



Providence Asset Group

27 April 2020



Project Name	
Location	Finley NSW
Project Number	2018
Client	Providence Asset Group
Mara Consulting Document	20200331_2018_Providence_KDC_SIS_003

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Revisions	Date of issue	Details	Author	Approved
001	1/04/2020	Draft	СН	
002	23/04/2020	Review	СН	KL
003	27/04/2020	Final	СН	KL





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1. Introduction

1.1 Overview

Providence Asset Group (Providence) is seeking development consent from Berrigan Shire Council to develop a solar farm at Lot 61 DP1053533, Broockmanns Road, Finley NSW 2713 (see Figure 1).

The proposed site is a large (74.7 hectares) rural irregularly shaped lot located on the southern side of Broockmanns Road, within the Berrigan Local Government Area (LGA) approximately 2.1km west of Finley town centre. There is a dwelling in the north western portion of the site located within a separate lot with the remainder of the site used for agricultural purposes. Finley Airport is located 1.1 km to the south east of the site.

The surrounding area is made up of large rural lots undertaking agricultural activities with some ancillary development such as single dwellings and sheds. The site is predominantly used for primary production.

Mara Consulting (Mara) has been engaged by KDC Planners to undertake a Social Impact Statement (SIS) for the proposed solar farm. This SIS includes consideration of:

- the social baseline of Finley State Suburb (SSC), as well as the wider Berrigan LGA
- assessment of the likely social impacts of the proposed development based on the scale, intensity and duration of the potential impacts
- proposed mitigation and enhancement strategies of impacts that may have a potentially significant impact on the community
- conclusions and recommendations that arise from the assessment in relation to the project.



Figure 1: Aerial view of site



1.2 Project description

The solar photovoltaic (PV) farm project at Finley includes an approximately 5MW grid-connected solar PV installation. It is proposed to connect into the electrical transmission grid via existing transmission lines which run along Hamilton Street and Dales Road.

A 4m wide access road is proposed connecting the solar farm to the approved access to Broockmanns Road at the northern area of the lot. The solar farm will be fully fenced with a gate for access in the north west corner. A car park area, off load area and temporary construction office will also be located on the site.



2. Existing environment

2.1 Community and social baseline

The project is located within the State Suburb of Finley (SSC), within the Berrigan LGA in the Southern Riverina Region of NSW, midway between Albury in NSW and Echuca in Victoria.¹

Berrigan LGA is on the NSW and Victorian border and is predominantly a rural community comprised of four towns; Berrigan, Barooga, Finley and Tocumwal. The landscape is characterised by irrigation, cropping and grazing for export.².³

Finley is bounded by Duncan Road and Hayfield Road in the north, the locality of Berrigan in the east the locality of Tocumwal in the south and the Edward River Council area in the west.⁴ Finley provides services to surrounding dry land and irrigated farming district as well as offering a range of recreation, health and tourist facilities.⁵

A social baseline of Finley SSC and the Berrigan LGA was developed to provide context for the assessment of potential impacts on the community as a result of the project. Key demographics are shown in Table 1 and summarised below. The state of NSW has also been shown in the assessment for comparative purposes.

At the 2016 census, there were 975 occupied private dwellings in the Finley SSC. The median weekly rent for the suburb is \$145, which is much lower when compared to the NSW median of \$380. At \$875 per month, median mortgage repayments in the suburb were also much lower than the state average (\$1,986). Approximately two thirds of homes (66%) are owned in Finley (either outright or with a mortgage) which is a similar proportion to NSW (64.5%).

The median weekly household income for the suburb (\$988) is lower than the NSW median (\$1,486).

The unemployment rate in Finley is similar to the wider Berrigan LGA and lower than the state average (4.9%, 4.8% and 6.3% respectively).

The most common occupations for residents in Finley are managers (20.1%), labourers (13.8%) and professionals (13.4%). This is similar to the most common occupations in the Berrigan LGA - managers (20.7%), labourers (14.7%) and technicians and trades workers (13.2%). The main industries of employment are also very similar between Finley and Berrigan LGA, with dairy cattle farming and aged care residential services being the top two employers for both areas.

