*Austrostipa scabra*), Lesser Joyweed (*Alternanthera denticulata*) and wallaby grass (*Rytidosperma spp*). Floristic identification of groundcover species was also difficult within this area due to prolonged drought and severe grazing.

The threatened Dusky Woodswallow (*Artamus cyanopterus*) was seen during the initial site inspection, perching and flying close to Pine trees around the northern farm residence. Several Nankeen kestrels were

seen, as well as a pair of Wedge-tailed Eagles. In general bird, activity was low at the time of inspection consisting mainly of birds of prey. Some Eastern Grey Kangaroos (*Macropus giganteus*) were observed also.

Plant Community Types (PCT's) and Threatened Ecological Communities (TEC's)

As the region was experiencing extreme drought conditions, the lack of floristics for groundcover species was apparent. There was a distinct lack of native forbs over all areas with only certain species of native grasses prevailing. The results of rapid survey are preliminary in nature and may change following more detailed vegetation survey of the site with reference to Floristic Plots in accordance with the Biodiversity Assessment Methodology (OEH, 2017).

Based on the preliminary inspection, two PCTs were identified and may classify as a Threatened Ecological Communities (TEC):

- PCT 277 'Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion'. This PCT may classify as NSW BC/EPBC Listed White Box Yellow Box Blakely's Red Gum Woodland
- PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion. This PCT has the potential to classify as NSW BC/EPBC listed TEC. Further investigation would be required if development is proposed for this area.

Six broad vegetation categories (vegetation zones) were identified during the site inspection and are described in Table 6-2. . Preliminary vegetation mapping is provided in Figure 6-5. .

Table 6-2 Summary of vegetation zones and habitat across the subject land.

Zone ID	Condition Desc	Easting	Northing	Description & dominant native species onsite	Image
1	Exotic Infrastructure Cultivated (Non-riparian)	(top photo) 682152 (middle) 681842	(top photo) 6104512 (middle) 6103932	Cleared and cultivated areas containing >90% bare ground. The 10% cover included mostly exotic species >90%). Paddocks had evidence of ploughed crops including Oats (<i>Avina spp</i>) and pasture improved country. Some areas currently being grazed by sheep and horses. No native paddock trees, no riparian land. Dominant species <u>Trees</u> – Willow (<i>Salix spp</i>), Pine (<i>Pinus radiata</i>) <u>Shrubs</u> – Hawthorn (<i>Cretagious spp</i>), Briar (<i>Rosa rubiginosa</i>). <u>Groundcovers</u> - Goose grass (<i>Eleusine tristachya</i>), Phalaris (<i>Phalaris aquatica</i>) and Long Storkbill (<i>Erodium Botrys</i>), Vipers Bugloss (<i>Echium vulgare</i>), Spear Thistle (<i>Cirsium vulgare</i>), Saffron Thistle (<i>Carthamnus lanatus</i>) and Illyrian Thistle (<i>Onopodum Illyricum</i>) No PCT allocated. This zone is not state or federally listed TEC. Biodiversity Constraint = LOW	
2	Riparian	(top photo) 682760 (bottom) 682244	(top photo) 6104188 (bottom) 6104161	Watercourses and gullies with minor watercourses subjected to erosion. Mostly exotic species in minor gullies with higher proportion of native reeds in major watercourses like Gooromon Ponds. Some areas currently being grazed by sheep and horses. No native paddock trees. Riparian habitat can be important in modified landscapes and provide threatened species habitat. Dominant species <u>Trees</u> – Willow (<i>Salix spp</i>),	

Zone ID	Condition Desc	Easting	Northing	Description & dominant native species onsite	Image
				<u>Shrubs</u> – None. <u>Groundcovers</u> – Major aquatic areas had Cumbungi (<i>Typha orientalis</i>) and Common Reed (<i>Phragmites australis</i>) and Phalaris (<i>Phalaris aquatica</i>). Drier riparian buffers contained Goose grass (<i>Eleusine tristachya</i>), Phalaris (<i>Phalaris aquatica</i>) and Long Storkbill (<i>Erodium Botrys</i>), Vipers Bugloss (<i>Echium vulgare</i>), Spear Thistle (<i>Cirsium vulgare</i>), Saffron Thistle (<i>Carthamnus lanatus</i>) and Illyrian Thistle (<i>Onopodum Illyricum</i>). No PCT allocated. This zone is not state or federally listed TEC. Biodiversity Constraint = HIGH	 

Zone ID	Condition Desc	Easting	Northing	Description & dominant native species onsite	Image
3	PCT 277 Grass	682576	6103420	Ninety percent groundcover present. Approximately 80% consists of native species but was lacking diversity at time of inspection. This zone is likely to be a secondary grassland to a box gum woodland community. <u>Trees</u> – None <u>Shrub</u> – None <u>Groundcovers</u> – Kangaroo Grass (<i>Themeda triandra</i>), Rough Spear Grass (<i>Austrostipa scabra</i>), Common Wheat Grass (<i>Elymus scaber</i>), Wattle Mat-rush (<i>Lomandra filliformis</i>). PCT 277 'Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion'. The condition thresholds of this zone are likely to classify as both state or federally listed TEC (Box Gum Woodland). Constraint = HIGH	

Zone ID	Condition Desc	Easting	Northing	Description & dominant native species onsite	Image
4	PCT 277 Tree	681625	6105396	Native trees 50-100m apart with several hollow bearing trees throughout. Greater than ninety percent of the ground devoid of plants. Remaining cover was greater than 50% native species. <u>Native Trees</u> – Blakely's Red Gum (<i>Eucalyptus blakelyi</i>), Yellow Box (<i>E. melliodora</i>). <u>Native Shrubs</u> – None <u>Native Groundcovers</u> – Rough Spear Grass (<i>Austrostipa scabra</i>), Lesser Joyweed (<i>Alternanthera denticulata</i>) and wallaby grass (<i>Rytidosperma spp</i>). PCT 277 'Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion'. The condition thresholds of this zone will classify as state and federally listed TEC (Box Gum Woodland). Constraint = HIGH	
5	PCT 282 Steep	618164	6105380	Trees 100m apart amongst very rocky and steep terrain. Not traversed due to slope constraints and not considered optimal land for solar panels. Trees species viewed through binoculars only and were senescent and some trees contained hollows. Invaded by Briar (<i>Rosa rubiginosa</i>). <u>Native Trees</u> – Blakely's Red Gum (<i>Eucalyptus blakelyi</i>), Red Stringybark (<i>E. macrorhyncha</i>). <u>Native Shrubs</u> – Not observed <u>Native Groundcovers</u> – Not surveyed PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay	

Zone ID	Condition Desc	Easting	Northing	Description & dominant native species onsite	Image
				loam soils on undulating hills of central NSW South Western Slopes Bioregion. The condition thresholds of this zone <u>may or may not</u> classify as state or federally listed TEC. Further investigation would be required if development is proposed for this area. Constraint = HIGH	
6	Planted			Small patch of dying pine trees. Land not optimal for solar panels because of small area and surrounding high constraint vegetation. Dominant species <u>Trees</u> –Pine (<i>Pinus radiata</i>) No PCT allocated. This zone is not state or federally listed TEC. Constraint = HIGH	No photo taken of this zone.

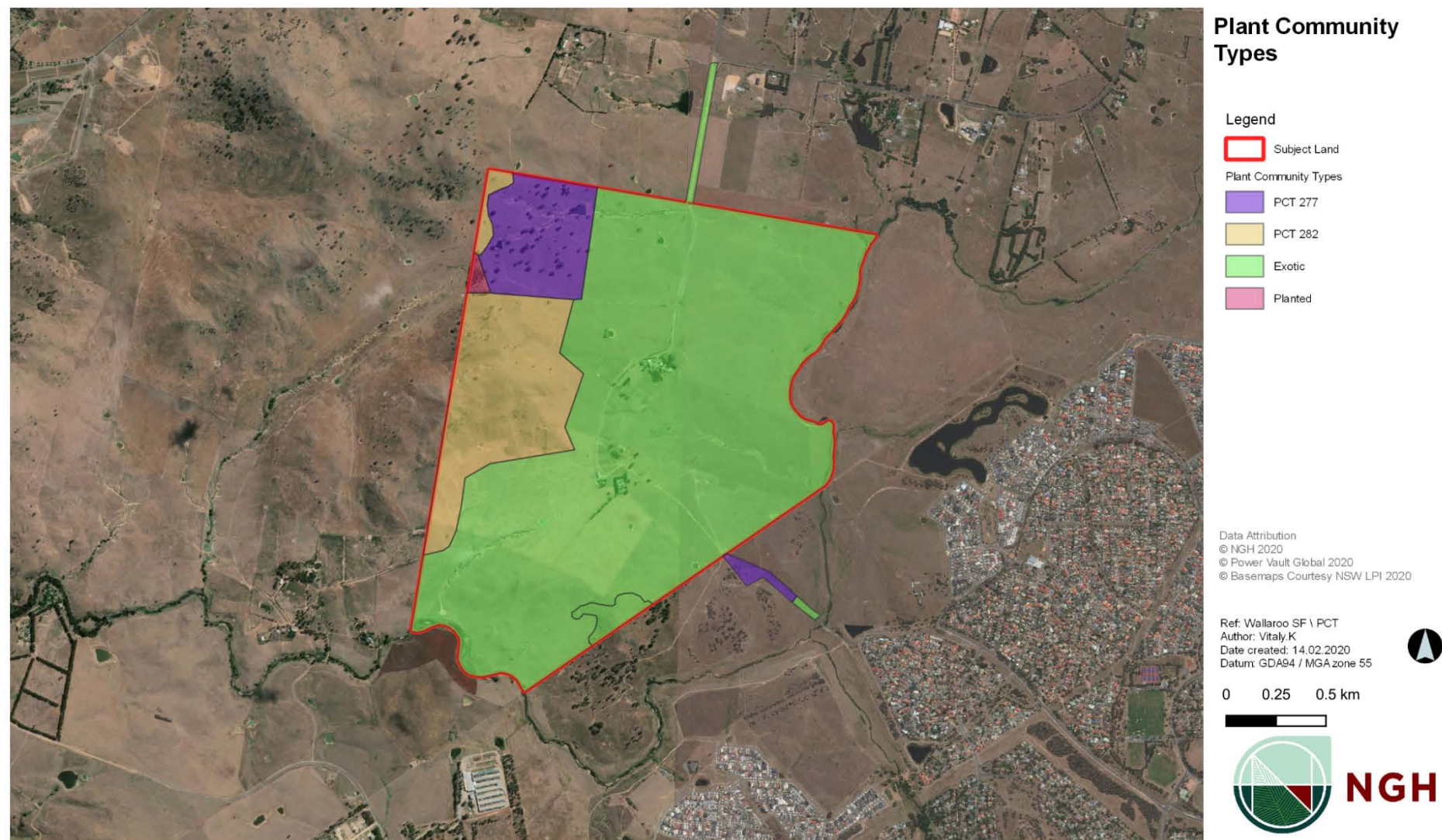


Figure 6-5 Preliminary mapping of vegetation zones and Plant Community Types (PCTs)

Constraints and need for further assessment

To inform the early proposal planning process and investigation strategies, biodiversity features within the subject land have been allocated to vegetation zones and mapped as High, Moderate, or Low constraints (Figure 7-1) and are detailed in the constraints assessment in Section 7.

