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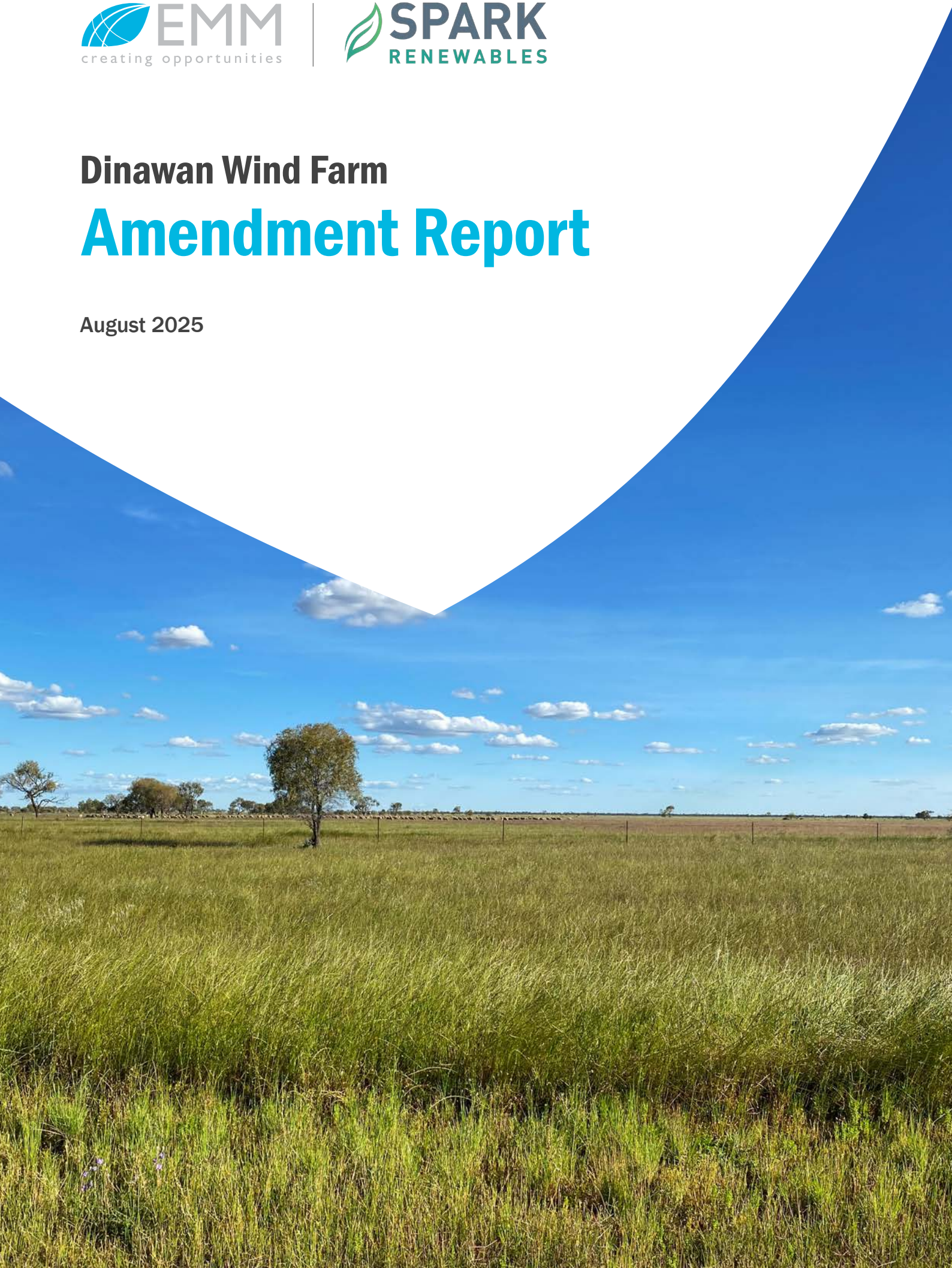
Dinawan Wind Farm

Amendment Report

August 2025



Dinawan Wind Farm

Amendment Report

Spark Renewables

E220305 RP#31

August 2025

Version	Date	Prepared by	Reviewed by	Comments
1	19 March 2025	S Stergio and D Richards	K Cox	Draft for client review
2	5 May 2025	S Stergio and D Richards	K Cox	Updated for client review
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6	19 August 2025	S Stergio and D Richards	K Cox	Final

Approved by

Kate Cox
Associate Director
19 August 2025

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Executive Summary

Spark Renewables Pty Limited (Spark Renewables) proposes to develop the Dinawan Wind Farm (the project). The project includes the installation, operation, maintenance and decommissioning of up to 200 wind turbine generators (WTGs), and associated infrastructure. The project is on the traditional lands of the Wiradjuri people and several smaller nations of the Murrumbidgee plains, about halfway between the towns of Coleambally and Jerilderie. The project is within the Murrumbidgee and Edward River local government area (LGA) in New South Wales (NSW).

The project area is within the South West Renewable Energy Zone (REZ), a region selected by the NSW Government for its strong renewable energy resource potential and proximity to the existing electricity network. The main objective of the project is to generate and dispatch electricity generated from renewable sources, consistent with NSW Government policy for renewable energy generation and storage. The project will have a generation capacity of up to approximately 1,200 megawatts (MW) (AC), equivalent to the demand of more than 700,000 NSW households.

The development application (DA) and environmental impact statement (EIS) for the project were submitted to the NSW Department of Planning, Housing and Infrastructure (DPHI) and publicly exhibited from 12 July 2024 to 8 August 2024.

The key components of the project as described in the EIS are:

- a network of up to 200 three-blade WTGs with a maximum blade tip height of 280 metres (m)
- electrical connection system, collector substations and control rooms
- electricity transmission line infrastructure (above ground and underground), including infrastructure connecting the collector substations to the Dinawan Substation site
- temporary construction infrastructure, including workforce accommodation, construction compounds, site offices and amenities, concrete batching plants, construction materials storage (including stockpiles), laydown areas, temporary meteorological monitoring masts (up to 200 m high), water tanks, water and sediment management infrastructure, storage and parking areas and borrow pits
- permanent supporting infrastructure, including operation and maintenance (O&M) infrastructure (including site offices and amenities, equipment and maintenance sheds and laydown, storage and parking areas), hardstands, water tanks and up to 10 permanent meteorological monitoring masts (up to 200 m high)
- site access and internal access roads, including access points from Kidman Way, Fernbank Road, Goolgumbla Road and McLennons Bore Road
- road upgrades to facilitate the delivery of project infrastructure to the development corridor.

Following the exhibition of the EIS, further review of the design has been completed to refine and optimise the project layout. Amendments to the project layout and development footprint have also been made in response to feedback from key stakeholders.

The amendments described in this report are:

- a reduction in the project area from 39,061 hectares (ha) to 34,510 ha (12% decrease)
- a reduction in the development corridor from 7,256 ha to 6,383 ha (12% decrease)
- a reduction in the development footprint from 1,339 ha to 1,095 ha (18% decrease)

- a reduction in the number of assessed locations for WTGs from 267 to 200 (no change to the total number of WTGs proposed for construction and operation), with up to 84 WTGs in Stage 1 (reduced from 117 in the EIS) and up to 116 WTGs in Stage 2 (reduced from 150 in the EIS)
- a reduction in the maximum blade tip height of each WTG from 280 m to 250 m
- amendments to the project layout, including revised locations for collector substation and switchyard options, electricity transmission line infrastructure, meteorological monitoring masts and site access
- other minor amendments, including:
    - nomination of 16 borrow pit locations (approximately 0.2 ha each)
    - addition of new disturbance areas for haulage route road upgrades outside the project area
    - updates to the proposed oversize/overmass (OSOM) and light vehicle routes
    - updates to biodiversity offset staging (i.e. from two to three stages).

A summary of the amended project is provided in Figure ES1.

This amendment report provides an assessment of the potential impacts associated with the amended project. The amendments have resulted in further avoidance and reduction of impacts including:

- reducing impacts to threatened ecological communities (TECs) listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) from 604.7 ha to 507.04 ha (16% reduction)
- reducing impacts to TECs listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) from 264.9 ha to 205.6 ha (22% reduction)
- further avoidance of occupation areas identified as part of the Aboriginal cultural heritage assessment (ACHA) with amendments to the development corridor and development footprint reducing the extent of potential impacts in occupation areas from 34.7% to 23.7% and 6.3% to 2.8%, respectively
- reducing the unmitigated visual impact rating for the closest non-associated residence (R019) from high visual impact to low visual impact.

The proposed amendments are consistent with the relevant objects of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and the principles of ecologically sustainable development (ESD) and do not significantly change the nature of the project originally proposed.

The justification of the project, as described in the EIS remains valid. The project is consistent with relevant Commonwealth, State, regional and local strategic plans and polices, in particular the *NSW Electricity Infrastructure Roadmap* (DPIE 2020a), which sets out the plan to deliver renewable energy zones (REZs) in NSW. The project will contribute to the energy generation and storage targets for the South West REZ, enhancing the security of the State's electricity supply.

The project at a glance

Development corridor
6,383 ha

Development footprint
1,095 ha

Generating capacity of up to
1.2 GW

200
turbines
(3 blade system)

Diameter
of the rotor
172 m

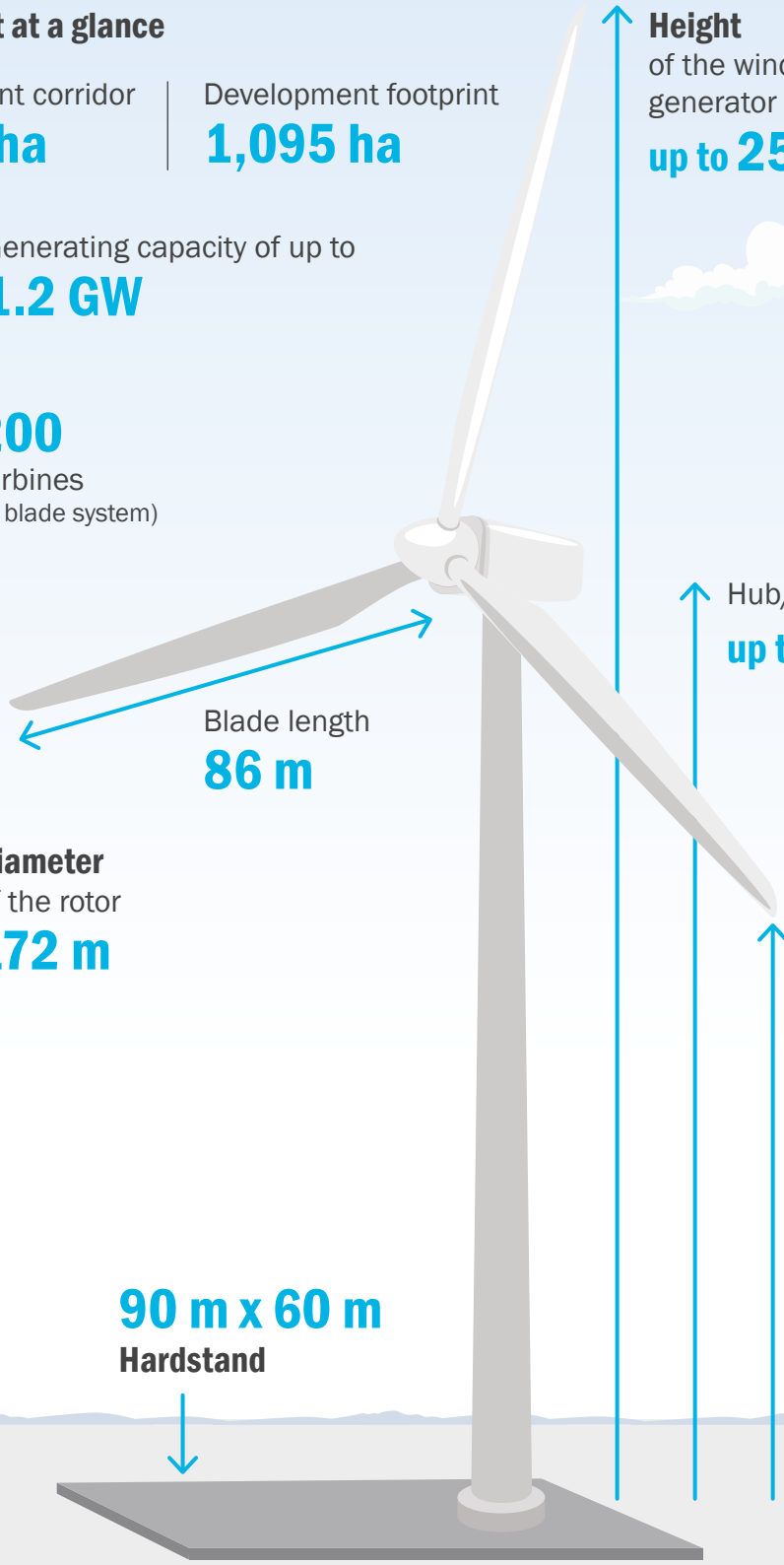
Height
of the wind turbine generator (to blade tip)
up to 250 m

Hub/nacelle height
up to 164 m

Blade length
86 m

Lowermost blade tip
greater than 64 m
height above ground

90 m x 60 m
Hardstand



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1 Introduction

1.1 Background

Spark Renewables Pty Limited (Spark Renewables) proposes to develop the Dinawan Wind Farm (the project). The project includes the installation, operation, maintenance and decommissioning of up to 200 wind turbine generators (WTGs), and associated infrastructure. The project is on the traditional lands of the Wiradjuri people and several smaller nations of the Murrumbidgee plains, about halfway between the towns of Coleambally and Jerilderie. The regional context of the project is within the Murrumbidgee and Edward River local government area (LGA) in New South Wales (NSW) as shown Figure 1.1.

The project is within the South West Renewable Energy Zone (REZ), a region selected by the NSW Government for its significant potential for renewable electricity generation and regional development.

The project will connect to the Dinawan Substation, to be constructed as part of the Project EnergyConnect interconnector that will run between Robertstown in South Australia and Wagga Wagga in NSW. The Dinawan Substation and interconnector are a separate approved project being built by Transgrid.

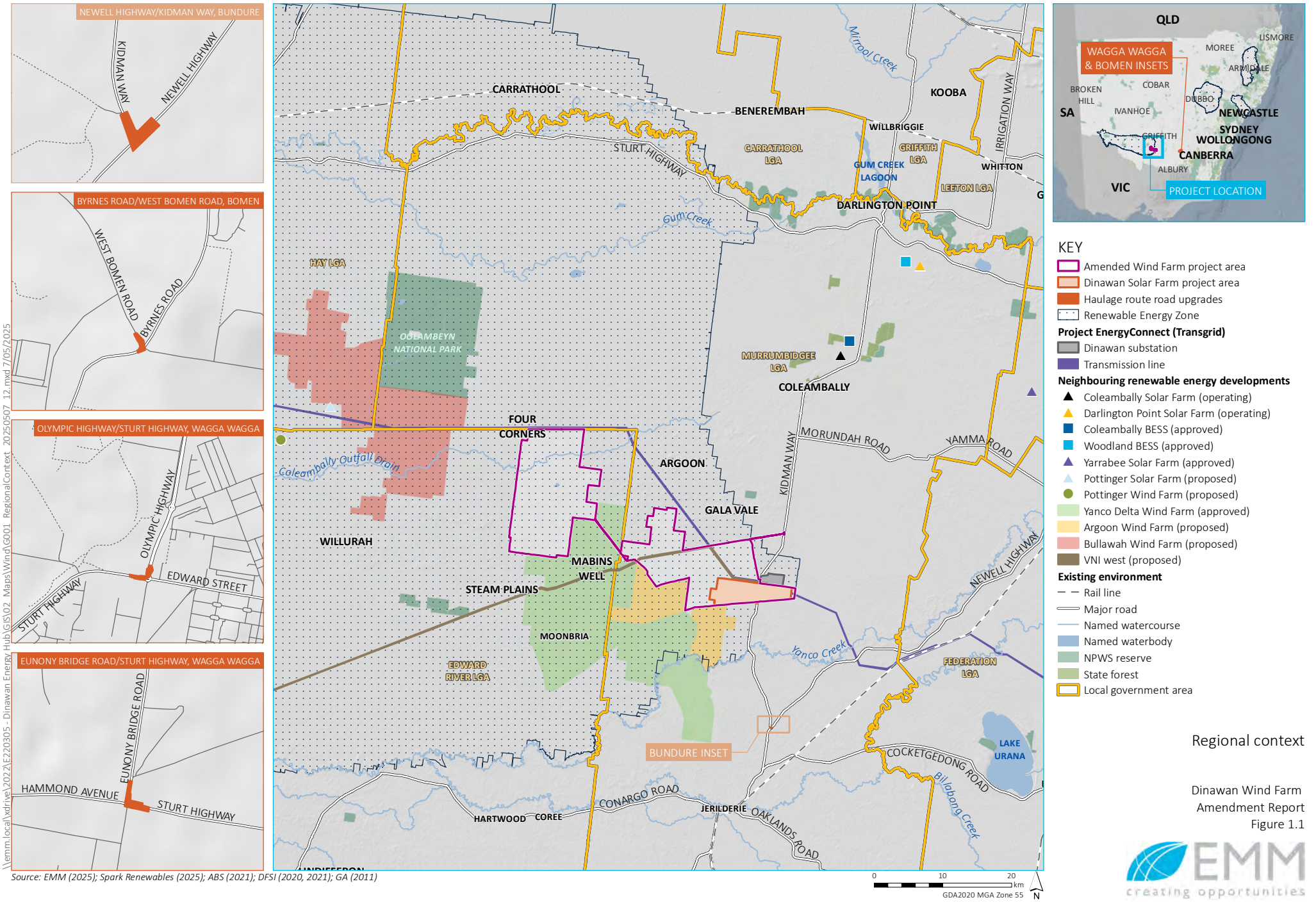
The main objective of the project is to generate and dispatch electricity generated from renewable sources, consistent with NSW Government policy for renewable energy generation and storage. The project will have a generation capacity of up to approximately 1,200 megawatts (MW) (AC), equivalent to the demand of more than 700,000 NSW households. Spark Renewables has successfully secured access rights for the Dinawan Energy Hub through the South West REZ access tendering process, being one of four projects to be awarded connection to the South West REZ transmission network. While the amended project has a total capacity of up to 1,200 MW, capacity will be scaled to meet the capacity awarded to the Dinawan Energy Hub through the South West REZ access tendering process. The project will significantly contribute to the government's planned 3.56-gigawatt (GW) generation target for the South West REZ. It will assist in meeting NSW and Australian Government emissions reduction targets and will abate up to approximately 3.2 million tonnes of greenhouse gases (GHG) annually.

The project is a State significant development (SSD) pursuant to schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). Accordingly, a development application (DA) and environmental impact statement (EIS) was submitted to the NSW Department of Planning, Housing and Infrastructure (DPHI) under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS for the project was publicly exhibited from 12 July 2024 to 8 August 2024.

During the public exhibition of the EIS, a total of 89 submissions were received by DPHI from the public (including 82 individuals and 7 organisations). Additionally, 23 regulatory agencies provided advice on the project. A submissions report has been prepared to respond to matters raised in these submissions and agency advice, and will be submitted in conjunction with this amendment report.

Following the exhibition of the EIS, further review of the design has been completed to refine and optimise the project layout (including the removal of 67 potential WTG locations and an 18% reduction to the development footprint). Amendments to the project layout and development footprint have also been made in response to feedback from key stakeholders, including Transgrid (as proponents for the proposed Victoria to NSW Interconnector (VNI) West) and Origin Energy Power Limited (Origin) (as proponents for the approved Yanco Delta Wind Farm).

This amendment report has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Spark Renewables in accordance with the *State significant development guidelines – preparing an amendment report* (DPE 2022a). This report describes the changes to the project and assesses the impacts associated with the amended project, compared to those presented in the EIS.



Source: EMM (2025); Spark Renewables (2025); ABS (2021); DFSI (2020, 2021); GA (2011)

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Regional context

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Figure 1.1

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1.2 Original project summary

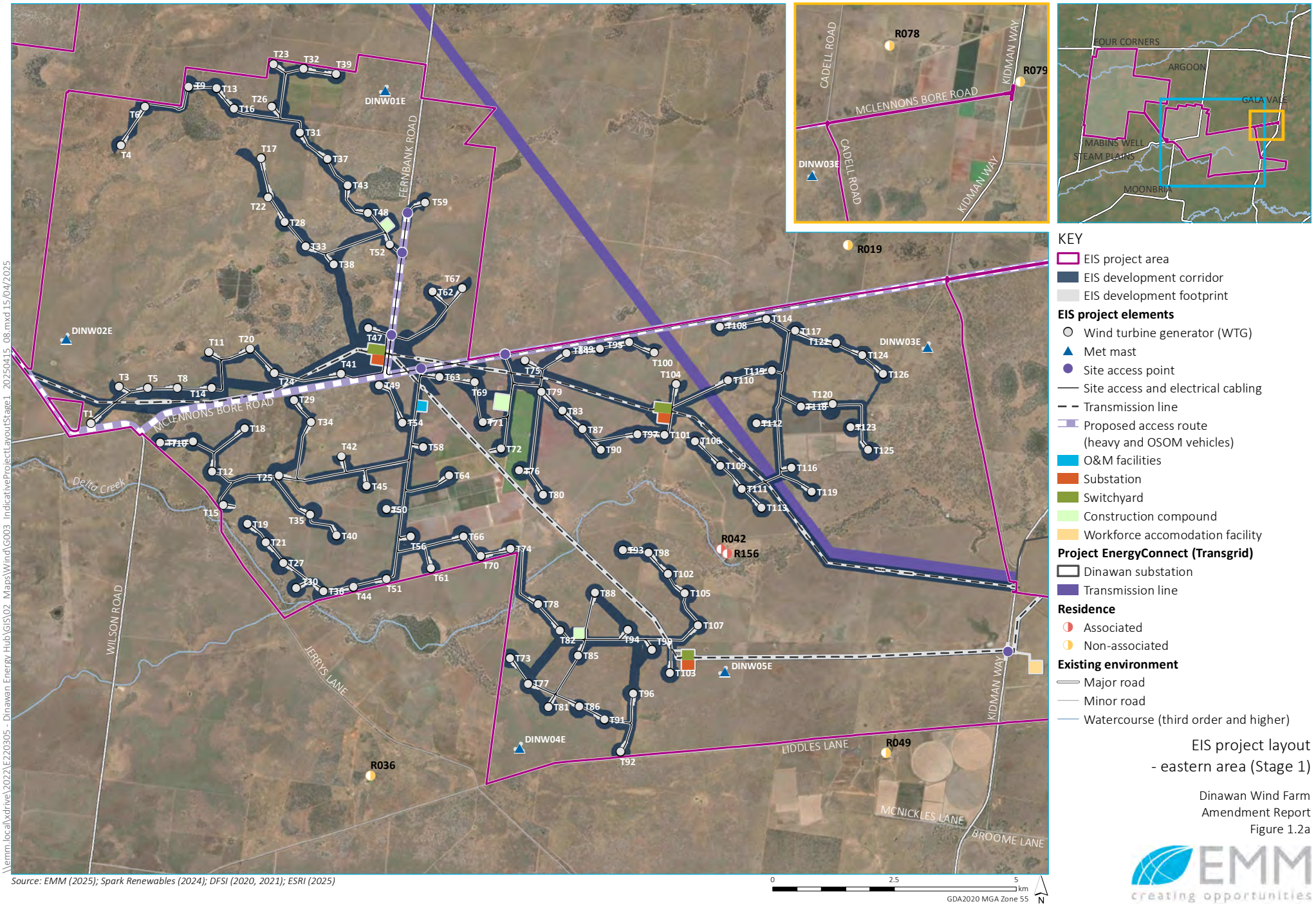
The project area presented in the EIS was approximately 39,061 hectares (ha). A development corridor of approximately 7,256 ha was defined within the project area. Within the development corridor, the indicative extent of the project's actual ground disturbance (e.g. earthworks, permanent infrastructure, temporary construction facilities) was defined as the development footprint, an area of approximately 1,339 ha.

The EIS development corridor and development footprint was refined throughout the assessment process to avoid impacts where possible and to minimise unavoidable impacts. It was informed by the outcomes of community and stakeholder engagement and the findings of environmental, social and economic assessments.

The project, as presented in the EIS, comprised the following key components:

- a network of up to 200 three-blade WTGs with a maximum blade tip height of 280 m
- electrical connection system, collector substations and control rooms
- electricity transmission line infrastructure (above ground and underground), including infrastructure connecting the collector substations to the Dinawan Substation site
- temporary construction infrastructure, including workforce accommodation, construction compounds, site offices and amenities, concrete batching plants, construction materials storage (including stockpiles), laydown areas, temporary meteorological monitoring masts (up to 200 m high), water tanks, water and sediment management infrastructure, storage and parking areas and borrow pits
- permanent supporting infrastructure, including operation and maintenance (O&M) infrastructure (including site offices and amenities, equipment and maintenance sheds and laydown, storage and parking areas), hardstands, water tanks and up to 10 permanent meteorological monitoring masts (up to 200 m high)
- site access and internal access roads, including access points from Kidman Way, Fernbank Road, Goolgumbla Road and McLennons Bore Road
- road upgrades to facilitate the delivery of project infrastructure to the development corridor.

The EIS project layout is provided in Figure 1.2.



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Source: EMM (2025); Spark Renewables (2024); DFSI (2020, 2021); ESRI (2025)

EIS project layout
- eastern area (Stage 1)

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Figure 1.2a

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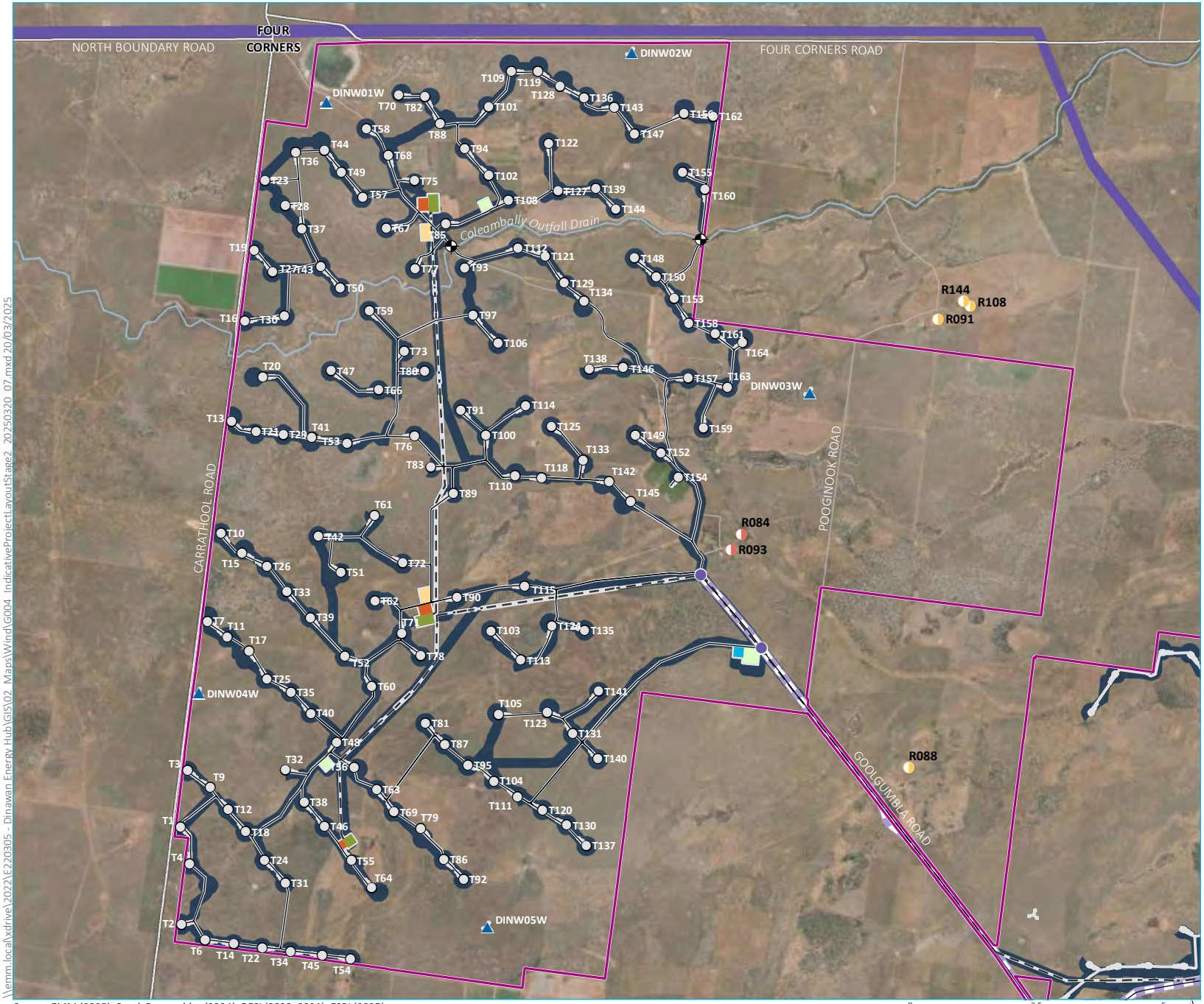

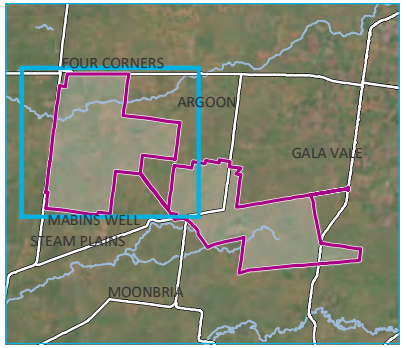

KEY

- EIS project area
- EIS development corridor
- EIS development footprint

EIS project elements

- Wind turbine generator (WTG)
- Met mast
- Site access point
- Site access and electrical cabling
- Transmission line
- Proposed access route (heavy and OSOM vehicles)
- O&M facilities
- Substation
- Switchyard
- Construction compound
- Workforce accomodation facility

Project EnergyConnect (Transgrid)

- Transmission line

Residence

- Associated
- Non-associated

Existing environment

- Bridge
- Major road
- Minor road
- Watercourse (third order and higher)

EIS project layout - western area (Stage 2)

Dinawan Wind Farm
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Figure 1.2b

Source: EMM (2025); Spark Renewables (2024); DFSI (2020, 2021); ESRI (2025)

0 2.5 5 km
GDA2020 MGA Zone 55

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1.3 Overview of amendments

Spark Renewables has amended the project following further detailed design, and in response to feedback from Transgrid (as the proponent for VNI West) and Origin Energy (as the proponent for Yanco Delta Wind Farm), as well as outcomes of ongoing engagement with the local community and government agencies. The development footprint has been reduced by approximately 245 ha (18%) from 1,339 ha to 1,095 ha. The reduction has facilitated further avoidance of impacts in the amended design.

