GrandJunction

6 December 2024

The Secretary

NSW Department of Planning

MALLEE WINDFARM EIS INADEQUATELY CONSIDER NEIGHBOURS

The EIS does not adequately consider the proposals impacts on neighbours.

Specifically, the EIS states there are no proximate landholders. This assumption is not reasonable, and it appears the assumption has the self-serving goal of avoiding analysis of impacts to neighbouring land.

The EIS has not considered the current and projected growth of Buronga Gol Gol. Several subdivisions on and around Native Ridge Lane in Gol Gol are not considered by the EIS. Similarly projected residential growth at North Gol Gol is not considered.

The EIS inadequately considers the Buronga Gol Gol Structure Plan which incorporates a high residential growth rate and expansion east and north of Gol Gol.

EIS FAILS TO CONSIDER IMPACTS ON WOORLONG STATION

Grand Junction Pty Ltd is an owner of Lot 2 DP 1233260 ("Lot 2") which together with Lot 1 DP 1182353 ("Lot 1") forms Woorlong Station. The EIS contains no mention of consultation with Grand Junction Pty Ltd or the owners of Woorlong Station. We submit the reason is that the consultation was both extremely limited consultation in 2022/3 that was unfavourable to the Project and the Proponent has deliberately excluded this information.

The Mallee Wind Farm has numerous impacts on Woorlong Station which included:

- Multiple wind turbines close by with consequential visual, sound and fire risk impacts
- Met mast on boundary
- 10 kilometres of high voltage powerline on boundary with minimal setback
- Switching station on boundary with minimal setback

The Proponent is specifically misleading the Department of Planning by excluding the following information:

- It is stated in the Rex J Andrews Transport Study that the Project can potentially utilize Danson's Road as an alternate access road when the Proponent knows this is a private road and that the Project has specifically been denied access to it.
- Substantial tourism and residential plans for Lot 1 and Lot 2
- Inclusion of Lot 1 in Buronga Gol Gol Structure Plan
- Previous Council support for rezoning of Lot 1 for tourism purposes

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- Wentworth LEP Land Use Table for the RU1 zone allowing considerable tourism activities as permitted with consent
- Agritourism policies of NSW Government which provide for tourism development on RU1 Zoned land such as Lot 1 and Lot 2 to be exempt and complying development

OVERWHELMING CUMULATIVE IMPACTS OF PROJECT AND SISTER MALLEE SOLAR FARM ON WOORLONG STATION

The cumulative impact of the Mallee Wind Farm and Mallee Solar Farm on Lot 2 has not been considered although the two projects will surround Lot 2 on three sides.

TOURISM AND DEVELOPMENT POTENTIAL ON WOORLONG STATION NOT CONSIDERED

The Wentworth LEP RU1 zone allows numerous human uses in conflict with wind turbines and powerlines including:

- Agritourism
- Artisan food and drink industries
- Cellar door premises
- Dual occupancies (attached)
- Dwelling houses
- Kiosks
- Markets
- Restaurants or cafes
- Secondary dwellings

In addition, Wentworth Council has previously supported rezoning of lot 1 for tourism. Lot 1 is included in the Buronga Gol Gol Structure Plan.

FIRE RISK TO WOORLONG STATION

The EIS Riskcon Report states in paragraph 4.7 and 4.8 that the transformer can cause fires and explosions but that:

"4.7 "...this incident [fire] has not been carried forward for further analysis"

"4.8 "...this incident [explosion] has not been carried forward for further analysis"

The distribution of electricity via high voltage transmission lines and associated equipment also has the potential to cause ignition of bushfire fuels, either within or adjoining the transmission line area.

In addition, the Mallee Solar Farm poses similar risks from the east.

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VISUAL IMPACTS / SHADOW FLICKER/ BLADE GLINT

The Mallee Wind Farm and the Mallee Solar Farm will have a dominant visual impact on Woorlong Station. Paragraph 6.5.3.5 states that there will be shadow flicker impacts to 11 kilometres of Arumpo Road and the western edge of Mallee Cliffs National Park. There is no mention of shadow flicker impacts to Woorlong Station, but it is likely the impacts will be like the acknowledged impacts to Arumpo Road and the Mallee Cliffs National Park.

The Mallee Wind Farm wind towers will become the dominant visual impact on the horizon from viewpoints all around Woorlong Station which will detract from tourism and residential development potential of Woorlong Station. The EIS has inadequately considered these impacts.

The failure of the EIS to consider the impacts of the Project on neighbours, Woorlong Station and the Buronga Gol Gol Structure Plan should require the EIS to be corrected and re-exhibited.

Yours sincerely

Bob Wheeldon

Director

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For further direction, the SIA Guideline states that the social locality should be defined by:

- the scale and nature of the project
- who may be affected by the project
- whether any vulnerable or marginalised people may be affected by the project
- built or natural features on or near the project that could be affected, and the intangible values that people may associate with these features
- relevant social, cultural, demographic trends or social change processes
- the history of the proposed project and the area.

2.2.2 Social Locality for the Project

The social locality for the Project has been defined at both a localised and regional scale, given the likely positive and negative social impacts that may be experienced. The Project Area, South West REZ boundary and proximal projects are illustrated in **Figure 2.7**, to demonstrate the geographical setting of the social locality in relevance to current developments and service townships. **Table 2.1** further defines and justifies how the social locality has been determined. It is important to note that whilst the Project is located within NSW, the key regional service centre of Mildura, which will likely service the Project, is located within Victoria, therefore the social locality includes and draws from data from both jurisdictions to define the characteristics of the community relevant to the Project.

Table 2.1 Social Locality Inclusions and Justifications

Aspect	Data Boundary	Locality	Reason for Inclusion
Host landholder	NA	Project Area	There are four host landholders, with one host dwelling located adjacent the Project Boundary.
Proximal landholders	NA	10 km from WTG	As there are no host, associated or non-associated dwellings within 10 km of a WTG, it has been classified that there are no proximal dwellings to the Project. The nearest dwellings are between 10 km and 12 km from WTGs, predominately located within the townships of Buronga and Gol Gol.
Proximal communities to the Project Area	Suburb and Locality (SAL)	Residents located in Buronga and Gol Gol.	The SAL's of Buronga and Gol Gol are the closest geographic localities, providing indicative insights into the communities most likely to experience positive and negative Project impacts.
Natural Features	NA	Mallee Cliffs National Park Mungo National Park Willandra Lakes Regional World Heritage Area	Key natural features and areas in the locality that are likely to be valued by residents in the social locality and those that may visit the area.

Host landholders were provided regular updates regarding matters such as community and stakeholder engagement, field survey and outcomes, visual, noise and traffic. Questions and feedback were received and responded to over the course of the EIS phase. This was facilitated via phone-calls, teleconferences, written correspondence and face-to-face meetings.

5.4.2.2 Proximal Neighbours

As there are no WTGs located within ten (10) km of a non-associated landholder and no landholder agreements have been required, specific consultation relevant to proximal landholders has not been undertaken. Proximal neighbours have been consulted alongside the broader community as outlined in **Section 5.4.1**.

Given the above, consultation with proximal neighbours is not differentiated from the broader community in subsequent parts of Section 5.0 of this EIS or within the SIA (**Appendix 11**).

5.4.2.3 Proximal Projects

As detailed in **Section 2.5**, a number of proposed projects are located in proximity of the Project including:

- Euston Mineral Sands Project located immediately to the south and within the Project Area. Consultation with Iluka Resources Limited, the proponent of Euston Mineral Sands Project has been undertaken and is ongoing to ensure coordinated construction, operation and decommissioning of both projects.
- Mallee Solar Farm located adjacent to the southern extent of the Project Area. This project is also proposed by Spark Renewables but is subject to a separate planning process.
- Gol Gol Solar Farm, Gol Gol Wind Farm and Gol Gol BESS projects are located west of the Project Area and are proposed by Squadron Energy Pty Ltd. These projects have recently received SEARs at the time of writing this EIS (Sept 2024). Consultation with Squadron Energy will be undertaken as the projects progress their development applications.

5.5 Outcomes of Engagement Undertaken

This section provides an overview of stakeholder feedback collected over the course of the Stakeholder Engagement Program.

5.5.1 Community Engagement

As part of the Stakeholder Engagement Program and to support the SIA (**Appendix 11**) a range of engagement mechanisms including a Project website, online and hard copy surveys, personal interviews, and community information sessions were undertaken. Further details regarding the engagement mechanisms are provided in **Section 6.7** and **Appendix 11**.