As part of the EIS, the detailed ecological surveys, investigation and assessment will be undertaken in the format of the Biodiversity Development Assessment Report (BDAR) in consultation with the Biodiversity Conservation Division (BCD) of DPIE. The assessment would be undertaken in accordance with the NSW Biodiversity Assessment Methodology (BAM) and is likely to generate an offset obligation.

6.1.5. Land use compatibility

The subject land is located in an agricultural area within NSW. Almost the entire proposal site is cleared of woody vegetation and is highly modified by historical farming practices, including cultivation of land and pasture improvement. Sheep grazing occurs on the northern portion of the subject land, while horses, sheep and cattle graze the southern portion of the land. The southern portion is also used for cropping (oats). Land use categories mapped within the subject land and surrounds are identified in Table 6-3 and Figure 6-6 .

Other land uses include broadscale agriculture and urban land. The urban areas are:

- Smaller RU1 land parcels (possibly a historical subdivision, more likened to R5 large lot residential or RU5 Rural village) located directly to the north of the site, in the locality of Wallaroo.
- Across the border within the ACT suburbs of MacGregor and Dunlop, located approximately 550 to 900m south east from the subject land (Figure 2-4).

The large area immediately south of the subject land within the ACT is zoned “hills, ridges and buffer areas”. The next largest area, as close as 520 m, to the subject land, is residential. Also nearby are suburban core, urban open space, and urban residential (ACT 2019). This land use zoning is shown in Figure 2-4.

A nature reserve (offset area) provides a buffer between the subject land and the ACT urban areas. The Bicentennial National Trail passes south of the subject land.

Crown land in the form of waterways borders the southern and eastern boundaries of the site (Ginninderra Creek and Gooromon Ponds). A title search/deposited plan search would confirm if any ‘paper roads’ are present within the subject land.

A search of the Department of Planning and Environment MinView on 7th February 2020 did not identify any current mineral or exploration licences or applications over the subject land.

The proposal would capture and utilise a natural resource (solar energy) for the life of the solar farm (anticipated to be 30 year lease). Although cultivation and cropping would no longer be possible throughout the construction, operation and decommissioning of the solar farm, the current land use would be diversified to include electricity generation. The economic benefit of the proposed solar farm is expected to exceed that of the current land use. Furthermore, the subject land will be returned to its pre-solar capability allowing for continued agricultural production once the solar farm has been decommissioned.

Table 6-3 Land use categories within the subject land (DPIE, 2013).

Land use category	Area (ha)
3.2.0 Grazing modified pastures	451
5.4.3 Rural residential without agriculture	14
6.3.0 River	8
2.1.0 Grazing native vegetation	4
1.2.0 Managed resource protection	2

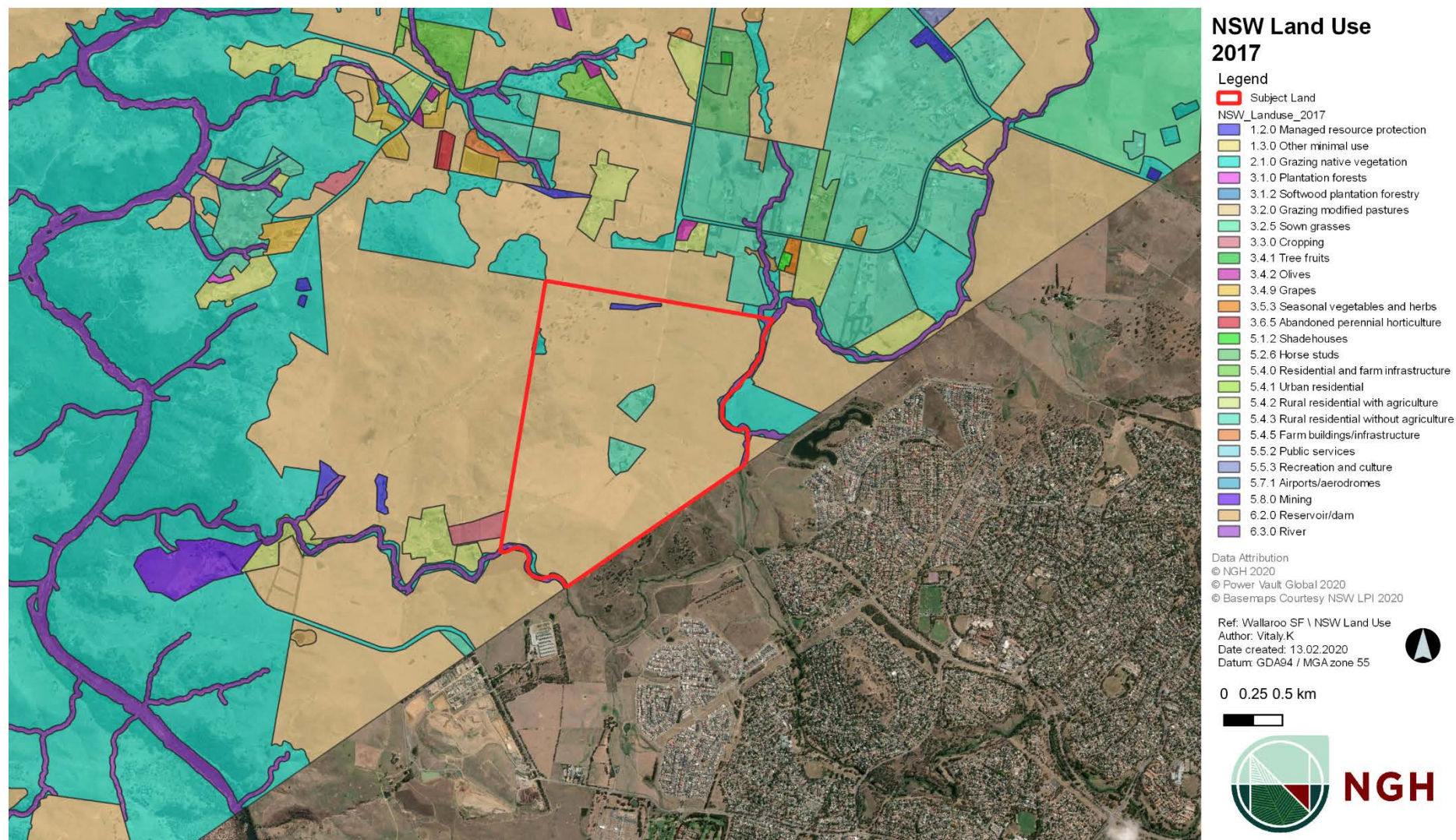


Figure 6-6 Land use within and surrounding the subject land (NSW only).

Constraints and need for further assessment

The solar farm operation is not considered to be incompatible with local land use activities. Construction impacts, particularly the location of site access, should be considered with regard to local residences. Mitigation such as noise screens and additional vegetation can be employed where high impacts are predicted. Mitigation should be developed in consultation with affected landowners within 500 m of the subject land and potentially those landowners backing onto the reserve within the suburbs of Macgregor and Dunlop.

On 9 December 2016 the NSW Premier and ACT Chief Minister signed the [ACT-NSW Memorandum of Understanding for Regional Collaboration 2016-19](#). The agreement is supported by an annually revised work plan and annual report to assist in the identification and progression of cross-border issues. Consultation with the ACT Government or relevant Directorates within the ACT Government would be undertaken.

6.1.6. Access and traffic

By road, the subject land is approximately 298 km south west of Sydney via the Hume Highway, Federal Highway and Barton Highway. The Hume Highway, Federal Highway and Barton Highway are classified as state Highways (HW) within the RMS Road Classification hierarchy.

Construction and operational access will be off the Barton Highway onto Wallaroo Road to access Gooroomon Ponds Road which leads to the existing access to the northern portion of the subject land. Wallaroo Road and Gooroomon Ponds road are not classified within the RMS Road Classification hierarchy and are likely to be local council roads.

Wallaroo Road is sealed and is approximately 6 – 7 m in width and in generally good condition. Gooroomon Ponds Road is sealed and approximately 5 - 6 m in width. This is the existing and preferred proposed access to the subject land.

The portion of the access route located within NSW is mapped as an RMS approved Restricted Access Vehicle (RAV) route with the exception of Wallaroo Road and Gooroomon Ponds Road.

Heavy vehicles will be required for transportation of solar farm infrastructure. Construction staff will be accessing the site via light vehicles and shuttle buses; there are 200 staff expected to be working on the construction of the solar farm and it is expected to be two staff members travelling in one vehicle between the times of 8am and 6pm.

The proposed route from the Barton Highway to the subject land is shown in Figure 7-1.

Constraints and need for further assessment

Impacts for sensitive receivers along the transport route within Wallaroo will be considered in detail in the EIS, including visual, noise and dust in addition to the impacts of increased traffic during construction and operation.

Intersection works and road upgrades compliant with Council and RMS requirements may be required for access to the site via Barton Highway, Wallaroo Road and Gooroomon Ponds Road. The access route currently provides access to residences that reside on the subject land as well as neighbouring residences. Any road upgrades and intersection treatments have the potential to benefit local traffic by improving the existing condition and safety. Based on similar projects and the existing width of the local roads, some upgrades may be required, including intersection and access upgrades and road widening. Any changes proposed to the proposed haulage route and site access would be considered by an appropriately qualified

consultant and would be detailed in the traffic impact assessment for the proposal. The traffic impact assessment would be guided by consultation with relevant roads authorities.

Management of traffic, for safety as well as road pavement conditions will be required.

The access options would be further investigated during the preparation of the EIS. Construction traffic impacts would be considered in the EIS and take into consideration existing traffic volumes and any requirements from the roads authority.

The mitigation measures would require a Traffic Management Plan including haulage routes be prepared.

6.1.7. Social and economic impacts

The proposal site is located primarily within NSW, but lies adjacent the ACT border and a transmission corridor is required to traverse ACT lands. Within NSW the subject land falls within Yass Valley LGA and the locality of Wallaroo. Within the ACT the subject land falls within the unincorporated ACT LGA and the suburbs of Dunlop and Macgregor. Table 6-4 provides a statistical overview of Yass LGA, the ACT, Wallaroo, Dunlop and Macgregor.

Table 6-4 Statistical overview of Orange, Wellington, Mullion Creek and Euchareena (ABS, 2016).

Statistic	Yass LGA	ACT	Wallaroo	Dunlop	Macgregor
Population	16,142	420,960	707	7,197	6,796
Median age	42	35	44	33	32
Main industry	- Government administration - Sheep farming - Defence - Primary education	- Government administration - Defence - Hospitals - Computer system designs	- Government administration - Primary education - House construction - Plumbing services	- Government administration - Defence - Hospitals - Primary education	- Government administration - Hospitals - Computer system designs - Higher education
Unemployment rate	2.9%	4.6%	1.1%	3.8%	3.8%

Economic benefits are expected to be generated by the construction, and to a lesser extent operation of the Wallaroo Solar Farm. Benefits would include local employment opportunities and stimulus to the local economy through use by construction staff of local accommodation and recreational facilities.

Access to the site may require road upgrades and intersection treatments. Interruptions associated with these works and during construction may be expected at Burrendong Way, where it meets Wallaroo Road and Long Point Road. Traffic volumes as a result of the construction of the solar farm will increase the volume of daily traffic along the Barton Highway, Wallaroo Road and Gooroomon Ponds Road. During operation of the solar farm, increases in traffic volumes are anticipated to be negligible during operation.