In Finley and the wider Berrigan LGA, the majority of the population was born in Australia (81.2% and 81.3% respectively) and primarily only spoke English at home (87.2% and 87.4%). This shows that the communities residing in the Berrigan LGA are not necessarily as culturally and linguistically diverse

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¹ <u>https://www.planning.nsw.gov.au/Plans-for-your-area/Regional-Plans/Riverina-Murray/Plan</u>

² https://www.berriganshire.nsw.gov.au/files/council/may/2017/G-

Appendix%20Item%205.4%20Draft%20CSP%202027%20V1.pdf

³ https://www.planning.nsw.gov.au/Plans-for-your-area/Regional-Plans/Riverina-Murray/Plan

⁴ <u>https://profile.id.com.au/berrigan/about?WebID=120</u>

⁵ https://www.planning.nsw.gov.au/Plans-for-your-area/Regional-Plans/Riverina-Murray/Plan



(CALD) when compared to the state average, where 26.5 per cent of the population speaks a language other than English at home.

At the 2016 census, there were 8,462 people in the Berrigan local government area with relatively equal gender distribution (49.9 per cent male and 50.1 per cent female). Aboriginal and Torres Strait Islander people made up 2.3 per cent of the population, lower than the NSW average of 2.9 per cent.

There is a large number of working age people in Finley, with the median age being 47 years old which is similar to Berrigan LGA (49) but almost a full decade older than the NSW median (38). Approximately two-thirds of residents are under 60 years old (66%).

Statistic	Finley SSC	Berrigan Shire LGA	NSW
Population (n)	2,519	8,462	7,480,228
Median age (years)	47	49	38
Top three industries of employment (%)	Dairy Cattle Farming (9.0), Aged Care Residential Services (5.5), Secondary Education (4.2)	Dairy Cattle Farming (4.5), Aged Care Residential Services (4.3), Supermarket and Grocery Stores (3.4)	Hospitals (except Psychiatric Hospitals) (3.5), Cafes and Restaurants (2.4), Supermarket and Grocery Stores (2.2)
Largest occupation of employment (%)	Managers (20.1), Labourers (13.8), Professionals (13.4)	Managers (20.7), Labourers (14.7), Technicians and Trades Workers (13.2)	Professionals (23.6), Clerical and Administrative Workers (13.8), Managers (13.5)
Unemployed (%)	4.9	4.8	6.3
Median weekly household income (\$)	988	967	1,486
Couple family without children (%)	49.9	52	36.6
Couple family with children (%)	32.1	34	45.7
Tenure - owned (%)	40.8	44.1	32.2
Tenure - mortgage (%)	25.2	26.3	32.3
Tenure - rented (%)	27.8	24.4	31.8

Table 1: Population characteristics

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Statistic	Finley SSC	Berrigan Shire LGA	NSW
Occupied private dwellings (%)	975	3,258	2,604,320
Median weekly rent (\$)	\$145	\$180	\$380
Median mortgage repayments (\$)	\$875	\$1,083	\$1,986
Travel to work - one method (largest %)	Car, as driver (63.0)	Car, as driver (63.3)	Car, as driver (57.8)
Marital status (married %)	49.4	52.4	48.7
Born overseas (%)	18.8	18.7	34.5
English only spoken at home (%)	87.2	87.4	68.5
Households where a non- English language is spoken (%)	4.0	3.9	26.5
Aboriginal and Torres Strait Islander (%)	3.4	2.3	2.9
Volunteering (%)	30.9	28.3	18.1

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The project area is under the Berrigan Shire LGA and Council planning is guided by the Berrigan Shire Community Strategic Plan 2027⁶. This is the major strategic document developed to guide the delivery of services and facilities over the next decade and outlines the goals of the elected council. The plan has the following community vision:

"In 2027 we will be recognised as a Shire that builds on and promotes our natural assets and advantages to create employment and economic activity to attract residents, families and tourists"

The Plan identifies four key strategic outcomes which contribute to achieving the community vision, these are:

- sustainable natural and built landscapes
- good government
- supported and engaged communities
- diverse and resilient businesses

The Riverina Murray Regional Plan 2036⁷ describes renewable energy as a priority growth sector for the region. One of the key directions for the region as becoming a strong and dynamic regional economy is to:

"Promote the diversification of energy supplies through renewable energy generation"

and to

"Promote appropriate smaller-scale renewable energy projects using biowaste, solar, wind hydro, geothermal or other innovative storage techniques'

Berrigan Shire Council's Economic Development Strategy 2017-2021⁸ states that:

"The escalating cost and questionable reliability of energy (electricity and gas) is becoming a very serious issue that is presenting Local businesses with supply and growth problems"

The strategy identifies solar/alternative energy production as an opportunity/enabler for the LGA and that:

"Council will continue to stay well informed on progress in the renewables sector to in turn inform business of options that are emerging. This is an area where Council could play a role in coordinating community energy pilot projects"

Establishing solar farms in the region aligns with Council's strategic and economic planning and the direction of the Riverina Murray Regional Plan 2036.