In accordance with the EIS Guideline, perceived impacts and community views on the Project have been considered in the following categories:

- the strategic context, including identifying the key natural and built features that are valued in the area and could be affected by the Project
- the design of the Project and any alternatives considered

2.5.2 Proximal Developments

The Cumulative Impact Assessment (CIA) Guidelines for State Significant Projects (DPIE, 2022) requires consideration of a project together with the impacts of other relevant future and existing projects in order to determine potential cumulative impacts. The NSW Wind Energy Guideline (DPE, 2016) also identifies the requirement to address cumulative impacts in relation to any other proposed, approved or operating wind energy projects in the vicinity particularly with regard to landscape, noise, biodiversity and traffic impacts.

The CIA Guideline indicates the following future projects should be considered in the cumulative impact assessment:

- changes to existing projects (expansion, modification, closure)
- approved projects (approved but construction has not commenced)
- projects under assessment (application for the project has been exhibited and is currently under assessment)
- related development (development that is required for the project but subject to separate assessment).

Table 2.2 below lists the various other future and existing projects known to exist in the region, general information relating to those developments, estimated construction periods and approximate distances to the Project. Cumulative impact assessments for each relevant technical study have considered this list and addressed potential environmental and social impacts accordingly. These cumulative impact assessments are documented in each of the relevant technical studies noted throughout this report.

Figure 2.9 below then visually illustrates the indicative construction timelines for key projects in the region.

Overall assessment outcomes are provided in **Section 6.0** with a cumulative impact summary table provided in **Appendix 22**, and a summary of cumulative impact assessment findings provided in **Section 6.15**.

5.5 Feedback from Proximal Neighbours

Spark Renewables has engaged with neighbouring landholders to introduce the Project and provide opportunities for them to ask questions, as well as provide valuable feedback to the Project team on important values of the local area and concerns or areas of interest about the project. To date, concerns have been raised with regard to:

- visual impact on Arumpo Road
- impacts to potential tourism developments
- impacts on the National Park (including birds flying through the area)
- feedback from some neighbouring landholders included possible initiatives for the community benefit fund associated with the Project.

Woorlong Station not identified

umwelt

As part of the site selection process, Spark Renewables has selected a Project Area that minimises the number of close residential receivers. While there are a low number of close residential receivers for a project of this scale, it is acknowledged that the Project has the potential for high visual impacts on travellers using Arumpo Road. Refer to **Section 6.2.1** for further detail on the Visual Assessment.

The biodiversity assessment approach is described in **Section 6.2.3.** Impacts on biodiversity (including the bird and bat impact assessment) will be avoided wherever possible, with unavoidable residual impacts offset.

6.5.3.2 Impacts to Dwellings

The Visual Bulletin requires that detailed dwellings assessments be undertaken. However, there are no non-associated dwellings or host dwellings located within 8,000 m of any WTG. Therefore, no further assessment was required.

Approved and Proposed Residences and Dwellings Entitlements

Lots with dwelling entitlements were determined by initially considering all land parcels within 8,000 m of a WTG. Consideration was then given to land zoning, minimum lot size, and whether the landholder was an associated or host landholder. Not properly considered.

Two (2) entitlements were identified within 5,500 m of a WTG based on the size of the lot or the on the basis that the lots formed part of an 'existing' holding as defined by the LEP. It is noted that any lots that are prohibited from dwelling entitlement based on zoning such as C zones were also excluded, including Lot 2977/DP765176 which comprises Malle Cliffs National Park.

6.5.3.3 Impacts to Landscape Character

The Project is located within a predominantly rural landscape that has not been identified as significant or rare. The broader landscape character is dominated by established rural land which consists of modified vast plains with little topographical variation. The LVIA determined that the Project would become a feature within the visual landscape due to the addition of vertical turbines in a landscape offering unencumbered views across large expanses.

There is restricted public access within Mallee Cliffs National Park, which is valued for its ecological and environmental functions. As a result, it is unlikely that the Project would degrade the scenic value of this landscape feature thus resulting in limited visual impact.

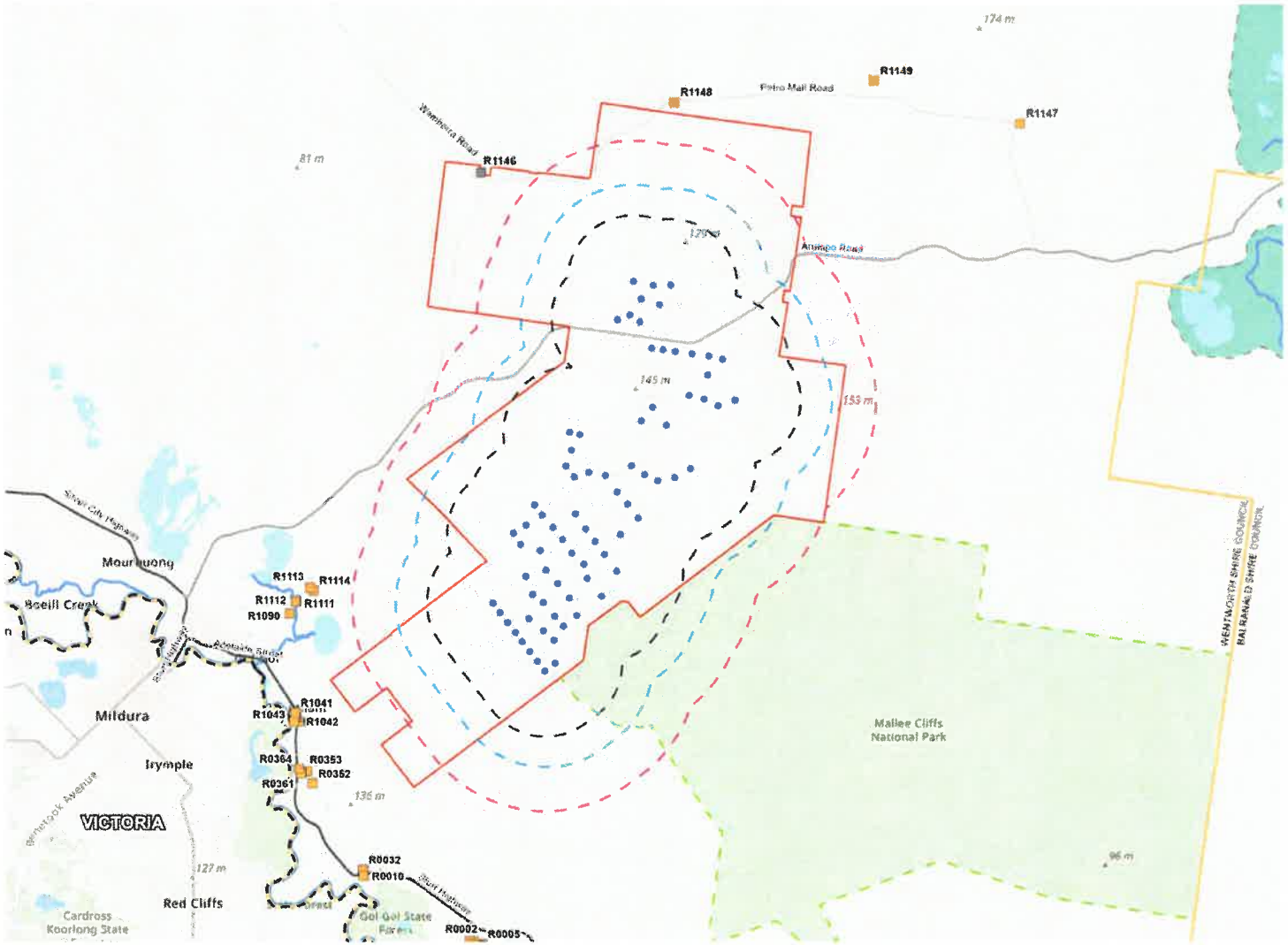
Generally, the Project will likely be visible in varying degrees from all five (5) LCUs that were identified and assessed. Due to the flat topography surrounding the Project Area, dense woodlands typical of the region and distance to urban settlements, views of the Project are likely to be fragmented. Further, no key features were identified in the LCUs or the existing key features would remain unaltered, resulting in an overall visual impact rating of low for all five (5) LCUs.

Willandra Lakes Region

The WLRWHA and WLRNHP are located approximately 25 km east of the nearest WTG. One (1) photomontage (PM03) and two (2) wireframe analysis (WF01 and WF02) have been prepared to assess the potential visual impact of the Project on the WLRWHA. It is unlikely that the Project will alter the existing visual landscape (even where night lighting is required) and is thus unlikely to have a visual impact on the WLRWHA, due to the distance from the Project.