Constraints and need for further assessment

The EIS would assess potential social and economic impacts of the proposal, including issues perceived by the community to be of concern and cumulative impacts of other proposed developments in the region. An investigation of ways to spread the benefits of the solar farm into operation would also be included within the EIS. Consultation to date is summarised in Section 4.2 of this report and would continue into the detailed investigation stage.

6.1.8. Hydrology, groundwater and water quality

Two named watercourses traverse the site and flow to the Murrumbidgee River which is located 3.1 to 4km west of the subject land:

- Ginninderra Creek 6th order (Strahler Stream Classification) flows along the south western boundary of the subject land and flows in westerly direction before meeting the Murrumbidgee River.
- Gooromon Ponds 5th order (Strahler Stream Classification) flows along the eastern boundary of the subject land and is a tributary of Ginninderra Creek.

Several smaller tributaries also traverse the site and run into Ginninderra Creek or Gooromon Ponds:

- Two 1st order tributaries and one 2nd order tributary of Ginninderra Creek.
- Four 1st order tributaries and one 2nd order tributary of Gooromon Ponds.

During the site inspection undertaken on 20th and 21st January 2020 the presence of the streams and drainage lines were confirmed. The major and minor watercourses show signs of degradation, and are especially altered in terms of native species. Most contained exotic species albeit some native reeds in Gooromon Ponds. There is major gully erosion and sheet erosion with little groundcover in within most of the first order watercourses over the property. Existing trees along watercourses are Willows (*Salix spp*). Watercourses and dams can currently be accessed by stock (sheep and horses) and would receive runoff from surrounding cultivated land.

During the site inspection conducted on the 20th and 21st January 2020, the landowner of the southern portion of the subject land noted that Ginninderra Creek floods at times along the southern boundary of the subject land.

Fifteen dams occur on the subject land but not all contain water at present. The dams can currently be accessed by stock and would also receive runoff from surrounding land.

Groundwater dependant ecosystems (GDEs) are mapped nearby, but none are located on the subject land. Strahler stream orders are shown in Figure 6-7.

An investigation of the water NSW online resource for the Snowy River Basin indicates no bores occur within the subject land, but two bores exist adjacent to the northern boundary;

- GW403264, currently licenced for domestic stock irrigation, 54m deep, standing water depth 18m, at Lat/Long coordinates 35°10'44.4"S, 149°00'22.5"E. Licence 40CA407420.
- GW402150, currently licenced for domestic stock irrigation, 1.54m deep; a hole with a casing & lining; no licence applicable. .

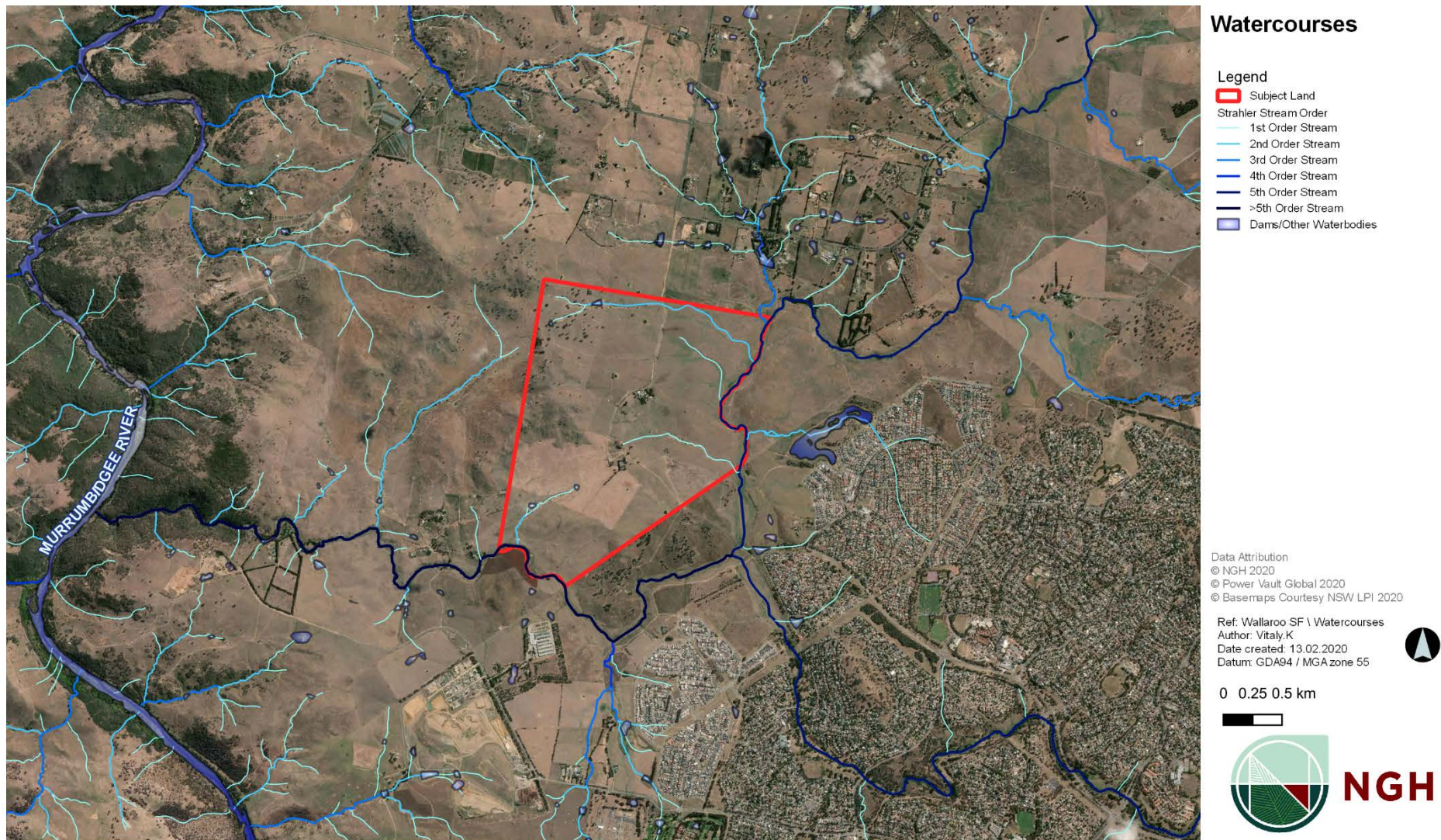


Figure 6-7 Strahler stream orders within and surrounding the subject land.

Constraints and need for further assessment

Under section 4.41 of the EP&A Act, SSD developments do not require a controlled activity approval (other than an aquifer interference approval) under Section 91 of the *Water Management Act 2000*. However, best practice measures are being used to inform site development in accordance with this Act. The WM Act defines waterfront land as the bed of any river, lake or estuary and any land within 10, 20, 30 and 40 metres (depending on the Strahler Stream order) of the river banks, lake shore or estuary mean high water mark, in accordance with best practice guidelines. In overland flow areas (i.e. the unnamed 1st and 2nd order tributaries within the subject land), which do not meet the definition of waterfront land under the Water Management Act, permanent infrastructure may be considered. Hydrological investigation may be required to inform the infrastructure layout.

Water quantities and sources required for construction and operation will be required to be detailed in the environmental assessment as part of the project description. This is emerging as an important issue, particularly for local councils, given the current drought conditions.

Buffers and strict management protocols where work cannot be avoided in waterways is recommended. While waterway crossing and cabling in waterways is considered manageable, solar panel arrays and other infrastructure are not recommended unless a hydrology assessment supports this, for example, that impacts to hydraulic function would be negligible. Confirmation of the hydraulic function and ecological value of the waterways will be undertaken as part of the EIS, including a specialist hydraulic and hydrological analysis to address potential flood risks.

6.1.9. Soil and landforms

The proposal site occurs in a rural landscape on foot-slopes and moderately hilly terrain. Soils are generally poor and appear to be derived from granite based rock. The topography is undulating to hilly with some major gullies. Two soil types occur across the subject land (rudosols and tenosols and kurosols -natric). Soil types are described in Table 6-5 and shown in Figure 6-8.

The subject land is mapped within the Land and Soil Capability Assessment Scheme state-wide mapping as having very low (Class 7) and moderate (Class 4) capability land, with the majority of the subject land mapped as Class 4. The soil landscape indicates limited agricultural capability; an important consideration in assessing land use compatibility impacts and rehabilitating the site to its pre-solar development capability during decommissioning. There is no mapped Biophysical Strategic Agricultural Land (BSAL) within the subject land. Land use capability classes are described in Table 6-6 shown in Figure 6-9.

Soils onsite during the site inspection were identified as having gully and sheet erosion, particularly in the vicinity of major watercourses. Sedimentation and movement of topsoils was observed, likely as a result of clearing and land management practices that do not match the limitations of the land. No evidence of salinity was observed within the subject land.

Soil constraints are considered manageable provided appropriate safeguards to control erosion during construction and operation and soil remediation treatments are considered during assessment and detailed design. Designs will need to consider works that may require cut and fill such as access tracks and how this will impact natural water flow paths and management.

A search of the NSW OEH Contaminated Sites Register on 7th February 2020 did not identify any sites within the suburb of Wallaroo. Two sites were identified within the Yass Valley Council LGA. Neither of the sites are in the vicinity of the subject land as they are located within the town of Yass. The subject land does not appear on the List of NSW Contaminated Sites notified to the EPA as at 14th January 2020. During the site inspection undertaken on the 20th and 21st January 2020, old cars, machinery and concrete slabs were observed within the subject land. It is noted that agricultural sites may contain buried/discarded/stored rubbish and/or contaminants such as herbicides that may be encountered during excavation.

Table 6-5 Australian Soil Classification (ASC) relevant to the subject land.

Soil type	Characteristics	Proportion within subject land (%)
Rudosols and Tenosols	• Generally have a loose to firm surface • Contain little to no shrink swell clays • Generally not dispersive • Contain very low salt levels • Generally low to moderate fertility • Generally well drained	13.6
Kurosols, natric	• Generally have a weak structure in the surface with a firm to hardsetting surface condition • Strongly acidic subsoils • Sometimes dispersive in the subsoil • Potential for high salt levels, resulting in scalding and erosion risk • Generally low to moderate fertility • Poorly to moderately drained with low plant available water holding capacity	86.4

Table 6-6 Land and Soil Capability (LSC) Classes within the subject land (OEH 2012).