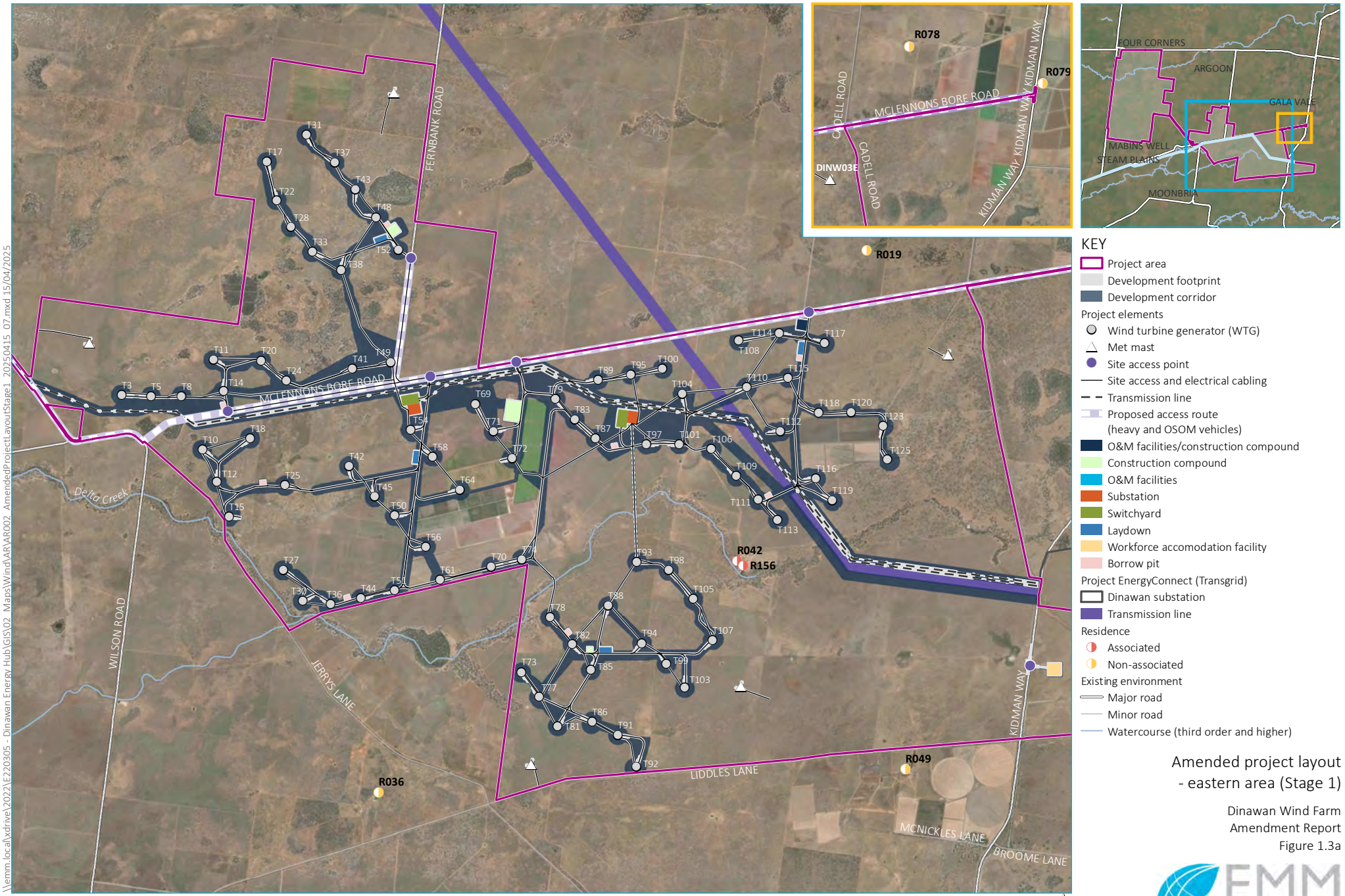
The amended project has resulted in:

- a reduction in the project area from 39,061 ha to 34,510 ha (12% decrease)
- a reduction in the development corridor from 7,256 ha to 6,383 ha (12% decrease)
- a reduction in the development footprint from 1,339 ha to 1,095 ha (18% decrease)
- a reduction in the number of assessed locations for WTGs from 267 to 200 (no change to the total number of 200 WTGs proposed for construction and operation), with up to 84 WTGs in Stage 1 (reduced from 117 in the EIS) and up to 116 WTGs in Stage 2 (reduced from 150 in the EIS)
- a reduction in the maximum tip height of each WTG from 280 m to 250 m
- amendments to the project layout, including revised locations for collector substation and switchyard options, electricity transmission line infrastructure, meteorological monitoring masts, site access, construction compounds, laydown areas, O&M facilities and worker accommodation facilities
- other minor amendments, including:
    - nomination of 16 borrow pit locations (approximately 0.2 ha each)
    - addition of new disturbance areas for haulage route road upgrades
    - updates to the proposed oversize/overmass (OSOM) and light vehicle routes
    - updates to biodiversity offset staging (i.e. from two to three stages).

No amendments are proposed to the:

- generation capacity
- total number of WTGs proposed for construction and operation (i.e. 200 WTGs)
- construction and operation workforce size
- hours of operation
- project lifespan
- intended activities within the development footprint.

The amended project layout is shown in Figure 1.3 and described in detail in Chapter 3. A comparison between the EIS project layout and amended project layout is shown on Figure 1.4.



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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

Amended project layout - eastern area (Stage 1)

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Figure 1.3a

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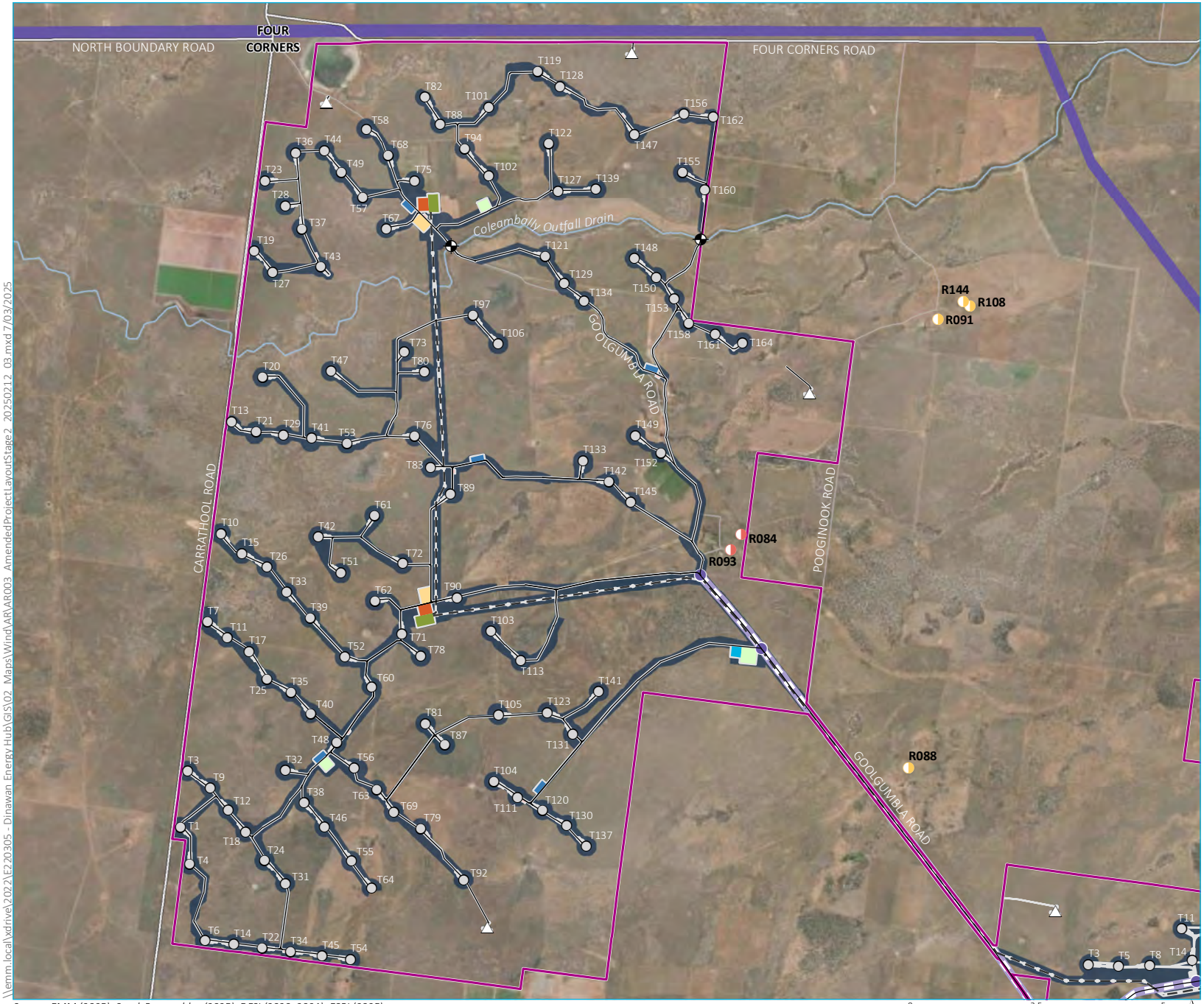

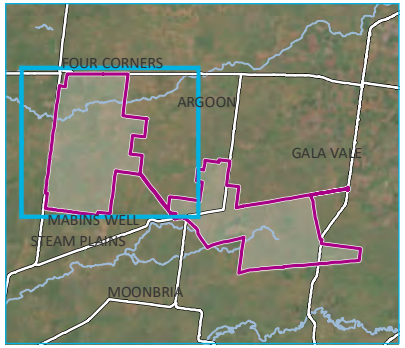

KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Met mast
- Site access point
- Site access and electrical cabling
- Transmission line
- Proposed access route (heavy and OSOM vehicles)
- O&M facilities
- Substation
- Switchyard
- Laydown
- Workforce accomodation facility
- Borrow pit
- Construction compound

Project EnergyConnect (Transgrid)

- Transmission line

Residence

- Associated
- Non-associated

Existing environment

- Bridge
- Major road
- Minor road
- Watercourse (third order and higher)

Amended project layout - western area (Stage 2)

Dinawan Wind Farm
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Figure 1.3b

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 2.5 5 km
GDA2020 MGA Zone 55

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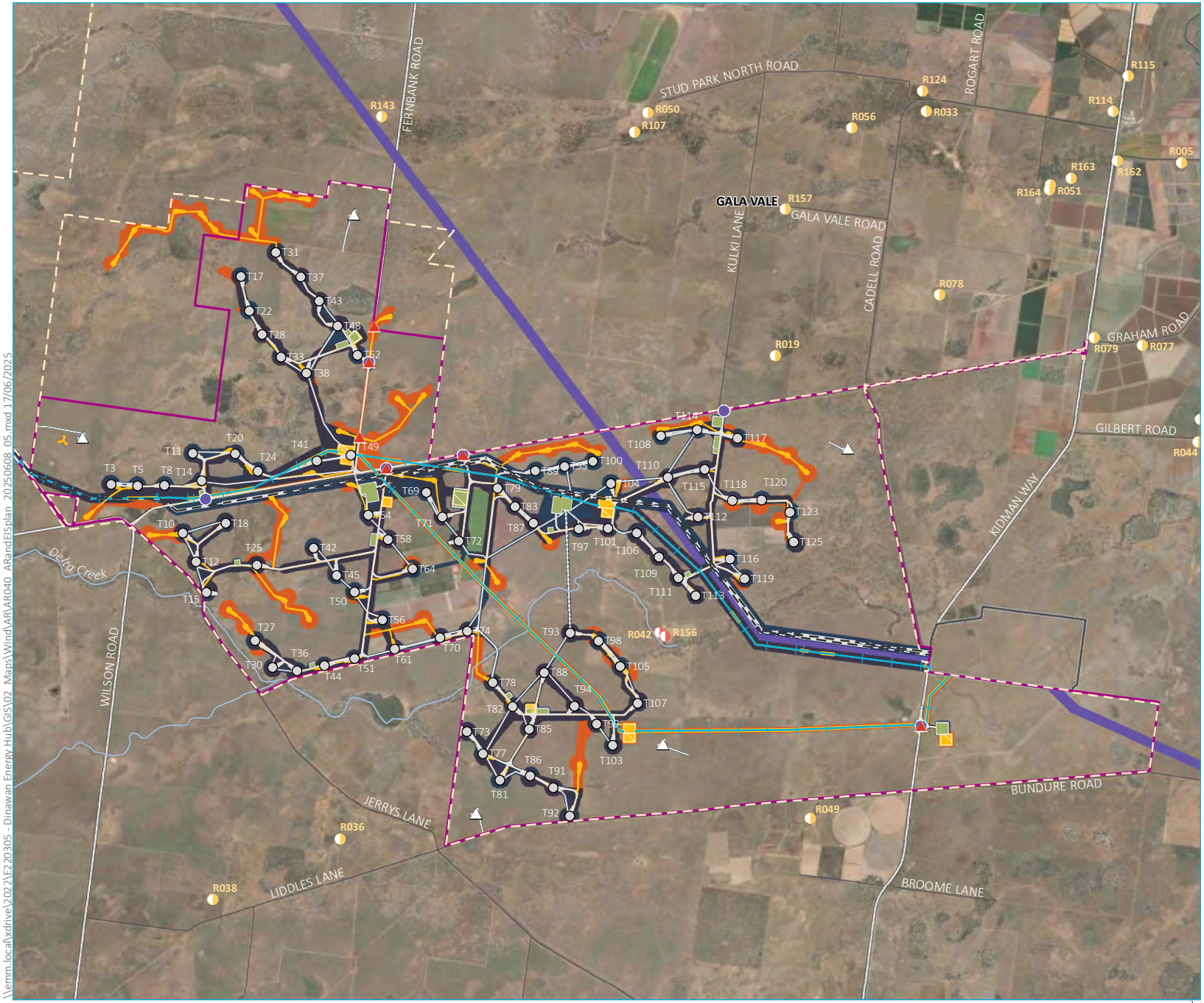

KEY

Amendment infrastructure
- Amended project area
- Amended development corridor
- Amended development footprint
- Amended ancillary infrastructure
- Amended transmission line
- Amended met mast
- Amended site access point
- Amended wind turbine generator (WTG)

EIS infrastructure
- EIS project area
- EIS development corridor
- EIS development footprint
- EIS ancillary infrastructure
- EIS transmission line
- EIS site access point

Residence
- Associated
- Non-associated

Project EnergyConnect (Transgrid)
- Transmission line
- Dinawan Substation

Existing environment
- Major road
- Minor road
- Watercourse (third order and higher)

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

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GDA2020 MGA Zone 55

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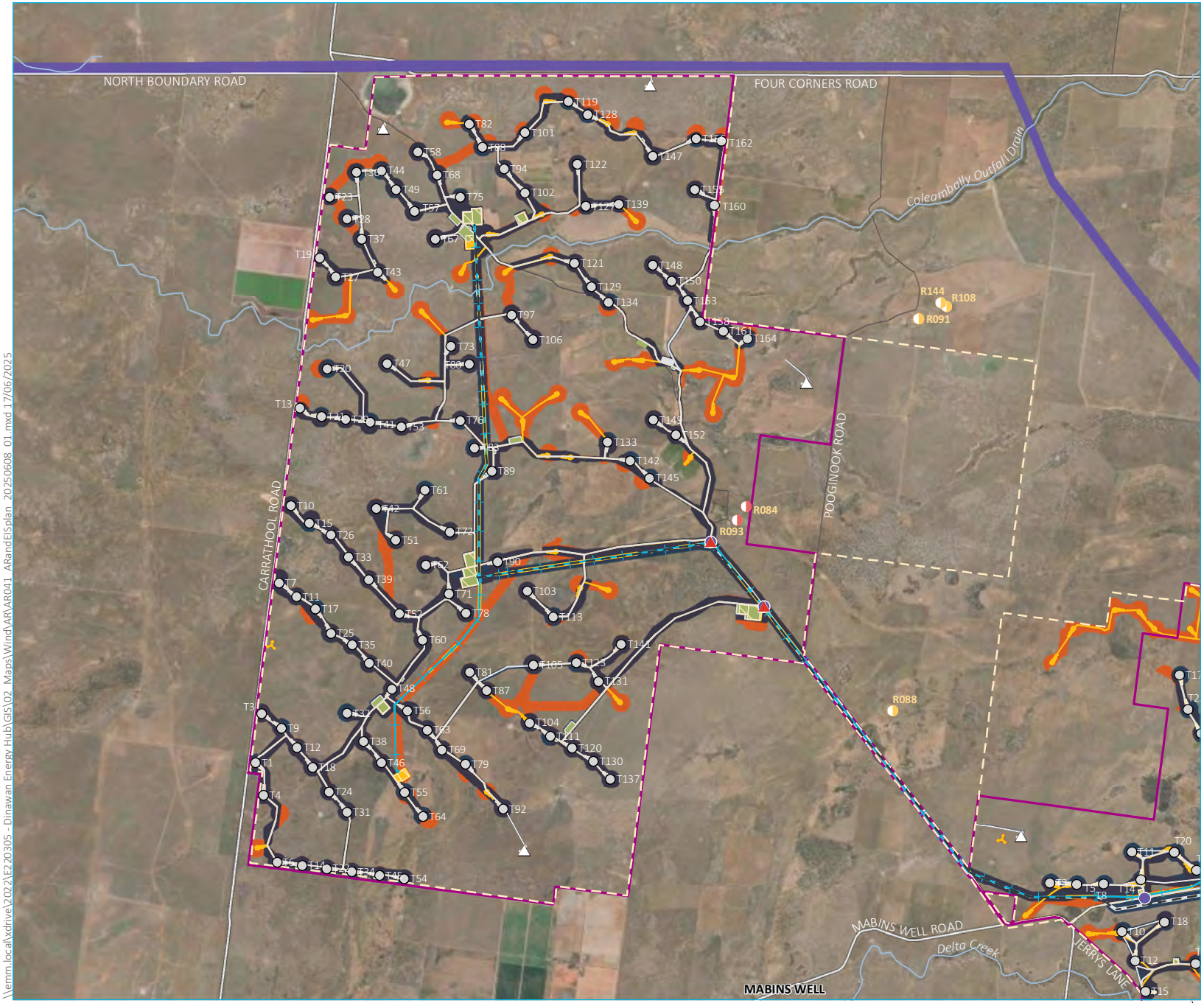
Comparison between EIS and amended project layouts

Dinawan Wind Farm
Amendment Report
Figure 1.4a

EMM creating opportunities



KEY

Amendment infrastructure
- Amended project area
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EIS infrastructure
- EIS project area
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- EIS ancillary infrastructure
- EIS transmission line
- EIS site access point

Residence
- Associated
- Non-associated

Project EnergyConnect (Transgrid)
- Transmission line
- Dinawan Substation

Existing environment
- Major road
- Minor road
- Watercourse (third order and higher)

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 5 10 km

GDA2020 MGA Zone 55

N

Comparison between EIS and amended project layouts

Dinawan Wind Farm
Amendment Report
Figure 1.4b

EMM creating opportunities

1.4 The applicant

The applicant is Dinawan Energy Hub Pty Ltd as trustee for Dinawan Energy Hub Trust, a wholly owned subsidiary of Spark Renewables.

Spark Renewables is a leading developer, long-term owner, and operator of Australian renewable energy projects. The company's portfolio comprises the Bomen Solar Farm, operational since 2020, and a number of projects in the development phase. Spark Renewables is currently developing more than 7 GW of solar, wind, and renewable storage projects across the National Electricity Market (NEM), including the Dinawan Energy Hub, Mallee Wind Farm, Mallee Solar Farm and Wattle Creek Solar Farm, within NSW. Dinawan Energy Hub Pty Ltd's details are provided in Table 1.1.

Spark Renewables is a wholly owned business within Tenaga Nasional Berhad (TNB), which is the largest electricity utility in Malaysia and also the largest publicly-listed power company in south-east Asia. With the core business of providing electricity to businesses, homes and industries, TNB's activities encompass the entire electricity production and supply value chain.

In recent years, TNB has embarked on a sustainability agenda, highlighting its commitment to decarbonisation and renewable energy initiatives. TNB strives to fulfill its commitments as outlined in its Net Zero 2050 Aspiration Plan to attain both net-zero emissions and a coal-free energy portfolio by 2050, as well as implementing other environmental and social initiatives adding value to all stakeholders and the global community.

Table 1.1 Applicant details

Company name	Dinawan Energy Hub Pty Ltd
Contact	Julian Kasby
ACN	646 054 524
Address	Level 4, 1A Rialto Lane Manly NSW 2095 Australia

1.5 Terminology

The following terms are used throughout this report:

- **Amended project:** The amended project is the Dinawan Wind Farm, as described in this amendment report, which includes the installation, operation, maintenance and decommissioning of up to 200 WTGs, and associated infrastructure. References to the project generally refer to the amended project, unless stated otherwise.

- **Amendments:** The amendments generally refer to the aspects of the project that have changed between the project as presented in the EIS (i.e. the EIS project) and the amended project.

- **Project area**: References to the project area generally refer to the amended project area, unless stated otherwise. The project area is approximately 34,510 ha and is the maximum area considered for the amended project based on the extent of land to be developed. The project area contains the entirety of 314 land parcels (Figure A.2 in Appendix A and Appendix E) that overlap with the development footprint. There are two private landholders that own land within the project area. The project area includes parts of Goolgumbla Road, Wilson Road, Fernbank Road, McLennons Bore Road and Kidman Way (including the road easement) and Coleambally Outfall Drain. The project area has reduced in size as part of this amendment report.

- **Development corridor:** References to the development corridor generally refer to the amended development corridor, unless stated otherwise. The development corridor is an outer envelope within which project components may be placed, providing the necessary flexibility for component placement during detailed design (i.e. micro-siting). The development corridor has been reduced from approximately 7,256 ha to approximately 6,383 ha. Approval is sought for disturbance equal to the extent of the development footprint (1,095 ha), which will be wholly within the development corridor. The development corridor has been refined based on the results of environmental surveys, including biodiversity and Aboriginal cultural heritage surveys, and with consideration of community and regulatory stakeholder feedback.

- **Development footprint:** References to the development footprint generally refer to the amended development footprint, unless stated otherwise. The development footprint has been reduced from approximately 1,339 ha to approximately 1,095 ha. Total ground disturbance will not exceed 1,095 ha. The development footprint is the indicative extent of the project's actual ground disturbance, including earthworks, associated with permanent infrastructure and temporary construction facilities. The development footprint will be within the development corridor; the exact location will be confirmed following detailed design. The development footprint has been optimised to avoid and minimise impacts where possible based on the outcomes of the technical assessments and stakeholder engagement.

- **Haulage route road upgrades:** Disturbance areas have been defined at the Newell Highway/Kidman Way (Bundure), Eunony Bridge Road/Sturt Highway (East Wagga Wagga), Olympic Highway (Moorong Street)/Sturt Highway (Wagga Wagga) and Byrnes Road/West Bomen Road (Bomen) intersections to facilitate minor intersection upgrade works to support the delivery of heavy vehicles requiring escort (i.e. OSOM loads). These are located outside the project area, but have been assessed as part of the amended project.

- **Site access points**: Locations where traffic will access the project from the public road network. Access within the development footprint will be via internal tracks.

- **Associated residence:** A dwelling whose owners have parts of their property included in a land agreement with Spark Renewables for the project (i.e. host landholder dwellings).

- **Non-associated residence**: A dwelling whose owners do not have parts of their property included in a land agreement with Spark Renewables for the project.

2 Strategic context

2.1 Project need and objectives

The project will have the capacity to generate up to 1,200 MW (AC) of renewable energy, playing an important role in the transition to a clean and efficient national electricity system. The project construction and operation will also contribute to the long-term economic prosperity of the host region.

Spark Renewables has successfully secured access rights for the Dinawan Energy Hub through the South West REZ access tendering process, being one of four projects to be awarded connection to the South West REZ transmission network. While the amended project has a total capacity of up to 1,200 MW, capacity will be scaled to meet the capacity awarded to the Dinawan Energy Hub through the South West REZ access tendering process.

The amendments will not change the need for the project or its objectives, and therefore, the strategic context presented within the EIS remains valid.

The following sections provide a summary of the objectives relevant to the strategic objectives of the project. Additional detail can be found in the EIS.

2.2 Ecologically sustainable development

2.2.1 National electricity demand

Significant growth in energy demand is anticipated as Australia progresses towards becoming a decarbonised society, largely driven by the electrification of industries which have traditionally relied on other sources of energy. This is made clear in the Australian Energy Market Operator's (AEMO) *2024 Integrated System Plan* (AEMO 2024), which forecasts that energy consumption from the NEM will rise by approximately 108% by 2050.

The Dinawan Energy Hub has been awarded access to the South West REZ transmission network, and the project will connect to the NEM via the Dinawan Substation, which is currently under construction as part of Project EnergyConnect. This will allow it to contribute low-cost generation through the wind farm. Construction of the project could alleviate the need for additional infrastructure in the South West REZ to bolster system strength and resilience.

2.2.2 Climate change policy

The Commonwealth and all NEM state governments have committed to a net zero emission economy by 2050 or sooner (AEMO 2024). The project will support this transition by contributing to the target of 82% of NEM generation supplied from renewable sources by 2030.

The project will help achieve the objectives of the Commonwealth Government's Large Scale Renewable Energy Target (LRET), Paris Agreement targets and the NSW Government's Net Zero Plan and Energy Roadmap legislation.

2.2.3 Regional economic stimulus

As described in Section 6.12.3, the project will provide economic opportunities including:

- ongoing economic benefits for both the local economy within the Murrumbidgee and Edward River LGAs, and the regional economy within the Riverina more broadly, including:
  - demand for local and regional materials, equipment and services
  - industry capability development

- a community benefit sharing program delivered in partnership with Murrumbidgee Council and Edward River Council through a Voluntary Planning Agreement (VPA) (refer Section 5.3)
- community initiatives funded by the project's South West REZ Access fee

- employment opportunities during construction and operation.