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⁶ https://www.berriganshire.nsw.gov.au/files/council/may/2017/G-

Appendix%20Item%205.4%20Draft%20CSP%202027%20V1.pdf

⁷ <u>https://www.planning.nsw.gov.au/Plans-for-your-area/Regional-Plans/Riverina-Murray/Plan</u>

⁸ https://www.berriganshire.nsw.gov.au/files/plans/Economic%20Development%20Strategy%202017%20-%202021%20-%20Final.pdf



3. Potential positive and negative impacts

3.1 Community attitudes to renewable energy

The outcomes of community research commissioned in 2015 by the former NSW Office of Environment and Heritage regarding attitudes to renewable energy indicates that generally, solar energy developments enjoy community support.⁹

The research found that 89 per cent of people support the use of renewable energy in the form of solar farms in NSW and that 78 per cent of respondents supported having a solar farm within 1-2 km of where they lived. Among the reasons for this were benefits to the environment and local economy.

Specific to the South East Region:

- 90 per cent of respondents supported using renewables to generate electricity in NSW
- 82 per cent believed NSW should increase the use of renewables over the next five years
- 88 per cent supported the use of solar farms in NSW, 85 per cent in their local region, and 74 per cent within 1–2 kilometres of where they lived.

The most common perceived advantages of renewables (unprompted) included environmental benefits and lower cost of electricity. The most common perceived disadvantages (unprompted) included higher cost and concerns about efficiency and reliability. In the South East, 70 per cent were prepared to use renewables 'provided I don't have to pay more for my electricity' and 26 per cent were prepared to pay more to support them.

3.2 Access to renewable energy

The renewable energy sector has responded to demand for a viable alternative options for electricity generation, contributing to 17 per cent of Australia's overall electricity.¹⁰

An analysis of electricity price increases between 2006 and 2016 was undertaken by the Australian National University (ANU). The ANU reported that those states with relatively low levels renewable energy experienced higher electricity prices (NSW, QLD and VIC). States with higher levels of renewable energy, in particular South Australia which generated almost half of its energy from renewables, had a far lower electricity price.¹¹

The potential to generate 5MW of electricity at the proposed solar farm has the potential to power 2,000 homes during daylight hours and reduce CO2 emissions by about 200,000 tonnes over the 25-year life of the project. Due to the changing nature of government incentive schemes for renewable

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 ⁹ <u>https://www.environment.nsw.gov.au/resources/actionmatters/community-attitudes-renewable-energy-150419.pdf</u>
¹⁰ <u>https://assets.cleanenergycouncil.org.au/documents/resources/reports/CEC-briefing-paper-Australias-clean-energy-investment-outlook-September-2019.pdf</u>

¹¹ <u>https://assets.cleanenergycouncil.org.au/documents/resources/reports/CEC-briefing-paper-Australias-clean-energy-investment-outlook-September-2019.pdf</u>



energy generation, the Finley solar farm has been developed so it is not reliant on these schemes for profitability.

3.3 Population

Due to the nature of the development, there is not an expected population change associated with the site either temporarily in the construction of the development or permanently once the development is complete.

3.4 Social amenity (noise, dust and visual impacts)

The impact of the project on social amenity, including those related to noise, dust and visual impacts are key issues to consider in relation to both construction and operation of the proposed solar farm.

The potential for noise during construction and operation are primarily key issues for near neighbours with noise affecting their quality and duration of sleep and their way of life. An assessment of noise and associated impacts has been undertaken as part of the development application.¹² This assessment found that construction noise levels have the potential to exceed relevant construction noise management levels for one receiver locations when work is being undertaken at the nearest proximity. However, the exceedance was determined to be temporary, of short duration and primarily due to piling activities. Mitigation measures to minimise the potential noise impacts from construction, albeit of a temporary nature during the daytime over a six-month construction period are recommended. For operational and road noise, the assessment found that noise criteria would be satisfied. Therefore, the potential impact for noise on the surrounding community is considered low.