LSC Class	Capability description	Proportion within subject land (%)
4	Moderate capability land: Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology.	86.4
7	Very low capability land: Land has severe limitations that restrict most land uses and generally cannot be overcome. On-site and off-site impacts of land management practices can be extremely severe if limitations not managed. There should be minimal disturbance of native vegetation.	13.6

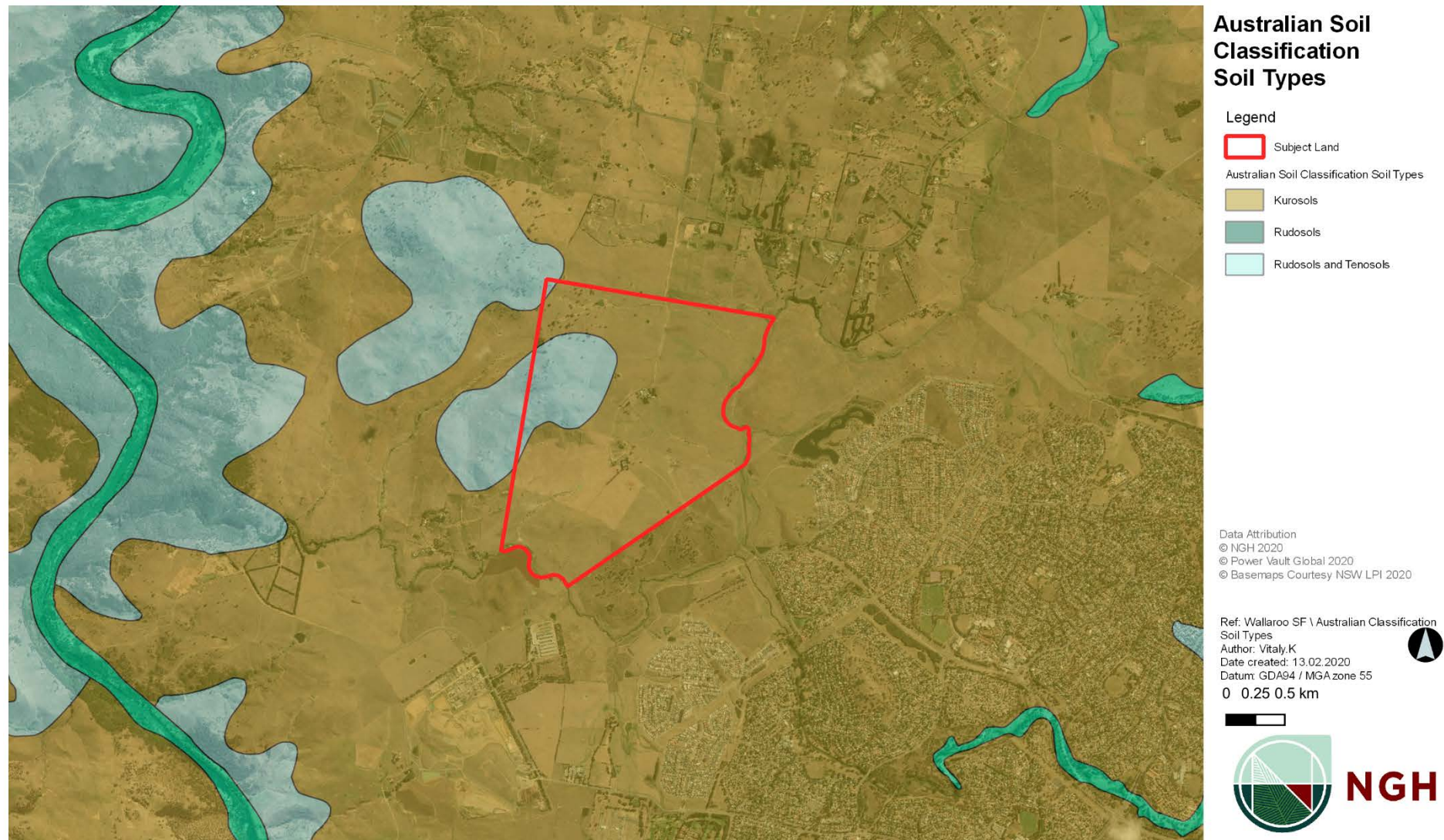


Figure 6-8 Australian Soil Classification (ASC) within and surrounding the subject land.

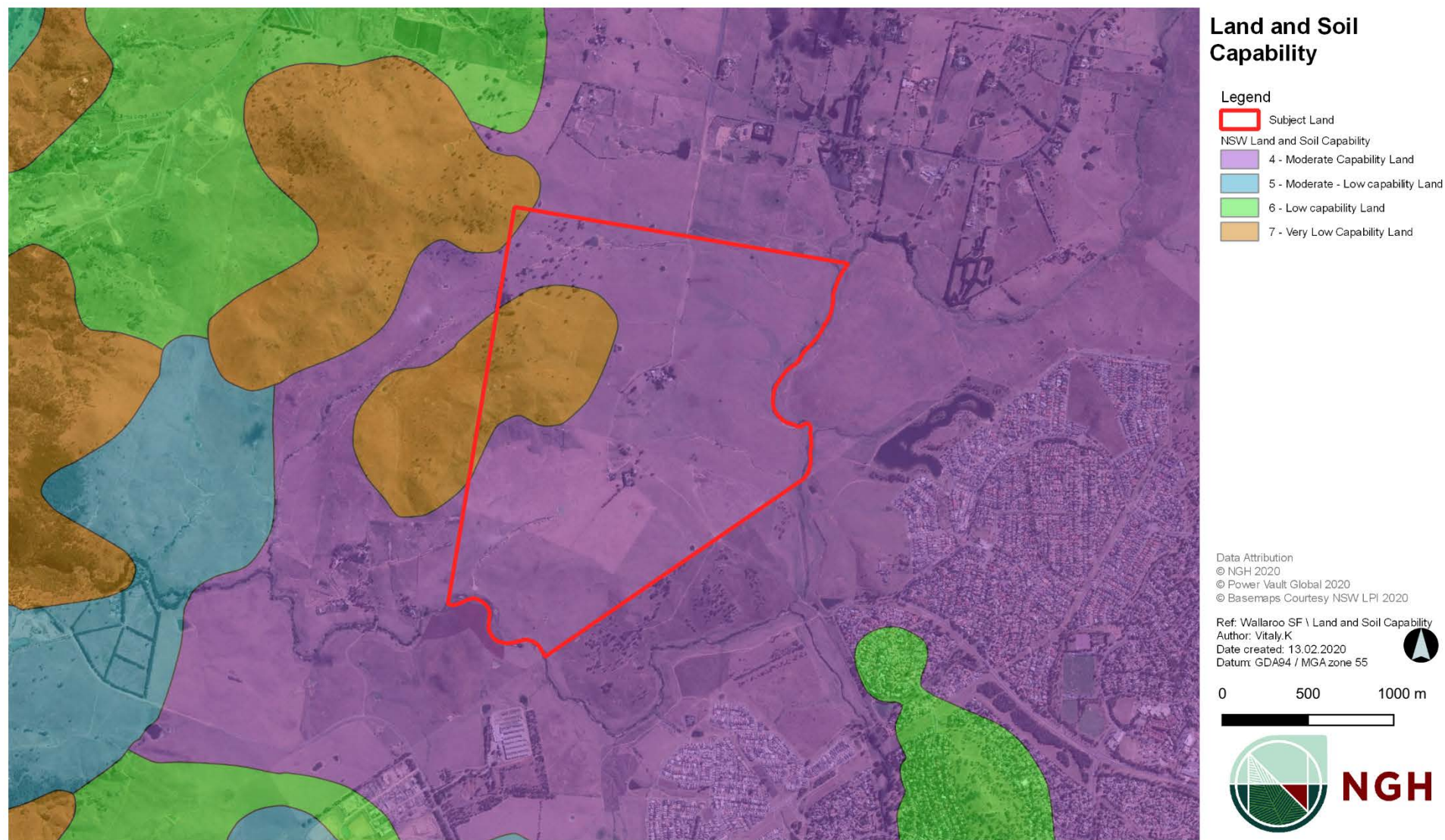


Figure 6-9 Land and Soil Capability classes within and surrounding the subject land.

Constraints and need for further assessment

It is noted that, where pile driving is used to install array mounts on land of relatively low relief, the soil disturbance and therefore reversibility of the proposal, with regard to future land uses, such as agricultural production, is very high. Excavation and footings are generally limited to discrete footings for inverters, switch station and office buildings. Building-in strategies to retain land use options post-decommissioning, will be part of the assessment and mitigation process.

Consideration of soil and erosion impacts, and proposed mitigation measures for the construction, operation and decommissioning of the solar farm would be included within the EIS.

Presence of substantiative contamination within the subject land is considered unlikely. As such, it is anticipated that a detailed investigation of contamination will not be required within the EIS.

Generally, soil impacts are considered readily manageable if high erosion areas are avoided or rehabilitated (in particular, the erosion gullies observed along Gooroomon Ponds and Ginninderra Creek). Management of ground cover during operation and restoration of the land capability of the subject land would be recommended in the EIS and is considered highly feasible. Opportunities for some continued agricultural production would be explored, i.e. strategic grazing. Rehabilitation would be with reference to base line soil testing to guide any remedial management actions that may affect maintaining groundcover during operation or rehabilitation disturbed areas during decommissioning.

6.2. OTHER ENVIRONMENTAL ISSUES

Issue	Existing environment	Potential impacts	Constraints and need for further assessment
Hazards and risks – Bushfire and Battery storage.	While most of the subject land is cleared of woody vegetation for agricultural purposes, a third of the site contains native vegetation on steeper land where eucalypt trees are scattered 50 – 100m apart. A small area of the south west portion of the subject land is mapped as a bushfire prone.	Bushfire Emergency response protocols will be required in the event of a bushfire. Battery storage Battery storage can elevate fire ignition risks. Storage, transport and handling must be considered.	Bushfire The potential to increase risk of bushfire would be assessed in the EIS. Emergency protocols would reflect advice from relevant agencies. Battery Storage A preliminary risk screening in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011) would be undertaken within the EIS. Should the preliminary risk screening determine the development as 'potentially hazardous', a Preliminary Hazard Analysis (PHA) would be undertaken in accordance with Hazard Industry Planning Advisory Paper No.6 – Guidelines for Hazardous Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).

Issue	Existing environment	Potential impacts	Constraints and need for further assessment
Hazards and risks – Electric and magnetic fields (EMF)	EMFs are produced within the vicinity of existing powerlines. Additional infrastructure proposed within the subject land such as inverters, connecting powerlines and the substation would produce additional EMF within their vicinity.	The EMF levels associated with solar infrastructure are well below the guideline for public exposure and would not be expected to have any adverse impact on human health. There can, however, be perceived impacts for nearby residents.	The EMF levels of the proposal infrastructure would be assessed as part of the EIS. Standard design provisions are expected to ensure impacts comply with relevant guidelines together with communication of the issue as required.
Hazards and risks – glint and glare	The closest airports within the vicinity of the subject land include: • Canberra International Airport is located approximately 21 km south-east; • Goulbourn Regional Airport is located approximately 79 km north east and • Tumut Regional Airport is approximately 71 km west. There is also a number of small airstrips mapped within the vicinity of the subject land approximately: • 4.8 km north west; • 4.7 km north east; and • 9 km south west.	It is understood that concerns relating to glare have been raised for other solar proposal as an issue of interest to neighbours. This is a perceived issue but requires consideration; other infrastructure, such as sheds and panel mounts have greater potential for glare and generating reflections than PV panels which are designed to capture not reflect light.	Glare and reflections from solar farm infrastructure would be investigated. It is noted that solar panels are designed to absorb as much sunlight as possible. As such, they reflect a very low percentage of light and are generally not considered likely to result in glare or reflections that would adversely impact traffic or nearby receivers
Non-indigenous heritage	Non-indigenous heritage database searches were conducted and included: A search of the EPBC Act protected matters search was undertaken on the 8th January 2020. The search	No impacts are considered likely for listed heritage items. Unlisted items are not anticipated to occur within the subject land. There can be visual, dust	The potential to impact non-listed heritage items would also be investigated by site inspection; old land holdings can contain buildings or