2.2.4 Strategic planning framework

An outline of how the project will contribute to achieving the objectives of international, national, state, regional and local government policies, plans and strategies is provided in Chapter 2 of the EIS. The project's strategic planning framework is largely unchanged by the amendments, and as such, the summary included in the EIS remains applicable to the amended project.

It is acknowledged that the *Wind Energy Guideline* (DPHI 2024a) was published as part of the Renewable Energy Planning Framework by DPHI in November 2024, which provides updated guidance on onshore wind energy projects. However, in accordance with *Renewable Energy Planning Framework – Transitional Arrangements* (DPHI 2024b), the framework does not apply to projects that lodged an EIS prior to 12 November 2024. Therefore, the *Wind Energy Guideline* (DPE 2016a) remains the relevant guidance for the project.

2.3 Site selection and justification

The project area is ideally located for the development of a wind farm for the following key reasons:

- **Location with the South West REZ** – the project area is in a REZ formally declared for significant investment in renewable electricity generation, storage and transmission projects. Additionally, the project forms part of Dinawan Energy Hub, which has been granted access rights in the South West REZ.

- **Proximity to approved transmission infrastructure** – the project area is adjacent to Project EnergyConnect's Dinawan Substation, which will export the electricity generated by the project directly into the grid.

- **Proximity to major transport networks** – the project will be accessed from Kidman Way via short local road connections. Kidman Way is an approved B-Double route, with access to the Sturt and Newell highways. Local roads including McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road will be used to access the project from Kidman Way.

- **Few surrounding receptors** – the land surrounding the project area is sparsely populated. There are 23 non-associated residences within 8 kilometres (km) of a WTG. There are no non-associated residences within 2 km of a WTG.

- **Strong wind resource** – the project area is relatively flat and has a very good wind resource that peaks overnight.

- **Compatible surrounding land use** – the existing agricultural land use within and surrounding the project area is compatible with a large-scale wind farm, and agriculture will continue within the project area throughout wind farm operation.

- **Ability to avoid and minimise impacts** – Spark Renewables has maximised the avoidance of potential environmental impacts. This has included limiting the project infrastructure footprint to the minimum required, avoiding higher value vegetation clearance where practicable, maximising the use of previously disturbed land, protecting significant heritage values where practicable, and minimising impacts on neighbouring (non-associated) landholders.

The project has been designed to avoid (wherever possible), and minimise, environmental, community and landholder impacts, as discussed further in Section 2.5.

2.4 Key features of the project area and surrounds

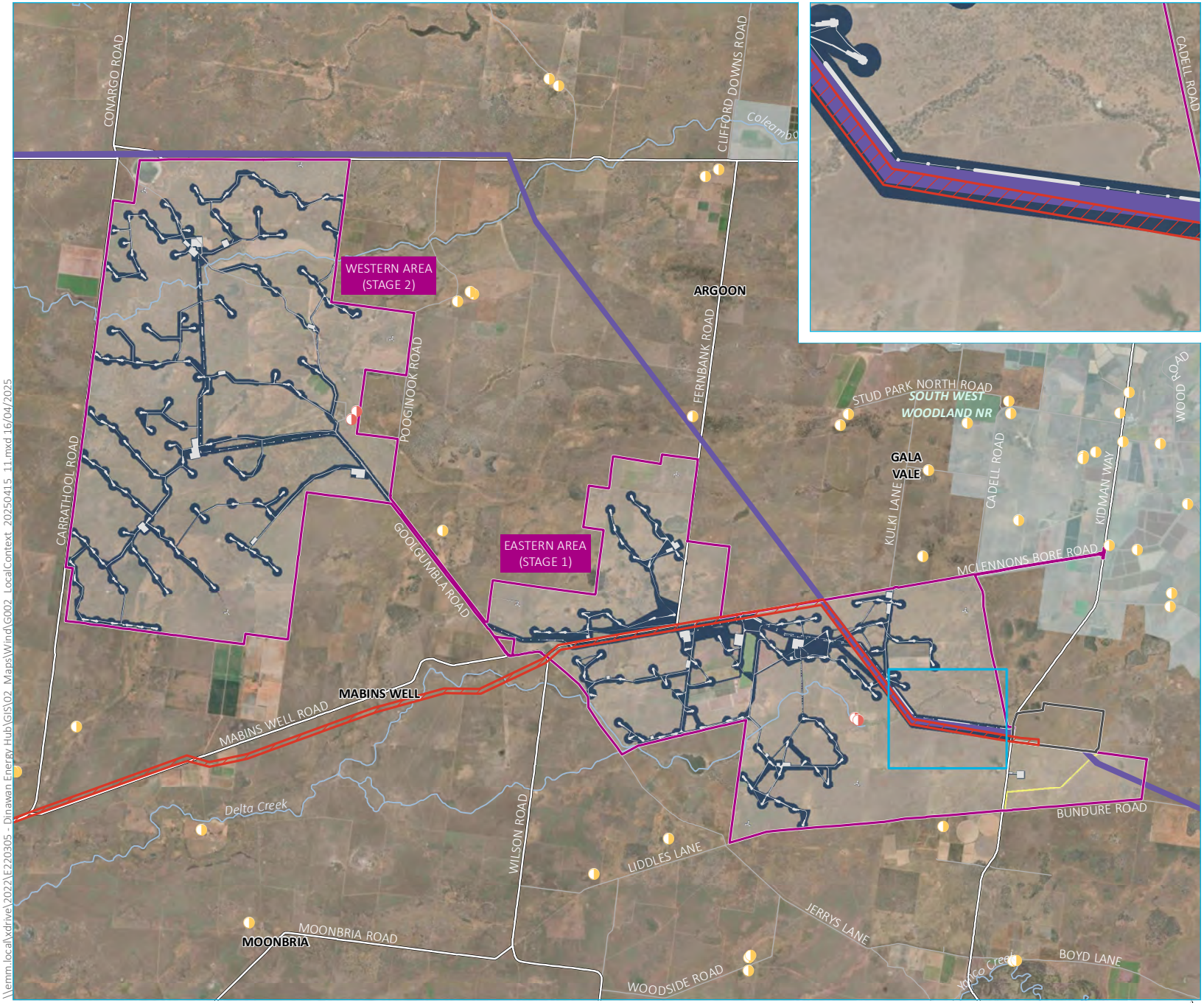
Key features of the project area and surrounds are summarised in Table 2.1 and the local context is shown in Figure 2.1.

Table 2.1 Key features of the project area and surrounds

Aspect	Description
Local government area	The project area is within the Murrumbidgee LGA and Edward River LGA.
Land zoning	The project area is zoned RU1 Primary Production under the *Jerilderie Local Environmental Plan 2012* (Jerilderie LEP) and *Conargo Local Environmental Plan 2013* (Conargo LEP). Kidman Way is zoned SP2 – Infrastructure (Classified Road) under the Jerilderie LEP where it passes through the project area. The objectives of the RU1 zone are to: • encourage sustainable primary industry production by maintaining and enhancing the natural resource base • encourage diversity in primary industry enterprises and systems appropriate for the area • minimise the fragmentation and alienation of resource lands • minimise conflict between land uses within this zone and land uses within adjoining zones. The project is generally consistent with the land use objectives of the RU1 zone. The project will not preclude the ongoing use of the development corridor for primary industry production. The project has been developed with the host landholders to ensure that agricultural land uses can continue during construction, operation and following decommissioning, and do not fragment agricultural resources. An assessment of potential land use conflicts has been completed in Appendix E.8 of the EIS. The objectives of the SP2 – Infrastructure (Classified Road) are to: • provide for infrastructure and related uses • prevent development that is not compatible with or that may detract from the provision of infrastructure. Project-related road upgrades will be undertaken in this zone. The project is consistent with the objectives of the SP2 zone.
Nearby townships	Coleambally (population of 1,152) and Jerilderie (population of 922) are within approximately 30 km of the project area.
Major population centres	Griffith (85 km north) and Wagga Wagga (135 km east) are the closest major population centres to the project area.
Landscape	The landscape within and surrounding the project area is largely flat with some minor drainage depressions that hold water during rainfall and flooding.
Land use	Land within and surrounding the project area is used for agriculture. The land within the project area is predominantly used for sheep and cattle grazing.
Site history	The project area is on the traditional lands of the Wiradjuri people and several smaller nations of the Murrumbidgee plains. The project area forms part of pastoral stations established following European settlement in the area from around the 1850s. In particular, the project area is closely associated with Yanko Station and later the Goolgumbla property.
Land ownership	There are six relevant landowners for the project area: • two private landholders who own the majority of land parcels within the project area • Coleambally Irrigation Co-operative Limited (CICL) who owns the Coleambally Irrigation Channel which runs through the project area east of Kidman Way and manages the Coleambally Outfall Drain which runs through the north-western corner of the project area • Murrumbidgee Council who is the relevant road authority for the public road network land in the Murrumbidgee LGA (i.e. Kidman Way, McLennons Bore Road, Fernbank Road and Wilson Road)

Aspect	Description
	• Edward River Council who is the relevant road authority for the public road network land in the Edward River LGA (i.e. Goolgumbla Road) • NSW Government which owns parcels of Crown land (including travelling stock reserves) within the project area. There are three relevant landowners for haulage route road upgrades: • Murrumbidgee Council who is the relevant road authority for the public road network land in the Murrumbidgee LGA, including the Kidman Way/Newell Highway intersection • Wagga Wagga Council who is the relevant road authority for the public road network land in the Wagga Wagga LGA, including the Eunony Bridge Road/Sturt Highway, Olympic Highway (Moorong Street)/Sturt Highway and Byrnes Road/West Bomen Road intersections • the owner of Lot 21 of DP 1122318, which is adjacent to the Sturt Highway at the Eunony Bridge Road/Sturt Highway intersection.
Residences	There are 23 non-associated residences within 8 km of a WTG location: • no non-associated residences within 2 km of a WTG • 2 non-associated residences within 3.75 km of a WTG (reduced from 4 in the EIS) • 10 non-associated residences between 3.75 km and 5.5 km of a WTG • 11 non-associated residences between 5.5 km and 8 km of a WTG.
Nearby natural features	Coleambally Outfall Drain runs through the north-west of the project area. Delta Creek is a third order stream that runs through the south-east of the project area. The largest nearby watercourse is Yanco Creek, approximately 6 km south of the project area, which flows south-west toward the Murray River. Minor segments of Bublebundie Creek and Blind Creek are in the north-west corner of the project area. There are several other ephemeral first and second order watercourses within the project area which drain to Delta Creek. The nearest national parks, nature reserves and state forest areas are: • Oolambeyan National Park, approximately 11 km north-west • South-West Woodland Nature Reserves, comprising of: – Edgar and Puckawidgee precincts, approximately 10 km to the south-west – Kulki precinct, approximately 6 km to the north • Murrumbidgee Valley National Park, approximately 30 km to the north-east • Bretts State Forest, approximately 24 km to the north-east.
Nearby infrastructure	Key transport infrastructure in the vicinity of the project area includes the following: • Kidman Way, a sealed regional road that intersects the project area. It runs from the Newell Highway at its southern extent, north towards Griffith. • Newell Highway, which intersects with Kidman Way approximately 19 km south of the project area and connects the region to major population centres across NSW, as well as Queensland and Victoria. • Sturt Highway, which intersects with Kidman Way, approximately 43 km north of the project area, and connects the region to major population centres in NSW, Victoria and South Australia. • Fernbank Road, McLennons Bore Road, Goolgumbla Road and Pooginook Road are unsealed roads within the project area. • Local roads in the vicinity of the project area include Bundure Road, Liddles Lane, Cadell Road, Jerrys Lane and Mabins Well Road. Cadell Road is a sealed road, while Bundure Road, Liddles Lane, Jerrys Lane and Mabins Well Road are unsealed and service local traffic only. Coleambally irrigation channel runs through the south-eastern portion of the project area, east of Kidman Way. Coleambally Outfall Drain runs through the north-western portion of the project area. Both irrigation channels deliver water to irrigated properties within the Coleambally irrigation area. Project EnergyConnect's Dinawan Substation and transmission line (SSI-9172452) are currently under construction immediately adjacent to the project area.
Surrounding development	The project area is within the South West REZ. Renewable energy and transmission developments (approved, proposed and operational) within close proximity to the project are shown on Figure 1.1.

Aspect	Description
Planning context	The project area does not contain any land identified as: • biophysical strategic agricultural land (BSAL) • flood planning area. Parts of the project area that reside in Edward River Council are identified as category 3 bushfire prone land. The eastern portion of the project area in Murrumbidgee Council is not currently mapped as bushfire prone. Murrumbidgee Council has confirmed that most of the project area is identified as bushfire prone in their draft bushfire prone land map (to be certified by the Commissioner of the NSW Rural Fire Service(RFS)). Parts of the project area are mapped as 'environmentally sensitive – biodiversity', 'environmentally sensitive – wetland' and 'environmentally sensitive – groundwater vulnerable' on the Jerilderie and Conargo LEPs. There are parcels of Crown land (including travelling stock reserves) within the project area (Figure 2.3 of the EIS).
Mining leases	No mining tenements within the project area were identified in a search of MinView. The closest is Exploration Lease (EL) 9366, approximately 25 km east of the project area.
Key risks or hazards for the project	Key risks and hazards considered include: • Flooding – a flooding assessment has been completed (Section 6.7 and Appendix E.7 of the EIS) to inform project design refinement to ensure that flood risks including frequency of occurrence, flood depth and flow velocity within and surrounding the development corridor are adequately considered in project design. • Hazards – parts of the project area within Edward River Council are mapped as bushfire prone land. A bushfire assessment has been completed for the project and updated for the amended project (Appendix D.7). A preliminary site investigation (PSI) was completed for the project (Appendix D.6) and identified that there is low potential for widespread contamination being present within the project area at concentrations which may present a significant risk of harm to human health or ecological receptors. No other mapped hazards were identified within the development corridor, including steep slopes, land subject to mine subsidence or other hazards. A hazard and risk assessment (Appendix E.13 of the EIS), telecommunications impact assessment (Appendix D.10 of this report), human health assessment (Appendix D.11 of this report) and aviation impact assessment (Appendix D.9 of this report) have been completed for the project (Section 6.11).



KEY

- Project area
- Development corridor
- Development footprint
- VNI West (proposed)

Project EnergyConnect (Transgrid)

- Dinawan Substation
- Transmission line

Residence

- Associated
- Non-associated

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)
- Coleambally irrigation area
- Coleambally irrigation channel
- NPWS reserve

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

Local context

Dinawan Wind Farm
Amendment Report
Figure 2.1

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2.5 Project refinement

The development footprint, development corridor and project layout have been the subject of an iterative design process informed by the outcomes of technical assessments (including biodiversity, Aboriginal cultural heritage, water, visual amenity and noise) and outcomes of engagement with community, regulatory and other stakeholders. Throughout the refinement process, the following key principles have been adopted:

- Minimise vegetation clearing and prioritise avoidance of significant biodiversity values – the results of multiple biodiversity surveys over several seasons (2021–2025) have enabled the progressive refinement of the development corridor, avoiding areas of higher conservation value, threatened species habitat and native vegetation to the maximum practicable extent.

- Maximise use of previously disturbed land – the development corridor has been selected to maximise the use of land previously modified by agricultural operations (including cleared areas), established access tracks and local roads.

- Avoid impacts to significant Aboriginal cultural and historical heritage values – areas of high archaeological sensitivity and Aboriginal and historical sites identified during fieldwork have been avoided through refinements to the development corridor to the maximum practicable extent.

- Avoid impacts to other developments – including:

    - VNI West, a proposed Critical State Significant Infrastructure (CSSI) project, by amending the project layout (including relocating and/or removing WTGs) to accommodate a transmission line easement through the project area

    - Yanco Delta Wind Farm, an approved SSD project, by amending the project layout to avoid potential interactions between the project's OSOM vehicle deliveries and approved locations for transmission line towers within the public road reserve for McLennons Bore Road.

- Minimise direct and indirect impacts on neighbouring landholders – setbacks to nearby residences and adjoining properties have been introduced and key infrastructure (including WTGs, permanent meteorological monitoring masts, substations and accommodation facilities) has been located at least 2 km from the closest non-associated residence.

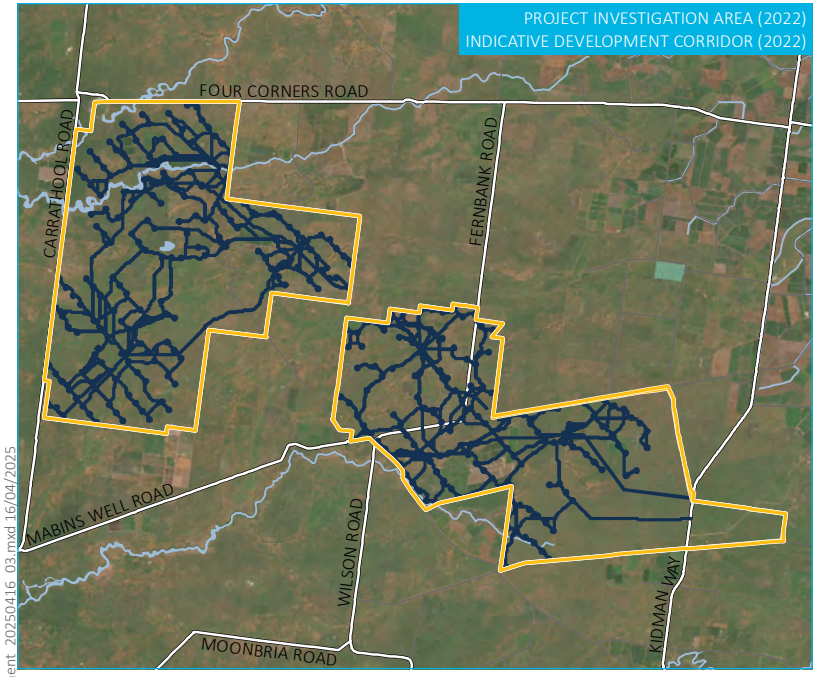
- An ongoing flexible approach to design, with continual refinement of the development corridor during the preparation of the EIS and this report, in response to identified environmental constraints.

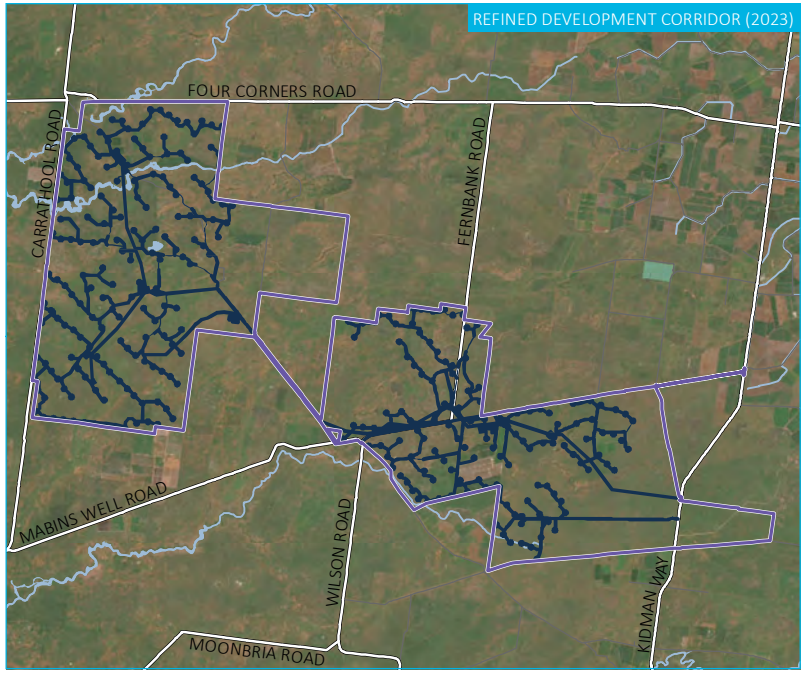
The evolution of the project layout from a broad investigation area through to the amended development corridor and amended development footprint is described in Table 2.2 and shown on Figure 2.2.

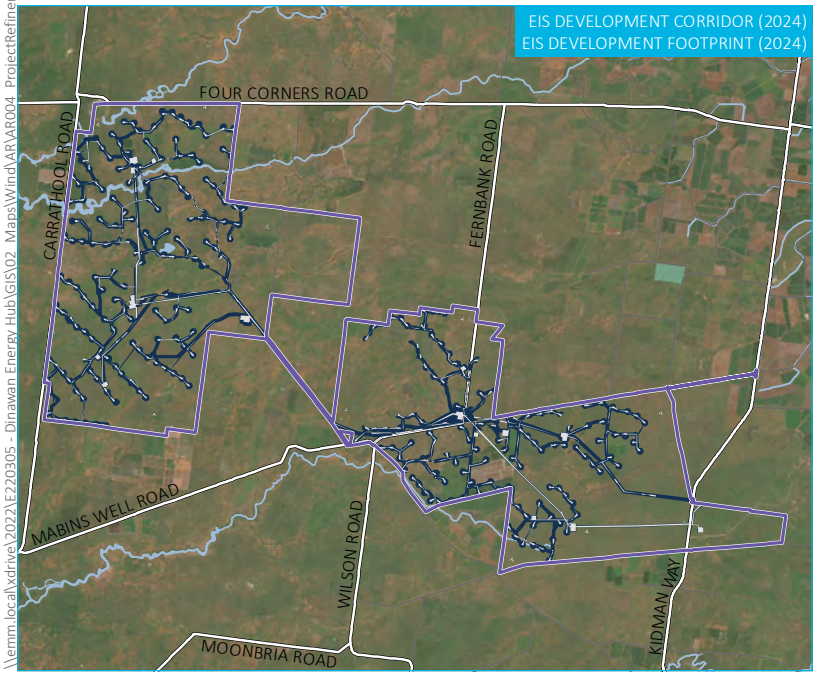
Table 2.2 Refinement in project layouts

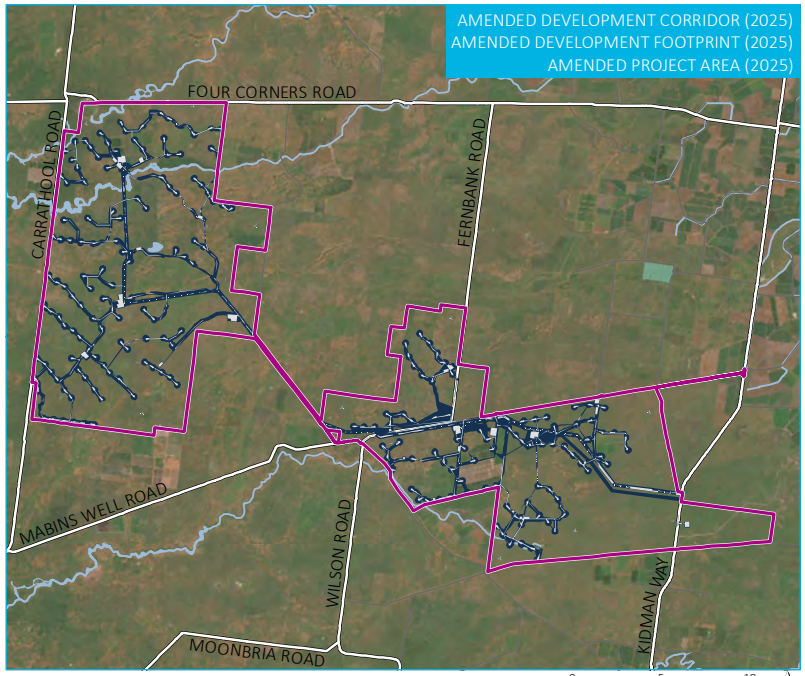
Footprint	Area (ha)	Key considerations informing refinements
Project investigation area (2022)	39,000 ha	• Proximity to Project EnergyConnect's Dinawan Substation • Strong wind resource • Strong solar resource to allow co-location with Dinawan Solar Project • Favourable topography and compatible surrounding land use • Access to local and regional road network • Few surrounding receptors • Minimal number of landholders • Setbacks from National Parks and other known protected areas, certified aerodromes, existing and planned transmission infrastructure and regional road corridors
Indicative development corridor (2022)	10,300 ha	The indicative development corridor presented in the *Dinawan Wind Farm Scoping Report* (EMM 2022) avoided the following key constraints to the extent practicable: • WTG placement in areas of high archaeological sensitivity that were identified during preliminary archaeological investigations • areas of higher biodiversity value, including mapped wetlands and higher condition plant community types (PCTs) • mapped important habitat for Plains Wanderer • WTG placement in PCTs dominated by Black Box and White Cypress Pine woodland • areas directly adjacent to Oolambeyan National Park (including a 11 km setback to the closest WTG) • areas directly adjacent to Kidman Way (including a 3.3 km setback to the closest WTG) • agricultural land mapped as land and soil capability (LSC) class 3.
Refined development corridor (2023)	7,956 ha	The development corridor continued to be refined and optimised to consider outcomes of ongoing environmental investigations, including: • seasonal biodiversity surveys throughout 2022 and 2023 • Aboriginal heritage field surveys and test excavations • historical heritage field surveys and research • flood modelling and consideration of flood risks and infrastructure placement • preliminary visual assessments from public and private viewpoints • preliminary telecommunications assessments (including potential for project infrastructure to interact with point-to-point microwave links). Refinements included optimisation of the locations and number of WTGs and permanent meteorological masts, as well as the network of access tracks and electrical reticulation between WTGs, collector substations and Dinawan Substation. Locations for temporary accommodation facilities were also identified on-site and included consideration of setbacks to neighbouring residences.
EIS development corridor EIS development footprint (2024)	7,256 ha 1,339 ha	The EIS development corridor and EIS development footprint: • prioritised avoidance of the highest biodiversity values including the highest vegetation integrity score threatened ecological communities (TECs), threatened flora such as Silky Swainsona-pea and Slender Darling Pea, large bird nests, important mapped habitat areas for Plains Wanderer and hollow-bearing trees • incorporated avoidance of impacts to 15 Aboriginal cultural heritage sites • maximised setback distances of WTGs at least 2 km from non-associated residences and collector substations and switchyard infrastructure at least 4 km from non-associated residences.