6.5.3.4 Night Lighting

Night lighting is required on meteorological masts (aviation safety) and ancillary facilities (safety and security) and has the potential to extend the visual impact of the Project into the night time, and thus change the night time landscape character of the region.



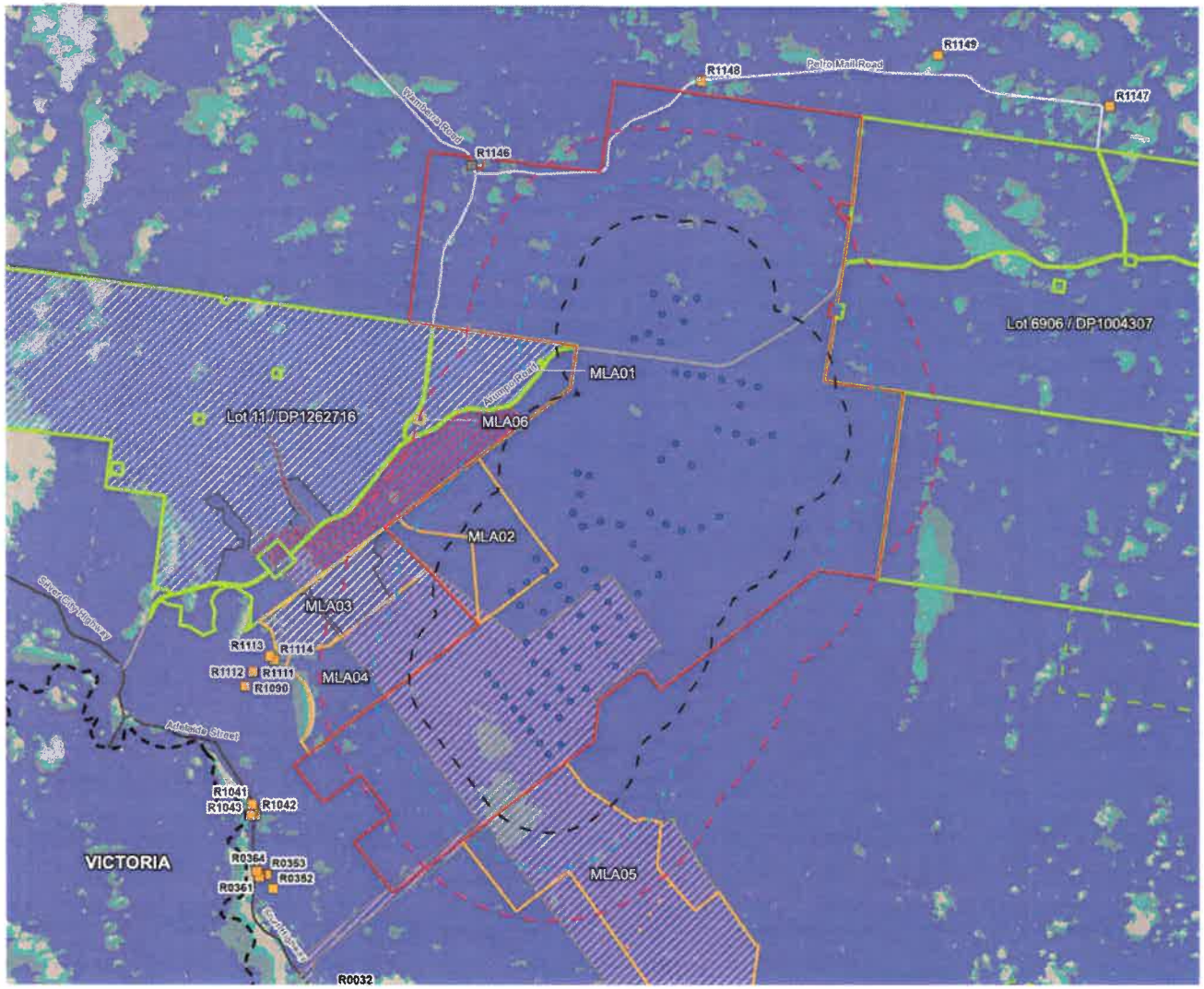
Dwelling Locations

Mallee Wind Farm

- Project Boundary
- Proposed WTG Location
- Associated Dwellings
- Non-Associated Dwellings
- 3750m From Nearest WTG (Black Line of Visual Magnitude)
- 5500m From Nearest WTG (Blue Line of Visual Magnitude)
- 8,000m From Nearest Proposed WTG (Study Area)
- State Border
- LGA Boundary
- National Park, Reserves and State Conservation Area
- World Heritage Listed Willandra Lakes Region
- Primary Road
- Arterial Road
- Sub Arterial Road
- Rivers and Creeks
- Lakes

Figure 19 – Dwelling Locations
Source: ArcGIS, 2024

0 3 6 12 18 24 km



Lots with Entitlement

Mallee Wind Farm

- Project Boundary
- Proposed WTG Location
- Associated Dwellings
- Non-Associated Dwellings
- Lots with Dwelling Entitlement
- Dwelling Entitlement (below minimum lot size)
- 3750m From Nearest WTG (Black Line of Visual Magnitude)
- 5500m From Nearest WTG (Blue Line of Visual Magnitude)
- 8,000m From Nearest Proposed WTG (Study Area)
- State Border
- National Park, Reserves and State Conservation Area
- Primary Road
- Arterial Road
- Sub Arterial Road
- Project Boundary (Gol Gol Wind Farm)
- Development Footprint (Gol Gol Solar Farm)
- Development Footprint (Mallee Solar Farm)
- Project Boundary (Euston Wind Farm)
- Project Boundary (Euston Mineral Sands)

ZONE OF VISUAL INFLUENCE LEGEND
NUMBER OF TURBINES VISIBLE
(Based on topography alone):

- 0 - 1 Turbines
- 1 - 24 Turbines
- 25 - 49 Turbines
- 50 - 76 Turbines

EIS has not considered

Subdivisions DP 1285900
DP 1242927
DP 1294020
DP 1251134

About 100 lots.

Figure 20 – Lots with Entitlement
Source: ArcGIS, 2024

0 2 5 9 14 18 km

9.0 Dwelling Assessments

9.1 Overview of Dwelling Assessment

9.1.1 Dwelling Assessment Requirements

Non-associated dwellings:

The Preliminary Assessment Tools (**Section 6.0**) defined the 'visual catchment' and identified no non-associated dwellings within the Study Area which require further assessment (see **Figure 19**).

9.2 Lots Adjacent to the Project

The SEARs issued for the Project states that the LVIA must include a "*detailed consideration of potential visual impacts on local residences (including approved developments, lodged development applications and dwelling entitlements)*".

9.2.1 Dwelling Entitlement (in excess of minimum lot size)

Umwelt undertook a dwelling entitlement analysis which identified two (2) lots within 5.5km of the nearest WTG in excess of the minimum lot size under subclause (3)(a) of the Wentworth LEP 2011. The two lots comprise:

- Lot 11 / DP1262716
- Lot 6906 / DP1004307

It is noted that any lots that are prohibited from dwelling entitlement based on zoning such as Conservation Zones were also excluded including Lot 2977/DP765176 which comprises MCNP.
An overview of the visual assessment for two (2) lots identified as potentially holding dwelling entitlements within 5,500 m of the nearest WTG has been included in this report (see **Figure 20**). An assessment based on topography alone suggests that the majority of the Project will be visible on all lots within the Study Area (see **Figure 20**).

9.2.2 Dwelling Entitlement (below minimum lot size)

The dwelling entitlement of six (6) lots within 5.5km but below the minimum lot size under the Wentworth LEP 2011 were investigated further by Wentworth Shire Council as outlined in **Table 09**. It is noted that any lots below the minimum lot size associated with host landholders or Crown landholdings were excluded.

Additionally, the assessment identified that, most of the lots are associated with the adjacent Gol Gol Wind Farm or the Euston Mineral Sands Project (see **Table 09**).