Issue	Existing environment	Potential impacts	Constraints and need for further assessment
	indicates that there are no World Heritage and National Heritage items within the site. The closest National Heritage item is listed as a place and is the Australian Alps and National Parks and Reserves natural area as a whole. The place meets National Heritage criteria for its distinctive landforms, fossils, unique plants and wildlife. Brindabella National Park is part of the Australian Alps complex and is located approximately 8 km west of the subject land. A search of the NSW OEH Heritage Register and Australian Heritage Database on 7th February 2020. The searches indicate no heritage items fall within the site. However, 4 are located between 2-3.5 km of the site. The sites are as follows: • The Ginninderry Parkwood Homestead and Chapel, Parkwood Road • Wattle Park Uniting Church Complex, 1716 Barton Hwy • Ginninderra Falls Area, Parkwood Road • Allwood slab house, 633 Wallaroo Road	and vibration impacts on heritage items near to the haulage route should be.	structures of significance. Protections for such features would be commitments of the EIS, as required.
Cumulative impacts	Cumulative impacts refer to the combined effect of impacts from several activities on a particular value or receiver. They may occur concurrently or sequentially. The relevant cumulative impacts are those associated with other known or foreseeable developments occurring in proximity to the proposal.	Specific details in relation to the timing of proposed construction of the Springdale Solar Farm, Yass Valley Solar Farm and Gunning Solar Farm are not available within the documentation available on the Major Projects website. As such, a worst case	Potential cumulative impacts would be assessed within the EIS. The timing of works associated with the proposed developments would be monitored throughout the EIS stage to ensure appropriate mitigation measures

Issue	Existing environment	Potential impacts	Constraints and need for further assessment
	Major projects listed on the Major Projects Register within proximity of the subject land (and their current status) are: • Springdale Solar Farm (response to submissions, 2020); • Yass Solar Farm (prepare SEARs, 2020); • Gunning Solar Farm (prepare EIS, 2020); and • Capital Wind Farm (Determination, stage 2, 2020).	assumption that construction of the developments could occur at the same time as the proposed Wallaroo Solar Farm has been made. Potential cumulative impacts of overlapping construction periods are primarily associated with traffic impacts, pressures on local facilities, goods and services and vegetation clearing.	are implemented, particularly in relation to construction traffic on the Barton Highway, Wallaroo Road and Gooroomon Ponds Road as well as pressure on local services and facilities within Wallaroo.

7. CONSTRAINTS ASSESSMENT

7.1. METHODOLOGY

Preliminary constraints advice has been informed by a desktop review and confirmed by site inspection (Senior ecologist, January 2020). The inspection allowed for full traverses of the site and additional vehicle-based surveys in the locality. As such, they are considered sufficient to provide preliminary constraints advice to inform development of the concept design and investigation strategies.

Low, moderate and high environmental constraints are defined in Table 7-1 and may be viewed in Section 7.2. with reference to the 'developability' of the site. Where uncertainty exists, a higher constraint rating has been applied. Further investigation may reduce the constraint level. Mapping of the identified environmental constraints was undertaken for the site and is provided in Figure 7-1.

Table 7-1 Environmental constraint definitions

Constraint	Definition
High	Priority for further investigation. These areas may be difficult, expensive or may not be possible to obtain approval to develop. They may require costly additional surveys to understand and manage or offset impacts.
Moderate	Impacts should be minimised, where possible. These areas may require specific management protocols and may add some cost and time to the assessment and approval process.
Low	Most suitable for development. Minimal impacts anticipated. Standard management protocols would be sufficient to manage any impacts.

7.2. RESULTS

Table 7-2 details the constraints of the environmental issues considered in Section 6 for the subject land. There were no 'no go' zones identified for the site.

Table 7-2 Environmental constraints for the subject land

Constraint level	Site specific results
High	Biodiversity: Zone 4 (PCT 277 Tree), Zone 3 (PCT 282 Steep) and Zone 5 (PCT 282 Steep) should be avoided. They are likely to classify as NSW and Commonwealth listed TEC (Box Gum Woodland). These areas may also provide threatened species habitat and require targeted surveys, more onerous impact assessment and will generally require strong justification for impacts and offsets under the NSW BAM. Higher value vegetation will generate greater offset requirements.

Constraint level	Site specific results
	• Amenity: Residences in close proximity of the site, who may be affected by visual impact, traffic noise and vibration, and dust during construction and operation. These are a priority for investigation. • Water: Works in or that affect waterways may require additional assessment, justification and management. Permits may apply for works in waterways and construction practices will be subject to best practice methodologies and rehabilitation requirements. Works that may affect local hydrology are likely to require specialist input from a hydrologist. This may include modelling to assess the flooding impacts in relation to placement of panels. • Aboriginal Heritage: Areas near water bodies, such as the Ginninderra Creek and Gooromon Ponds have higher potential for Aboriginal heritage sites of significance. This must be confirmed by onsite surveys and assessment. Any Aboriginal heritage sites/items/etc. identified would be a moderate to high constraint; impacts on sites will require approval. Mitigation strategies can range from avoidance, to salvage programs to more intensive survey including test pits. These add to the expense of the assessment and mitigation but are unlikely to preclude significant areas of the site from development.
Moderate	• Biodiversity: Planted vegetation (Zone 6) and rocky hill-top within Zone 1 Exotic. • Aboriginal Heritage: Historic farming practices are likely to have reduced potential for intact Aboriginal heritage sites in very modified areas. This must be confirmed by onsite surveys. Any Aboriginal heritage sites/items/etc. identified would be a moderate to high constraint; impacts on sites will require approval. Mitigation strategies can range from avoidance, to salvage programs to more intensive survey including test pits. These add to the expense of the assessment and mitigation but are unlikely to preclude significant areas of the site from development. • Crown land and Crown land easements occur within the proposal site. Consultation and approvals would be required if impacts on crown lands are required. These should be sought concurrent with the EIS, in consultation with Crown Lands (DPIE), as required.
Low	• Biodiversity: Exotic (Zone 1) away from drainage depressions. Access to the site should be from the north (off Gooromon Ponds Rd) to avoid disturbance to high conservation value vegetation and the need for construction upgrades over Gooromon Ponds floodway.

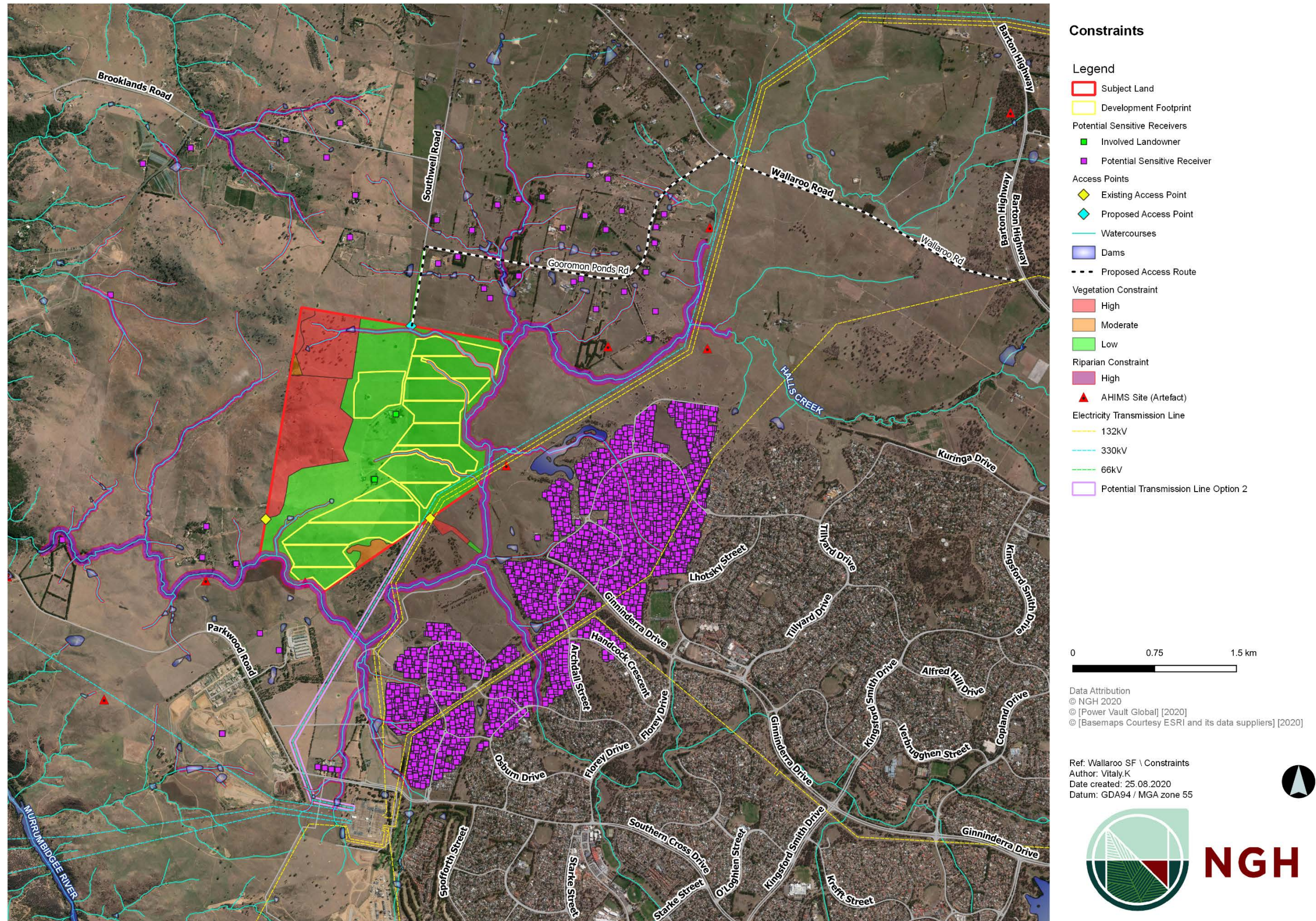


Figure 7-1 Wallaroo Solar Farm constraints and indicative development footprint

8. CONCLUSION AND RECOMMENDATIONS

The Wallaroo Solar Farm proposal is currently in the early planning phase. This report has outlined the planning and general environmental context of the proposal. The proposal would be assessed under Part 4 of the EP&A Act and classed as State Significant Development under State Environmental Planning Policy (State and Regional Development) 2011.

The Scoping Report has categorised the potential environmental impacts of the proposal as key issues or other issues. Based on this Scoping Report, an indicative scope for the EIS has been developed, focusing on the key issues:

- Visual and noise amenity, in particular, sensitive receivers in close proximity to the site and likely to have a view of solar farm infrastructure (R3 – R37)
- Biodiversity, in particular high constraint vegetation zones (Zone 3, Zone 4, and Zone 5).
- Aboriginal heritage, in consultation with Registered Aboriginal Parties.
- Hydrology, groundwater and water quality, in particular, works in or that affect waterways or local hydrology.
- Land use compatibility, in particular, economic impacts to the region and rehabilitation of the site to its pre-solar capability.
- Access and traffic, in particular, potential requirement for road upgrades on unsealed and narrow roads, and intersection treatments.
- Social and economic impacts, in particular, potential impacts to surrounding localities in relation to cumulative construction and traffic volume impacts.

Secondary issues will also be investigated, commensurate with risk, through desktop investigation.

The EIS would be prepared, in response to the proposal-specific SEARs and constraints identified. Mitigation measures will be developed for inclusion in the EIS and will address the management of key issues and other issues identified in the assessment and community and stakeholder engagement process.