Footprint	Area (ha)	Key considerations informing refinements
Amended development corridor	6,383 ha	The amended development corridor and amended development footprint: • incorporated feedback from Transgrid (as proponents for VNI West) and Origin Energy (as proponents for Yanco Delta Wind Farm) • incorporated improvements to the efficiency of the project's electrical collection system • increased setback distances from nearby non-associated residences to WTGs, with two non-associated residences within 3.75 km of a WTG • incorporated avoidance of 196.76 ha of native vegetation, including: – reducing impacts to State listed TECs from 604.7 ha to 507.04 ha (16% reduction) – reducing impacts to Commonwealth listed TECs from 264.9 ha to 205.6 ha (22% reduction) • incorporated avoidance of impacts to 25 Aboriginal cultural heritage sites.
Amended development footprint (2025)	1,095 ha	









KEY

- Amended project area
- EIS project area
- Project investigation area
- Development corridor
- Development footprint

Existing environment

- Major road
- Minor road
- Named watercourse
- Named waterbody
- NPWS reserve

0 5 10 km

GDA2020 MGA Zone 55

N

Source: EMM (2025); Spark Renewables (2025); DCSSS (2023); ESRI (2025)

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Key steps in project refinement

Dinawan Wind Farm
Amendment Report
Figure 2.2

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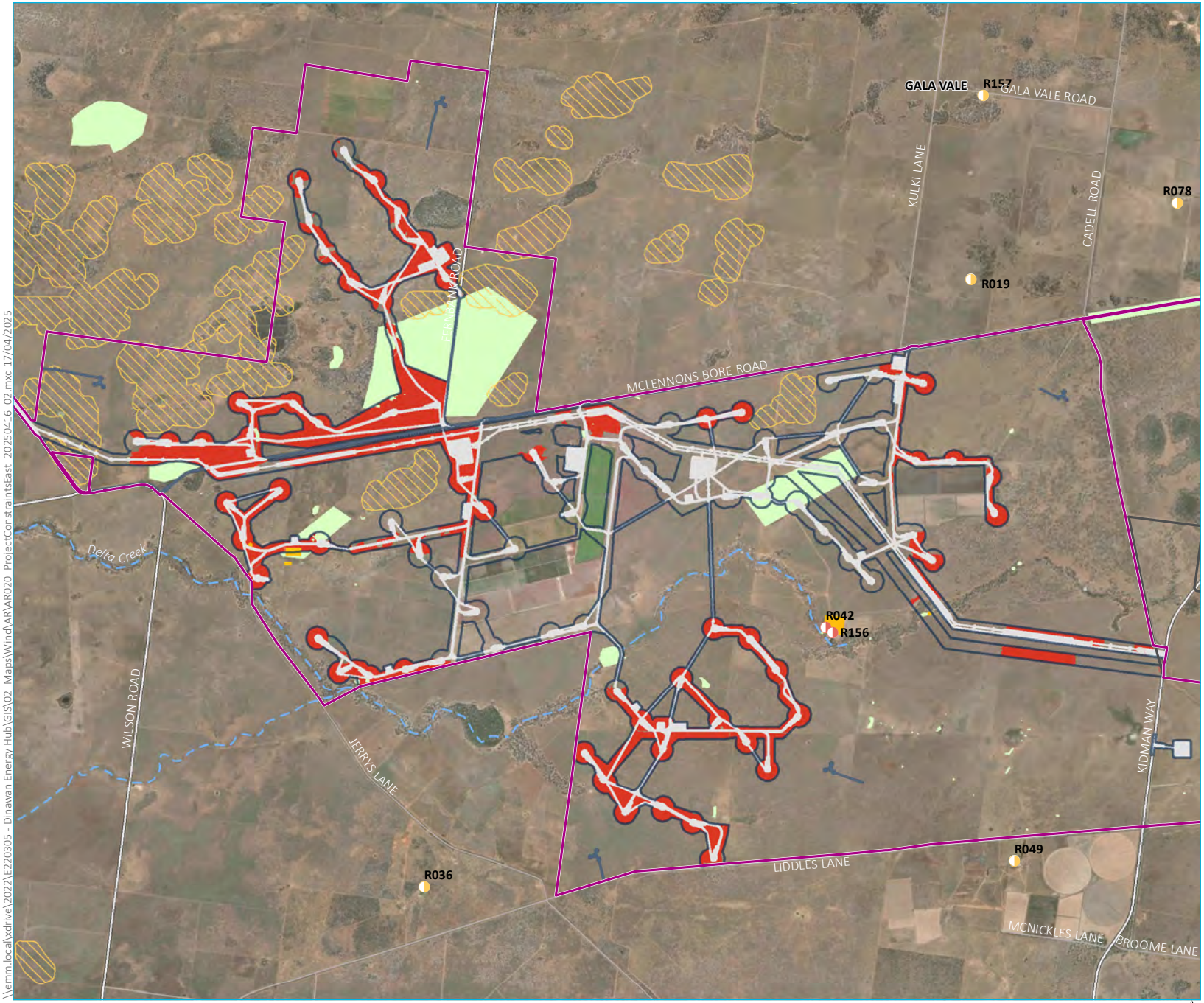
A summary of the key environmental constraints considered as part of the refinement process and selection of the development corridor and footprint is provided in Table 2.3 and shown on Figure 2.3.

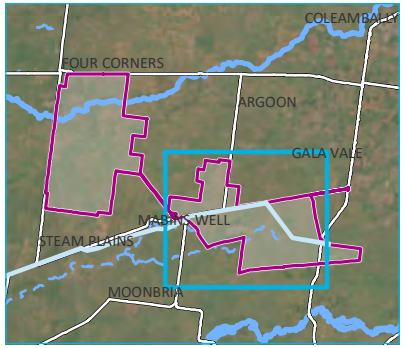
Table 2.3 Key considerations during project refinement

Aspect	Key considerations
Landscape and visual	Avoidance of vegetation clearing where possible to maintain existing levels of visual screening provided by vegetation. Incorporation of setbacks from potential viewpoints including placement of WTGs at least 2 km from non-associated residences and placement of substation and switchyard infrastructure at least 4 km from non-associated residences. The amended project layout has decreased the number of non-associated residences within 3.75 km of a WTG from four to two. The amended project has reduced the tip height of the WTGs from 280 m to 250 m. A detailed assessment for the closest non-associated residence (R019) has reduced the visual impact rating at R019 from high to low and removed the requirement for visual screening (i.e. tree planting).
Noise and vibration	Maximising setback distances of WTGs (>2 km) and collector substations (>4 km) from non-associated residences. Selecting a WTG model with serrated trailing edges to reduce trailing edge noise.
Biodiversity	As a result of identified biodiversity constraints and subsequent design refinements, 214 WTGs were relocated during the preparation of the EIS to avoid and minimise biodiversity impacts (i.e. approximately 80% of the assessed WTG locations within the development footprint). The amended project has removed 67 WTG locations, reducing the total number of assessed WTG locations to 200. Although impacts to native vegetation, threatened species habitat and TECs will occur, project refinements have avoided or minimised impacts to the areas with the highest biodiversity values. Key avoidance and minimisation of impact measures for the EIS and amended project include: • prioritising avoidance of impacts to PCT 26 (intact), which has the highest vegetation integrity score and is an EPBC Act listed TEC, and is known habitat for Painted Honeyeater and Grey-crowned Babbler • minimising disturbance through preferential use of existing access tracks and public roads for site access and transmission line easements and co-locating access tracks with electrical cabling and transmission line easements • minimising removal of habitat trees for threatened species, including Superb Parrot and Corben's Long-eared Bat • avoidance of direct impacts to important mapped habitat areas for Plains Wanderer to the extent possible and avoiding impacts to a known Plains Wanderer record • removing and/or relocating WTGs away from large bird nests observed during surveys • siting WTGs at least 200 m away from PCT 13, PCT 15, PCT 10 and PCT 28 to the extent possible • avoidance of approximately 85% of hollow-bearing trees recorded within the development corridor • avoidance and minimisation of impacts to large patches of Silky Swainsona-pea and Slender Darling Pea • removing 67 WTGs from the EIS development footprint, including removing 26 WTGs with a 'high' collision risk and all WTGs with a 'very high' collision risk • reducing the rotor swept area • reducing impacts to TECs listed under the BC Act from 604.7 ha to 507.04 ha (16% reduction) as part of the amended project • reducing impacts to TECs listed under the EPBC Act from 264.9 ha to 205.6 ha (22% reduction) as part of the amended project • removing and/or relocating WTGs from areas of PCT 26 (intact) where vulnerable listed Painted Honeyeaters were recorded and vulnerable listed Grey-crowned Babblers were nesting.

Aspect	Key considerations
Aboriginal cultural heritage	Avoidance of Aboriginal Heritage Information Management Information System (AHIMS) listed sites to the extent practicable. Maximising avoidance of areas of higher archaeological potential including identified aeolian, paleochannels, and watercourses features; and the eastern fringes of Gilgai and ephemeral wetlands. This is most noticeable in the western area, where sand dunes and/or sandy soil profiles have been predicted and/or observed. Avoidance of impacts to 25 cultural heritage sites (including two sites considered of high cultural value), including hearths, occupation areas and culturally modified trees. This equates to approximately 57% of the identified cultural assemblage being unharmed. Substation, switchyard and transmission line options in the western area underwent significant refinements and redesign to avoid DEHW-CS1, a source-bordering dune that was identified as being of high scientific and cultural significance by project archaeologists and registered Aboriginal parties (RAPs). The nine occupation areas identified as part of the Aboriginal cultural heritage assessment (ACHA) encompass an area of approximately 896 ha. When compared to the EIS, amendments to the development corridor and development footprint have further reduced the level of potential impact in these occupation areas from 34.7% to 23.7% and 6.3% to 2.8%, respectively.
Historical heritage	Avoidance of impacts to sites identified during research and field assessments as part of the preparation of the Statement of Heritage Impact, including late nineteenth and early twentieth century pastoral and agricultural sites.
Transport	Consideration of proximity to, and capacity of, the local and regional road network and ability to transport the necessary infrastructure to the development footprint and resource the workforce demand during construction. Design of construction traffic routes to minimise vehicle movements on the public road network to the extent practicable (including the removal of project-related traffic from Cadell Road). The use of on-site accommodation facilities for up to 75% of the project's peak construction workforce to reduce the number of daily vehicles travelling to and from site on the local and regional road network.
Water resources	The development footprint has been designed to minimise impacts on watercourses, where possible. Flood modelling outputs resulted in refinements being applied to the extent of the development footprint and placement of project infrastructure based on modelled inundation of greater than 50 cm under the 1% annual exceedance probability (AEP) event.
Land use	Spark Renewables has designed the project to minimise impacts on agricultural land, wherever possible. In addition, as part of the land use conflict risk assessment (LUCRA), impacts to neighbouring agricultural operations have also been considered.
Hazards and risks	Setbacks to residences have been introduced to reduce blade throw risk, with WTGs a minimum of 2 km from the closest non-associated residence.
Socio-economic	The capacity of regional cities and towns including Griffith, as well as Coleambally and Jerilderie and subsequent availability of local businesses, services and a local labour force have been considered. A key refinement based on the social impact assessment was the inclusion of an accommodation facility to minimise impacts on local housing availability and short-term accommodation providers.

Where potential impacts cannot be avoided, Spark Renewables' design principles have sought to minimise environmental impacts and/or implement mitigation measures to manage the extent and severity of any residual environmental impacts.





KEY

- Project area
- Development corridor
- Development footprint

Project EnergyConnect (Transgrid)

- Dinawan substation

Project constraints

- Historical heritage site
- Threatened ecological community (TEC)
- Aboriginal site boundaries
- Plains Wanderer – mapped important habitat

Residence

- Associated
- Non-associated

Strahler stream order (third order and higher)

- 3rd order

Existing environment

- Major road
- Minor road

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 2.5 5 km

GDA2020 MGA Zone 55

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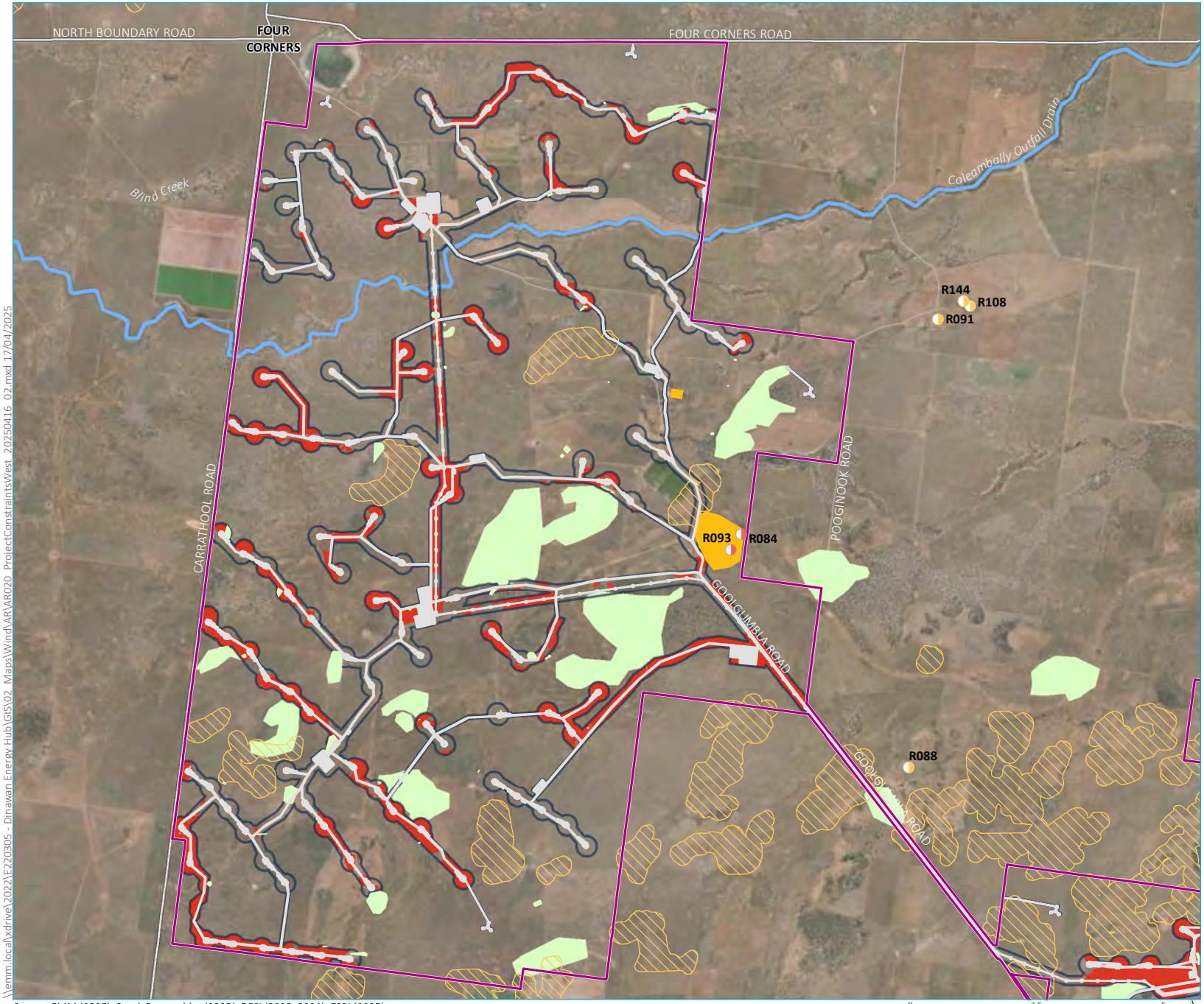
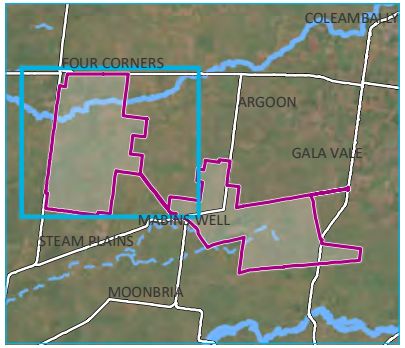
Project constraints - eastern area

Dinawan Wind Farm
Amendment Report
Figure 2.3a

EMM
creating opportunities





KEY

- Project area
- Development corridor
- Development footprint

Project constraints

- Historical heritage site
- Threatened ecological community (TEC)
- Aboriginal site boundaries
- Plains Wanderer – mapped important habitat

Residence

- Associated
- Non-associated

Strahler stream order (third order and higher)

- 9th order

Existing environment

- Major road
- Minor road

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 2.5 5 km

GDA2020 MGA Zone 55

N

Project constraints - western area

Dinawan Wind Farm
Amendment Report
Figure 2.3b

EMM
creating opportunities

3 Description of amendments

3.1 Overview

A summary of the amendments is provided in this chapter. A comparison between the project proposed in the EIS and the amended project is provided in Table 3.1 and shown on Figure 1.3.

A consolidated description of the amended project is provided in Appendix A.

Table 3.1 Proposed amendments

Aspect	Proposed in the EIS	Proposed amendments
Project area	Approximately 39,061 ha comprised of 349 land parcels.	Approximately 34,510 ha comprised of 314 land parcels (Figure A.2 in Appendix A and Appendix E). The project area has been reduced to exclude some land parcels that no longer overlap with the development footprint.
Development corridor	The development corridor (approximately 7,256 ha) is the envelope within which the project will be developed, providing the necessary flexibility for component placement during detailed design (i.e. micro-siting).	The amended development corridor is approximately 6,383 ha (a 12% decrease from what was presented in the EIS). Amendments to the development corridor generally align with the amendments to the development footprint. The amended development corridor has expanded in some areas to provide additional flexibility. For example, an overhead transmission line assessed as part of the EIS still forms part of the development corridor to provide flexibility to accommodate potential changes to VNI West's preferred alignment.
Development footprint	The development footprint (approximately 1,339 ha) is the indicative extent of the project's ground disturbance area, including earthworks, associated with permanent infrastructure and temporary construction facilities. It is approximately 18% of the development corridor area. Approval is sought for disturbance equal to the total area of the development footprint. The exact location of the development footprint will be determined during detailed design.	The amended development footprint is approximately 1,095 ha (an 18% decrease from what was presented in the EIS). Amendments to the development footprint in Stage 1 have been made in response to feedback from Transgrid (as proponents for VNI West) and Origin Energy (as proponents for Yanco Delta Wind Farm). Further design work also identified improvements to the efficiency of the electrical collection system.
Generation capacity	Up to 1.2 GW.	No change.
Project stages	The project area comprises an eastern area (within the Murrumbidgee LGA) and a western area (predominantly within the Edward River LGA). The wind farm will be developed in two stages: • Stage 1 – eastern area • Stage 2 – western area.	The stages of the project are anticipated to include: • an early works package (largely associated with public road upgrades and establishment of construction compounds and an accommodation facility in Stage 1 (eastern area)) • Stage 1 (eastern area) - construction of WTGs and associated infrastructure • Stage 2 (western area) - construction of WTGs and associated infrastructure. There may be some overlap in construction timeframes of Stage 1 and Stage 2.

Key infrastructure	• up to 200 WTGs (up to 280 m tall, ground to maximum tip height) including:
	  – tower, nacelle, rotor and blades
	  – concrete foundations
	  – hardstand pad
	  – electrical infrastructure
	• electrical collection system, collector substations and control rooms
	• electricity transmission line infrastructure (above ground and underground)
	• electricity transmission line infrastructure connecting the collector substations to the Dinawan Substation site
	• operation and maintenance (O&M) infrastructure, including:
	  – site offices and amenities
	  – equipment and maintenance sheds
	  – laydown, storage and parking areas
	• other permanent infrastructure, including:
	  – hardstands
	  – water tanks
	  – permanent meteorological monitoring masts (up to 200 m tall)
	  – new/upgraded access tracks
	  – access points from the public road network
	• temporary construction facilities, including:
	  – worker accommodation facilities
	  – construction compounds
	  – site offices and amenities
	  – concrete batching plants
	  – construction materials storage (including stockpiles)
	  – laydown areas
	  – temporary meteorological monitoring masts (up to 200 m tall)
	  – water tanks
	  – water and sediment management infrastructure
	  – storage and parking areas
	• borrow pits.
		No change, with exception of the following:
		• Reduction in the number of assessed WTG locations from 267 to 200 (no change to the total number of WTGs proposed for construction and operation). The amended layout includes up to 84 WTGs in Stage 1 (reduced from 117 in the EIS) and up to 116 WTGs in Stage 2 (reduced from 150 in the EIS).
		• Reduction in blade length from 100 m to 86 m and reduction in tip height from 280 m to 250 m.
		• Amendments to the location of:
		  – collector substation and switchyard options
		  – construction compounds, laydown areas and O&M facilities
		  – electricity transmission line infrastructure connecting the collector substations to the Dinawan Substation site
		  – permanent meteorological monitoring masts
		  – worker accommodation facilities.
		• Inclusion of 16 borrow pits (each approximately 0.2 ha and up to 5 m deep) – it is noted that borrow pits were included in the project description in the EIS; however, specific locations were not defined. Following further resource identification by Spark Renewables and in consultation with project landholders, indicative footprints for 16 borrow pits have been provided.
		• Laydown areas identified in Figure 1.3 may be required during construction and operation. Laydown areas were included in the project description in the EIS; however, specific locations were not defined and it was unclear that these may be required during both construction and operation.

Aspect	Proposed in the EIS	Proposed amendments
Workforce	Approximately 600 personnel during peak construction. Up to 50 full-time employees and varying numbers of contractors during operation.	No change.
Hours of operation	Standard day time construction hours (7.00 am to 6.00 pm Monday to Friday and 8.00 am to 1.00 pm Saturday). Exceptions to these hours may include: • deliveries outside of peak traffic times • concrete batching and pouring • crane movements between WTG sites • activities that are inaudible at non associated residences • activities for WTG construction hindered by adverse weather conditions. Once operational, the project will operate continuously, 24 hours per day, 7 days per week.	No change.
Project life	Construction: approximately 36 months for each stage (approximately 60 months total to allow for overlap between stages). Operation: 25–35 years with the potential to extend the operational life.	No change.

Aspect	Proposed in the EIS	Proposed amendments
Roads	Site access points will be on Kidman Way, McLennons Bore Road, Fernbank Road and Goolgumbla Road. Upgrades to the local road network: • intersection improvements at: – Kidman Way/McLennons Bore Road – Kidman Way/Cadell Road (south) – Cadell Road/McLennons Bore Road – McLennons Bore Road/Fernbank Road – McLennons Bore Road/Wilson Road – Wilson Road/Goolgumbla Road • road upgrades on: – McLennons Bore Road – Fernbank Road – Cadell Road – Wilson Road – Goolgumbla Road. An internal network of access tracks within the development corridor will be used to access: • the eastern area from McLennons Bore Road and Fernbank Road • the western area from Goolgumbla Road.	No change, with the exception of the following: • removal of two site access points on Fernbank Road • addition of two new site access points on McLennons Bore Road • removal of proposed intersection improvements at Kidman Way/Cadell Road (south) • removal of project-related vehicles from Cadell Road • addition of haulage route road upgrades to facilitate OSOM movements at: – the intersection of Kidman Way/Newell Highway, Bundure – the intersection of Sturt Highway/Eunony Bridge Road, East Wagga Wagga – the intersection of Olympic Highway (Moorong Street)/Sturt Highway, Wagga Wagga – the intersection of Byrnes Road/West Bomen Road, Bomen.
Transport	• Maximum daily heavy vehicle movements (construction, upgrading and decommissioning): 176 • Maximum daily light vehicle movements (construction, upgrading and decommissioning): 462 Movements account for one vehicle entering the site and one vehicle leaving the site. Daily heavy vehicle movements exclude restricted access vehicles (RAVs), which will be used to transport WTG and infrastructure components from Port of Newcastle. Plant, equipment and other bulk construction materials will be sourced based on availability of suppliers/contractors.	No change. The proposed route from Port of Newcastle to the site has been amended in response to feedback from Transport for NSW (TfNSW) and outcomes of additional OSOM route assessments.

Aspect	Proposed in the EIS	Proposed amendments
Subdivision	Subdivision of lots may be required to create new allotments for the substations and switchyards.	No change.
Decommissioning and rehabilitation	All aboveground structures will be removed and the land disturbed by the project will be rehabilitated to its pre-existing land use, as far as practicable unless otherwise agreed with landowners and regulators.	No change.
Offset staging	The Biodiversity Development Assessment Report (BDAR) (Appendix E.3 of the EIS) considers the staged (Stage 1 and Stage 2) retirement of the project's biodiversity credit liability, should staging be required.	The amended BDAR (Appendix D.3 of this amendment report) considers the staged retirement of the project's biodiversity credit liability. It considers three stages: • early works (largely associated with public road upgrades and establishment of construction compounds and an accommodation facility in Stage 1 (eastern area) • Stage 1 (part of Stage 1 (eastern area)) • Stage 2 (the remainder of Stage 1 (eastern area) and all of Stage 2 (western area)).

3.2 Reduction of the development footprint

The amended project has reduced the number of assessed locations for WTGs from 267 to 200 (no change to the total number of WTGs proposed for construction and operation), with up to 84 WTGs in Stage 1 (reduced from 117 in the EIS) and up to 116 WTGs in Stage 2 (reduced from 150 in the EIS).

These changes, as well as amendments to the project layout, have reduced the development footprint from 1,339 ha to 1,095 ha (18% decrease) and the development corridor from 7,256 ha to 6,383 ha (12% decrease). Amendments to the development footprint in Stage 1 have also been made in response to feedback from Transgrid (as proponents for VNI West) and Origin Energy (as proponents for Yanco Delta Wind Farm). Further design work also identified improvements to the efficiency of the electrical collection system.

During refinement of the development footprint, Spark Renewables has considered opportunities for further avoidance of impacts in the revised design. The amended project avoids and minimises the following impacts:

- avoidance of a further 98 ha of BC Act listed TEC (16% reduction) and 59 ha of EPBC Act listed TECs (22% reduction)
- removal of 1.64 ha of important mapped habitat for Plains Wanderer from the development footprint
- avoidance of a further 10 additional Aboriginal heritage sites
- avoidance of a further 245 ha of agricultural land
- increased buffer distance between the development footprint and nearby private and public receptors (including R143 and R088) to further minimise visual impacts of the project.

3.3 Changes to wind turbine generator specifications

The amended project has:

- reduced the maximum upper tip height of each WTG from 280 m to 250 m
- reduced the blade length from 100 m to 86 m
- increased the minimum lower tip height of each WTG from 50 m to 64 m
- reduced the hub height from 180 m to between 150 m and 164 m.

3.4 Changes to project layout

Changes have been made to other project components and the project layout including the following:

- Changes to the location of:
  - collector substation and switchyard options
  - construction compounds, laydown areas and O&M facilities
  - electricity transmission line infrastructure connecting the collector substations to the Dinawan Substation site
  - permanent meteorological monitoring masts
  - worker accommodation facilities.

- Inclusion of indicative footprints for 16 borrow pits (approximately 0.2 ha each and up to 5 m deep). Borrow pits were included in the project description in the EIS; however, specific locations were not defined.

- Laydown areas identified in Figure 1.3 may be required during construction and operation. Laydown areas were included in the project description in the EIS; however, specific locations were not defined and it was unclear that these may be required during both construction and operation.

3.5 Changes to access route

The amended project has also included changes to the proposed access route for the project, including:

- removal of two site access points on Fernbank Road and addition of two new site access points on McLennons Bore Road

- removal of project-related vehicles from Cadell Road (south) and associated removal of proposed intersection improvements at Kidman Way/Cadell Road (south)

- amendments to the development footprint at the McLennons Bore Road/Kidman Way intersection to allow sufficient space for the necessary intersection upgrades

- amendments to the proposed OSOM route from Port of Newcastle in response to feedback from TfNSW and outcomes of additional OSOM route assessments, including the option of a Wagga Wagga bypass route due to potential height limitations at Edward Street Rail Bridge in Wagga Wagga

- addition of haulage route road upgrades (refer Figure 1.1) to facilitate OSOM movements at:

    - the intersection of Kidman Way/Newell Highway, Bundure

    - the intersection of Sturt Highway/Eunony Bridge Road, East Wagga Wagga

    - the intersection of Olympic Highway (Moorong Street)/Sturt Highway, Wagga Wagga

    - the intersection of Byrnes Road/West Bomen Road, Bomen.

It is noted that once public road upgrades (including haulage route road upgrades) have been constructed and are operational, they would no longer form part of the project.

3.6 Changes to project staging

The project's generation capacity and connection to the electricity grid will be dependent on the outcomes of the South West REZ Access Scheme and the construction of electricity distribution infrastructure, including Dinawan Substation. The staging of the project will be determined as part of detailed design; however, it's anticipated that the stages of the project will include:

- an early works package (largely associated with public road upgrades and establishment of construction compounds and an accommodation facility in Stage 1 (eastern area))

- Stage 1 (eastern area) - construction of WTGs and associated infrastructure

- Stage 2 (western area) - construction of WTGs and associated infrastructure.

There may be some overlap in construction timeframes of Stage 1 and Stage 2.

As a conservative assumption, technical studies prepared for the EIS and this report have assessed the concurrent construction of the eastern part of Dinawan Wind Farm (i.e. Stage 1) and the adjoining Dinawan Solar Farm (subject to a separate application) as this scenario would have the greatest construction workforce demands and vehicle movements.

4 Statutory context

4.1 Introduction

The relevant statutory requirements under which the project will be assessed and determined are outlined in Chapter 4 of the EIS. No additional statutory requirements have been identified.

An updated statutory compliance table for the amended project is provided in Appendix B. It lists all relevant statutory requirements for the amended project and indicates where they have been addressed (either in this report or the EIS).

4.2 Approval pathway

As the project is classified as SSD, approval for the project is sought under Division 4.7 of the EP&A Act. Spark Renewables seeks to amend the application in accordance with Section 37 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation), which states that a development application may be amended by the applicant at any time before the application is determined.

The consent authority for the project has been transferred from the NSW Minister for Planning to the NSW Independent Planning Commission (IPC), as per section 2.7(1) of the State Environmental Planning Policy (Planning Systems) 2021, as more than 50 submissions were made in objection to the project (total of 86 objections). A submissions report has been submitted to DPHI in response to the matters raised in the submissions in conjunction with this amendment report.

4.3 Relevant approvals and pre-conditions to granting approval

The nature of the project will not be substantially altered by the amendment. Hence, the proposed amendments will not result in changes to the licences, approvals, pre-conditions and permits that are likely to be required for the project. These are listed in full in Chapter 4 of the EIS.

5 Engagement

Stakeholder engagement for the project commenced in 2021 and has been comprehensive to date. A summary of engagement carried out during the preparation of the EIS is provided in Chapter 5 of the EIS.