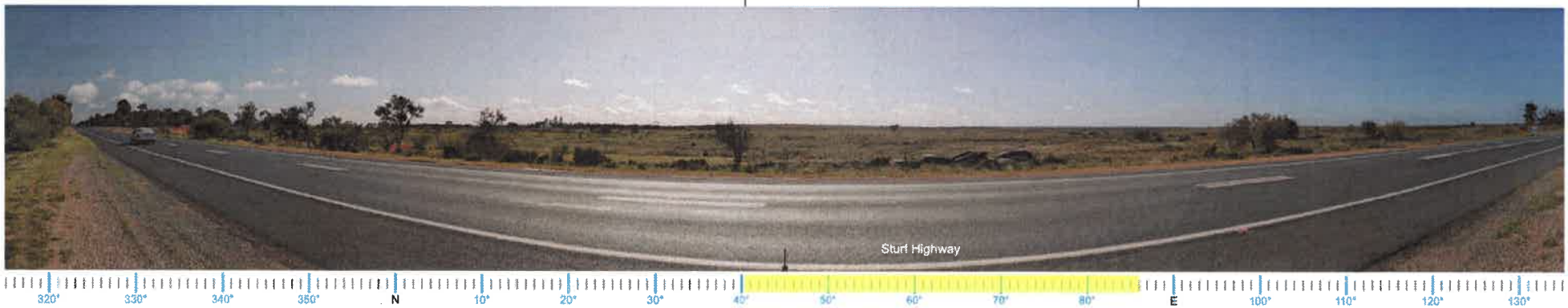
MLA Reference	Lot / DP & Address	LGA	Assessment notes
MLA01	1036/DP765851	Wentworth Shire LGA	No dwelling entitlement if there is currently no existing dwelling on the land. An aerial assessment of the lot identified that there is no dwelling currently on the lot. The additional assessment identified that the lot is likely associated with the adjacent Gol Gol Wind Farm.
MLA02	3/DP1182353	Wentworth Shire LGA	Associated Landholder
MLA03	1/DP1233260	Wentworth Shire LGA	No dwelling entitlement. Part of the lot is likely associated with the adjacent Euston Mineral Sands.
MLA04	2/DP1233260	Wentworth Shire LGA	No dwelling entitlement. Most of the lot is likely associated with the adjacent Euston Mineral Sands.
MLA05	29/DP836099	Wentworth Shire LGA	No dwelling entitlement if there is currently no existing dwelling on the land. Most of the lot is likely associated with the adjacent Euston Mineral Sands.
MLA06	1/DP756951	Wentworth Shire LGA	No dwelling entitlement if there is currently no existing dwelling on the land.

Table 09 – Overview of Lots Adjacent to the Project
Source: Wentworth Shire Council,2024

Lot 1 DP1182353 not considered.

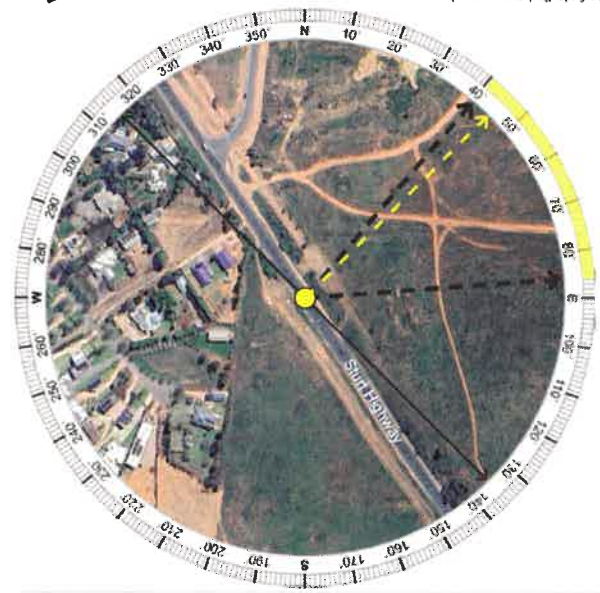
VP09 Sturt Highway, Mallee

Approximate extent of potentially visible turbines



LEGEND

- Viewing direction and centre of panorama
- Direction of potentially visible turbines
- Extent of panorama
- Extent of visible turbines (Based on topography alone)



VIEWPOINT VP09

Viewpoint Summary:	
Location:	Elevation:
Sturt Highway, Mallee	48 m
Coordinates:	Viewing Direction:
34°11'39.35"S 142°14'17.12"E	Northeast
Distance to nearest WTG:	Visibility Distance Zone:
12.95 km	**Mid Background (MB)**
Land Use:	Viewer Sensitivity Level:
Major Road, Agricultural	**Low**
LCU:	Scenic Quality Rating:
LCU01 - Grazing Native Pastures	**Low**
Visual Influence Zone: VIZ3	

Existing Landscape Character Description:

This viewpoint was taken along Sturt Highway towards Gol Gol. The terrain is relatively flat with the surrounding land being used for grazing. Vegetation is charactered as native grasslands with scattered trees dotted throughout adjoining paddocks. Views are open and expansive from this location.

Potential Visual Impact:

Due to a lack of intervening elements and flat terrain, there will be open views towards the Project. The WTGs will be a new element in the landscape; however, due to the distance from the viewer, the vertical proportion of the view affected is negligible.

Visual Performance Objectives:

No visual performance objectives apply to this viewpoint due to VIZ3.

Acknowledged view impacts from this point while the majority of Woorlong is much closer to the turbines than this point.

14.2 Transmission Lines

The Proponent has proposed underground reticulation to the connect the WTGs to collector substations and an overhead transmission line will connect the collector substations to the switchyard located in the southern extent of the Disturbance Footprint adjacent to Dansons Road. The Project is to be connected to the Project EnergyConnect transmission line via this switchyard (see **Figure 30**).

It is noted that Project EnergyConnect transmission line runs south west of the Project which proposes to construct a transmission line adjacent to the existing 220 kV line. These transmission towers are proposed to be up to 65 m in height. Project Energy Connect will be within the Project Area and connect to the on site switchyard.

It is acknowledged that the proposed transmission towers will be a visible element in the landscape from the surrounding area. However, ~~the transmission towers~~ will not contrast with the existing landscape character or features and the visual impacts of the proposed transmission towers are expected to be low.

Potential mitigation methods that may be applied during detailed design phase include:

- *Where possible underground cabling is to be used to connect wind turbines to the electricity grid.*
- *Utilise existing transmission lines where possible.*
- *The route for any proposed overhead transmission lines should be chosen to reduce visibility from surrounding areas.*
- *Plan route to minimise vegetation loss.*
- *Use of subtle colours and a low reflectivity surface treatment on power poles to ensure that glint is minimised.*

Image 30 – Existing 220 kV transmission towers

Should be positioned away from neighbour boundary.

14.4 Internal Access Tracks

Access tracks are proposed within the Project Area between the WTGs, associated infrastructure and connecting to existing arterial roads. Access to the Project is proposed via Arumpo Road close to WTG T80 and T72 associated with the Project.

Internal access tracks of minimum 6 m width will be constructed to provide access to the proposed WTG locations. This includes upgrades to some existing access tracks currently formed within the Project Area and the establishment of new access tracks. The access tracks are generally unsealed (refer **Figure 31**).

Generally, the internal roads have been sited to reduce potential vegetation loss and limit earth work requirements. Due to the existing agricultural land use within the Project Area, farm roads traversing the landscape form a significant part of the existing landscape character. The proposed access tracks are likely to be viewed as part of the existing character of the landscape. The Proponent could implement the following measures to mitigate residual visual impact beyond requirements from the construction of access tracks. These may include:

- Where possible utilise or upgrade existing roads, trails or tracks to provide access to the proposed WTG to reduce the need for new roads.
- Allow for the provision for downsizing roads or restoring roads to existing condition following construction where possible.
- Any new roads must minimise cut and fill and avoid the loss of vegetation.
- Utilise local materials where possible and practical.

14.3 On-site Substations, BESS and on-site Switching Stations

Up to two (2) collector substations are proposed throughout the Project Area. One (1) on-site switchyard and BESS facilities of up to 100 MW/ 200 MWh are proposed within the Project Area (see **Figure 30**). The substation and all ancillary buildings would be no taller than 4 m, excluding pole like structures such as gantries, bus bars and other transmission connection infrastructure.

The substation, BESS and switching station areas are located away from major transport corridor including Sturt Highway and Arumpo Road. There are no non-associated dwellings in close proximity to the substation, BESS and the switching station.

Due to the combination of distance and the low horizontal scale of the proposed substations, BESS and switching stations, views toward these elements are likely to be limited from public viewpoints in close proximity to these structures such as Arumpo Road. As a result, the visual impacts associated with these elements will be low.

Should be positioned away from neighbour boundary.

Image 31 – Example of unsealed farm road typical of the landscape character in the area

170 metre tower should be positioned away from neighbour boundary.