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APPENDIX A SITE PHOTOGRAPHS



Farm Dam – near entrance to Bicentennial National Trail.



First order watercourse draining into Ginninderra Creek



Erosion gully flowing into dam on first order watercourse off Ginninderra Creek



Farm track adjacent to cultivated land in south western portion of Lot 1 DP 544209



Large farm dam in centre of Lot 1 DP 544209



Access off Bicentennial National Trail to farmhouse
(Lot 1 DP 544209)



Looking east along Belconnen, Bicentennial
National trail (Southern Access)



Causeway over Gooromon Ponds, Bicentennial
National Trail (Southern Access)

APPENDIX B COMMUNITY AND STAKEHOLDER ENGAGEMENT PLAN



NGH

COMMUNITY AND STAKEHOLDER ENGAGEMENT STRATEGY

Wallaroo Solar Farm

July 2020

Project Number: 18-557



DOCUMENT VERIFICATION

Project Title: Wallaroo Solar Farm

Project Number: 18-557

Project File Name: Wallaroo Solar Farm CSES

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TABLE OF CONTENTS

1.	Introduction.....	1
1.1.	Community consultation principles.....	1
1.2.	Aim of this Plan.....	1
1.3.	Structure	2
1.4.	Implementation and revision of this document.....	2
1.5.	Relevant Guidelines	2
2.	Proposal overview.....	3
2.1.	Wallaroo Solar Farm proposal.....	3
2.2.	Construction	3
3.	Community profile.....	5
3.1.	Yass Valley Local Government Area.....	5
3.2.	Wallaroo	5
3.3.	Australian Capital Territory	6
3.4.	Dunlop	6
3.5.	MacGregor.....	6
4.	Stakeholder groups and consultation strategies.....	7
5.	Issue management	12
6.	Project based activities	16
7.	Monitoring and evaluation.....	21

FIGURES

Figure 2-1 Site location	4
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TABLE

Table -1 Stakeholder group consultation strategies	8
Table 5-1 Risks and strategies	13
Table 6-1 Proposed engagement activities	17

ACRONYMS AND ABBREVIATIONS

ABS	Australian Bureau of Statistics
ARENA	Australian Renewable Energy Agency
CSES	Community and Stakeholder Engagement Strategy
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DPIE	Department of Industry, Planning and Environment
EIS	Environmental Impact Statement
Ha	hectares
Km	kilometres
kV	kilovolts
LGA	Local Government Area
M	Metres
MW	Megawatt
NSW	New South Wales
SEARs	Secretary's Environmental Assessment Requirements
WSF	Wallaroo Solar Farm

1. INTRODUCTION

1.1. COMMUNITY CONSULTATION PRINCIPLES

Best practice community consultation involves the community in all decision-making stages of a project. The community plays a role from project conception, through the assessment process and on to project development. Effective community consultation has three important functions:

1. Facilitate deeper understanding of potential issues and decisions required for the project.
2. Enhance the quality of decisions made for the project.
3. Allow people to contribute to decisions that affect their lives.

Effective community consultation includes three important community engagement principles:

- Openness – combats assumptions and misinformation.
- Inclusiveness - consultation should be diverse and representative, not responding only to the most vocal stakeholders.
- Effective communication – requires tools appropriate to the task to build trust between parties.
- A communication plan – clearly setting out what the project is fully about to:
 - o Inform: one-way communication to deliver information about the project.
 - o Consult: two-way communication to seek input into the project.
 - o Collaborate and involve seek participation in elements of the project design and implementation.
- Early rather than late communication - to maximise engagement opportunities.
- Accountability – monitoring and evaluation to ensure consultation aims are being achieved.

1.2. AIM OF THIS PLAN

This Community and Stakeholder Engagement Strategy (CSES) has been developed for the Wallaroo Solar Farm (WSF) proposal as proposed by New Energy Development.

The aim of the plan is to:

1. Identify effective methods to inform the community about the WSF proposal.
2. Facilitate engagement with the community. This includes allowing meaningful contributions from the community into the environmental assessment and project development.
3. Obtain social license to operate from the local community. This will allow for good long-term relationships with community stakeholders

The plan identifies:

- Community stakeholders for the project
- Issues/risks related to the engagement of each stakeholder group
- A consultation plan for each stakeholder group
- A set of consultation activities against the project development timeline

Effective engagement requires an understanding of community stakeholders and prioritisation of potential impacts. It also relies on an understanding within the community of the project and specific issues of interest to them, for the community to contribute effectively. The focus of the consultation plan will be on providing this understanding and engagement.

1.3. STRUCTURE

The structure of this plan includes:

1. Proposal overview
2. Identification of community stakeholders for the project
3. Issue management – specific issues that require consideration
4. Project based activities –activities that will be undertaken to achieve the goals of this CSES

1.4. IMPLEMENTATION AND REVISION OF THIS DOCUMENT

This CSES has been developed to coincide with the early planning and assessment stages of the WSF proposal.

If the proposal is approved, consultation will also be required to continue into the assessment, construction and operational phases of the project. These phases will require a new or updated CSES in order to reflect any changes to consultation objectives but also, the increasing knowledge gained about the community. At this stage, only preapproval project stages are addressed. However, should there be queries on project stages that have not been finalised or identified, the CSES would respond efficiently to these queries to prevent the side-tracking of community expectation.

1.5. RELEVANT GUIDELINES

This CSES has been prepared considering the following guidelines and references:

- *Community and Stakeholder Engagement Guideline 2017*, NSW Department of Industry, Planning and Environment.
- *Community Guide to EIA 2017*. NSW Department of Industry, Planning and Environment.
- *Community Consultative Committee Guideline 2019*, NSW Department of Industry, Planning and Environment.
- *Aboriginal cultural heritage consultation requirements for proponents 2010*, NSW Government.
- *Beyond Public Meetings: Connecting community engagement with decision making*, Twyford Consulting 2007.

2. PROPOSAL OVERVIEW

2.1. WALLAROO SOLAR FARM PROPOSAL

The WSF is located in NSW at 248 Southwell Road, Wallaroo, including Lot 1 DP544209 and Lot 2 DP602262 located within the Local Government Area (LGA) of Yass Valley Council on approximately 391ha of land (Figure 2-1). There are two established farms within the subject land; Glenmore and Yarramlee. The subject land is adjacent to the New South Wales / Australian Capital Territory border, with the ACT suburbs of Dunlop and MacGregor 550 to 900m from the subject land respectively.

The current access to the subject land is via The Bicentennial National Trail, which connects Wallaroo, NSW, to Dunlop, ACT. The nearest major road is the Barton Highway, approximately 7.5km north west from the subject land.

Under the Yass Valley Local Environmental Plan 2013, the subject land is located on land zoned as RU1 Primary Production. Much of the subject land has been extensively cleared of woody vegetation and has been modified by farming practices. The majority of the subject land is used for grazing (cattle) with some cropping for feed.

The proposed WSF is a photovoltaic (PV) solar facility that will generate up to 100 MW AC of electricity to the national grid. The subject land is a maximum of about 391ha with the area of solar arrays and associated infrastructure anticipated to occupy approximately 209 ha (development footprint). This would include an onsite substation and a battery storage facility with a proposed storage capacity of 10MW (20MWh).

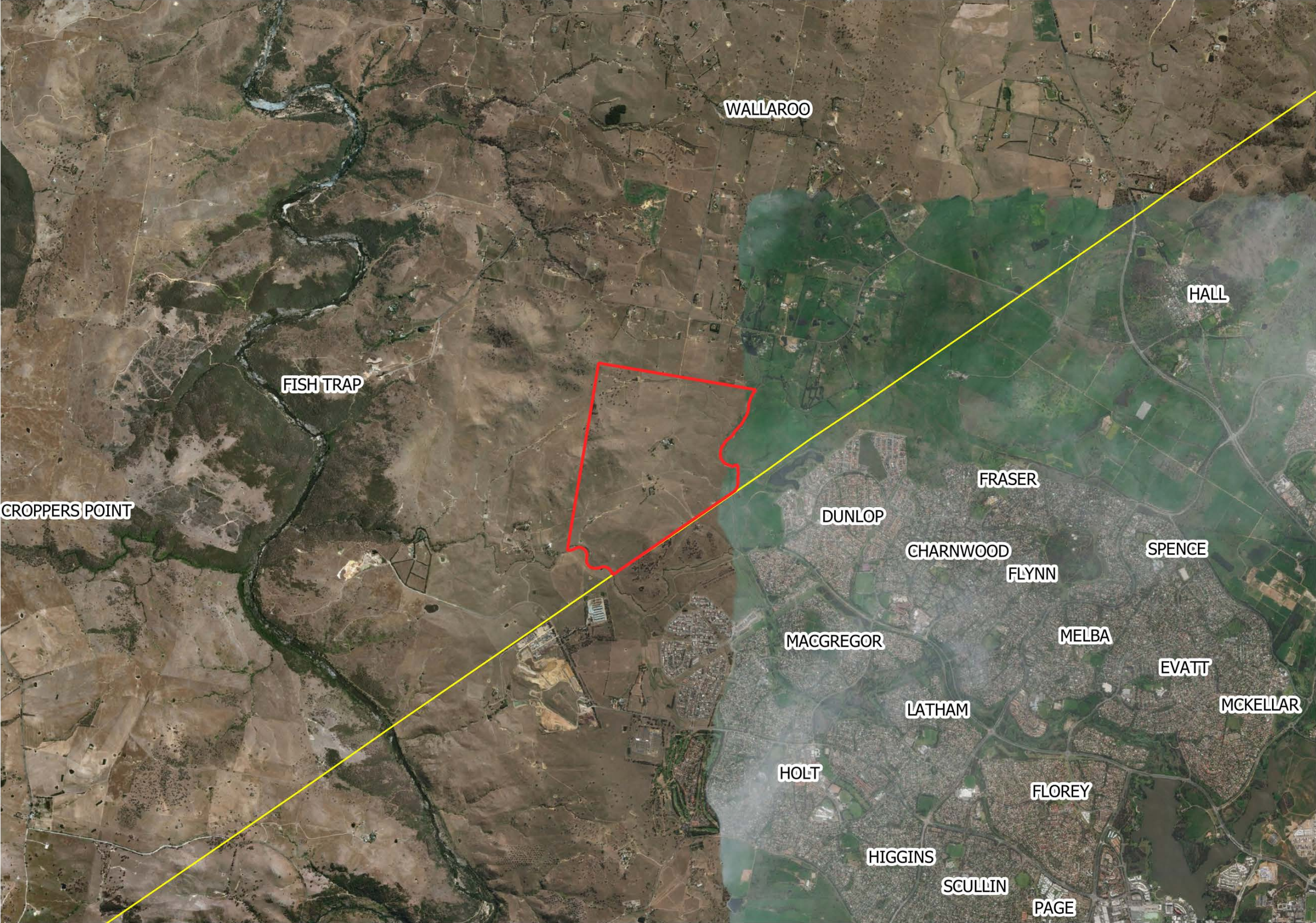
The suburbs of Dunlop and MacGregor, ACT, are located approximately 550 m and 750 m south east of the subject land, at the closest points. The rural farms of Wallaroo range from 550 m to 3 km north & north-east of the subject land. An industrial estate at Macnamara ACT is 2km from the subject land, to the south-west. A total of 521 residences are located within 1km of the subject land boundary, excluding the 2 dwellings within the subject land boundary. There are 3268 residences in the range of 1km to 2 km from the subject land.