Since the lodgement of the EIS, Spark Renewables has continued to engage with stakeholders including local authorities, government agencies, the local community and neighbouring landholders. An overview of the engagement activities carried out during and after the public exhibition of the EIS is provided in the following sections.

5.1 Community engagement

A summary of the community engagement undertaken post-submission of the EIS is provided in Table 5.1.

Table 5.1 Summary of engagement post-EIS submission – community

Stakeholder	Summary
Local community	Spark Renewables held drop-in sessions in Coleambally and Jerilderie in July 2024 during the public exhibition of the EIS to share project information and answer any questions about the project and EIS. The sessions raised community awareness of the project and facilitated greater connection of the Spark Renewables team with the local community. The Spark Renewables team discussed the project with a range of community members during the exhibition period including project neighbours, local residents, local businesses, community groups and clubs, local government and First Nations stakeholders. Both positive and negative feedback was received during the exhibition period with key matters discussed including opportunities for local employment, the project's pilot grant program, impacts on local roads, management of bushfire risks and visual amenity impacts. Spark Renewables continue to engage with local community groups and service providers (including Coleambally Lions Club and Aboriginal Medical Services in Griffith) and have participated in events orientated towards supporting the education and training of a local workforce (including the New Energy apprentice workshop in Leeton and Clean Energy Taster training in Hay).
Bundure Landowner Group	Spark Renewables has continued to engage with the Bundure Landowner Group including meetings, phone calls and written responses to matters raised. Further information has been provided on neighbour benefits, cumulative impacts, bushfire management and insurance.
Nearby landholders	Spark Renewables has maintained regular consultation with nearby landholders and continues to consult with neighbours regarding the Dinawan Energy Hub as a whole inclusive of both Dinawan Wind Farm and Dinawan Solar Farm to minimise consultation fatigue and to provide transparency. Since the public exhibition of the EIS, consultation has been targeted towards owners of residences within 10 km of a WTG (including R019, R036, R049, R078, R107, R111, R124, R157, R163 and R164).
First Nations groups	A summary of the amended Aboriginal cultural heritage assessment (ACHA) was presented to the registered Aboriginal parties (RAPs) for the project at three focus group meetings in March 2025. This included discussion around comments from Heritage NSW on the ACHA and the reduction in the development footprint that will maximise the preservation of cultural materials. Appropriate management actions if a burial site is identified during construction were also discussed. No concerns with the amendments or changes to the ACHA were raised. Spark Renewables has also met with representatives from the South West REZ First Nations Working Group to present its Aboriginal Participation Plan, which is intended to provide opportunities to local First Nations communities during the construction and operation of the project. Spark Renewables has signed a Memorandum of Understanding with the Griffith Local Aboriginal Land Council (LALC) to enable opportunities for the Aboriginal community. The focus of the partnership is to identify opportunities for mutual benefit, collaboration, training and employment pathway co-design.
Coleambally Irrigation Cooperative Limited (CICL)	CICL own land within the project area associated with Coleambally Irrigation Channel (east of Kidman Way) and have an easement within the project area and development footprint that is associated with Coleambally Outfall Drain. Spark Renewables continues to consult with CICL via email, phone calls and meetings with discussions focused on interactions with CICL infrastructure including use of CICL bridges, interactions with Coleambally Outfall Drain, flooding risks and fire management.

5.2 Agency engagement

Engagement with regulatory stakeholders continued post-submission of the EIS and is summarised in Table 5.2.

Table 5.2 Summary of engagement post-EIS submission – agencies

Stakeholder	Summary
DPHI	Spark Renewables continued to engage with DPHI during the public exhibition of the EIS and as part of the preparation of this submissions report and the amendment report. A meeting was held in October 2024 to provide an update on the project and discuss the proposed amendments, which included the initial removal of 24 WTG locations. Following DPHI's feedback on the amendments to the project layout, a further 43 WTG locations were removed from the development footprint (a total of 67 removed). There is no change to the total number of WTGs proposed for construction and operation (a total of 200 proposed). A letter was provided to DPHI in January 2025 to inform DPHI of the proposed amendments to the project and included a summary of the proposed assessment approach.
Conservation Programs, Heritage and Regulation Group of NSW DCCEEW (CPHR) (formerly Biodiversity, Conservation and Science Group (BCS))	Meetings were held with CPHR in February and August 2025 to provide updates on the amendments to the project (including further efforts that have been made to avoid and minimise impacts on biodiversity) and additional fieldwork that has been completed since the public exhibition of the EIS. Clarification was sought on several of the matters raised in CPHR's submission on the EIS, including comments on the approach to vegetation mapping, plot collection and credit calculations. A separate meeting was held with CPHR in September 2024 to discuss the comments provided on flood risk management. It was confirmed that both matters raised in its submission could be resolved post-determination. CPHR encouraged early engagement with Murrumbidgee Council, Edward River Council and State Emergency Services around what's proposed during construction and operations to manage flood risks (e.g. access routes in an emergency and procedures or triggers for workforce evacuation). It was also confirmed that flood model outcomes had been considered in siting of high-risk infrastructure (primarily the substations and accommodation facilities).
Transgrid	Spark Renewables has engaged extensively with Transgrid regarding project design and potential interactions with VNI West alignment as well as interactions with on-site teams for Project EnergyConnect. The VNI West alignment and establishment of appropriate setbacks from the proposed transmission line were a major consideration in the amendments to the WTG layout in Stage 1.
Murrumbidgee Council	Spark Renewables continue to liaise with Murrumbidgee Council and provide regular updates on the project. This has included discussions with traffic engineers at Murrumbidgee Council to discuss the vehicle access requirements and proposed road upgrades associated with the project and Dinawan Solar Farm and discussions regarding mobile telecommunications reliability in the region. Discussions with Murrumbidgee Council have also included consideration of post approval requirements for the proposed accommodation facilities.
Edward River Council	Spark Renewables continue to liaise with Edward River Council and provide regular updates on the project. Edward River Council have provided a letter stating they are generally supportive of the project but do not wish to discuss voluntary planning agreements (VPAs) with any proponent until access rights have been awarded for the South West REZ. Following the announcement of the access rights for the South West REZ, Spark Renewables will continue to liaise with Edward River Council on the terms of the VPA.
TfNSW	A meeting was held with TfNSW in December 2024 to discuss its submission on the EIS and clarify several of the matters raised. Spark Renewables provided an update on key changes to the project since public exhibition of the EIS and provided an update on the additional work undertaken to better understand OSOM transport limitations through Wagga Wagga.
National Parks and Wildlife Services (NPWS)	A meeting was held with NPWS in January 2025 to discuss its submission on the EIS, with a focus on potential impacts on telecommunication links and NPWS management activities. Spark Renewables is committed to maintaining a strong working relationship with NPWS during the construction and operation of the project.
Rail network operators	Spark Renewables has commenced engagement with Australian Rail Track Corporation (ARTC) and UGL Regional Linx (UGLRL) regarding potential interactions with level crossings, under-bridges and over-bridges and are committed to continuing this engagement throughout the assessment and approval process.

Stakeholder	Summary
Tunnel operators	Spark Renewables has commenced engagement with NorthConnex regarding the use of their tunnel infrastructure as part of OSOM vehicle movements and are committed to continuing this engagement throughout the assessment and approval process.
Civil Aviation Safety Authority (CASA)	An email was sent to CASA in March 2025 to offer an opportunity to discuss the outcomes of the amended aviation impact assessment and requirements for obstacle lighting on WTGs. No response has been received to date.

5.3 Voluntary planning agreement

Below outlines the key terms of the community benefit sharing program and VPAs that have been agreed upon with Murrumbidgee Council and that are being discussed with Edward River Council:

1. Spark Renewables will provide funding for benefit sharing initiatives associated with Dinawan Wind Farm.
2. The total fund amount (TFA) will be an annual payment of $1,050 per megawatt (MW) of capacity under construction or operational within the respective LGA.
3. The first annual payments will be made after the commencement of construction of the relevant stage.
4. After the initial annual payments, future payments will be escalated in line with consumer price index (CPI).
5. The TFA will be based on Dinawan Wind Farm's nameplate capacity.
6. The TFA will be allocated as follows:
    a) 70% of the funding ($735 per MW) will be provided to the respective council hosting the wind capacity for projects identified in that council's approved Development Contributions Plan or Community Strategic Plan.
    b) 15% of the funding ($157.50 per MW) will go to a Community Benefit Fund to be administered by a committee of the relevant council, which will provide annual grant funding to initiatives that are put forward by and benefit the local and broader community.
    c) 15% of the funding ($157.50 per MW) will be administered by Spark Renewables (or the project owner) and will go to initiatives to share project benefits with the neighbouring community and local Aboriginal and Torres Strait Islander communities.
7. The Community Benefit Fund will:
    a) be administered by a committee of the relevant council, which will include representatives from the local community, Spark Renewables (or the project owner) and the respective council
    b) prioritise funding for suitable projects located closer to the project
    c) prioritise projects that receive co-funding or in-kind support from other sources
    d) be used for environmental programs, enhancing local biodiversity, recreational facilities, education programs, arts or cultural programs and other initiatives that benefit the local community.

Consistent with the *Benefit Sharing Guideline* (DPHI 2024), the key terms above would result in Murrumbidgee Council or Edward River Council administering 85% of the TFA. The remaining 15% of the TFA will be administered by Spark Renewables and will support initiatives within:

- The project's neighbouring community – this is aligned with public commitments that Spark Renewables has made during engagement with neighbouring landholders. The project's near neighbours reside in remote locations significantly removed from infrastructure and services provided by Murrumbidgee Council and Edward River Council within the townships of Jerilderie, Coleambally, Darlington Point, Deniliquin. This funding would support initiatives identified and supported by the local community most likely to experience day-to-day changes during the construction and operation of the project.

- Local Aboriginal Torres Strait Islander communities – this is aligned with public commitments that Spark Renewables has made during engagement with the local First Nations community. As part of the preparation of the Aboriginal Participation Plan, Spark Renewables will engage with representatives from First Nations communities within both Edward River and Murrumbidgee local government areas to ensure representation from multiple geographies and in recognition of the scale of the project and the opportunities it could provide for First Nations peoples. This funding would support initiatives identified and supported by the local First Nations community.

The intention of each VPA is that the TFA will be linked to MW capacity under construction or operational within the respective LGA. It is anticipated that construction will commence in the eastern area. As shown in Figure 1.1, the eastern area is entirely within the Murrumbidgee Council LGA and will not require upgrades to roads or other public infrastructure within the neighbouring Edward River LGA. The only significant population centre within Edward River LGA is Deniliquin, which is approximately 75 minutes' drive from the eastern area. Based on this separation distance and commute time, Deniliquin is not expected to house a significant proportion of the project's construction or operational workforce. Following the commencement of construction in the western area, a VPA would start with Edward River Council. Once construction commences in the western area, a VPA would already be in place with Murrumbidgee Council.

6 Assessment of impacts

6.1 Landscape and visual

A landscape and visual impact assessment (LVIA) was prepared for the EIS by Moir Landscape Architecture and is provided in Appendix E.1 of the EIS. The LVIA was prepared in accordance with the methods outlines in the *Wind Energy Visual Assessment Bulletin* (the Visual Bulletin) and assesses the potential landscape visual impacts.

The amended project has a reduced number of WTGs assessed within the development footprint, from 267 to 200 WTGs, as well as a reduced maximum tip height for the WTGs.

An addendum to the LVIA has been prepared by Moir Landscape Architecture to assess the amended project against the outcomes of the LVIA and is provided in Appendix D.1 of this report.

With the exception of R019, the addendum to the LVIA has conservatively considered visual impacts from WTGs with a maximum tip height of 280 m, which is consistent with the assumptions in the LVIA. The detailed assessment at R019 has been updated to align with the amended maximum tip height (250 m).

6.1.1 Potential impacts

The LVIA identified 22 non-associated residences within 8 km of a WTG. The EIS project had a high visual impact on one non-associated residence (R019), a low visual impact on 10 non-associated residences and a negligible visual impact on 11 non-associated residences.

The amended project layout has reduced the number of WTGs overall and increased distances from WTGs for a number of non-associated residences. Of the 13 non-associated residences that were within 5.5 km of a WTG, the distance to the nearest WTG has increased for 8 residences (refer Table 6.1). Visual impacts are therefore, generally assumed to be consistent with or lower than assessed in the EIS.

A detailed assessment for the closest non-associated residence (R019) found that the amended project would reduce the impact from a high visual impact in the LVIA, to a low visual impact for the amended project (refer Appendix D.1).

Table 6.1 Visual impact to residences from the amended project

Residence ID	Distance to nearest amended WTG location (km)	Associated projects with WTG visible[1]	Number of 60-degree sectors with visible WTGs[2]	Visual impact rating
Non-associated residences within 3.75 km of a WTG location				
R019	2.05 (increased by 20 m)	-	2	Low[3] (reduced from high)
R036	3.75	Argoon Wind Farm	4	Negligible
Non-associated residences within 3.75–5.5 km of a WTG location				
R143	3.88 (increased by 1.39 km)	-	1 (reduced by 1)	Low
R091	3.88	-	2 (reduced by 1)	Low
R090	4.16	Yanco Delta Wind Farm	1	Negligible
R144	4.43	-	2 (reduced by 1)	Low
R108	4.55 (increased by 10 m)	-	2 (reduced by 1)	Low
R049	4.67	-	3	Low

Residence ID	Distance to nearest amended WTG location (km)	Associated projects with WTG visible[1]	Number of 60-degree sectors with visible WTGs[2]	Visual impact rating
R088	5.26 (increased by 1.51 km)	Yanco Delta Wind Farm	4	Low
R157	5.28 (increased by 110 m)	-	1	Negligible
R111	5.41 (increased by 30 m)	Argoon Wind Farm	3	Negligible
R008	5.5 (increased by 30 m)	Argoon Wind Farm	3	Negligible
R078	5.58 (increased by 600 m)	-	1	Negligible

Notes: 1. Where non-associated residences are associated residences of another project, views of WTGs associated with that project have been removed from the multiple wind turbine tool assessment.

2. This does not consider existing screening factors such as vegetation and farm buildings. Detailed dwelling assessments for non-associated residences are provided in Appendix C of Appendix E.1 of the EIS.

3. The visual impact rating for R019 has been amended based on the amended project layout and a 250 m tip height.

As the amended project will reduce the number of assessed WTG locations from 267 to 200, other landscape and visual impacts from the amended project are likely to be consistent with, or lower than assessed in the EIS, and are considered below:

- Landscape character – As outlined in the EIS, the overall impact of the project on the landscape character of the region is expected to be low to moderate. Impacts for the amended project will be substantially the same as assessed in the EIS.

- Public viewpoints – Of the 25 viewpoints assessed in the EIS, 2 locations (VP15 and VP22) within 8 km of WTGs were rated as moderate (VIZ2), and 23 locations were rated as low (VIZ3). As VP15 and VP22 are on low-use roads, they were found to have a low sensitivity and scenic quality and no mitigations are proposed. Impacts to public viewpoints for the amended project will be substantially the same as assessed in the EIS.

- Dwelling entitlements –A total of 32 lots with dwelling entitlements were identified within 8 km of a WTG in the EIS. An assessment based on topography alone suggests that the majority of the project is likely to be visible from all of these lots. Recommendations to reduce the visibility of project infrastructure for any future residences constructed on these lots are provided in Table 15 to 18 of the LVIA (Appendix E.1 of the EIS). While dwelling entitlements could be taken up in the future, there are no known approved developments or lodged development applications within 8 km of the nearest WTG.

- Shadow flicker – No shadow flicker impacts are expected at non-associated residences given distances to WTGs are the same or increased. A number of public roads are predicted to experience shadow flicker, which may cause annoyance to public road users. These include Carrathool Road, Fernbank Road, Jerrys Lane, Liddles Lane, Wilson Road, Four Corners Road and McLennons Bore Road. There are no guidelines in the Visual Bulletin relating to the acceptable level of shadow flicker on road users. Impacts for the amended project will be substantially the same as assessed in the EIS and are not considered to be significant as these roads carry low traffic volumes.

- Blade glint – Major wind turbine blade manufacturers currently finish blades with a low reflectivity treatment. Therefore, consistent with the EIS, the risk of blade glint is considered to be very low, provided the mitigation measures are implemented (refer Appendix C of this report).

- Other project infrastructure – Consistent with the EIS, ancillary infrastructure (e.g. substations, switchyards, O&M buildings, permanent meteorological monitoring masts, transmission lines, worker accommodation facilities) has the potential to be visible from some low-use local roads, such as Fernbank Road, McLennons Bore Road and Goolgumbla Road, however viewer sensitivity is expected to be low. Ancillary infrastructure is not likely be visible from non-associated residences due to setback distances and screening by existing vegetation. While the amended project has included minor changes to the project layout as described below, visual impacts are expected to be generally consistent with the EIS. Visual impacts from construction infrastructure are expected to be temporary, occurring during the five-year construction period. Mitigation measures will be adopted to reduce the visual impacts of ancillary infrastructure during operation and construction, as outlined in Appendix C. Changes to the project layout have included:

  - Transmission lines – in the EIS, two transmission options were proposed to connect to the Dinawan Substation. The amended project has removed one of the options (the southern option within the eastern area) and aligned the northern option to be adjacent to the approved Project EnergyConnect transmission line and the proposed VNI West transmission line. The amended project will reduce impacts to R049, which is now 4 km from the proposed transmission line (an increase from 2 km in the EIS). The location of transmission lines west of Fernbank Road are largely unchanged and are expected to be visible from McLennons Bore Road and Goolgumbla Road.

  - Substation/switchyard locations – the amended project has removed of the southernmost collector substation/switchyard option in the eastern area, which was previously 4.3 km north-west of R049. The remaining two substation/switchyard locations in the eastern area have moved 500 m south-east and 600 m west, to a more centralised location within the eastern area. These locations remain a similar distance from McLennons Bore Road as in the EIS (about 0.3 km and 1.2 km) and may be visible for road users, however, are unlikely to be visible from the closest receptors, which are R019 (5.6 km away) and R036 (7.6 km away). The locations in the western area have not changed as part of the amended project.

  - Accommodation facilities – the amended project has resulted in micro-siting of two of the three accommodation facility locations (in the order of 100 to 250 m of the locations in the EIS). There are no non-associated residences within 10 km of the accommodation facility options in the western area. R049 remains in the order of 3.4 km from the accommodation facility in the eastern area (no material change in distance compared to the EIS).

- Night lighting – Aviation hazard lighting requirements are subject to ongoing consultation with CASA and Airservices Australia. An indicative aviation obstacle lighting plan has been prepared in accordance with the *Wind Energy Guideline* (DPHI 2024a) and is provided in Appendix D.13. It requires that 67 of the 200 WTGs be lit with two low intensity steady red lights. Shielding is required to reduce light spill and visual impacts to receptors, with no more than 5% of the nominal light intensity emitted at or below 5 degrees below horizontal and no light emitted at or below 10 degrees of horizontal. Consistent with the EIS, night lighting of ancillary infrastructure may be required for out-of-hours maintenance work at the substations and O&M facility and for security lighting adjacent to security fencing and O&M buildings. It is unlikely that the proposed night lighting will create a noticeable impact on the existing night-time landscape as this infrastructure will be sited away from existing residences and publicly accessible viewpoints, and lighting design principles will be implemented to reduce impacts (such as directing lighting downwards and using light shield fittings to avoid light spill).

6.1.2 Mitigation measures

The measures proposed to mitigate residual landscape and visual impacts are provided in Table 6.2, which have been amended to remove the requirements for visual screening (i.e. tree planting) at R019 based on the revised low visual impact, shown with strikethrough text.

Table 6.2 Landscape and visual mitigation measures

ID	Mitigation measures
LV1	The WTGs will have a predominantly matte white (or other non-reflective) finish.
~~LV2~~	~~Visual screening planting will be undertaken at non-associated residence R019, or as otherwise agreed with the landowner. An indicative example of visual screening is provided in Appendix E of the LVIA (Appendix E.1 of the EIS). The following general guidelines for planning landscaping and visual screening will be adopted:~~ ~~• planting will occur post-construction in consultation with the landowner~~ ~~• planting will remain in keeping with existing landscape character~~ ~~• species selection will be typical of the area, with a preference for locally native species~~ ~~• planting layout will avoid screening views of the broader landscape~~ ~~• landscaping will avoid the clearing of existing vegetation, and where required, reinstate any lost vegetation.~~
LV2	The following mitigation measures will be ~~considered~~ **implemented** during detailed design of the project to mitigate the visual impact of transmission lines: • selecting routes for overhead transmission lines to reduce visibility from surrounding areas and minimise vegetation loss • using subtle colours and a low reflectivity surface treatment on power poles to ensure that glint is minimised.
LV3	The following mitigation measures will be ~~adopted~~ **implemented** to reduce residual visual impacts from O&M facilities: • siting O&M facilities to ensure minimal screening vegetation loss • using a recessive colour palette to blend structures into the existing landscape • avoiding unnecessary lighting, signage on fences and logos.
LV4	**Aviation hazard lighting that is required on the WTGs or meteorological monitoring masts will be designed to minimise the impact of lighting, in consultation with relevant aviation authorities.**

6.1.3 Conclusion

The amended project will have a low to negligible impact on all non-associated residences within 8 km of WTG locations, which is consistent with, or lower than, what was assessed in the EIS. The amendments have reduced visual impacts at R019 from high to low and removed the requirements for visual screening (i.e. tree planting).

All other potential landscape and visual impacts of the amended project will be substantially the same as assessed in the EIS. With the implementation of mitigation measures in Section 6.1.2, the project will meet the performance objectives of the Visual Bulletin.

6.2 Noise and vibration

A noise impact assessment was prepared for the project by Echo Acoustics and is provided in Appendix E.2 of the EIS.

The amended project has reduced the number of assessed WTG locations and collector substations. The candidate WTG model to be used in operational noise modelling has been amended from the Vestas V162-6.0 WTG model with serrated trailing edges to the Vestas V172-7.2 with serrated trailing edges (with a hub height of 150 m). Sixteen potential borrow pit locations have also been identified as part of the amended project, which is an additional construction activity included in the construction noise model.

A technical letter has been prepared by Echo Acoustics to assess the change in noise impacts from the amended project (Appendix D.2 of this report).

6.2.1 Potential impacts

The amended project has required assessment of potential impacts for:

- Construction noise (development footprint) – the amended project layout and the inclusion of borrow pits will result in minor changes to construction noise levels. There is no change to the outcomes of the assessment, which predicts that during the construction phase, three non-associated residences (R019, R079 and R088) will temporarily be in a noise affected area as defined by the *Interim Construction Noise Guideline* (DECC 2009). The noise affected area has been slightly reduced for the amended project, as shown in Figure 6.1. As outlined in the EIS, residences will be consulted to determine appropriate measures to minimise the effects of impacts and a construction noise management plan will be implemented. A summary of noise affected residences is provided in Table 6.3.

Table 6.3 Residences predicted to be noise affected during construction

Residence	Construction stage	Noise level
R019	Road upgrades	Less than 49 dB(A)
	Concrete batching	Less than 39 dB(A)
	Concrete pour	Less than 36 dB(A)
	WTG installation, commissioning and testing	Less than 38 dB(A)
R079	Road upgrades	Less than 69 dB(A)
R088	Road upgrades	Less than 51 dB(A)
	Transmission line installation	Less than 49 dB(A)

- Construction noise (haulage route road upgrades) – Disturbance areas have been defined at the Newell Highway/Kidman Way (Bundure), Eunony Bridge Road/Sturt Highway (East Wagga Wagga), Olympic Highway (Moorong Street)/Sturt Highway (Wagga Wagga) and Byrnes Road/West Bomen Road (Bomen) intersections to facilitate intersection upgrade works to support the delivery of heavy vehicles requiring escort (i.e. OSOM loads). There are no sensitive receivers within proximity of the proposed upgrade works at the intersection of Kidman Way and Newell Highway, and Byrnes Road and West Bomen Road, and therefore construction noise impacts have not been assessed at these locations. A construction noise assessment has been prepared for two intersections:

  - Eunony Bridge Road and Sturt Highway: There are three sensitive receivers within proximity of the proposed upgrade works at the intersection of Eunony Bridge Road and Sturt Highway (two dwellings and a motel). Predicted noise levels, which conservatively assume that all equipment operates continuously at full capacity, indicate that these three receivers will be 'highly noise affected' as defined by the *Interim Construction Noise Guideline* (DECC 2009) (i.e. noise predictions exceeding 75 dB(A)) during and outside of standard hours. Once further information is available on construction duration and timing, Spark Renewables will engage with these receivers to discuss total construction time; what works are expected to be noisy; the duration of these works; what is being done to minimise noise; when respite periods will occur; and ongoing communication and complaint methods.

- Olympic Highway (Moorong Street) and Sturt Highway: There are residential areas within approximately 300 m of the proposed upgrade works at the intersection of the Olympic Highway (Moorong Street) and Sturt Highway. Predicted noise levels, which conservatively assume that all equipment operates continuously at full capacity, indicate that these residential areas will be noise affected (i.e. noise predictions exceeding 45 dB(A) during standard hours and 35 dB(A) outside of standard hours). Construction noise management measures will be implemented for the road upgrade works at this intersection.

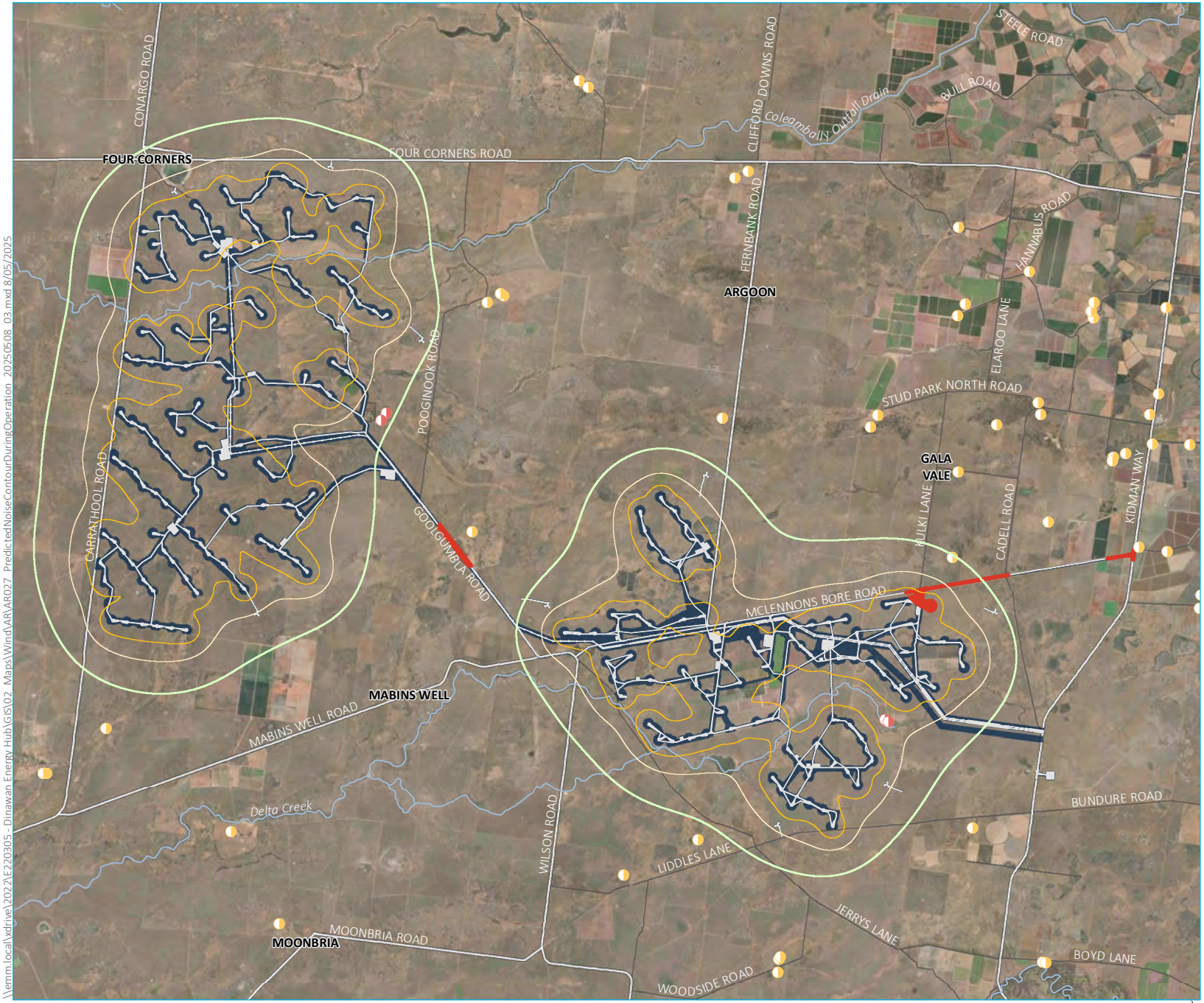
- Operational noise (WTGs) – as outlined in the EIS, the *Wind Energy: Noise Assessment Bulletin for State Significant Wind Energy Development* (DPE 2016c) (Noise Bulletin) requires a base equivalent noise level of 35 decibels on the A weighted scale (dB(A)) ($LA_{eq,10\ minute}$) to be adopted at assessment locations. Noise levels from WTG operation at highest noise level are predicted to comply with the relevant noise criteria at all non-associated residences for the amended project. The closest non-associated residence to a WTG, R019, has a predicted operational noise level of 35 dB(A). Noise contours for WTG operation are shown in Figure 6.1.