14.5 Meteorological Monitoring Masts

Up to seven (7) permanent meteorological monitoring masts of up to 170 m in height are proposed to be located within the Project Area to record wind speed and other meteorological data. The meteorological masts will be fitted with various instruments such as anemometers, wind vanes, temperature gauges and other electrical equipment.

Due to the existing flat terrain, views towards the meteorological masts are likely to be available and have the potential to be a feature from public viewing locations surrounding the Project. However, it is noted that no key landscape features are likely to be impacted.

14.6 Operations and Maintenance (O&M) Facility

A permanent O&M building will be constructed to support the construction and operation of the wind farm. The O&M Facility is proposed to be located next the Arumpo Road. The O&M Facility will include storage, water tanks, and other necessary infrastructure placement.

Due to the proximity, the O&M Facility may be visible from the Arumpo Road. It is likely to appear in keeping with the farm infrastructure typical of the surrounding area. As a result, the visual impacts associated with these elements will be low.

14.7 Other Temporary Infrastructure

In addition, temporary infrastructure elements such as:

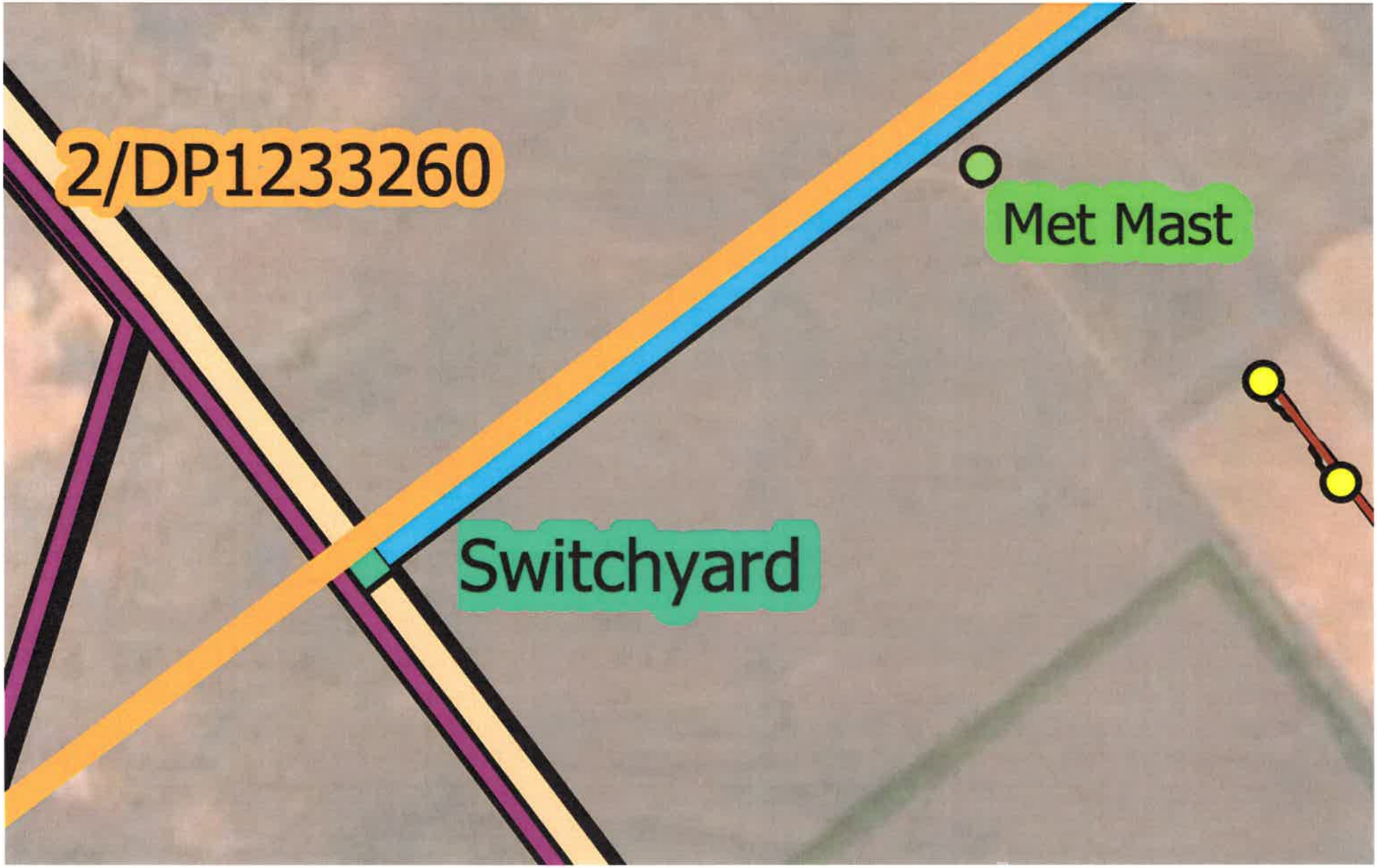
- Up to seven (7) temporary met masts up to a height of 200 m;
- Workers accommodation;
- Construction compounds;
- Laydown areas; and
- Concrete batching plants.

The visual impacts associated with these facilities will be temporary and will occur during the construction phase. No scenic views will be impacted by the construction activity.

The smaller scale of ancillary structures including the proposed O&M have the ability to be screened by existing vegetation or proposed screening vegetation. The Proponent could consider the following mitigation measures to reduce the potential impacts:

- *Siting to ensure minimal vegetation loss.*
- *Consideration should be given to controlling the type and colour of building materials used. Where possible a recessive colour palette is to be used which blends into the existing landscape.*
- *Avoidance of unnecessary lighting, signage on fences, logos etc.*
- *Any proposed buildings to be sympathetic to existing architectural elements in the landscape.*
- *Minimise cut and fill and loss of existing vegetation throughout the construction process.*
- *Boundary screen planting is an effective mitigation method which could be utilised to ameliorate potential visual impacts resulting from the construction of ancillary structures with a small vertical scale such as collector substations, switching stations and the operations facilities building.*

Image 32 – Example of mitigation screening to ancillary buildings


2/DP1233260
Met Mast
Switchyard

2.4.3 *Residential Land Supply and Demand*

Residential land in Buronga Gol Gol falls in the RU5 Village and R5 Large Lot Residential zones.

The average demand for RU5 Village and R5 Large Lot Residential zoned land is estimated as 74 and 19 lots per annum respectively, which equates to an annual average residential take-up rate of 93 lots in Buronga Gol Gol.

In terms of land supply, it has been determined that the total existing undeveloped residential land in Buronga Gol Gol is 320 ha comprising 227 ha of RU5 Village and 93 ha for R5 Large Lot Residential. With allowance of 30% of the land for access, open space and other non-residential uses, the net developable land for RU5 Village and R5 Large Lot Residential is 159 ha and 65 ha respectively.

Based on the average lot size of recent subdivisions and current annual take-up rate for RU5 Village and R5 Large Lot Residential zoned land, a summary of existing developable residential land supply is provided in Table 2.3.

Table 2.3 indicates that Buronga Gol Gol has 25 years supply of RU5 Village land and 10 years of R5 Large Lot Residential land. This suggests that under current circumstances Buronga Gol Gol has adequate long-term RU5 Village zoned land supply, and short to medium term supply of R5 Large Lot Residential zoned land.

However, an increase in the current growth rate of Buronga Gol Gol is anticipated due to factors such as recent improvements in infrastructure services, ongoing development of population services such as supermarket and commercial shops/premises, attractive rural residential lifestyle and amenity, the relatively lower price of land and housing (median=$310,000) compared to Mildura (median=$385,000), as well as residential housing demand overflows from Mildura due to urban expansion constraints in the Victorian regional city. These factors can potentially cause a significant residential land shortage, especially in the very popular R5 Large Lot Residential zone.

Therefore, additional residential land needs to be identified to cater for any future increase in current demand rates. This will prevent a potential land supply shortage and housing affordability issues, such as currently being experienced in Mildura.

Table 2.3 – Existing Residential Land Supply under current demand rate and average lot size

Zone	Undeveloped land (ha)	Developable land (ha)	Net Developable land (ha)	Average lot size (m²)	Lot Yield (Additional Lots)	Average Annual Demand	Years Supply
RU5 Village	227	159	111	850	1306	74	25
R5 Large Lot Residential	93	65	40	3500	114	19	10
Total	320	224	151	N/A	1420	N/A	N/A

2.4.4 *Housing Development*

As of 2016, the housing stock of Buronga Gol Gol was estimated at 1,210 dwellings with the greater majority (93.6%) of the residents occupying a detached residential dwelling type structure. This reveals a homogenous housing typology which suggests the need for increased housing diversity to improve affordability to meet the needs of the ageing population.