2.2. CONSTRUCTION

The WSF would be expected to operate for a minimum of 30 years. After the initial operating period, the WSF would either be decommissioned, removing all above ground infrastructure and returning the subject land to its existing land capability, or repowered subject to landowner and planning consents.

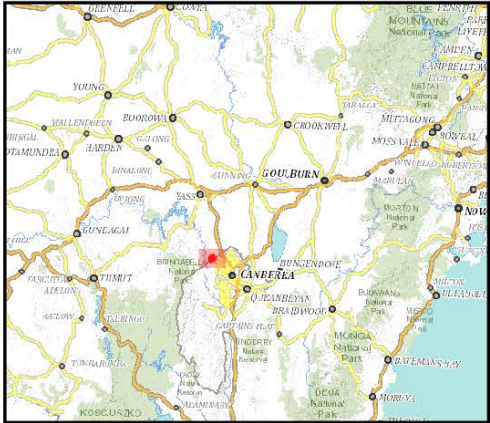
It is anticipated that the proposed solar farm would include development of the following infrastructure:

- 40 inverters
- 261,000 PV modules
- 20 Energy Storage containers distributed throughout the facility (10MW/20MWh)
- Internal access tracks between 3.5m-5m wide
- 2 watercourse crossings for internal access tracks
- Car parking
- Site office
- Water storage.



Location

- Legend
- Subject Site
 - NSW/ACT Border



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Ref: Wallaroo SF \ Location
Author: Vitaly.K
Date created: 30.01.2020
Datum: GDA94 / MGA zone 55

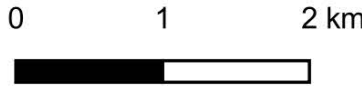


Figure 2-1 Site location

3. COMMUNITY PROFILE

Understanding the makeup and values of a community is essential to finding effective ways to reach the community. It is also important to understand ways the project may impact the community. This may not be limited to the construction and operational stages of a project but may also include the pre-lodgment assessment phase, as the project is being shaped. This section provides a broad overview of the community demographics in the Yass Valley Local Government Area (LGA), the local township of Wallaroo and the Canberra suburbs of Dunlop and MacGregor.

3.1. YASS VALLEY LOCAL GOVERNMENT AREA

The proposal site is located within the Yass Valley LGA, which covers an area of 3,998 km² (399,837ha) in the Southern Tablelands region of NSW about 60 km north-west of the Canberra CBD. The Yass Valley Council area is bounded by the Hilltops Council area and Upper Lachlan Shire in the north, the Queanbeyan-Palerang Regional Council area in the east, the Australian Capital Territory and the Snowy Valleys Council are in the south, and the Cootamundra-Gundagi Regional Council area and the Hilltops Council area in the west.

The area was formed in 2004 after the former Yass Shire merged with parts of the surrounding Gunning and Yarrowlunla Shires. The 2018 Census indicates that the Yass Valley LGA has a population of 16,953, which indicates a population density of 0.04 persons per hectare with a larger proportion of female residents occupying 50.9% of the population. The median age is 42 (ABS, 2016) and Aboriginal and Torres Strait Islanders make up 2.5% of the population.

There were 8,325 people employed in the Yass Valley LGA labour force in 2016, 61.5% of which were employed full time. The highest percentage of workers (20.8%) were employed as professionals, followed by managers whom were 19.8% (ABS, 2016). Other major industries included clerical and administrative workers, technicians and trades workers and community and personal service workers.

Socio Economic Indexes for Areas (SEIFA) is a suite of indices created by the ABS. The Index of Relative Socio-economic Advantage and Disadvantage (IRSDAD) summarises data about economic and social conditions of people and households in an area. Ranking of NSW suburb's and LGA's are used in this report with 1 being most disadvantaged (1st decile) to 2643 being most advantaged (10th decile). The SEIFA score for the Yass Valley LGA was 1062 in 2016 (ABS, 2016). These indices of wellbeing indicate that the Yass Valley LGA have a relatively high standard of living without many social or economic disadvantages (ABS, 2016).

The Yass Valley LGA is located in south-eastern New South Wales (NSW) and brought approximately 469,362 daytrip visitors annually during 2018/19 to experience various events and attractions. The region's natural attractions include areas of wilderness, wild rivers and cave formations within the national parks. The most visited sites include Burrinjuck Dam, Hume and Hovell hiking tracks and Careys Cave. The area also holds significant Aboriginal heritage, including rock art sites.

3.2. WALLAROO

The proposal site is located in NSW within the locality of Wallaroo, along the north-western NSW/ACT border. The 2016 census states that the locality accommodates 707 people with a median age of 44 years along with a slight dominance in female residents at 51.8% (ABS, 2016).

Within the locality 337 people were employed, either full time or part time as of 2016 with 60.1% currently full-time and 30.7% part-time. 8.1% of the population stated they were away from work, while 1.1% were unemployment. The highest percentage of workers (24.6%) were employed as

professionals, while 24.4% were managers (ABS, 2016). Other major industries were clerical and administrative workers, technicians and trades workers and labourers.

The SEIFA score for the Wallaroo State Suburb was 1,123 in 2016 (ABS, 2016). These indices of wellbeing indicate that the locality of Wallaroo has a relatively high standard of living without many social or economic disadvantages (ABS 2016).

3.3. AUSTRALIAN CAPITAL TERRITORY

The solar farm proposal site is located within NSW, however the subject land is adjacent to the NSW/ACT border and a transmission corridor would be located within the ACT to connect with the Canberra substation.

The ACT is an unincorporated LGA with a population of 420,960 and a median age of 35 (ABS, 2018). There is a slightly higher proportion of female residents in the population at approximately 50.5%. Census records from 2016 indicate that the Aboriginal and Torres Strait Islander Peoples population was at 1.6%.

As of 2017, the largest proportion of employment is within public administration and safety at approximately 28.3%, followed by roles within the professional, scientific and technical services and jobs within the accommodation and food services at 9.9% and 8.8% respectively. Other dominant fields of employment include health care and social assistance, administrative and support services and retail trades.

As of 2016 the SEIFA index for the ACT was at a value of 1,075. The suburbs of Dunlop and MacGregor both fall within the ACT and are therefore included in this SEIFA index value.

In total as of 2018 the ACT has 131,238ha of protected land and 22,652 small-scale solar panel system installations.

3.4. DUNLOP

Dunlop is a suburb of the Belconnen district of Canberra, located within the Australian Capital Territory, along the north-west state border with NSW. As of the 2016 census the population was 7,197 within an area of approximately 3.6km². With a median age of 33 there is slight dominance of female residents at 50.9%. Approximately 2.3% of the population are Aboriginal and/or Torres Strait Islander. Occupation demographics were dominated by professionals at 23.2%, clerical and administrative workers were at 21.2%. Other dominant occupations include managers, technicians and trade workers and community and personal service workers.

3.5. MACGREGOR

Bordering the suburb of Dunlop and the NSW border is the ACT suburb of MacGregor. In 2016, MacGregor had a population of 6,796 with 51% female residents. The median age was 32 years. As of the ABS 2016 there were 144 Aboriginal and/or Torres Strait Islander people living within the suburb. Approximately 65.6% of the population were employed in full-time positions, while 24.4% were working part-time and 3.8% are unemployed. The largest occupation was professionals at 26.5% followed by clerical and administrative workers at 19.5% and technicians and trades workers at 12.0%. Other major occupations are managers, community and personal service workers and sales workers.

4. STAKEHOLDER GROUPS AND CONSULTATION STRATEGIES

It is important to identify key stakeholder groups and relevant characteristics of each of the groups so that engagement strategies can be tailored in order to best suit them. Different levels of engagement will be appropriate for different groups, depending on the potential interest or impacts on the groups.

Where impacts are minor, the International Association for Public Participation (IAP2) consultation spectrum suggests approaches such as 'Inform' and 'Consult'; and where impacts are greater, approaches such as 'Involve', 'Collaborate' and 'Empower'.

Proposed strategies are set out below for each stakeholder group. Levels of engagement may change, depending on issues identified during the consultation process.

Table -1 Stakeholder group consultation strategies

Stakeholder group	Defining characteristics	Consultation strategies
1. Adjacent neighbours	Neighbours on land adjacent to the subject site boundaries, with a potential to experience impacts (noise, air quality, etc) as a result of the construction and operation of the proposal. 2 properties are located within the subject land and will be directly affected as a result of the proposed WSF, new road and transmission line.	Inform, consult, involve, collaborate Consultation will be undertaken as part of the project's development. If properties are affected by impacts, these will be assessed in accordance with statutory requirements. Initial consultation with this group will involve direct face to face meeting at their properties. If meeting does not occur, the opportunity for face to face consultation and direct feedback should be provided upon request.
2. Near neighbours and residents	Impacts for this group would be less than adjacent properties but properties along the access routes would be impacted during construction. There are 5 residences within 500 m of the subject land and 635 within 1km. A number are expected to have a view of the proposed solar farm.	Inform, consult, involve Understanding the values and potential impacts to this group is highly important. It will assist the assessment process and development of appropriate mitigation strategies. It will also assist in gaining social license from the local community to operate. Initial consultation with this group will involve distribution of a newsletter. Upon request, the opportunity for face-to-face consultation and direct feedback will be provided for residents likely to have a view of the solar farm within 500m of the subject land. All consultation will be documented.

Stakeholder group	Defining characteristics	Consultation strategies
3. Small Local Businesses	Local businesses in the locality of Wallaroo may be impacted by the influx of workers during construction. This development may be of particular interest to business owners in the area. Opportunities and potential impacts will need to be considered. Local business can benefit the project by distributing information about the project and may play a large part in influencing community opinions.	Inform and consult Understanding the values and potential impacts to this group is highly important. It will assist the assessment process and development of appropriate mitigation strategies and in gaining social license to operate from the local community. The opportunity for face to face consultation and direct feedback will be provided upon request. Potential opportunity to distribute project information and understand community sentiment. These stakeholders will have access to the latest project information (such as by newsletter and website). All consultation will be documented.
4. Representative bodies	Representatives of groups such as: • Yass Valley Council • Ngambri Local Aboriginal Land Council • Aboriginal Land Council Ngunnawal	Inform and consult Specific information may be required for these groups. An avenue to receive information and provide specific feedback or ask questions will be provided. The opportunity for face to face consultation and direct feedback will be provided upon request.

Stakeholder group	Defining characteristics	Consultation strategies
5. Agencies	• Transport for NSW (TfNSW previously Roads and Maritime Services) • Rural Fire Service (RFS) • Fire and Rescue • National Parks and Wildlife Service (NPWS) • Environment Protection Authority (EPA) • NSW Department of Planning, Industry and Environment (DPIE) – - o Crown Land - o Agriculture - o Biodiversity and Conservation Division (BCD) - o Water and Natural Resources Access Regulator (NRAR) - o Division of Resources and Geosciences (DRG) • Heritage Council of NSW • Department of Primary Industries – Fisheries • NSW Local Land Services • ACT Environment, Planning and Sustainable Development Directorate (EPSDD) • ACT Suburban Land Agency (SLA) • ACT Conservator	Inform Specific information may be required from these groups during the DPIE's assessment of the application. These groups will have the opportunity to request specific information within the SEARs. It will assist the assessment process and development of appropriate mitigation strategies.