Visual amenity in terms of glare and reflectivity and changes to the visual landscape can be perceived issues of the community in relation to the potential impacts of solar farms. Furthermore, landholders may be potentially concerned about the time it would take for vegetation screens to establish, whether they would be tall enough to screen the panels and whether they would be watered and maintained.

The location of this proposal is 1.5 km west of the township of Finley, the landscape surrounding the site is predominantly agricultural land. A visual impact¹³ and reflective glare assessment for the project has been conducted and has assessed the likely visual impacts of the proposal (including any glare, reflectivity and night lighting) on surrounding residences and other potentially impacted stakeholders.

The visual impact assessment found that the proposed development on the nearest residents), which are 650m away, is that they will be able to see the proposed development. Due to the close proximity and the open agricultural landscape with few trees and without mitigation, the visual impact is noted as moderate.

Beyond the properties adjacent the development, views of the site are diminished substantially due to the distance from the site. With distance, the scattered trees begin to form solid screens as they overlap. Fences and tall grasses also become a factor as they screen up to 1.5m.

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¹² Muller Acoustic Consulting, Noise Assessment 2020

¹³ Mara Consulting, Visual Impact Assessment 2020

The photographs from the viewpoints illustrate the visual impact will be moderate within view of up to 800m. Beyond 800m, the visual impacts diminish to low.

The reflective glare assessment found that the potential for adverse glare from the proposed facility will be negligible. This is primarily due to the selection of the single-axis tracking system for the mounting of the ground-based array panels and the distances to nearest receivers (aviation, road traffic, rail traffic and residential). The visual impact assessment noted that in terms of glare, given the parameters of reflection and the movement of the solar panels, there are no locations surrounding the site where glint or glare are geometrically possible.

In terms of air quality, the nuisance of dust on stakeholders way of life and amenity, are primarily experienced during construction. A Construction Management Plan should be developed and implemented to mitigate any of these potential impacts.

It should be noted that the area is still considered to be drought affected, despite recent rainfall. Given that water is generally a mitigation measure used to control dust, this could result in a negative social impact. The use of water during drought should be minimised and other innovative methods for controlling dust should be considered.

3.5 Personal and property rights

In Bathurst, NSW, a community is opposing a proposed Solar Farm with one of the identified fears being that the facility will lead to a drop in land values.¹⁴

A similar concern is also reflected in the Environmental Impact Statement for a Tamworth solar farm¹⁵ and the potential impact of the development on the visual amenity and what affect that might have on the property values. Landholders expressed concerns about the time it would take for vegetation screens to establish, whether they would be tall enough to screen the panels and whether they would be watered and maintained. If landholders wanted or needed to sell in the near future, the rate of establishment of the vegetation screens might influence the selling price and the likelihood of sale.

Outcomes of community research commissioned in 2015 by the former NSW Office of Environment and Heritage regarding attitudes to renewable energy identified that a small number of survey respondents raised concerns about decreased land/house values and often mentioned this in conjunction with the visual impact they perceived local wind and solar farms would have ('Could be ugly and decrease land value'; 'Visual impact - impact on property prices arising from that visual impact').¹⁶

There is insufficient sales data to provide a definitive answer to the question of whether solar farm development in NSW impacts on surrounding land values, however, the size and scale of the proposal lends itself to mitigating potential risks and designing the proposal to prevent, minimise and/or offset adverse environmental impacts and impacts on the community.

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¹⁴ https://www.westernadvocate.com.au/story/4920308/solar-plant-will-lead-to-property-value-drop-real-estate-agent/

¹⁵ ProjectE (2020), Environmental Impact Statement, Tamworth Solar Farm

¹⁶ https://www.environment.nsw.gov.au/resources/actionmatters/community-attitudes-renewable-energy-150419.pdf



3.6 Land use and management

An Aboriginal Archaeological Assessment has been undertaken¹⁷ and states that:

"There is no impediment to the proposed development on Aboriginal archaeological grounds"

This notwithstanding, the assessment makes recommendations for undertakings to ensure any artefacts Aboriginal human remains that may be discovered are dealt with appropriately.

Solar farms have the potential to impact on neighbouring agricultural operations including impacts on grazing livestock and cropping from the spread of weeds from the project site and soil and groundwater contamination.