Analysis of Council's approvals records reveals an increasing trend in housing development in Buronga Gol Gol with a total of 170 development approvals granted for new dwellings between 2015 and 2019. This indicates a new dwelling approval rate of 34 per year with the total yearly approvals increasing steadily over the period as presented in Figure 2.9.

The increasing trend of housing development can be attributed to a range of factors, particularly Mildura's strong population growth, which averages around 580 persons per annum and an associated housing demand overflow. Other explaining factors include the availability of relatively affordable residential and rural residential land on the NSW side of the Murray River, encouraging people to choose Buronga Gol Gol over the regional city of Mildura, which is located less than 5 km away.

Most of the recent residential housing developments occur within the new subdivision area north and east of Gol Gol. The housing boom in Buronga Gol Gol is expected to continue into the future and will be driven and supported by currently proposed residential subdivision and commercial development in the area as presented in Figure 2.10.

Buronga Gol Gol has grown quickly since the 2020 version.

It must, however, be noted that housing development in Buronga Gol Gol is strongly linked to availability of suitable residential land. As depicted in Figure 2.8, the area experienced a sharp decline in housing development in 2016 due to a limited supply of residential land as no residential subdivisions were completed in that year. However, this trend was reversed in 2017 when major residential subdivisions were completed and more suitable residential land became available. Therefore, it is vital to ensure there is an ongoing supply of readily available residential land to satisfy the current and anticipated future demand.