- Operational noise (collector substations) – the noise model has been updated to include noise at four substation locations. Similar to the EIS, the noise level from the collector substations is predicted to be less than 15 dB(A) at assessment locations, which complies with the relevant noise criterion of 35 dB(A), as defined by *Noise Policy for Industry* (EPA 2017). Noise contours for collector substation operation are shown in Figure 6.1.

- Worker accommodation facilities – noise generated by the construction and operation of the worker accommodation facilities has been assessed. Construction noise levels from the worker accommodation facility at the closest non-associated residence (R049, 3.4 km away) are predicted to be 35 dB(A), which conservatively assumes all works occurring concurrently. A noise model has been used to predict noise levels from the operation of the accommodation facilities and included consideration of noise generated by air conditioning and ventilation systems, power generation equipment, vehicle movements and day-to-day use of the facilities by the construction workforce. Operational noise levels are predicted to be less than 20 dB(A) at all assessment locations, including the closest non-associated residence (R049). Therefore, noise generated during the construction and operation of the worker accommodation facilities is predicted to comply with all relevant noise criteria, including the *Noise Policy for Industry* (EPA 2017) and the *Interim Construction Noise Guidelines* (DECC 2009) during the day, evening, and night periods.

- Road traffic noise – the potential for road traffic noise impacts on public roads due to project-related traffic has been assessed in accordance with the *Road Noise Policy* (RNP) (DECCW 2011) for maximum daily project traffic movements during construction. Two additional assessment locations (i.e. dwellings) were identified along Kidman Way that are setback approximately 40 m and 50 m from the edge of the pavement and are approximately 17 km and 21 km north of the project, respectively. Existing road traffic noise on Kidman Way is already above the relevant RNP criteria at these assessment locations during both the day and night periods. The RNP states that where existing road traffic noise criteria are already exceeded, any additional increase in total traffic noise level should be limited to an increase of up to 2 dB. Project-related traffic is predicted to result in increases of 1.5 dB at these receptors during the day and night periods, during the busiest month of construction. This relative increase will be temporary during construction only. Road traffic noise impacts associated with the operation of the project will be negligible due to the minimal traffic movements.

The amended project will not change the outcomes of the vibration assessment, which is predicted to comply with relevant criteria.



KEY

- Development footprint
- Development corridor

Construction noise prediction

- Construction area to result in a noise affected area

Operational noise prediction

- WTG Noise Contour - 35dB(A)
- WTG Noise Contour - 40dB(A)
- WTG Noise Contour - 45dB(A)

Residence

- Associated
- Non-associated

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)

\\emm.local\xdrive\2022\E220305 - Dinawan Energy Hub\GIS\02 Maps\Wind\ARVAR027 PredictedNoiseContourDuringOperation 20250508 03.mxd 8/05/2025

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 5 10 km

GDA2020 MGA Zone 55

N

Predicted noise impacts during construction and operation

Dinawan Wind Farm
Amendment Report
Figure 6.1

EMM creating opportunities

6.2.2 Mitigation measures

The measures proposed to mitigate residual noise and vibration impacts to are provided in Table 6.4, which have been updated to align with the amended project layout. New mitigation measures are shown in **bold**.

Table 6.4 Noise and vibration mitigation measures

ID	Mitigation measure
N1	Background noise monitoring will verify existing background noise levels prior to construction.
N2	Noise modelling will be updated prior to construction to confirm that the final WTG layout complies with the noise assessment criteria.
N3	A construction noise management plan will be prepared to manage noise during construction, and will include specific measures to minimise noise at assessment locations that are noise affected.
N4	Construction work activities will be scheduled to minimise noise impacts, including: • with the exception of the categories below, construction will be undertaken during standard construction hours: – Monday to Friday 7 am to 6 pm – Saturday 8 am to 1 pm – no work on Sundays or public holidays • works outside the standard hours listed above will be within the following categories: – deliveries by heavy vehicles and RAVs outside of peak traffic times – concrete batching and pouring – crane movements between WTG sites – activities that are inaudible at non-associated residences – activities for WTG construction hindered by adverse weather conditions.
N5	Construction infrastructure, including construction compounds, and plant and equipment will be placed to minimise noise impacts by: • placing fixed plant and equipment as far as practicable from non-associated residences • locating the site access points, construction compounds and parking areas as far as practicable from non-associated residences • maximising acoustic shielding by the use of temporary site buildings and materials stockpiles as noise barriers to R019, R079 and R088, where practicable.
N6	Residents in R019, R079 and R088 (which will be potentially impacted by construction noise) will be consulted to determine appropriate measures to minimise the effects of any impacts.
N7	Construction work practices to manage construction noise on-site and construction-related traffic will be documented in the construction noise management plan and will be implemented to minimise noise impacts.
N8	**Once further information is available on construction duration and timing for public road upgrades at the intersection of Eunony Bridge Road and Sturt Highway, Spark Renewables will engage with relevant receivers to discuss total construction time; what works are expected to be noisy; the duration of these works; what is being done to minimise noise; when respite periods will occur; and ongoing communication and complaint methods.**

6.2.3 Conclusion

The noise impacts of the amended project will be substantially the same as assessed in the EIS. Noise levels from construction and operation of the amended project are predicted to comply with all relevant noise criteria at all non-associated residences, with the exception of three non-associated residences (R019, R079 and R088), which will temporarily be in a noise affected area at specific times during the construction phase. Construction noise management measures will be implemented during haulage route road upgrades to reduce impacts at nearby receivers.

6.3 Biodiversity

6.3.1 Introduction

A biodiversity development assessment report (BDAR) was prepared for the project by Biosis for the EIS in accordance with the NSW *Biodiversity Conservation Act 2016* (BC Act), the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Biodiversity Assessment Method* (DPIE 2020b) (BAM) and is provided in Appendix E.1 of the EIS.

The amended project has reduced the number of assessed WTGs and the extent of the development footprint, which has reduced the area of land to experience direct impacts to biodiversity. The amended project has also changed the WTG specifications to be used for collision risk modelling. An amended BDAR has been prepared by Biosis and is provided in Appendix D.3 of this report. The amended BDAR provides a complete and updated assessment of the amended project in accordance with the relevant legislative requirements and guidelines.

The term 'subject land' is used in this section, consistent with the amended BDAR and BAM. The subject land for the amended project is approximately 31,445 ha and is derived based on a minimum 500 m buffer from the amended development corridor. The subject land includes the amended development footprint and haulage route road upgrades that will be directly impacted by the project, and additional areas where indirect and prescribed impacts have been addressed in accordance with the BAM (DPIE 2020b).

6.3.2 Existing environment

i Landscape context

The landscape context of the subject land remains the same. The subject land is within the Riverina Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Murrumbidgee IBRA subregion. Vegetation within the subject land is predominantly native, with varying condition as a result of agricultural land use. Agricultural land use has contributed to overstorey removal, resulting in large areas of derived native grasslands (DNG, where trees have been cleared from the original vegetation community), areas of natural grasslands and fragmented and regenerating woodlands.

The subject land is largely flat with some minor drainage depressions that temporarily hold water during and following rainfall. Minor topographic depressions within the subject land hold water for longer, creating scattered swamp or wetland environments. There are multiple ephemeral waterways within the subject land, including three named, natural waterways: Delta Creek, Blind Creek and Bublebundie Creek. Ephemeral waterways provide transient aquatic habitat corridors for frog and fish species across the subject land during optimal environmental conditions, such as after significant rainfall and flooding events.

There is no key fish habitat within the subject land; however, Delta Creek and Coleambally Outfall Drain are mapped as potential habitat for two threatened freshwater fish species, Flathead Galaxias (*Galaxias rostratus*) and Silver Perch (*Bidyanus bidyanus*) (DPI Fisheries 2024).

Groundwater dependent ecosystems (GDEs) are ecosystems which require access to groundwater on a permanent or intermittent basis. There are multiple mapped GDEs with medium to high value within the subject land, the majority of which have been avoided by the development corridor. Mapped GDEs intersecting the development corridor are typically associated with River Red Gum, Lignum wetland and Canegrass wetland vegetation communities.

There is approximately 2,721 ha of non-native vegetation within the subject land, which is associated with areas of cropping, existing roads and access tracks, fencelines, dams, rural infrastructure and residences.

The subject land does not contain karst, caves, crevices, cliffs or other areas of geological significance.

ii Native vegetation

The subject land for the amended project is approximately 31,445 ha, of which approximately 28,724 ha is mapped as native vegetation. The assessment area as defined within the BDAR (1,500 metre buffer around the subject land) is 56,849 hectares, of which approximately 50,856 ha is mapped as native vegetation (approximately 89% native vegetation cover).

a Plant community types

Vegetation zones have been used to identify the different condition states of plant community types (PCTs) within the subject land. There are 10 identified PCTs, in varying condition, within the subject land (Table 6.5 and Figure 6.2). The amendments have reduced the extent of most PCTs within the development footprint.

Detailed descriptions of each PCT are provided in Section 3.2.3 of the Amended BDAR (Appendix D.3).

Table 6.5 Plant community types and vegetation integrity within the development footprint

Plant community type	Condition	EIS project (ha)		Amended project (ha)		Percentage change in development footprint	Vegetation integrity (VI) score
		Development corridor	Development footprint	Development corridor	Development footprint		
PCT 10 River Red Gum - Black Box woodland wetland of the semi-arid (warm) climatic zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Moderate	9.35	0.33	4.25	0.19	-41%	29.2
PCT 13 Black Box - Lignum woodland wetland of the inner floodplains in the semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion).	Moderate	19.71	4.83	16.61	3.56	-26%	70.6
	Thinned	29.17	9.14	29.78	7.88	-14%	69.2
PCT 15 Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Moderate	34.32	6.20	33.13	2.54	-59%	75.7
	Thinned	7.05	1.61	6.39	1.1	-31%	67.1
PCT 17 Lignum shrubland wetland of the semi-arid (warm) plains (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Moderate good	15	1.84	23.90	0.76	-59%	84.2
	Moderate	3.06	1.09	11.16	1.27	+17%	83.5
PCT 24 Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains	Moderate	2.52	0.23	0	0	-100%	N/A
PCT 26 Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slopes Bioregion	DNG	2,282.95	395.93	2,177.64	342.38	-14%	20.3
	Intact	871.09	133.14	795.43	116.79	-12%	67.1
	Sparse	2,137.46	416.60	1,961.78	341.38	-18%	46.2

Plant community type	Condition	EIS project (ha)		Amended project (ha)		Percentage change in development footprint	Vegetation integrity (VI) score
		Development corridor	Development footprint	Development corridor	Development footprint		
PCT 28 White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	Low	278.04	54.00	240.65	47.76	-12%	57.1
	Moderate	25.36	0.98	22.54	1.11	-13%	73.8
PCT 45 Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion	Moderate good	57	8.83	22.79	2.24	-80%	65.1
	Intersection	0	0	0.83	0.83	+100%	100
PCT 46 Curly Windmill Grass - speargrass - wallaby grass grassland on alluvial clay and loam on the Hay Plain, Riverina Bioregion	Moderate	620.14	105.59	399.65	73.44	-30%	90.6
	Intersection	0	0	0.34	0.34	+100%	100
PCT 160 Nitre Goosefoot shrubland wetland on clays of the inland floodplains	Moderate good	42.34	4.07	27.70	4.97	-22%	79.0
	Moderate	5.75	0.84	0	0	-100%	N/A

Notes: Excludes areas of non-native vegetation within the subject land.

The majority of native vegetation within the development corridor (77%) and development footprint (73%) aligns with PCT 26 Weeping Myall woodland and occurs in three condition states:

- intact (Photograph 6.1)
- DNG (Photograph 6.2)
- sparse (Photograph 6.3).

Photograph 6.1 Example of PCT 26 (intact) within the subject land

Photograph 6.2 Example of PCT 26 (DNG) within the subject land

Photograph 6.3 Example of PCT 26 (sparse canopy) within the subject land

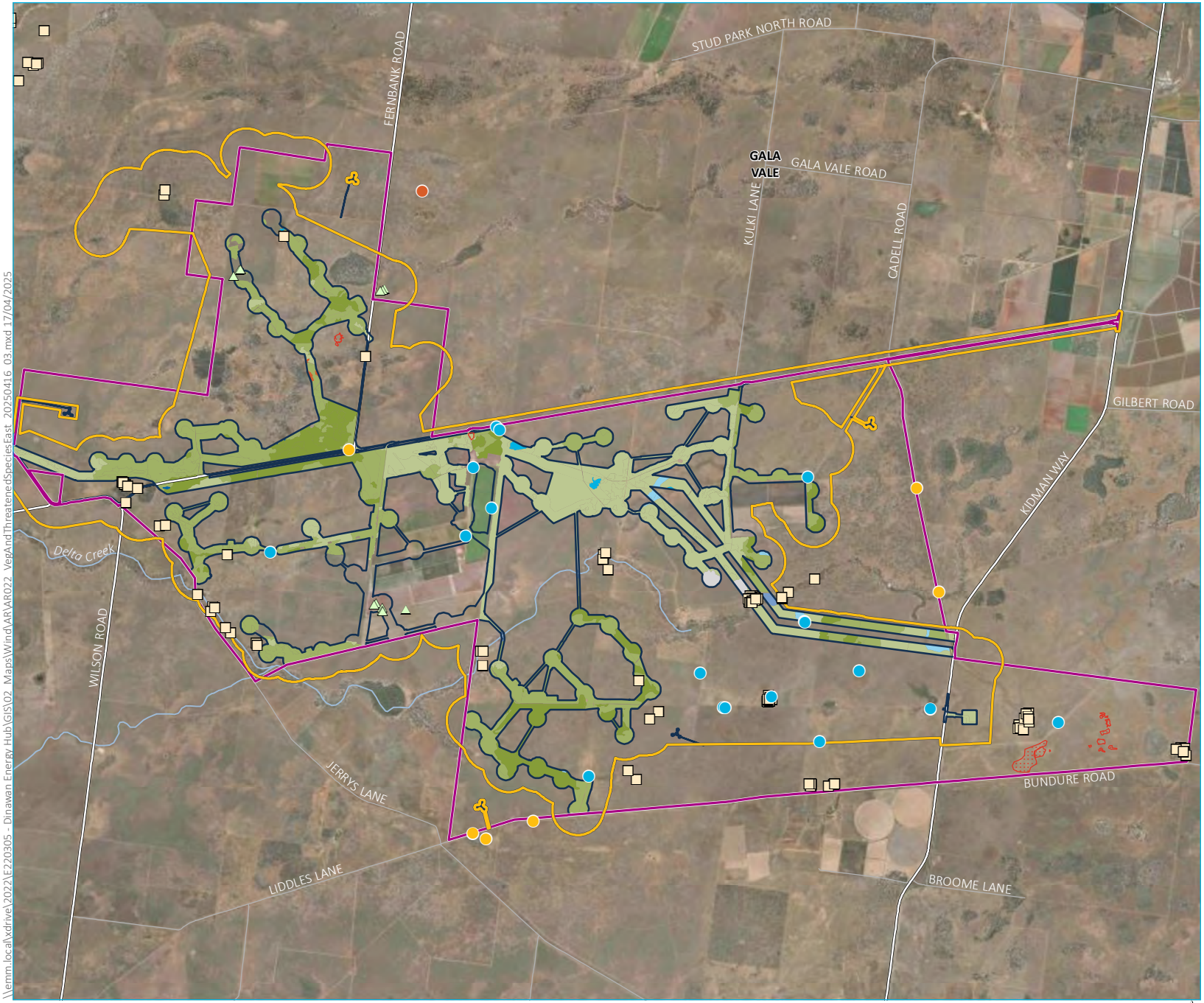
b Threatened ecological communities

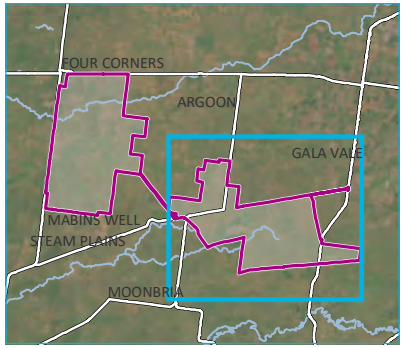
Vegetation within the subject land and development corridor aligns with four threatened ecological communities (TECs) (Table 6.6 and Figure 6.3). Further descriptions of these TECs are provided in Section 3.2.4 of the amended BDAR (Appendix D.3).

Table 6.6 Threatened ecological communities within the subject land

Threatened ecological community	Listing status	Alignment with PCTs within the subject land	EIS project (ha)			Amended project (ha)			Comments
			Subject land	Development corridor	Development footprint	Subject land	Development corridor	Development footprint	
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	Endangered (BC Act)	The listing does not contain key diagnostics or condition thresholds for this TEC and relies on a general description of the community and a list of characteristic plant species. Sparse and intact patches of PCT 26 were determined to meet the criteria for this TEC. DNG patches of PCT 26 did not meet the criteria for this TEC.	5,814.3	3,008.55	549.75	7,535.70	2,757.21	458.17	The total area of this TEC within the development footprint is approximately: • 6% of the extent of this TEC identified within the subject land • 17% of the extent of this TEC identified within the development corridor.
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	Endangered (BC Act)	All patches of PCT 28 were determined to meet the criteria for this TEC.	1,099.6	303.4	54.98	1,418.29	263.19	48.87	The total area of this TEC within the development footprint is approximately: • 4% of the extent of this TEC identified within the subject land • 19% of the extent of this TEC identified within the development corridor.
Weeping Myall Woodlands	Endangered (EPBC Act)	All intact patches of PCT 26 and select patches of PCT 26 sparse canopy (approximately 3.5%) were determined to meet the criteria for this TEC.	Not available[1]	991.34	150.46	Not available[1]	873.53	128.73	The total area of this TEC within the development footprint is approximately 15% of the extent of this TEC identified within the development corridor.
Natural Grasslands of the Murray Valley Plains	Critically endangered (EPBC Act)	As a precautionary measure, all patches of PCT 45 and PCT 46 were determined to meet the criteria for this TEC.	Not available[1]	677.14	114.42	Not available[1]	423.62	76.87	The total area of this TEC within the development footprint is approximately 18% of the extent of this TEC identified within the development corridor.

Notes: 1. Alignment of vegetation with EPBC Act listed TECs was not confirmed within the full extent of the subject land.





KEY

- Project area
- Development corridor
- Subject land
- Threatened flora location
- Hollow-bearing tree
- Scattered tree

Threatened fauna location

- Southern Bell Frog
- Painted Honeyeater
- Superb Parrot

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)

PCT13
- Moderate
- Thinned

PCT15
- Moderate

PCT17
- Moderate
- Moderate/good

PCT26
- Intact
- Sparse
- DNG

PCT45
- Moderate/good

PCT46
- Moderate

PCT160
- Moderate/good

Source: EMM (2024); Spark Renewables (2024); Biosis (2024); DFSI (2020, 2021); ESRI (2024)

0 2.5 5 km

GDA2020 MGA Zone 55

N

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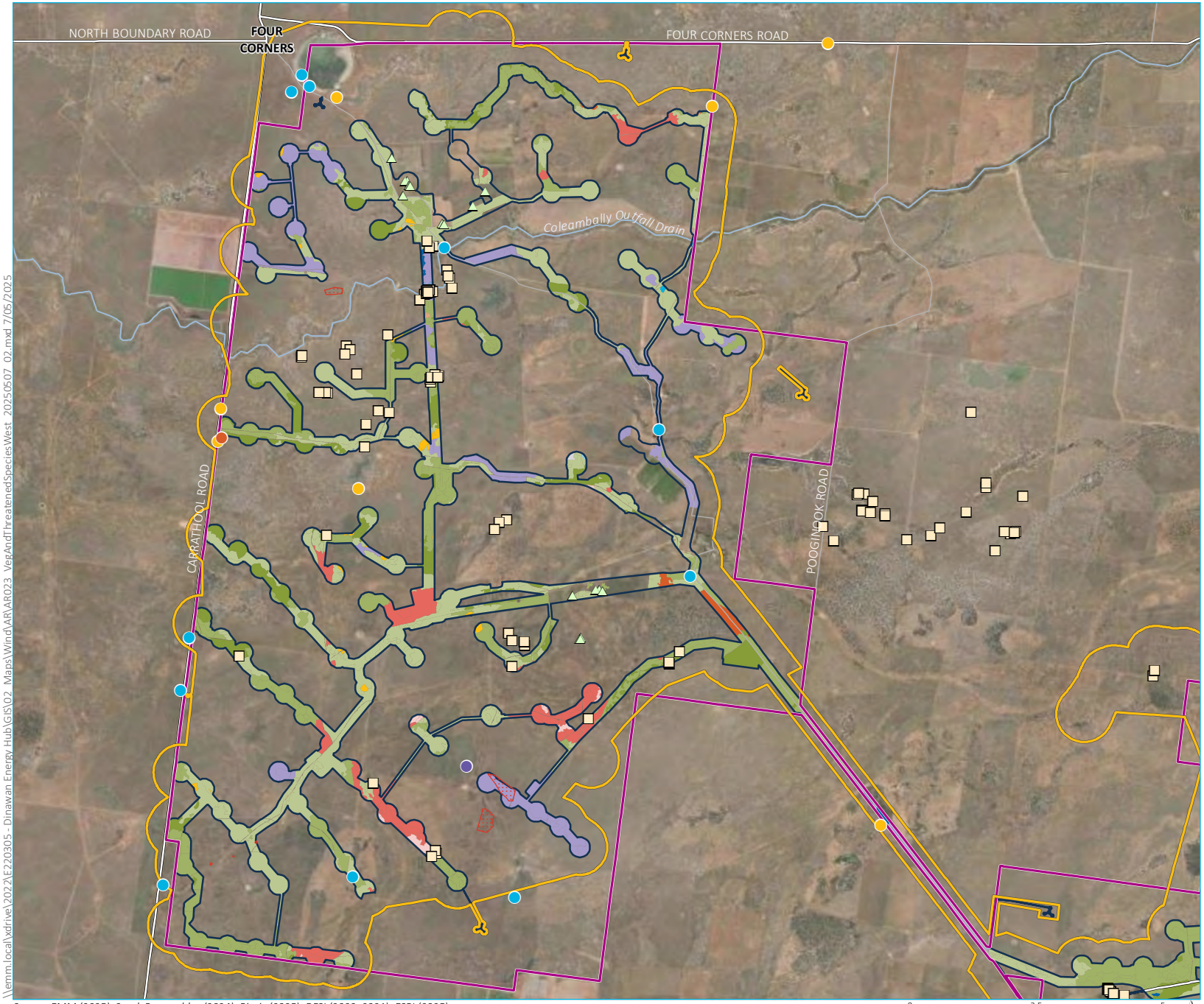
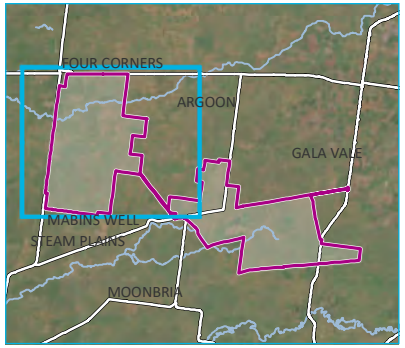
Vegetation and threatened species within the subject land and development corridor - eastern area

Dinawan Wind Farm
Amendment Report
Figure 6.2a

EMM
creating opportunities





KEY

- Project area
- Development corridor
- Subject land
- Threatened flora location
- Hollow-bearing tree
- Scattered tree

Threatened fauna location

- Southern Bell Frog
- Painted Honeyeater
- Plains Wanderer
- Superb Parrot

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)

PCT10
- Moderate

PCT13
- Moderate
- Thinned

PCT15
- Moderate
- Thinned

PCT17
- Moderate
- Moderate/good

PCT26
- Intact
- Sparse
- DNG

PCT28
- Low
- Moderate

PCT45
- Moderate/good

PCT46
- Moderate

PCT160
- Moderate/good

Source: EMM (2025); Spark Renewables (2024); Biosis (2025); DFSI (2020, 2021); ESRI (2025)

0 2.5 5 km

GDA2020 MGA Zone 55

N

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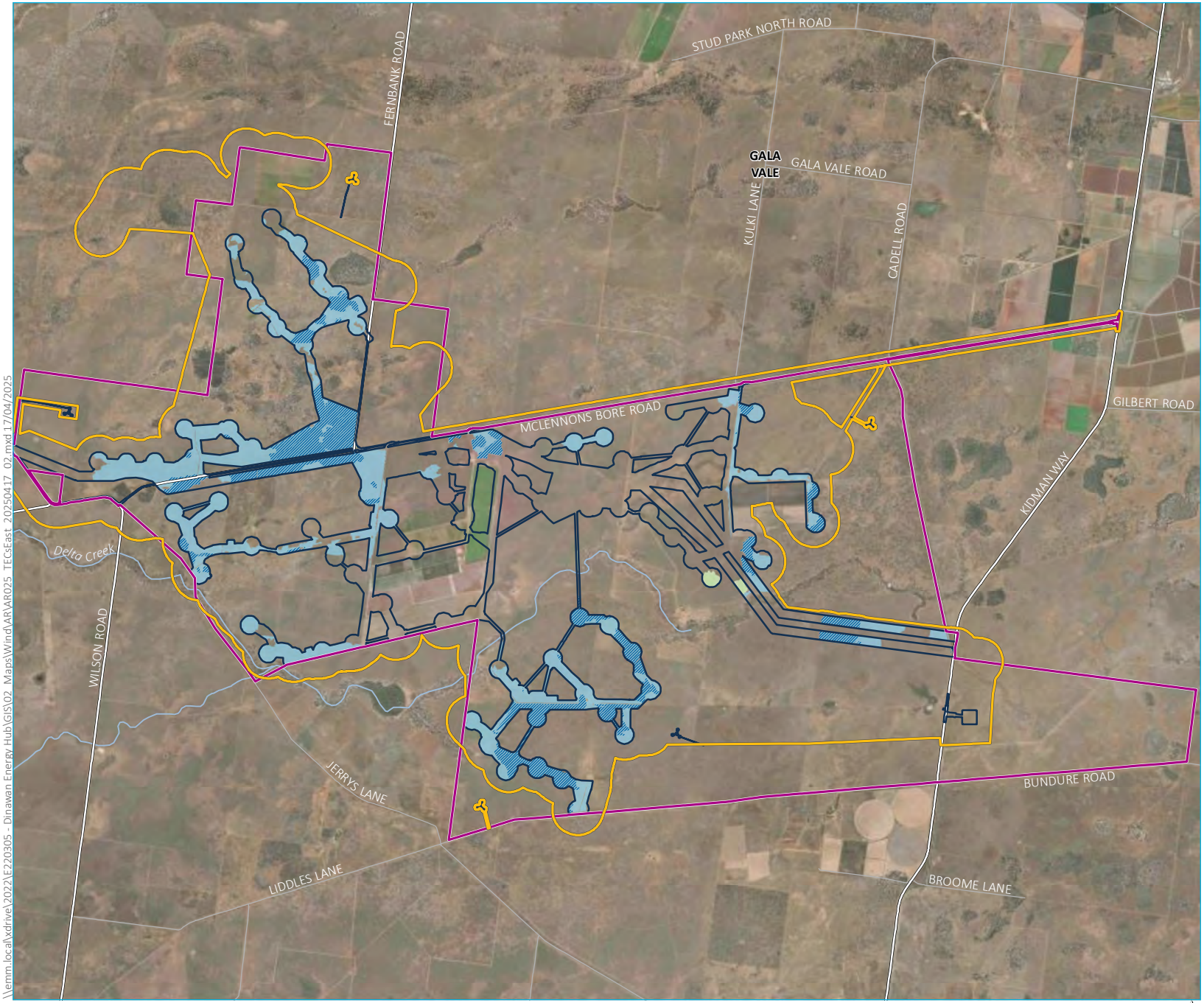
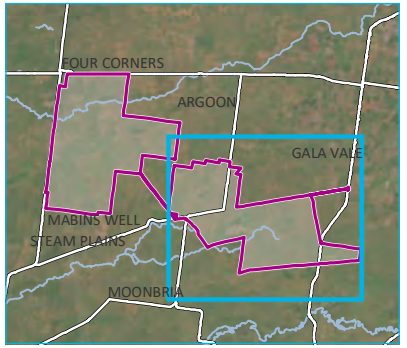
Vegetation and threatened species within the subject land and development corridor - western area