Provisions have been made to allow the site to potentially double up as pastureland for grazing. With the implementation of adequate management plans and ensuring that the trackers are of appropriate height to allow for grazing, it is not considered that the project would significantly impact the agricultural operations of neighbouring landholders given the relatively low impacts associated with the solar farm.

3.7 Traffic impacts

The project is unlikely to result in any changes to population as a result of additional workforce requirements during construction. However, there is the potential for traffic associated with the project to affect the way of life of near neighbours, local business and community members. These impacts relate to disruption associated with additional traffic movements and the potential changes to accesses.

The traffic assessment that has been undertaken for the proposal¹⁸ indicates that any additional construction and operational traffic generated by the development will not adversely impact on the efficiency or effectiveness of the local and state road network. As such, the impact on traffic from a social perspective is considered low.

3.8 Local economy and employment opportunities

Construction of the project is expected to take up to six months and involve a workforce of up to 30 people.

Currently in Finley, the unemployment rate is slightly lower than the state average (4.9% compared with 6.3%). One of the top three occupations of employment in the area is labourers (13.8%); therefore, the construction of the development would have the potential to increase employment opportunities for locals during this stage.

It is also plausible that existing businesses proximal to the development experience higher rates of business as a flow on effect. To enhance the positive impact employment opportunities will have on the community, it is recommended that local contractors be used for any construction needs.

 ¹⁷ VIRTUSHERITAGE, Solar PV Power Plant Due Diligence Aboriginal Archaeological Assessment 2020
¹⁸ Intersect Traffic, Traffic Assessment Report, 2020



Given there would be no permanent staff on site during operations, the potential positive benefit on the economy in terms of employment opportunities is considered negligible.

3.9 Intergenerational equity

Consideration of intergenerational equity is an emerging key theme in project development processes. Primarily, concerns relate to environmental impacts, including climate change and the costs to future generations. In the context of the proposal, notions of intergenerational equity can relate to the rehabilitation of land to facilitate future land use, and broader climatic issues regionally and internationally.

A flora and fauna study has been undertaken with the biodiversity impacts of the project assessed in accordance with the NSW Biodiversity Assessment Method (BAM). The assessment concludes that the development will not require the removal of any native vegetation and is unlikely to have a significant impact on any threatened species, populations or ecological communities. ¹⁹

With regard to climate change, greenhouse gas and energy, the construction and operation of the Finley solar farm proposal would contribute to Australia's efforts to meet its greenhouse gas commitments while continuing to provide a reliable supply of electricity for industry and consumers. Specifically, it would provide the following benefits:

- directly contribute to helping Australia in meeting the Renewable Energy Target
- reduce greenhouse gas emissions required to meet Australia's international climate conditions
- assist in the transition towards cleaner electricity generation.

¹⁹ Kleinfelder, Flora and Fauna Assessment, 2020



4. Conclusion and Recommendations

Overall, it is considered that the development:

- is consistent with the regulatory and business development framework, including state government legislation and the Berrigan Shire Council and State government strategic plans (summarised in Section 2)
- will have positive impacts on intergenerational equity, with the provision of cleaner energy in the future
- supports Commonwealth and NSW climate change commitments
- will generate enough clean, renewable energy for about 2,000 homes
- is an appropriate development in relation to the projected changes to population and demographics in the region
- is unlikely to have significant negative social impacts to the locality and region
- would be a benefit contributing to the overall community sustainability of the Finley community.

In order to maximise the social benefits anticipated through the development, it is recommended that:

- liaison with local industry representatives to maximise the use of local contractors, manufacturing facilities, materials
- establish visual screening early to minimise the visual impact on the solar farm. Visual screening should be done in consultation with closest property holders in accordance with Visual Impact Assessment
- establish good relations with people living in the vicinity of the proposal site at the beginning of the proposal and maintain
- implement a community consultation plan to manage impacts to community stakeholders, including but not limited to:
 - protocols to keep the community updated about the progress of the development and its benefits
 - protocols to inform relevant stakeholders of potential impacts (haulage, noise, air quality etc.)
 - o protocols to respond to any complaints received
 - o information on how potential customers can access the renewable energy source.*

* Providence contacted neighbouring properties to inform them of the proposal via a letterbox drop, face-to-face meetings and phone calls. They also held a meeting with Berrigan Shire Council.



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