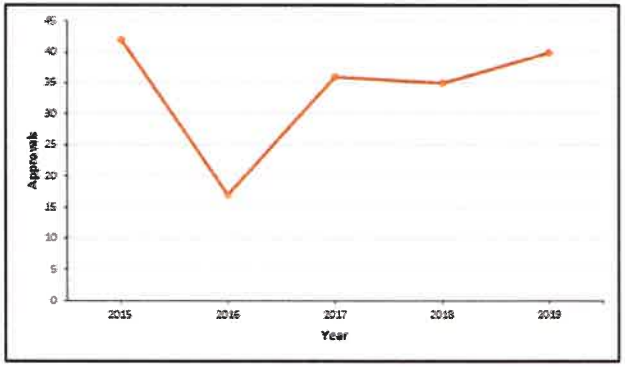


Figure 2.9 – Housing Development Approvals in Buronga Gol Gol

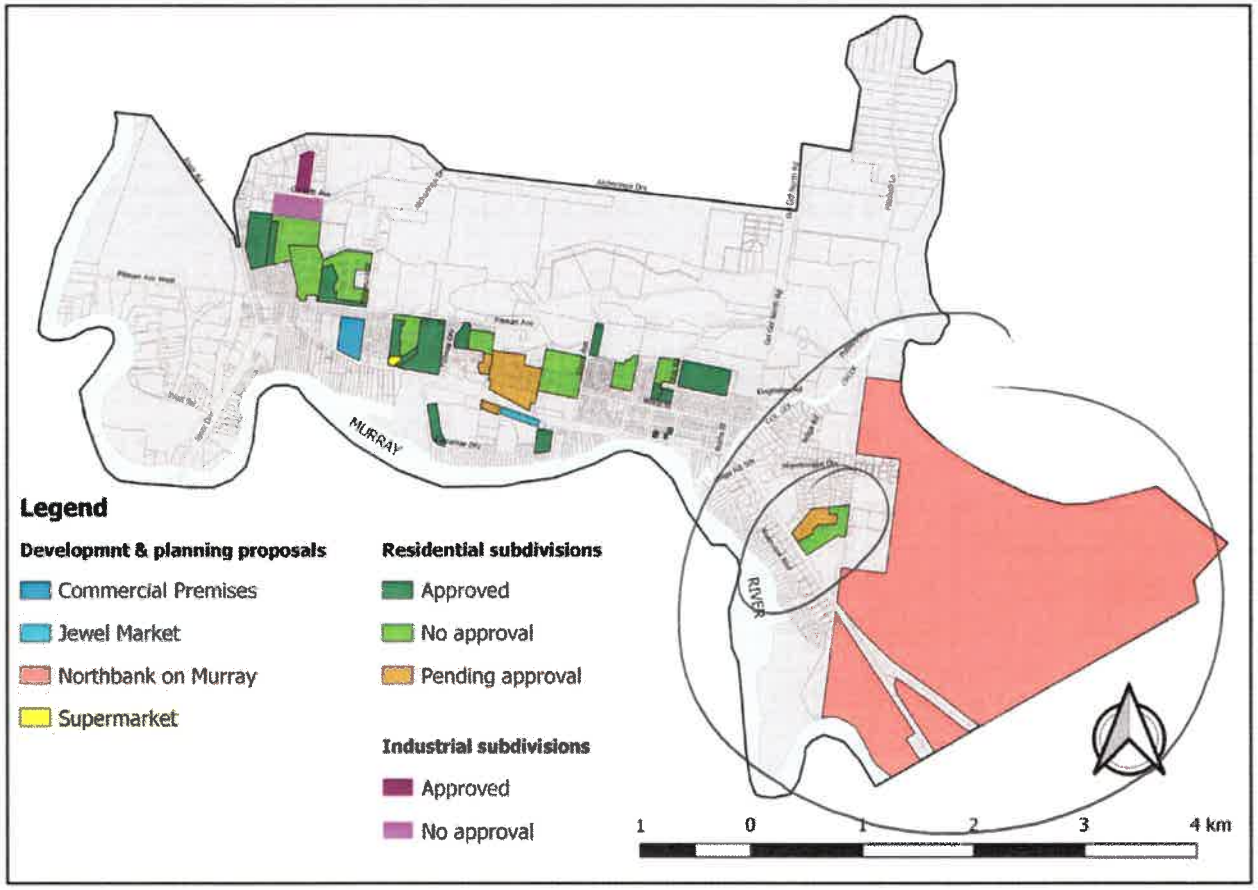


Figure 2.10 Proposed developments, concepts and planning proposals

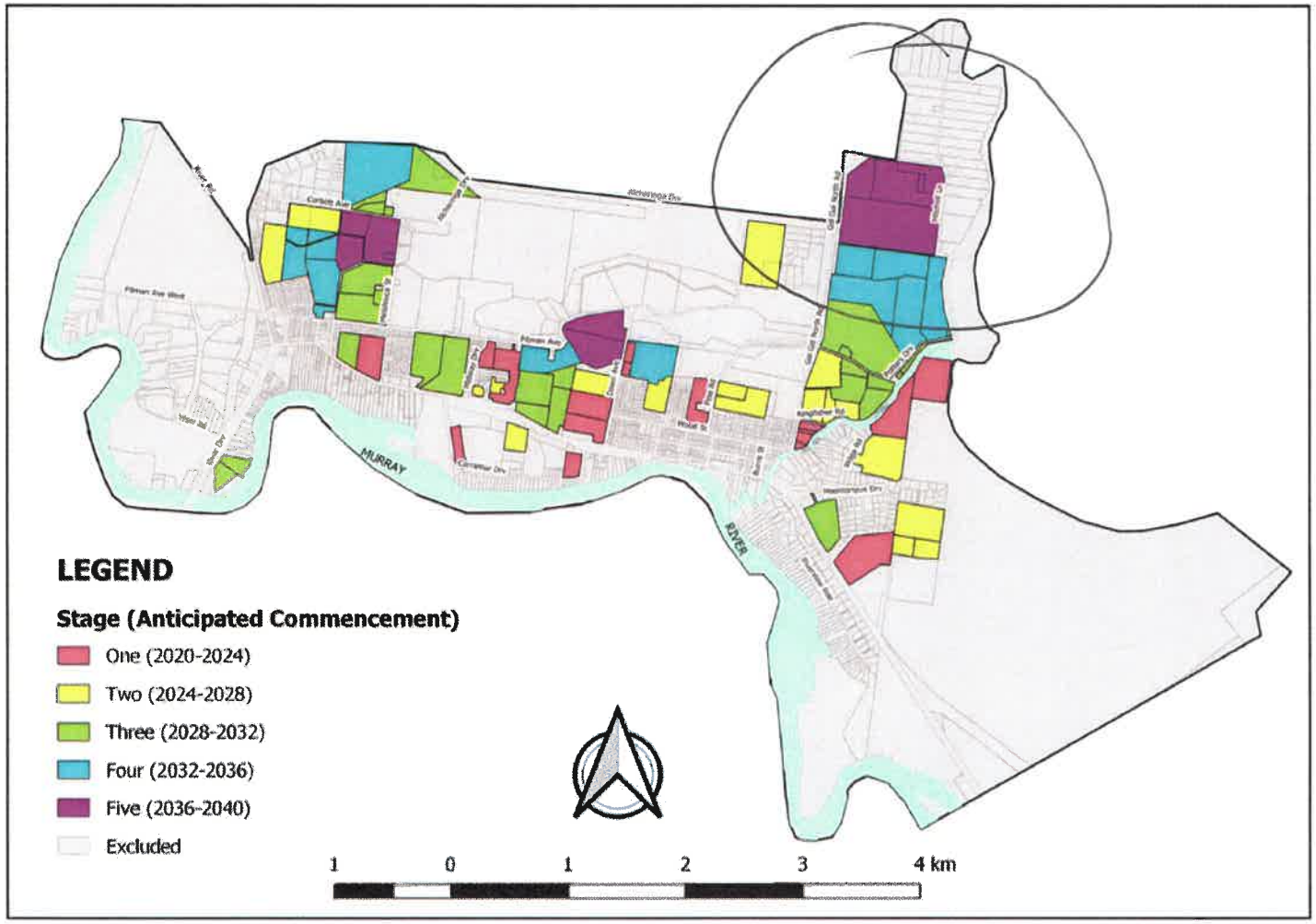


Figure 4.4 – Urban Land Release Staging Plan

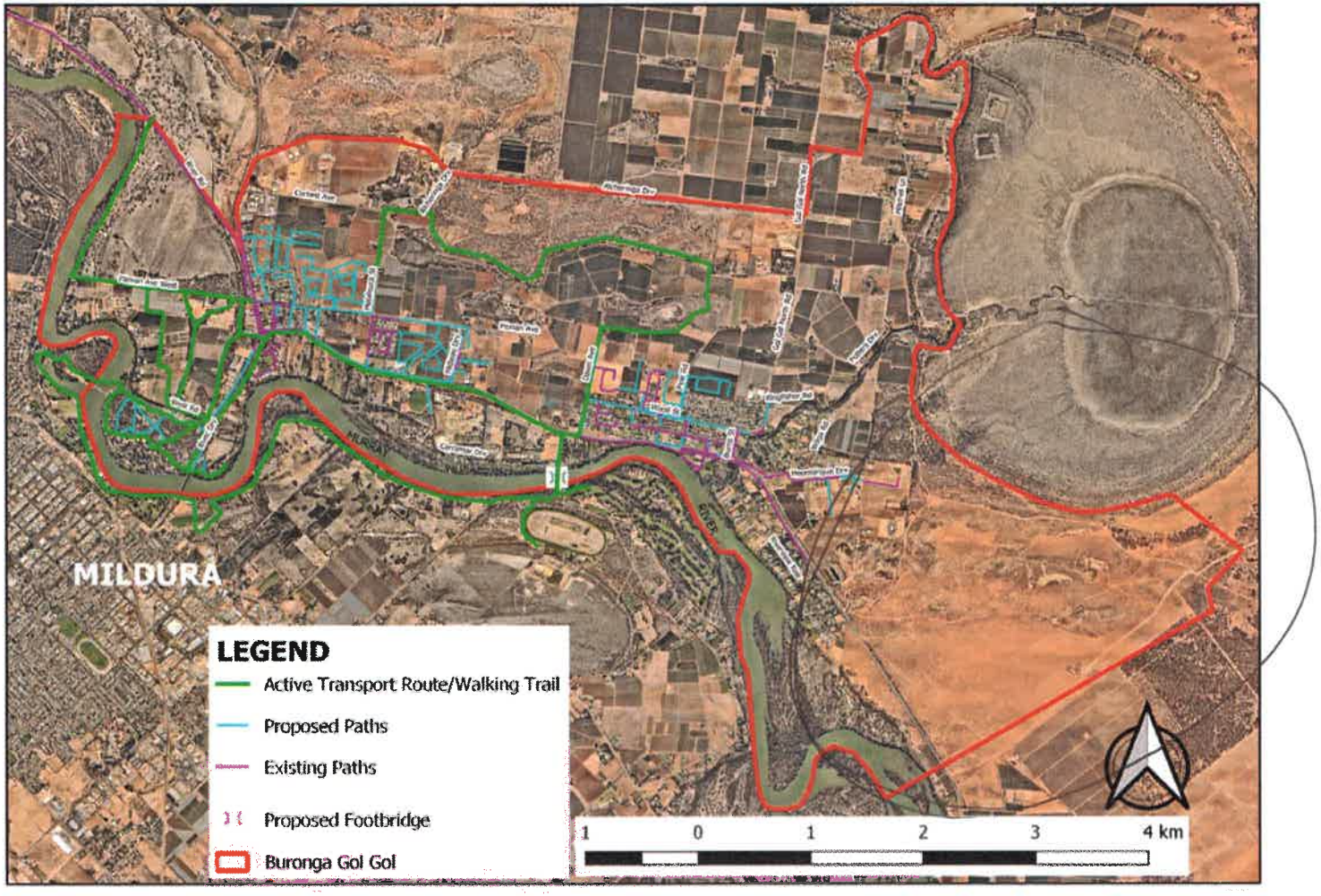


Figure 4.11 – Proposed Active Transport Route/Corridor

4.5 Natural Environment

As highlighted in Section 2.8, the Buronga Gol Gol area is endowed with a rich ecosystem and biodiversity. There are a host of endangered and vulnerable species and significant ecological habitats in the area.

The following general measures are proposed to preserve the health of the natural environment which is critical for ensuring healthy social and built environments in the area.

a) Consolidate urban development to reduce impact on biodiversity and ecosystem functions
b) Stabilise erosion and unstable river banks where possible
c) Treat salt-affected land
d) Remove noxious weeds (but not willows where it benefits bank stability)
e) Remove agricultural, commercial and residential waste appropriately
f) Control human access to areas of high environmental sensitivity, especially the Murray River Ecosystem
g) Revegetate riparian zones and other degraded vegetation only with native vegetation that is local to the area
h) Protect wetlands to maintain their ecological, recreational, flood storage and pollutant filtering ability
i) Ensure that key habitats for bird and marine life are not affected by planning decisions

4.6 Summary of Recommendations and Implementation Plan

Table 4.3 presents the staged implementation of the recommendations of this structure plan. This implementation approach has been adopted to ensure coordinated land development and infrastructure while preventing undue pressure on Council resources.

Council would seek to fund implementation of infrastructure and community facilities projects in this planning through internal budgetary allocations and external grants. Council would also actively advocate for implementation of infrastructure projects that are outside its jurisdiction by engaging, collaborating and liaising with the relevant agencies and authorities.

It is however noted that most of the anticipated land use development would be private sector driven, as such Council will also pursue planning strategies and practices that attract investors to invest and develop in Buronga Gol Gol. These could include fast-track development application processing, developer charges concessions and voluntary planning agreements among others.

Table 4.3 – Implementation Plan for Recommendations

No.	Project Title/Description	Category	Responsible/Co-ordinating organisation or agency L: Lead S: Support	Timing (years) Short: 0- 3 Medium: 3-5 Long: 10+	Funding Source
1	Investigate and implement traffic treatments at intersection of Midway Drive with Sturt Highway	Infrastructure planning & development	L: TfNSW S: WSC	Short	NSW Federal WSC
2	Review Moontongue Drive	Infrastructure planning	WSC	Short	WSC
3	Provision of Bus Stop at Wilga Road and Modikerr Way intersection	Community facility/service	L: CDC Mildura S: WSC	Short	CDC Mildura WSC
4	Planning proposal to rezone proposed health and emergency precincts to SP1 Special Activities	Land use planning	WSC	Short to Medium	WSC
5	Planning proposal to rezone nominated existing public open spaces to RE1 Public Recreation	Land use planning	WSC	Short	WSC
6	Planning proposal to rezone land for expansion of Carramar Drive Sporting Complex to RE1 Public Recreation	Land use planning	WSC	Short	WSC
7	Planning proposal to rezone Hendy Road Commercial Precinct	Land use planning	WSC	Short	WSC
8	Planning proposal to rezone Buronga West and the Mitchell Lane areas to E4 Environmental Living and change minimum lot size	Land use planning	WSC	Short to Medium	WSC
9	Planning proposal to rezone Bridge Road precinct to RE1 Public Recreation	Land use planning	WSC	Short	WSC
10	Planning proposal to apply minimum lot size to RU5 Village zone	Land use planning	WSC	Short	WSC
11	Planning proposal to change minimum lot size of RU1 Primary Production land adjoining the RU5 Village land to the north	Land use planning	WSC	Medium	WSC
12	Planning proposal to rezone proposed RU5 Village land	Land use planning	WSC	Ongoing as per Urban Land Release Staging Plan	WSC
13	Planning proposal to rezone proposed IN1 General Industrial land	Land use planning	WSC	Ongoing as per Urban Land Release Staging Plan	WSC