Stakeholder group	Defining characteristics	Consultation strategies
6. Special interest groups	There may be benefit in contacting special interest groups, to ensure that any special areas of interest will be addressed in the assessment of the project. Local information can be important for the assessment stage. Some that have been identified specific to this proposal include: • Environmental Defenders Office ACT • Australian Conservation Foundation • Conservation Council ACT Region • National Parks Association ACT Branch • Ginninderra Catchment Group • Belconnen Community Council • Ginninderra Falls Association Inc • Ginninderra Landcare • Bicentennial National Trail • Riverview Group • Ginninderry Conservation Trust • Riverview Group	Inform The group will be specifically contacted. Specific information or assessment may be required to understand and mitigate impacts for these groups. These stakeholders will have access to the latest project information (such as by newsletter and website). An avenue to provide feedback or ask questions will be provided.
7. Broader community	It is important to ensure a clear and consistent message is delivered to the broader community. There may be opportunities and impacts to the broader community that are important to understand during the assessment of the project. Accommodation and services for project construction staff and other economic matters may be of interest.	Inform Newsletters, advertisements, website information used to relay information about the project. A contact will be provided to this group, for further information / provision of feedback.

5. ISSUE MANAGEMENT

A set of project-specific issues and risks to maximising community engagement in the project have been identified below. These issues pose potential risks to the effective identification and mitigation of impacts important to the community and ultimately, to achieving social license to operate from the community. Strategies have been developed below, specific to the identified issues. These have been incorporated into the Project-based Activities, in Section 6.

Table 5-1 Risks and strategies

Issue	Risks	Strategies
The project may define / overwhelm the locality / suburbs of Dunlop and MacGregor / Wallaroo	This may polarise the community. They may not feel that the project reflects their values. The scale of the project may overwhelm the existing local character.	Early and easily accessible distribution of information about the project and its specific justification and benefits, particularly material about the role of solar energy in the country's energy mix, the technology and its impacts. Photomontages will be provided for visualisation to assist the understanding of the proposal and actual versus perceived impacts. Seek direct input into how the project may reflect the community's 'personality' and values. How the benefits of the project may be spread to the local community. Clear communication of key environmental impacts and mitigation strategies of the project. Offer direct contact with the proposal's project manager (New Energy).
Spread of misinformation / feel left out of engagement	Rural residences can be difficult to contact and word of mouth travels very fast in small communities. Feel left out, disengaged, misinformed. Although the NSW Government is the determining body, a portion of the transmission corridor is located within the ACT.	Early direct communication to local community – adjacent landowners first, near neighbours second, then the wider community. Multiple means to identify all relevant residences undertaken – mapping, Council, engagement with other members of the community. It can be difficult to locate all residences and contact all landowners.

Issue	Risks	Strategies
Lack of support for the project	Lack of interest, leading to low levels of public support. Community could be against the project due to unaddressed concerns.	Early and easily accessible distribution of information including but not limited to the project's: • justification and benefits as well as community benefits; • environmental and social impacts and mitigation strategies; and • community relationship strategies. Create a clear and trusted communication channel exclusively for the community to provide comments. Make participation easy and effective so that everyone within the community is heard and their comments taken into consideration. Ensure all concerns are addressed and distributed; and informed when these are available for the community. Be creative – seek support for renewable energy by demonstrating how benefits can be contributed to the local and community level, including with special interest groups and local businesses.
The approvals process can be long and complex.	Perception that the process is too difficult to become involved in. Suspicion that input will not be valued. Overly technical information provided, use of jargon.	Clearly illustrate approvals process. Clearly define opportunities for community input including what is required and when it is required. Communicate back, identifying where input has been used. Reinforce this at each relevant stage for community input – pre lodgement, during public exhibition etc. Key achievements will be identified early and celebrated.
Distrust in environmental assessment process.	Distrust of impact identification and mitigation strategies.	Make participation easy and effective so that everyone within the community is heard and their comments taken into consideration. Provide a logical and/or evidence based plain English explanation on how impacts will be mitigated. Establish credentials of assessment team and OMSP development. Present these in the EIS and in newsletters etc.

Issue	Risks	Strategies
Representative	Risk of biased consultation, serving only the 'squeaky wheel'. Sections of the community may be "overpowered" and may be marginalised.	Ensure community consultation representative possess appropriate training and understands the execution of public forums. This strategy is aimed to provide the community with a polite and outstanding social skills person representing the proposal. Ensure community is engaged in a polite and "at same level" manner; and in a forum that minimises risk of groups mismanagement or debate being side tracked. Follow up with smaller groups where required. Use established social (and media) channels in distribution of materials, i.e. company website, newsletter, local newspaper or notice board, direct messaging, sport clubs.
Unified message	Differing messages may create confusion and mistrust.	Create a clear and trusted communication channel exclusively for the community to provide comments. Prepare concise, detailed and direct messages in plain English that are clearly set out for use rather than reinventing it for each consultation activity.
Unequal distribution of benefits	Residents close to the development are likely to feel more strongly.	Identification of stakeholder groups should reflect differences in perceived impacts.

6. PROJECT BASED ACTIVITIES

The following table outlines the different project stages and associated community consultation objectives and activities, in chronological order. The stages include:

- Decision to proceed with early investigations and proposal development
- Preparation and lodgement of request for Secretary's Environmental Assessment Requirements (SEAR's) to Department of Planning Industry and Environment (DPIE)
- Receipt of SEARs from DPIE which will form part of the EIS format and content requirements
- Undertaking of community/stakeholder consultation
- Preparation of EIS and development application
- Lodgement of development application accompany with the EIS
- EIS on public exhibition and response to submissions
- Assessment from DPIE

Further stages will apply pending project approval.

During this progression, key achievements should be celebrated, and used as an opportunity to keep the community on board. Key achievements can include:

1. Announce project – visit and notify near residents first, follow up with consistent information.
2. Early studies update – meet the community face to face.
3. If necessary, undertake a public forum to explain avenues for community input, including post lodgement of the EIS.
4. Approval – celebrate in a way that involves the community.

Table 6-1 Proposed engagement activities

Stakeholder group	Issue	Consultation objective	Community engagement targets	Format
Decision to proceed with early investigations, proposal development, and receipt of SEARs				
Adjacent landowners	Misinformation / left out of engagement Lack of support for project	Inform, consult, involve, collaborate	Early distribution of information about solar energy generation development generally. Early distribution of information about the proposal and its justification and benefits. Seek direct input to include in assessment approach and development of proposal.	Face to face meetings with the New Energy Project Manager. Encourage ongoing direct contact with New Energy Project Manager during project development.
Near neighbours, Wallaroo, Dunlop and MacGregor local communities	Misinformation / left out of engagement May define locality Lack of support Unequal perception of impacts	Inform and consult Involve those receivers or are likely to have a view of the solar infrastructure.	Early distribution of information about solar energy generation development generally. Early distribution of information about the project and its justification and benefits. General feeling toward solar development.	Request to meet face to face or by phone with the New Energy Project Manager. Follow up with newsletter introduction to the project, contact number provided for feedback and follow up, supplementary information on website. Touch base at milestones to seek feedback.
Local small business owners	Misinformation / left out of engagement Lack of support for project	Inform and consult	Build relationship with these owners and staff as they may assist to 'get the word out'. Discuss specific impacts and opportunities.	Face to face meeting / direct contact with the New Energy Project Manager. Encourage ongoing direct contact with Project Manager.

Stakeholder group	Issue	Consultation objective	Community engagement targets	Format
Broader community	Distrust in environmental assessment process. The approvals process can be complex.	Inform	Make information on the project team and assessment team available.	Provide newsletter to broader community via letterbox drop include graphic showing stages of the process, project location and justification and opportunities for input.
Agencies	May hold site specific Information that is required to be considered early in the design process	Inform and consult	Discuss specific impacts and opportunities.	Phone call/seek initial feedback
Detailed assessment and proposal development				
Adjacent landowners	Lack of support	Inform, consult, involve, collaborate	Discuss and understand specific impacts on these receivers. Feed information into the final assessment to ensure all their issues have been identified and addressed by the project.	Face to face meeting with New Energy Project Manager / Phone call.
Near neighbours	May define locality Lack of support	Inform, consult, involve, collaborate	Identify ways the community can participate in the project and seek input on these, but not limited to: • Adopt a tree (one for project, one for landowner?) • Signage / logo for Solar project • Support other renewable or energy saving programs within the community or Council offices.	Touch base at milestones to seek feedback.

Stakeholder group	Issue	Consultation objective	Community engagement targets	Format
Wallaroo, Dunlop and MacGregor local communities	Distrust in environmental assessment process. Unequal perception of impacts Risk of biased consultation, serving only the 'squeaky wheel'.	Inform and consult	Update community on detailed project environmental assessment process including its impacts and mitigation strategies. Seek input – any additional concerns, that have not been heard or included in the assessment. Meet assessment specialists. Feed information into the final assessment to ensure all community issues have been identified and addressed by the project, differentiating between stakeholder groups.	Public forum information day held by New Energy Project Manager and Environmental Consultant. Where relevant, specialists may also be involved for key issues such as visual and noise impacts. (provide links to relevant information, provision of feedback forms - also now on website).
Broader community	Representative	Inform and consult	Outline ways they can continue to have input into project Seek broad feedback on how the community view solar energy projects generally and this project specifically.	Media release, link to website (including feedback form).
Agencies	Statutory obligations	Inform and consult	Address Agency comments from SEARs and consult as necessary	Phone calls and direct email responses. The more evidence the better.
EIS on public exhibition, submissions reporting				
Adjacent landowners	Relationship with landowners and community	Inform, consult, involve, collaborate	Update on project status.	Phone call update and email.
Near neighbours	Relationship with community	Inform and consult	Update on project status. Outline ways they can continue to have input into project.	Phone call update and email.
Wallaroo locality and Dunlop and MacGregor suburbs	Relationship with community	Inform and consult	Update on project status. Outline ways they can continue to have input into project.	Newsletter update.
Broader community	The approvals process can be long and complex.	Inform	Update on project status. Outline ways they can continue to have input into project.	Media release.

Stakeholder group	Issue	Consultation objective	Community engagement targets	Format
Approval determination				
Adjacent landowners	Relationship with landowners and community	Inform, consult, involve, collaborate	Update on project status.	Phone call update and email.
Near neighbours including those within the Wallaroo locality and suburbs of Dunlop and MacGregor	Relationship with community	Inform	Update on project status. Thank the community for their involvement.	Phone call update and email.
Broader community	Relationship with community	Inform	Update on project status. Thank the community for their involvement.	Media release.

7. MONITORING AND EVALUATION

To ensure this plan is effective during the implementation of activities, and adapts as required to new information, the following review actions will be undertaken by WSF alongside implementation activities:

- Appoint and maintain a consultation manager for the project to implement activities and review this plan regularly.
- Keep an accurate record of all feedback from consultation activities and all correspondence with the community.
- Monitor regularly and respond promptly to email and phone queries.
- Monitor if the activities are reaching a diverse and representative section of the community. Subject to the monitoring results, consider if new activities need to be implemented.
- Ensure that all project related information and updates have been shared with:
 - o the team developing the detailed project description;
 - o assessment staff;
 - o other project's Community representatives;
 - o the team managing information channels including, social media, website, hotline, etc.