Dinawan Wind Farm
Amendment Report
Figure 6.2b

EMM
creating opportunities





KEY

- Project area
- Development corridor
- Subject land

Threatened ecological communities

- Natural Grasslands (EPBC Act)
- Weeping Myall Woodlands (EPBC Act)
- Myall Woodland (BC Act)

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)

Source: EMM (2024); Spark Renewables (2024); Biosis (2024); DFSI (2020, 2021); ESRI (2024)

0 2.5 5 km

GDA2020 MGA Zone 55

N

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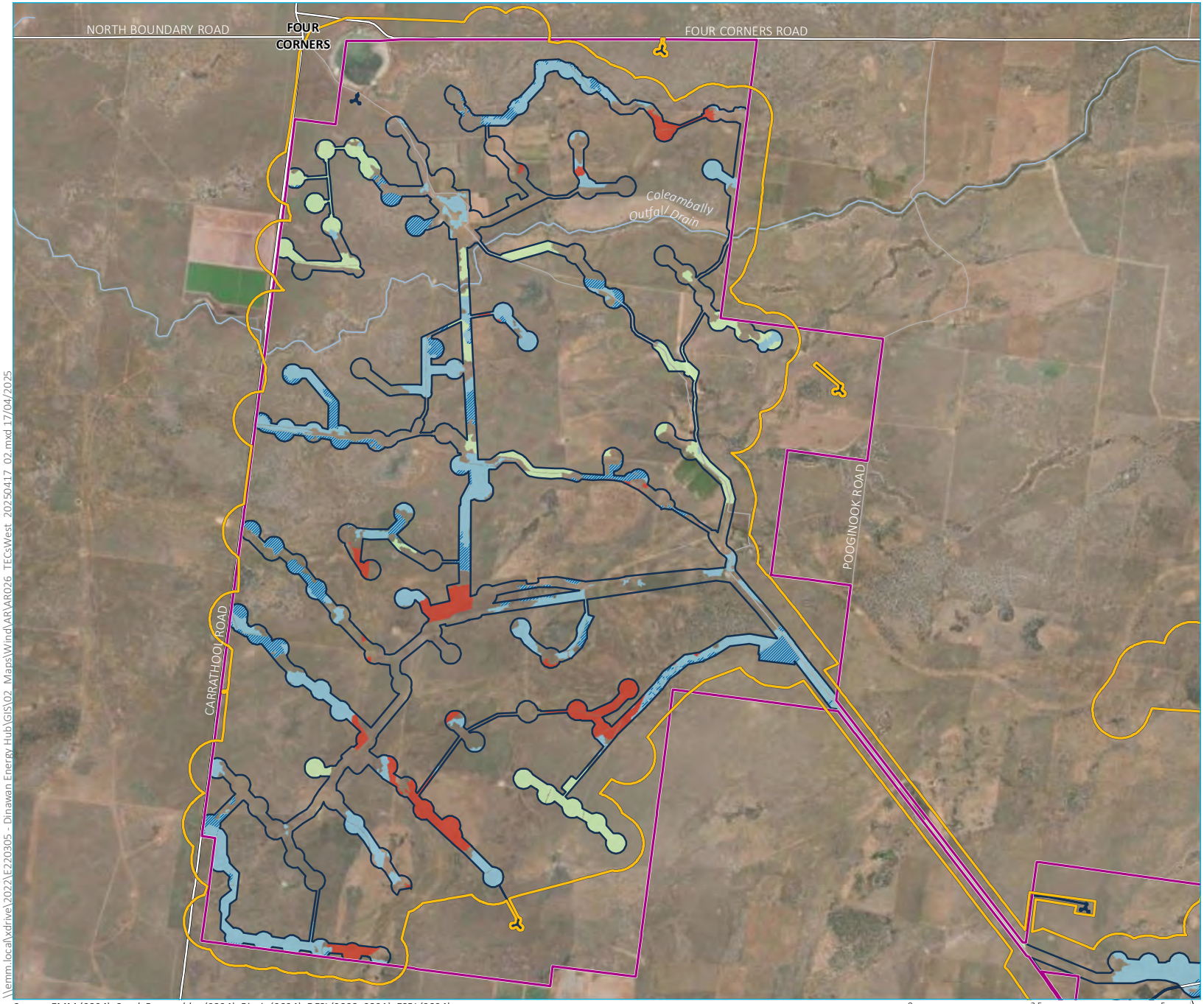
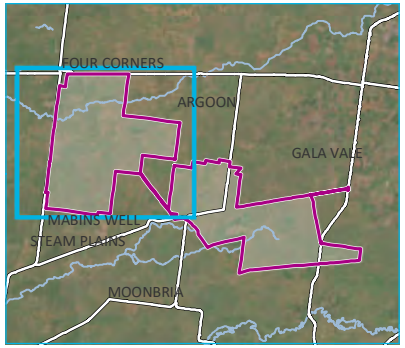
Threatened ecological communities within the development corridor – eastern area

Dinawan Wind Farm
Environmental Impact Statement
Figure 6.3a

EMM
creating opportunities





KEY

- Project area
- Subject land
- Development corridor

Threatened ecological communities

- Natural Grasslands (EPBC Act)
- Sandhill Pine Woodland (BC Act)
- Myall Woodland (BC Act)
- Weeping Myall Woodlands (EPBC Act)

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)

Source: EMM (2024); Spark Renewables (2024); Biosis (2024); DFSI (2020, 2021); ESRI (2024)

0 2.5 5 km

GDA2020 MGA Zone 55

N

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Threatened ecological communities within the development corridor – western area

Dinawan Wind Farm
Amendment Report
Figure 6.3b

EMM
creating opportunities

iii Threatened species

a Ecosystem credit species

The amendments have not altered the ecosystem credit species predicted to occur within the subject land. Of 33 ecosystem credit species predicted to occur within the subject land, 14 were recorded during field surveys within or in proximity to the subject land.

- Black Falcon (*Falco subniger*) – listed as 'vulnerable' under the BC Act
- Diamond Firetail (*Stagonopleura guttata*) – listed as 'vulnerable' under the BC Act and EPBC Act
- Dusky Woodswallow (*Artamus cyanopterus cyanopterus*) – listed as 'vulnerable' under the BC Act
- Grey-crowned Babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*) – listed as 'vulnerable' under the BC Act
- Painted Honeyeater (*Grantiella picta*) – listed as 'vulnerable' under the BC Act and EPBC Act
- Plains Wanderer (*Pedionomus torquatus)* – listed as 'endangered' under the BC Act and 'critically endangered' under the EPBC Act
- Pied Honeyeater *(Certhionyx variegatus)* – listed as 'vulnerable' under the BC Act
- Southern Whiteface (*Aphelocephala leucopsis)* – listed as 'vulnerable' under the BC Act and EPBC Act
- Spotted Harrier (*Circus assimilis*) – listed as 'vulnerable' under the BC Act
- Superb Parrot (*Polytelis swainsonii*) – listed as 'vulnerable' under the BC Act and EPBC Act
- White-fronted Chat (*Epthianura albifrons*) – listed as 'vulnerable' under the BC Act
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*) – listed as 'vulnerable' under the BC Act
- Inland Forest Bat (*Vespadelus baverstocki*) – listed as 'vulnerable' under the BC Act
- Little Pied Bat (*Chalinolobus picatus*) – listed as 'vulnerable' under the BC Act.

Targeted surveys are not required for ecosystem credit species as these species are assumed to occur, based on the identified PCTs, calculated patch sizes, habitat constraints and native vegetation cover.

b Species credit species

Species credit species are threatened species for which vegetation and landscape features cannot reliably predict the likelihood of their occurrence, or components of their habitat. Species credit species with a medium or high potential or a known occurrence within the subject land are listed in Table 6.7. Species with low potential to occur within the subject land were excluded from field survey. A full list of species credit species predicted to occur within the subject land is presented in Appendix 2 of the BDAR (Appendix D.3).

iv Birds and bats

Bird and bat utilisation surveys (BBUS) were conducted across eight seasons from August 2022 to July 2024 and included two surveys for each season (winter, spring, summer and autumn). The purpose of these surveys was to inform collision risk modelling, which has been used to predict the likelihood of WTG blade strike to bird and bat species.

A total of 26 fixed survey sites were established, including 16 impact sites and 10 control sites, with 720 replicates collected during the survey periods. The impact sites were considered representative of potential WTG positions and were positioned in various vegetation zones to capture data in different habitat types. In addition to the BBUS, large stick nest and hollow bearing tree surveys were conducted.

A total of 140 bird species were recorded within the subject land, including 110 species recorded during the BBUS and 30 additional bird species recorded as incidental observations. The number of species varied across seasons for bird utilisation and incidental surveys with the highest diversity in spring (104 species recorded), closely followed by summer (98 species recorded) and autumn (88 species recorded), with the lowest diversity in winter (70 species recorded).

A total of 14 bat species were positively identified (i.e. a call identification rating of 'almost certain' or 'probable' was recorded). Four additional bat species may also have been recorded; however, reliable identification to species level was not possible due to similarity of call characteristics between species.

Table 6.7 Species credit species with potential to occur within the subject land

Name	Listing	Survey outcome	Potential for impact	Species polygon required[2]
Flora				
A spear-grass (*Austrostipa wakoolica*)[1]	Endangered - BC Act and EPBC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Claypan Daisy (*Brachyscome muelleroides)*[1]	Vulnerable - BC Act and EPBC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Mossgiel Daisy (*Brachyscome papillosa)*[1]	Vulnerable - BC Act and EPBC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Bindweed (*Convolvulus tedmoorei)*[1]	Endangered - BC Act	Not recorded during surveys.	Low	Not required
Yellow Gum (*Eucalyptus leucoxylon* subsp. *Pruinosa*)[1]	Vulnerable - BC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Lanky Buttons (*Leptorhynchos orientalis)* [1]	Endangered - BC Act	Not recorded during survey to date. Assumed present where further survey is required.	Medium	Yes – refer Figure 12A of Appendix D.3
Winged Peppercress (*Lepidium monoplocoides)*[1]	Endangered - BC Act and EPBC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Chariot Wheels (*Maireana cheelii)*[1]	Vulnerable - BC Act and EPBC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Austral Pillwort (*Pilularia novae-hollandiae)* [1]	Endangered - BC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Turnip Copperburr (*Sclerolaena napiformis)*[1]	Endangered - BC Act and EPBC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Red Darling Pea *(Swainsona plagiotropis)*[1]	Vulnerable - BC Act and EPBC Act	Not recorded during survey to date. Assumed present where further survey is required.	Low	Yes – refer Figure 12A of Appendix D.3
Slender Darling Pea (*Swainsona murrayana)*[1]	Vulnerable - BC Act and EPBC Act	Recorded during surveys. Assumed present where further survey is required.	High	Yes – refer Figure 12A of Appendix D.3
Silky Swainsona-pea *(Swainsona sericea)*[1]	Vulnerable - BC Act	Recorded during surveys. Assumed present where further survey is required.	High	Yes – refer Figure 12A of Appendix D.3

Name	Listing	Survey outcome	Potential for impact	Species polygon required[2]
Fauna				
Australian Bustard *(Ardeotis australis)*	Endangered - BC Act	Not recorded.	Low	Not required
Barking Owl (*Ninox connivens)*	Vulnerable - BC Act	Not recorded.	Low	Not required
Grey Snake (*Hemiaspis damelii*)	Endangered – BC Act and EPBC Act	Not recorded. Assumed present.[2]	Low	Yes – refer Figure 12B of Appendix D.3
Little Eagle (breeding) *(Hieraaetus morphnoides)*	Vulnerable - BC Act	Not recorded.	Medium	Not required
Major Mitchell's Cockatoo (breeding) (*Lophochroa leadbeateri)*	Vulnerable - BC Act and EPBC Act	Not recorded.	Low	Not required
Masked Owl (*Tyto novaehollandiae)*	Vulnerable - BC Act	Not recorded.	Low	Not required
Plains Wanderer (*Pedionomus torquatus)*	Endangered - BC Act; critically endangered - EPBC Act	Recorded during surveys. Development footprint intersects 2.38 ha of mapped important habitat, of which 0.67 ha is cleared.	Medium	Yes – refer Figure 12B of Appendix D.3
Southern Bell Frog (*Litoria raniformis)*	Endangered - BC Act; vulnerable - EPBC Act	Recorded.	High	Yes – refer Figure 12B of Appendix D.3
Southern Myotis (*Myotis macropus*)	Vulnerable - BC Act	Assumed present.[3]	Low	Yes – refer Figure 12B of Appendix D.3
Square-tailed Kite (breeding) (*Lophoictinia isura)*	Vulnerable - BC Act	Not recorded.	Low	Not required
Superb Parrot (breeding) (*Polytelis swainsonii)*	Vulnerable - BC Act and EPBC Act	Recorded during surveys. Assumed to breed within the development footprint in select vegetation zones due to the presence of paired individuals and juveniles.	High	Yes – refer Figure 12B of Appendix D.3
White-bellied Sea-Eagle (breeding) (*Haliaeetus leucogaster)*	Vulnerable - BC Act	Not recorded.	Low	Not required

Notes: 1. Species have been assumed to be present within areas of potentially suitable habitat and will be subject to further surveys in Spring 2025.

2. This species was recently listed as a species credit species and therefore surveys were not able to be undertaken as part of the preparation of the amended BDAR.

3. This species has conservatively been assumed present within areas of potentially suitable habitat as its call was potentially identified during ultrasonic recording.

6.3.3 Avoidance and minimisation through design

As described in the EIS, a key constraint considered during the site selection and design refinement process has been avoidance and minimisation of impacts on biodiversity.

Due to the extent of native vegetation within the broader region, South West REZ and subject land, complete avoidance of impacts was not possible. Although impacts to native vegetation, threatened species habitat and TECs will occur, project refinements, including the amendments, have avoided or minimised impacts to the areas with the highest biodiversity values. Key avoidance and minimisation measures include:

- prioritising avoidance of impacts to PCT 26 (intact), which has the highest vegetation integrity score and is an EPBC Act listed TEC, and is known habitat for Painted Honeyeater and Grey-crowned Babbler
- minimising disturbance through preferential use of existing access tracks and public roads for site access and transmission line easements and co-locating access tracks with electrical cabling and transmission line easements
- minimising removal of habitat trees for threatened species, including Superb Parrot and Corben's Long-eared Bat (*Nyctophilus corbeni*)
- avoidance of direct impacts to important mapped habitat areas for Plains Wanderer to the extent possible
- removing and/or relocating WTGs away from large bird nests observed during surveys
- siting WTGs at least 200 m away from PCT 13, PCT 15, PCT 10 and PCT 28 to the extent possible
- avoidance of approximately 78% of hollow-bearing trees recorded within the development corridor
- avoidance and minimisation of impacts to large patches of Silky Swainsona-pea and Slender Darling Pea.

As a result of identified biodiversity constraints and subsequent design refinements, 214 WTG locations were relocated as part of the EIS to avoid and minimise biodiversity impacts. The amended layout further reduces and refines the locations of the WTGs, which has further reduced biodiversity impacts. The amended layout has included:

- removing 67 WTGs from the development footprint, including removing 26 WTGs with a high collision risk and all WTGs with a very high collision risk to at risk bird and bat species
- a reduction in the rotor swept area
- reducing impacts to TECs listed under the BC Act from 604.7 ha to 507.04 ha (16% reduction)
- reducing impacts to TECs listed under the EPBC Act from 264.9 ha to 205.6 ha (22% reduction)
- avoiding impacts to a known Plains Wanderer record
- removing and/or relocating WTGs from areas of PCT 26 (intact) where vulnerable listed Painted Honeyeaters were recorded and vulnerable listed Grey-crowned Babblers were nesting
- further avoidance and minimisation of impacts to *Swainsona murrayana* and *Swainsona sericea.*

As outlined in the EIS, with the exception of the Coleambally Irrigation Area (a significant network of irrigated farming north-west of the project) and areas of modified agricultural land, the TECs that will be impacted by the project have been mapped extensively within the south-eastern extent of the South West REZ and surrounds. The

prevalence of native vegetation in this region is due to land use practices and patterns of agricultural development implemented, which are dominated by grazing. Where grazing is implemented, native vegetation persists in variable condition states.

It is not possible to develop a viable large-scale wind farm within the region/South West REZ with no impacts to native vegetation. Locally, the extent of native vegetation in the subject land and surrounds means that impacts to TECs cannot be completely avoided by the project. The project refinement process has therefore focused on avoiding higher quality woodland and forested areas, as well as areas of TEC and habitat of highest value that are likely to contain, or have recorded, threatened species. As a result, the development footprint contains land previously disturbed by low intensity agriculture, which contains DNG and lower condition vegetation, to the extent possible.

Since project inception, avoidance and minimisation of direct impacts to TECs (specifically, the EPBC Act listed TECs) has been a key driver in both site selection and project refinement. As described in Section 2.3, a key driver for site selection has been the proximity of the development footprint to the approved Dinawan Substation for connection to the electricity network. By selecting a site within close proximity to the substation, the project maximises energy generation efficiencies and minimises the requirement for linear transmission infrastructure to connect to the network, which would have biodiversity (and other) impacts. The project area is, on balance, considered to be in an optimal location.

6.3.4 Potential impacts

i Direct impacts

The project's direct impacts on biodiversity within the development footprint, and associated credit requirements, are listed in Table 6.8, Table 6.9 and Table 6.10.

Of the 60 hollow-bearing trees recorded within the development corridor, the project will result in the loss of 9 hollow-bearing trees, which represents a reduction from a total of 15 hollow-bearing trees assessed in the EIS. These trees contain small, medium and large hollows, or a combination of all three.

The project will also have a direct impact on 16 scattered trees (reduced from 29) with a subsequent offset requirement of 10 credits.

The project will have a direct impact on 507.04 ha of BC Act listed and 205.6 ha of EPBC Act listed TECs:

- 458.17 ha of the Myall Woodland TEC listed under the BC Act (i.e. areas identified as PCT 26 (sparse) and PCT 26 (intact))
- 48.87 ha of the Sandhill Pine Woodland TEC listed under the BC Act (i.e. areas identified as PCT 28 (low) and PCT 28 (moderate))
- 128.73 ha of the Weeping Myall Woodland TEC listed under the EPBC Act (i.e. areas identified as PCT 26 (intact) and part of the area identified as PCT 26 (sparse))
- 76.87 ha of the Natural Grasslands of the Murray Valley Plains TEC listed under the EPBC Act (i.e. areas identified as PCT 45 (moderate to good) and PCT 46 (moderate)).

The project will impact:

- 128.83 ha of confirmed threatened species habitat requiring offsets
- 2,226.97 ha of habitat for threatened species assumed to be present (for which surveys are yet to be completed).

Table 6.8 Ecosystem credit requirements

Plant community type	Condition	Conservation status		SAII entity	Impact area (ha)	Credit liability
		BC Act	EPBC Act			
PCT 10 River Red Gum - Black Box woodland wetland	Moderate	-	-	-	0.19	2
PCT 13 Black Box - Lignum woodland	Moderate	-	-	-	3.56	110
	Thinned	-	-	-	7.88	238
PCT 15 Black Box open woodland wetland	Moderate	-	-	-	2.54	84
	Thinned	-	-	-	1.1	32
PCT 17 Lignum shrubland wetland	Mod_good	-	-	-	0.76	28
	Moderate	-	-	-	1.27	46
PCT 26 Weeping Myall woodland	DNG	-	-	-	342.38	3,475
	Intact	EEC	EEC	-	116.79	3,917
	Sparse	EEC	EEC[1]	-	341.38	7,890
PCT 28 White Cypress Pine Woodland	Low	EEC	-	-	47.76	1,364
	Moderate	EEC	-	-	1.11	41
PCT 45 Plains Grass grassland	Mod_good	-	CEEC	-	2.24	91
	Intersection	-	CEEC	-	0.83	52
PCT 46 Curly Windmill Grass - speargrass - wallaby grass grassland	Moderate	-	CEEC	-	73.44	4,158
	Intersection	-	CEEC	-	0.34	21
PCT 160 Nitre Goosefoot shrubland wetland	Mod_good	-	-	-	4.97	147
Scattered trees					N/A	10
Total					**948.54**	**21,706**

Notes: 1. Approximately 3.5% of PCT 26 sparse aligns with the EPBC Act listed TEC.

Table 6.9 Flora species credit requirements

Flora species		Conservation status		SAII entity	Impact on habitat (ha)			Credit liability
		BC Act	EPBC Act		Known	Assumed	Total	
Slender Darling Pea	*Swainsona murrayana*	Vulnerable	Vulnerable	-	2.6	391.37	393.97	9,121
Silky Swainsona-pea	*Swainsona sericea*	Vulnerable	-	-	2.6	391.37	393.97	9,121
A spear-grass	*Austrostipa wakoolica*	Endangered	Endangered	-	-	16.41	16.41	322
Claypan Daisy	*Brachyscome muelleroides*	Vulnerable	Vulnerable	Yes	-	35.62	35.62	2,428
Mossgiel Daisy	*Brachyscome papillosa*	Vulnerable	Vulnerable	-	-	44.42	44.42	1,930
Winged Peppercress	*Lepidium monoplocoides*	Endangered	Endangered	-	-	212.44	212.44	3,985
Lanky Buttons	*Leptorhynchos orientalis*	Endangered	-	-	-	205.52	205.52	5,285
Chariot Wheels	*Maireana cheelii*	Vulnerable	Vulnerable	-	-	238.04	238.04	5,241
Austral Pillwort	*Pilularia novae-hollandiae*	Endangered	-	-	-	71.99	71.99	2,772
Turnip Copperburr	*Sclerolaena napiformis*	Endangered	Endangered	-	-	238.97	238.97	5,241
Red Darling Pea	*Swainsona plagiotropis*	Vulnerable	Vulnerable	-	-	358.47	358.47	8,054
Total					**5.2**	**2,204.62**	**2,209.82**	**53,500**

Table 6.10 Fauna species credit requirements

Fauna species		Conservation status		SAII entity	Impact on habitat (ha)			Credit liability
		BC Act	EPBC Act		Known	Assumed	Total	
Grey Snake	*Hemiaspis damelii*	Endangered	Endangered	-	-	22.35	22.35	815
Plains Wanderer	*Pedionomus torquatus*	Endangered	Critically endangered	Yes	2.38	-	2.38	125
Superb Parrot	*Polytelis swainsonii*	Vulnerable	-	-	35.96	-	35.96	988
Southern Bell Frog	*Litoria raniformis*	Endangered	Vulnerable	-	82.88	-	82.88	1,946
Southern Myotis	*Myotis macropus*	Vulnerable	-	-	2.41	-	2.41	83
Total					**123.63**	**22.35**	**145.98**	**3,957**

ii Indirect impacts

Indirect impacts on biodiversity may occur in areas outside the development footprint, but within the subject land. Potential indirect impacts arising from the project are detailed in Section 8.2 of Appendix D.3.

The assessed likelihood of indirect impacts occurring as a result of the project has changed in response to comments received from CPHR (refer Table 78 of Appendix D.3) and are summarised as:

- wood collection; and inadvertent impacts on adjacent habitat or vegetation – increased from negligible to low likelihood of occurrence and consequence for biodiversity

- reduced viability of adjacent habitat due to noise, dust or light spill; reduced viability of adjacent habitat due to edge effects; and transport of weeds and pathogens from within the development footprint to adjacent vegetation (increased from negligible to low-moderate).

iii Prescribed impacts

Prescribed impacts are additional biodiversity impacts identified under clause 6.1 f the NSW Biodiversity Conservation Regulation 2017 and listed in the BAM. Further assessment of prescribed impacts has been undertaken in the Amended BDAR in response to comments received from CPHR. Prescribed impacts relevant to the project are:

- Human-made structures and non-native vegetation – dams and irrigation infrastructure within the subject land is utilised by water birds, raptors and the Southern Bell Frog. The consequence of removal of dams as a habitat feature is considered to be low. Existing transmission lines and rural infrastructure (e.g. sheds and fences) may be used by avian fauna species for nesting. Many small and moderate nests were recorded within the subject land, but outside of the development corridor. The consequence of removal of these features is considered to be low. The project's impacts on non-native vegetation will have a negligible impact on threatened and non-threatened species that utilise this habitat.

- Habitat connectivity – avoidance of woody areas within the subject land will allow for the continued uninterrupted movement of the majority of fauna species during construction and operation of the project. It is expected that fauna species will continue to utilise the existing corridors within the subject land and broader landscape, with minor or negligible impact to movement patterns and/or population viability. While the project will reduce local scale connectivity, this is unlikely to prevent genetic exchange of the threatened entities known, or assumed to be, inhabiting the subject land and broader area.

- Waterbodies, water quality and hydrological processes – No significant direct impacts are considered likely to occur to major waterways in the region and the project is not expected to change hydrological flow, or contribute to the degradation of waterways within the subject land. Impacts to threatened species, including Southern Bell Frog, as a result of direct impacts to watercourses, or indirect impacts to hydrological patterns are not expected to be substantial or significant. Appropriate controls to effectively manage surface and groundwater resources are outlined in Appendix C.

- Vehicle strikes – the project will increase vehicle movements, predominantly during construction. This has potential to result in increased vehicle strikes of fauna. Measures to reduce potential for vehicle strikes include reduced speed limits, minimising project-related vehicle movements between dusk and dawn and implementation of vehicle strike protocols.

These impacts are discussed in detail in Section 8.3 of Appendix D.3.

iv Bird and bat collision risk and barrier effect

In addition to the direct loss of habitat from during construction, indirect impacts on birds and bats could also arise from the operation of the WTGs. Bird and bat collision risk and barrier effects have been assessed using a combination of collision risk modelling and risk assessments. While impacts to microbat species may occur as a result of turbine strike, it is considered unlikely that additional impacts will occur as a result of barotrauma. The pressure changes necessary to cause barotrauma in microbats are anticipated to occur at such close proximity to the blade itself, it is considered unlikely a microbat could experience barotrauma without simultaneously being struck by the blade itself.

The impacts to bird and bat collision risk and barrier effect have been reassessed for the amended project layout and amended WTG specifications.

a Collision risk modelling

Collision risk modelling using BBUS data has been completed to predict bird and bat flight movements that could be at risk of collision with a WTG during each year of operation. This was based on species that were recorded flying at the height at which the WTG blades are proposed to rotate. The model's results are expressed as the number of flights at risk of collision per year for each species. Based on an assumption that the collision avoidance capacity of recorded species is 95%, the results of the collision risk model predict:

- eight species with less than one annual flight will be at some risk of collision
- nine species with one to five annual flights will be at some risk of collision
- two species with greater than five annual flights will be at some risk of collision.

The amended project has reduced the number of species that with greater than five annual flights at risk of collision from six, to two species.

Of the threatened species recorded during the BBUS, the collision risk model predicts that Superb Parrot will have three annual flights and Black Falcon and Spotted Harrier will have less than one annual flight that will be at some risk of collision.

b Risk assessment

Risk assessments have identified bird and bat species considered to be at risk of collision with WTGs (refer to Section 6.2 of Appendix D.3). A total of 23 species of birds (1 'high risk', 4 'moderate risk' and 18 'low risk') and 7 species of bats (all 'low risk') are considered to be at more than a negligible risk of impact from turbine collisions, and thus 'at-risk' as a result of the project (refer to Section 6.2.3 of Appendix D.3). These results remain unchanged by the amended project.