14	Planning proposal to rezone RU1 Primary Production land to R5 Large Lot Residential	Land use planning	WSC	Ongoing as per Urban Land Release Staging Plan	WSC
15	Encourage and promote the development of housing solutions for the Shire's aging population	Land use planning	WSC	Ongoing	WSC
16	Development of Dawn Avenue Depression Drainage Basin	Infrastructure development	WSC	Short	WSC
17	Construction of service road between Dawn Avenue and the proposed B2 Local Centre zone	Infrastructure development	WSC	Medium	WSC
18	Construction and establishment of 'superclinic'	Community facility/service	L: NSW Health S: WSC	Short	NSW
19	Bridge Road Upgrade	Infrastructure development	WSC	Short	WSC
20	Acquisition and development of Pink Lake as Drainage Basin (including retention basin, boardwalk, landscaping, seats, play equipment)	Asset acquisition	WSC	Short	WSC
21	Water Demand Management Program	Infrastructure planning	WSC	Short to Medium	WSC
22	Upgrade the George Chaffey Bridge to accommodate for safe pedestrian and cyclist use or consider pedestrian & cyclist-only from Buronga Gol Gol (Buronga Riverside Caravan Park) to Mildura	Infrastructure development/planning	L: TfNSW S: WSC, MRCC	Short to Medium	NSW VIC Federal
23	Strategic Water Supply Master Plan	Infrastructure planning	WSC	Short to Medium	WSC
24	Stormwater Infrastructure Master Plan	Infrastructure planning	WSC	Short to Medium	WSC
25	Sewerage Infrastructure Master Plan	Infrastructure planning	WSC	Short to Medium	WSC
26	Integrated Water Cycle Management Plan	Infrastructure planning	WSC	Short to Medium	WSC
27	Development of residential aged care facility or retirement village	Community facility/service	WSC	Short to Medium	Private
28	Upgrade the Bus Pole at the northern end of Midway Drive to Bus Shelter	Community facility/service	L: CDC Mildura S: WSC	Medium	CDC Mildura WSC
29	Seal Pine Road	Infrastructure development	WSC	Medium	WSC
30	Traffic and Transport Infrastructure Master Plan	Infrastructure planning	L: WSC S: TfNSW	Short to Medium	WSC
31	Advocate for the relocation and consolidation of Buronga & Gol Gol Public Schools	Community facility/service	L: Dept of Edu S: WSC	Medium	WSC
32	Improve public transport network and service	Community facility/service	L: CDC Mildura S: WSC	Medium	CDC Mildura WSC
33	Development of Bridge Road Precinct	Community facility/service	WSC	Medium	WSC
34	Acquisition of land and establishment of greenbelt/ecological buffer at the interface of industrial, rural and residential land uses in north Buronga	Asset acquisition	WSC	Medium	WSC
35	Acquisition of land and establishment of greenbelt/ecological buffer at the interface of rural and residential land uses between Melaleuca Street and Dawn Avenue in north-east Buronga	Asset acquisition	WSC	Medium	WSC
36	Acquisition of land and establishment of greenbelt/ecological buffer at the interface of rural and residential land uses between Dawn Avenue and Gol Gol North Road in north Gol Gol	Asset acquisition	WSC	Medium	WSC
37	Acquisition of land and establishment of greenbelt/ecological buffer along northern part of Gol Gol North Road and between Gol Gol North Road and Mitchell Road at the interface of rural, rural residential and residential land uses in north east Gol Gol	Asset acquisition	WSC	Medium	WSC
38	Provision of 3.5 km trail through the zone E2 Environmental Conservation land to Pink Lake Drainage Basin	Infrastructure development	WSC	Medium to Long	WSC
39	Provision of 2.4 km trail from Pink Lake Drainage Basin to Dawn Avenue Depression Drainage Basin	Infrastructure development	WSC	Medium to Long	WSC
40	Prepare On-site Stormwater Detention Policy	Infrastructure planning	WSC	Medium to Long	WSC
41	Improvement of dirt roads and rural arterial networks	Infrastructure development	WSC	Medium to Long	WSC
42	Footy oval, netball court and swimming pool construction at Carramar Drive Sporting Complex	Community facility/service	WSC	Medium to Long	WSC
43	Extension of sewerage services to R5 Large Residential Lot zone	Infrastructure development	WSC	Ongoing as per Sewer Extension Staging Plan	WSC
44	Construction of service road south of Sturt Highway between Punt Road and Bligh Street	Infrastructure development	L: WSC S: TfNSW	Medium to Long	WSC NSW

45	Establishment of emergency precinct	Community facility/service	L: NSW Health, Police & RFS S: Ambulance VIC, WSC	Medium to Long	NSW
46	Construction of additional water reservoir and pumps	Infrastructure development	WSC	Long	WSC
47	Extension of stormwater services	Infrastructure development	Private Developers WSC	Ongoing as per Stormwater Extension Staging Plan	Private WSC
48	Sewerage reticulation system extension and upgrade	Infrastructure development	Private Developers WSC	Ongoing as per Sewer Extension Staging Plan	Private WSC
49	Retrofit footpaths & sharedways as per Pedestrian Access & Mobility Plan	Infrastructure development	L: WSC S: TfNSW	Ongoing as per PAMPs	WSC NSW
50	Water supply system upgrade and extension	Infrastructure development	Private Developers WSC	Ongoing as per Water Supply Extension Staging Plan	Private WSC
51	Routine maintenance of the Gol Gol Creek riparian areas	Environmental management	WSC	Ongoing	WSC
52	Road safety audit on Sturt and Silver City Highways	Infrastructure planning	WSC TfNSW	Ongoing	WSC NSW
53	Review and update Pedestrian Access & Mobility Plan	Infrastructure planning	WSC	Ongoing	WSC
54	Revamp Buronga Riverfront as per Buronga Riverfront Master Plan	Community facility/service	WSC	Ongoing	WSC
55	Provide and upgrade of bus stop facilities at vantage locations	Community facility/service	L: CDC Mildura S: WSC	Ongoing	CDC Mildura WSC
56	Explore options for a bypass or second river crossing	Infrastructure planning	L: TfNSW, Regional Roads Victoria S: WSC, MRCC	Ongoing	NSW VIC Federal
57	Amenities upgrade (Public Toilets)	Community facility/service	WSC	Ongoing	WSC
58	Wilga Road Roundabout	Infrastructure development	L: TfNSW S: WSC	Medium	NSW VIC Federal
59	Investigate and implement upgrades at Corbett Avenue and Sturt Highway Intersection	Infrastructure planning & development	L: TfNSW S: WSC	Long	NSW
60	Seal Native Ridge Lane and upgrade its intersection with Sturt Highway	Infrastructure development	WSC	Short	WSC
61	Investigate and implement upgrades at Dawn Avenue and Sturt Highway Intersection	Infrastructure planning & development	L: TfNSW S: WSC	Medium	NSW Federal
62	Improvements at Pitman Avenue, Pitman West & Silver City Highway intersection	Infrastructure development	L: WSC S: TfNSW	Long	WSC NSW
63	Explore and implement options for construction of bridge upstream of Gol Gol Creek	Infrastructure development	WSC	Medium to Long	WSC
64	Development of active transport loop	Infrastructure development	L: WSC, MRCC S: TfNSW Regional Roads Victoria	Medium	NSW VIC Federal WSC MRCC
65	Engage with Essential Energy to eliminate overhead powerlines	Land use planning Infrastructure development	L: Essential Energy S: WSC	Long	Essential Energy
66	Development of Moontongue Recreation Park	Community facility/service	WSC	Short	WSC
67	Widen and realign Sturt Highway at intersection with Melaleuca Street	Infrastructure development	L: Transport for NSW S: WSC	Medium	NSW
68	Extend service road south of Sturt Highway between Rose Street and Carramar Drive to connect with Carramar Drive	Infrastructure development	L: WSC S: TfNSW	Medium	WSC NSW
69	Construct service road north of Sturt Highway between Midway Drive and Melaleuca Drive	Infrastructure development	L: WSC S: TfNSW	Medium	WSC NSW