Risk assessments for individual WTGs considered the likelihood of each turbine resulting in collisions with bird and bat species (refer to Section 6.3 of Appendix D.3). The collision risk is largely dependent on the proximity of surrounding habitat types to WTGs, and the potential consequence on bird and bat species utilising those habitats if they were to collide with a WTG. The latter is largely driven by the 'at-risk' and conservation status of the species. In total, 83.5% of the WTGs fall within a low (31.5%) or moderate (52%) risk category (increased from 77% in the EIS), whilst the remaining 16.5% fall within the high risk category (reduced from 22% in the EIS). All very high risk category WTGs have been removed as part of the amended project.

v Serious and irreversible impacts

An impact is regarded as serious and irreversible (SAII) if it is likely to contribute significantly to the risk of a threatened species (including endangered populations) or an ecological community becoming extinct, on the basis of four principles described in the BC Regulation. Two species that may be impacted by the project are considered to meet these principles: Plains Wanderer and Claypan Daisy. Austral Pillwort is no longer an SAII entity and further survey has determined that the project will not impact Bindweed. A detailed SAII assessment is provided in Appendix 5 of Appendix D.3 and a summary is provided in Table 6.11.

Table 6.11 Summary of serious and irreversible impacts

Species	Summary of assessment
Claypan Daisy	The avoidance of higher quality biodiversity values within the subject land through project refinements included avoidance of potential habitat for Claypan Daisy to the extent practicable. Surveys for Claypan Daisy were undertaken in 2022, 2023 and 2024 and this species has not been recorded to date. Recent design refinements have resulted in gaps in the survey effort and further survey is planned for Spring 2025; however, overall, the survey undertaken to date is considered representative of the potential habitat for Claypan Daisy within the subject land. Potential indirect impacts will be managed through the implementation of the BMP.
Plains Wanderer	As part of site selection and project refinement, a key consideration has been the avoidance of impacts to Plains Wanderer habitat including avoidance of areas of mapped important habitat to the extent practicable. Approximately 2.38 ha of mapped important habitat for Plains Wanderer is within the development footprint, which has been reduced from 4 ha by the amended project. Of this 2.38 ha, 0.67 ha is cleared land that forms part of Goolgumbla Road or existing access tracks. The impacted area of mapped important habitat represents 0.25% of the total mapped important habitat within the subject land (reduced from 0.62% in EIS). All areas of mapped important habitat that will be impacted by the project are immediately adjacent to either Goolgumbla Road or existing access tracks. These areas cannot be avoided by the project as they have been selected to minimise overall biodiversity impacts by prioritising the use of existing, disturbed land. Targeted surveys did not detect this species within the subject land; however, one individual was incidentally recorded when flushed from habitat within the western area. A 300 m exclusion zone has been adopted around this location. Based on the extent of occurrence, the area of occupancy and carrying capacity, the subject land could potentially support four pairs of birds. At the time of the targeted surveys (April 2023), limited areas of the grasslands within the development corridor were considered to be optimal Plains Wanderer habitat, including areas mapped as important habitat by NSW DCCEEW. Due to the dynamic nature of the grassland habitat critical to this species, areas within the subject land may be suitable for this species in the future; however, the most optimal areas have been avoided by the development footprint as far as practicable. Indirect impacts, such as those associated with increased fragmentation and isolation of suitable habitat, are considered unlikely to be substantial as a result of the project. Potential indirect impacts will be managed through the implementation of the BMP.

vi Matters of National Environmental Significance

A summary of the MNES identified by DCCEEW in the SEARs as being likely to be significantly impacted or possibly at risk is provided in Table 6.12.

Table 6.12 EPBC Act listed threatened species and ecological communities identified by DCCEEW

Threatened species or ecological community *DCCEEW rating*[1]	Assessment summary
Weeping Myall woodlands ***Significant impact likely***	***Significant impact likely*** Weeping Myall woodlands is the dominant vegetation community within the development footprint and broader region. It occurs in three different conditions: intact, sparse and DNG. The development corridor contains 873.53 ha of Weeping Myall woodlands, of which 128.73 ha is within the development footprint and will be directly impacted. It is estimated that there is approximately 5,771 ha of intact Weeping Myall woodlands within the subject land; however, it is uncertain how much of this area would meet the requirements of the EPBC Act listing. The project is considered likely to have a significant impact on this TEC due to the removal of approximately 128.73 ha, which would reduce the extent of this TEC.
Natural Grasslands of the Murray Valley Plains ***Significant impact likely***	***Significant impact likely*** Impacts to known areas of Natural Grasslands of the Murray Valley Plains TEC have been avoided to the extent practicable. The project will impact 76.87 ha (i.e. PCT 45 and PCT 46) of small, isolated patches or fringing areas of larger more connected patches. It is estimated that there is approximately 3,337 ha of Riverine plain grassland communities (i.e. PCT 45 and PCT 46) within the subject land; however, it is uncertain how much of this area would meet the requirements of the EPBC Act listing. Within the broader area, it is estimated that approximately 61,000 ha of this TEC remains within the Riverina region. The removal of 76.87 ha of this TEC equates to 0.1% of the expected extent of this TEC within the Riverina region. The BMP will include weed and biosecurity management measures to mitigate potential indirect impacts on this TEC. The BMP will also include adaptive management strategies, including measures to monitor predicted and uncertain impacts that will trigger adaptive management actions, allowing effective and quick responses. The project is considered likely to have a significant impact on this TEC due to the removal of approximately 76.87 ha, which would reduce the extent of this TEC.
Plains Wanderer ***Significant impact likely***	***Significant impact possible based on reduced occupancy*** Avoidance (with suitable buffers) of Plains Wanderer habitat and mapped important areas has been a key consideration during site selection and project refinement. The Plains Wanderer was not recorded during targeted surveys (which included nocturnal transects and acoustic detection) within the subject land. One Plains Wanderer individual was incidentally recorded in October 2024 within PCT 46 fringing areas of PCT 26 DNG in close proximity to important mapped areas. A 300 m buffer exclusion area was applied and design amended to avoid impacts to this buffer and potential home range. Direct impacts to Plains Wanderer habitat will be limited to: • 2.38 ha of mapped important habitat • areas of PCT 45 and PCT 46 (total of 76.87 ha), which may provide habitat in the future due to the dynamic nature of grassland communities in the Riverina. The BMP will include weed and pest management measures to mitigate potential indirect impacts on Plains Wanderer. The BMP will also include adaptive management strategies, including measures to monitor predicted and uncertain impacts that will trigger adaptive management actions, allowing effective and quick responses. The project is considered likely to adversely impact habitat critical to the survival of the species and reduce the area of occupancy of a population. Direct impacts equate to approximately 0.36% of mapped important habitat within the subject land.

Threatened species or ecological community *DCCEEW rating*[1]	Assessment summary
Superb Parrot ***Some risk of significant impact***	***Potential for significant impact based on reduced occupancy and collision risk*** The Superb Parrot has been recorded foraging within the subject land. Numerous paired individuals and juveniles were observed. No evidence of breeding was found. Potential nesting hollows were found to be used by other, more common, species. Areas of high biodiversity value, including most likely habitat for Superb Parrot has been avoided as much as possible. Superb Parrots are at risk of collisions with WTGs. Potential indirect impacts will be managed through the implementation of the BMP and bird and bat adaptive management plan (BBAMP), which will include pre-clearance surveys, adaptive management should collisions occur and unexpected finds procedures. Additional baseline surveys will also be undertaken within areas of expected high use for Superb Parrot prior to vegetation clearing.
Slender Darling Pea ***Some risk of significant impact***	***Significant impact unlikely*** Slender Darling Pea was recorded during targeted surveys. The species was found in discrete areas with reduced grass cover and increased forb richness and was not identified in areas dominated by thick grass cover. Approximately 1,332 individuals were recorded (of which a limited number of individuals will be directly impacted by the project) and 42 ha of optimal habitat identified. The development footprint has been refined to avoid and minimise impacts to large patches of Slender Darling Pea to ensure a viable local population can be maintained. The project will directly impact approximately 2.6 ha of suitable habitat that is known to host isolated individuals and small patches. This represents approximately 6% of the local population recorded within the subject land. This species has also been assumed present in 391.37 ha of potential habitat where adequate survey is yet to be completed. Potential indirect impacts will be managed through the implementation of the BMP, which will include pre-clearance surveys, adaptive management and unexpected finds procedures. It is unlikely that significant impacts will occur to this species as a result of the project.
Spear Grass ***Some risk of significant impact***	***Significant impact unlikely*** Targeted surveys did not identify this flora species within the subject land. The presence of Spear Grass has not been surveyed adequately to date due to flooding and access constraints. A total of 16.41 ha is assumed present and will be subject to further survey. Most likely habitat for this species has been avoided as much as possible. This species can be associated with PCT 17 and PCT 26. For PCT 26, it is assumed this species will only occur in areas subject to more frequent flooding. Potential indirect impacts will be managed through the implementation of the BMP, which will include pre-clearance surveys, adaptive management and unexpected finds procedures. It is unlikely that significant impacts will occur to this species as a result of the project.
Claypan Daisy ***Some risk of significant impact***	***Significant impact unlikely*** Targeted surveys did not identify this flora species within the subject land. Although not detected in surveys to date across a large portion of the development footprint, changing designs has resulted in spatial gaps in survey effort and this species has been assumed to be present in 35.62 ha of the development footprint. It is unlikely that significant impacts will occur to these species as a result of the project.
Mossgiel Daisy[2]	***Significant impact unlikely*** Targeted surveys did not identify this flora species within the subject land. Although not detected in surveys to date across a large portion of the development footprint, changing designs has resulted in spatial gaps in survey effort and this species has been assumed to be present in 44.42 ha of the development footprint. It is unlikely that significant impacts will occur to these species as a result of the project.

Threatened species or ecological community *DCCEEW rating*[1]	Assessment summary
Winged Peppercress ***Some risk of significant impact***	***Significant impact unlikely*** Targeted surveys did not identify this flora species within the subject land. Although not detected in surveys to date across a large portion of the development footprint, changing designs has resulted in spatial gaps in survey effort and this species has been assumed to be present in 212.44 ha of the development footprint. It is unlikely that significant impacts will occur to these species as a result of the project.
Turnip Copperburr ***Some risk of significant impact***	***Significant impact unlikely*** Targeted surveys did not identify this flora species within the subject land. Although not detected in surveys to date across a large portion of the development footprint, changing designs has resulted in spatial gaps in survey effort and this species has been assumed to be present in 238.97 ha of the development footprint. It is unlikely that significant impacts will occur to these species as a result of the project.
Chariot Wheels ***Some risk of significant impact***	***Significant impact unlikely*** Targeted surveys did not identify this flora species within the subject land. Although not detected in surveys to date across a large portion of the development footprint, changing designs has resulted in spatial gaps in survey effort and this species has been assumed to be present in 238.04 ha of the development footprint. It is unlikely that significant impacts will occur to these species as a result of the project.
Red Darling Pea ***Some risk of significant impact***	***Significant impact unlikely*** Targeted surveys did not identify this flora species within the subject land. Although not detected in surveys to date across a large portion of the development footprint, changing designs has resulted in spatial gaps in survey effort and this species has been assumed to be present in 35.62 ha of the development footprint. It is unlikely that significant impacts will occur to these species as a result of the project.
Southern Bell Frog[2]	***Significant impact unlikely*** This species has been recorded within the subject land. Records occurred following above average rainfall and flooding conditions that likely washed individuals from a stronghold area in the Coleambally Irrigation Area or via flooding events in Delta Creek and Coleambally Outfall Drain. Areas of high biodiversity value, and therefore most likely habitat for this species, have been avoided to the extent practicable. Direct impacts will be limited with most impacts associated to adjacent buffers and dispersal habitat up to 82 ha. Potential indirect impacts will be managed through the implementation of the BMP, which will include pre-clearance surveys, adaptive management and unexpected finds procedures. It is unlikely that significant impacts will occur to this species as a result of the project.
Grey Snake[2]	***Significant impact unlikely*** Targeted surveys were not completed for this fauna species within the subject land due to the late inclusion of the species as a species credit species, approximately 15 months after the project's SEARS were issued. This species has been assumed to be present in 22.35 ha of the development footprint. It is considered unlikely that this species will be present within the subject land as known records and more optimal habitat is west of Maude, approximately 110 km west of the project. It is unlikely that significant impacts will occur to this species as a result of the project.

Threatened species or ecological community *DCCEEW rating*[1]	Assessment summary
Corben's Long-eared Bat (*Nyctophilus corbeni)* ***Some risk of significant impact***	***Significant impact unlikely*** A call complex was identified during the bat utilisation surveys which has the potential of being Corben's Long-eared Bat. This species often flies at low levels and is unlikely to fly at a height where it would be exposed to potential collision risk. Impacts to habitat for this species have been minimised to the extent possible. As there is a high abundance of small and medium hollows within the subject land, the removal of nine hollow bearing trees is unlikely to impact the species. Potential indirect impacts will be managed through the implementation of the BMP, which will include pre-clearance surveys, adaptive management and unexpected finds procedures. It is unlikely that significant impacts will occur to this species as a result of the project.
Sand-hill Spider Orchid (*Caladenia arenaria*) ***Some risk of significant impact***	***Significant impact unlikely*** Sand-hill Spider Orchid has a limited geographic distribution and specific habitat requirements. The subject land is not 'east of Jerilderie' and microhabitat within the White Cypress Pine communities has groundcover which is degraded. It is unlikely that significant impacts will occur to this species as a result of the project.
Eastern Major Mitchell's Cockatoo (*Lophochroa leadbeateri leadbeateri*) Australasian Bittern (*Botaurus poiciloptilus*) Australian Painted Snipe Southern Whiteface Painted Honeyeater Diamond Firetail (*Stagonopleura guttata*) Blue-winged Parrot (*Neophema chrysostoma*) White-throated Needletail (*Hirundapus caudacutus*) Fork Tailed Swift[2] Glossy Ibis (*Plegadis falcinellus*)[2] ***Some risk of significant impact***	***Significant impact unlikely*** Southern Whiteface, Painted Honeyeater, Diamond Firetail, Glossy Ibis and Fork Tailed Swift have been recorded within the development footprint. Australasian Bittern and Australian Painted Snipe have been observed opportunistically within or adjacent to the subject land. Eastern Major Mitchell's Cockatoo, White-throated Needletail and Blue-winged Parrot have been surveyed and are unlikely to be present. Areas of high biodiversity value, including most likely habitat for these species have been avoided as much as possible. Potential indirect impacts will be managed through the implementation of the BMP and BBAMP, which will include pre-clearance surveys, adaptive management should collisions occur and unexpected finds procedures. It is unlikely that significant impacts will occur to these species as a result of the project.
Caspian Tern (*Hydroprogne caspia)*[2]	***No potential for significant impact*** This species has not been recorded within the subject land and there is no suitable habitat within the subject land. Potential indirect impacts will be managed through the implementation of the BMP and BBAMP, which will include pre-clearance surveys, adaptive management should collisions occur and unexpected finds procedures. There is no potential for significant impacts to occur to this species as a result of the project.

Notes: 1. Commonwealth DCCEEW Decision on referral and assessment approach – bilateral agreement for Dinawan Wind Farm (EPBC ref: 2023/09537), 12 July 2023.

2. Not included in Commonwealth DCCEEW Decision advice; however, considered as part of the BDAR and/or MNES assessment in Attachment 6 of Appendix D.3.

vii Aquatic species, populations and ecological communities

Potential habitat for two threatened aquatic species, Flathead Galaxias and Silver Perch, is mapped on DPI's spatial data portal within sections of Coleambally Outfall Drain and Delta Creek within the subject land. These sections are mapped as 'poor' freshwater fish community habitat (DPI Fisheries 2024).

There are no BioNet Atlas of NSW records of threatened aquatic species, including Flathead Galaxias and Silver Perch, within 10 km of the subject land.

Direct impacts to areas of potential habitat for these species will be limited to Coleambally Outfall Drain, a modified channel used to supply water for irrigation. Water pooling and minor flow were observed within the Coleambally Outfall Drain during surveys within the subject land. Water quality was poor in the drain.

Habitat within the Coleambally Outfall Drain is highly modified. The channel may be used as transitional habitat between areas of suitable breeding and foraging areas; however it is considered highly unlikely to support breeding of Flathead Galaxias or Silver Perch during low or high flows.

As there is no key fish habitat mapped within 10 km of the subject land and waterways within the subject land do not support aquatic ecological communities, the project is unlikely to result in impacts to fish passage. This is unchanged by the amended project. Potential indirect impacts on aquatic species will be managed through the implementation of the BMP, which will include adaptive management and unexpected finds procedures.

viii Groundwater dependent ecosystems

Groundwater from existing landowner entitlements will be used to supply non-potable water for construction and operation. With the implementation of standard management measures, no impacts to groundwater quality or supply are expected. Groundwater availability for existing groundwater users in the vicinity of the project (including GDEs) will not be impacted as project construction activities are not anticipated to intersect the regional water table.

6.3.5 Biodiversity offset strategy

There are three main options to offset biodiversity impacts that cannot be avoided:

- payment to the Biodiversity Conservation Fund managed by the Biodiversity Conservation Trust
- purchase of credits from the open market
- establishment of a biodiversity stewardship site(s) to generate credits to offset biodiversity impacts of the project.

As outlined in the EIS, Spark Renewables has commenced investigations into the establishment of local biodiversity stewardship sites. Five properties with a total of 11,785 ha have been subject to desktop and on-ground assessment to determine their suitability for establishment of biodiversity stewardship sites. This has included background research, field investigation, credit calculations and suitability assessment. A sixth site, as well as areas excised from the development footprint for Dinawan Solar Farm, have also been identified as potentially suitable for stewardship site establishment and are currently under assessment. Field investigations have confirmed the presence of nine different PCTs across the five properties, including six of the ten PCTs that require offsetting as part of the project (refer to Table 98 of Appendix D.3). Threatened species habitat has also been assessed and habitat has been recorded for a number of species expected to require offsets as a result of the project. Further investigations will be undertaken during appropriate seasons to determine the presence of threatened species at the subject properties. If found to be present, stewardship sites will be used to generate species credits.

The stewardship site investigations and resulting biodiversity credit estimates demonstrate that the subject properties could provide a significant proportion the ecosystem credits required for the project (refer to Section 11.3 of Appendix D.3).

Management actions that would be required following the establishment of a biodiversity stewardship site across the subject properties have been identified and no significant constraints to the establishment of a biodiversity stewardship site within each property have been identified.

Spark Renewables will continue to investigate biodiversity stewardship site options during the assessment process.

The development footprint has been broken up into stages to facilitate the staged retirement of the project's biodiversity credit liability, should it be required. The amended project has changed the areas nominated in the offset staging plan (refer to Section 11.4 of Appendix D.3). The amended BDAR considers three stages (refer to Figure 23 in Appendix D.3):

- early works (largely associated with public road upgrades and establishment of construction compounds and an accommodation facility in Stage 1 (eastern area))
- Stage 1 (part of Stage 1 (eastern area))
- Stage 2 (the remainder of Stage 1 (eastern area) and all of Stage 2 (western area)).

Prior to works commencing in each area, the biodiversity offset associated with that area will be secured. Spark Renewables will confirm the offset staging plan with DPHI prior to the commencement of construction.

6.3.6 Mitigation measures

The measures proposed to mitigate residual impacts to biodiversity are provided in Table 6.13, which have been updated to align with the amended project layout and to address comments received from CPHR. New mitigation measures are shown in **bold**.

Table 6.13 Biodiversity mitigation measures

ID	Mitigation measure
B1	Detailed design of the project will: • avoid and minimise the loss of native vegetation and habitat, including consideration of the results of additional biodiversity surveys in **Spring 2025** • avoid and minimise impacts to breeding habitat for fauna, including threatened species, to the extent possible.
B2	A BMP will be prepared by a qualified ecologist in consultation with CPHR. The BMP will include: • a plan for adaptive management and for implementing, evaluating and reporting on the effectiveness of all mitigation measures • survey requirements prior to micro-siting of infrastructure within the development corridor (including criteria that must be met to ensure there is no increase to biodiversity impacts as a result of micro-siting during detailed design) • figures showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features, revegetation areas and retained tree hollows • pre-clearing survey requirements and clearing protocols (including specific measures for threatened species, nests, construction in waterways and removal of dams) • procedures for unexpected threatened species finds (including relocation requirements) • procedures for monitoring of retained threatened flora species • procedures for fauna handling, monitoring and management, including identification and reporting of fauna mortalities • speed limits for project-related vehicles on local roads and access tracks

ID	Mitigation measure
	• sub-plans for weed and biosecurity management, pest animal management and rehabilitation management • measures to reduce the risk of spreading weeds and pathogens, and other biosecurity items into or out of the development footprint, including: – collection of baseline weed and invasive pest data to determine if an increase of key emerging weeds or invasive pests occurs during construction or operation – consultation with Local Land Services and neighbouring landholders on fox control and baiting programs • training and education awareness for all staff on key threatened species, both flora and fauna, relevant to the region and project • monitoring of soil and water controls to prevent indirect impacts associated with water pollution to all waterways • biodiversity performance targets, monitoring criteria, corrective actions, timing and responsibilities • annual reporting and consultation requirements.
B3	Noise during construction will be managed as part of the construction noise management plan (NMP). The NMP will include noise management strategies for construction works adjacent to known breeding habitats.
B4	Shading and artificial light impacts will be minimised where possible through detailed design and lighting will be designed in general accordance with AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting.
B5	Adaptive management strategies within the BMP will ~~consider~~ **include** any new and relevant data from ongoing assessment and monitoring. This will include measures to monitor predicted and uncertain impacts that will trigger adaptive management actions, allowing effective and quick responses. The strategies will include consideration of impacts on biodiversity that are uncertain such as: • inadvertent impacts to native vegetation adjacent to the development footprint • introduction of pests, pathogens and weeds to native vegetation adjacent to the development footprint and further afield • degradation of downstream habitats via worsening of water quality or alteration to hydrological processes • vehicle strikes.
B6	Measures will be implemented to protect vegetation and fauna habitat outside the development footprint, including minimising indirect impacts, especially to known threatened flora species and potential fauna species.
B7	The **draft BBAMP (Appendix 9 of Appendix D.3) will be updated** in consultation with DPHI and CPHR prior to operation and will: • address the prescribed impacts associated with blade strike impacts • include trigger levels to manage impacts during operation (including timing of implementation of additional mitigation measures) – the purpose of these triggers will be to identify unacceptable events and subsequent mitigation measures, providing an ongoing feedback loop and reducing the potential for the project to result in substantial unforeseen operational impacts to bird and bat species • develop the impact monitoring framework, including baseline and operation monitoring.

6.3.7 Conclusion

The subject land contains native vegetation in the form of native grasslands (natural and derived), Weeping Myall woodland, Black Box woodland and White Cypress Pine-dominated sandhills. There are wetlands and drainage systems that support seasonal and semi-permanent wetland habitats.

The iterative project design process, including the amendments, have avoided the highest quality PCTs and threatened species habitat within the subject land to the extent possible. As part of the amendment, actions to further reduce the project's biodiversity impacts include:

- optimisation of the development footprint resulting in an overall reduction of 18%, from 1,339 ha to 1,095 ha
- prioritisation of further avoidance of higher value biodiversity TECs, resulting in a 16% reduction in impacts to two State listed TECs, and a 22% reduction in impacts to two Commonwealth listed TECs
- removal of 26 high risk WTGs and all very high risk WTGs, reducing collision risks for bird and bat species.

Direct impacts to biodiversity will include removal of:

- 948.54 ha of native vegetation requiring offsets (approximately 84% of which is Weeping Myall woodland in various condition states), including:
  - 507.04 ha of BC Act listed TEC
  - 205.6 ha of EPBC Act listed TEC
- 128.83 ha of confirmed threatened species habitat requiring offsets
- 2,226.97 ha of habitat for threatened species assumed to be present (for which surveys are yet to be completed)
- 16 scattered trees
- 9 hollow bearing trees.

Indirect impacts to biodiversity will be further mitigated through the implementation of a BMP and BBAMP. The BBAMP will detail the requirements for ongoing monitoring of bird and bat collisions during operation (including actions to address unexpected fatalities and increased collision risk).

Impacts to species and communities listed under the EPBC Act have been assessed. Significant impact assessments concluded that the project has potential to cause significant impact on two TECs, Weeping Myall woodland and Natural Grasslands of the Murry Valley Plains; and has potential to significantly impact on two threatened fauna species, Plains Wanderer and Superb Parrot.

Residual impacts that are not able to be avoided will be offset through a biodiversity offset strategy, with a preference for the establishment of stewardship sites near the project and generation of like-for-like credits.

The amended project requires 21,706 ecosystem credits to compensate for impacts to native PCTs, ecosystem credit species and scattered trees. The amended project also requires 57,457 species credits to compensate for impacts to threatened species; however, this is expected to be significantly reduced following completion of additional targeted surveys.

6.4 Aboriginal cultural heritage

6.4.1 Introduction

An Aboriginal cultural heritage assessment (ACHA) was prepared for the EIS by EMM in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents in NSW* (DECCW 2010a), the *Code of Practice for Archaeological Investigation in NSW* (DECCW 2010b), and where relevant the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) (Appendix E.4 of the EIS).

The amended project has reduced the overall size of the development footprint, however, some areas that were not previously assessed have been included in the amended development corridor and development footprint.

An amended ACHA has been prepared by EMM and is provided in Appendix D.4 of this report. The amended ACHA provides a complete and updated assessment of the amended project in accordance with the relevant legislation requirements and guidelines and addresses issues raised in submissions from Heritage NSW.

6.4.2 Consultation

Consultation for the ACHA was conducted in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a), as documented in Section 6.4.2 of the EIS and Chapter 2 of the ACHA, consisting of the following stages:

- Stage 1 – Notification of project proposal and registration of interest:
    - six Aboriginal parties registered their interest in the project (referred to as registered Aboriginal parties (RAPs)).
- Stage 2 – Presentation of information about the proposed project.
- Stage 3 – Gathering information about cultural significance including:
    - six Aboriginal focus group meetings
    - participation in a 39-day field survey
    - participation in a nine-day archaeological test excavation program.
- Stage 4 – Review of draft ACHA.

6.4.3 Existing environment

The environmental and Aboriginal cultural heritage context provided within Chapter 4 and Chapter 5 of the ACHA (Appendix E.4 of the EIS) remains accurate for the amended development footprint.

An additional five days of survey was conducted in September 2024 to provide coverage of gaps between the EIS field investigations and the amended project layout. The field investigation identified an additional 18 previously undocumented Aboriginal objects/sites, increasing the total to approximately 126.

When combining and ratifying these findings, this data has been rationalised into 44 identified sites and places including a low-density distribution of predominantly surface and shallowly buried cultural materials distributed across the project area. These can be broken down as:

- 11 hearths with various associated stone cultural materials.

- 14 culturally modified trees, many with tentative classifications, requiring further assessment to confirm their status.

- 12 occupation areas – these are characterised as broader locales with areas ranging from 0.6 ha to 485 ha (average size of approximately 69 ha) where a range of cultural materials are found in proximity to each other and where further objects and/or sites are expected. These include hearth/oven complexes, moderate and/or dense stone artefact scatters (more than 15 artefacts/m^2), culturally modified trees, and/or subsurface cultural deposits

- Six cultural sites – these include three potential ring trees, a potential women's area, a historic blaze tree and a site which comprises a cluster of culturally significant sites including a source-bordering dune in the centre of the western part of the project area (described as DEHW-CS1).

- One site collectively referred to as DEHW-BS1, comprising a low-density stone artefact background scatter (1–15 artefacts/m^2) and eroded hearths or scattered heat retainers intermittently dispersed across the project area. This site includes 53 discrete site recordings.

As a result of additional fieldwork and analysis of identified sites, 12 additional sites have been considered as part of the amended ACHA: one hearth, ten culturally modified trees (most with tentative status) and one cultural site.

6.4.4 Avoidance and minimisation through design

The refinement of the project's development footprint has been iterative and has been progressively informed by the ACHA surveys and test excavation findings.

Areas of higher archaeological potential were identified during initial archaeological constraints modelling and avoided as part of preliminary project design, including aeolian landforms, paleochannels, watercourses, and the eastern fringes of Gilgai and ephemeral wetlands.

Project refinements during the preparation of the EIS resulted in the avoidance of impacts to 15 sites including hearths, occupation areas and culturally modified trees, and were variously of high and moderate significance. The amended development footprint avoids a total of 25 of the discrete Aboriginal sites and site complexes identified by the field investigations (refer Table 6.14). This equates to approximately 57% of the identified cultural assemblage being unharmed.

The nine occupation areas identified as part of the ACHA encompass an area of approximately 896 ha. When compared to the EIS, amendments to the development corridor and development footprint have further reduced the level of potential impact in these occupation areas from 34.7% to 23.7% and 6.3% to 2.8%, respectively.

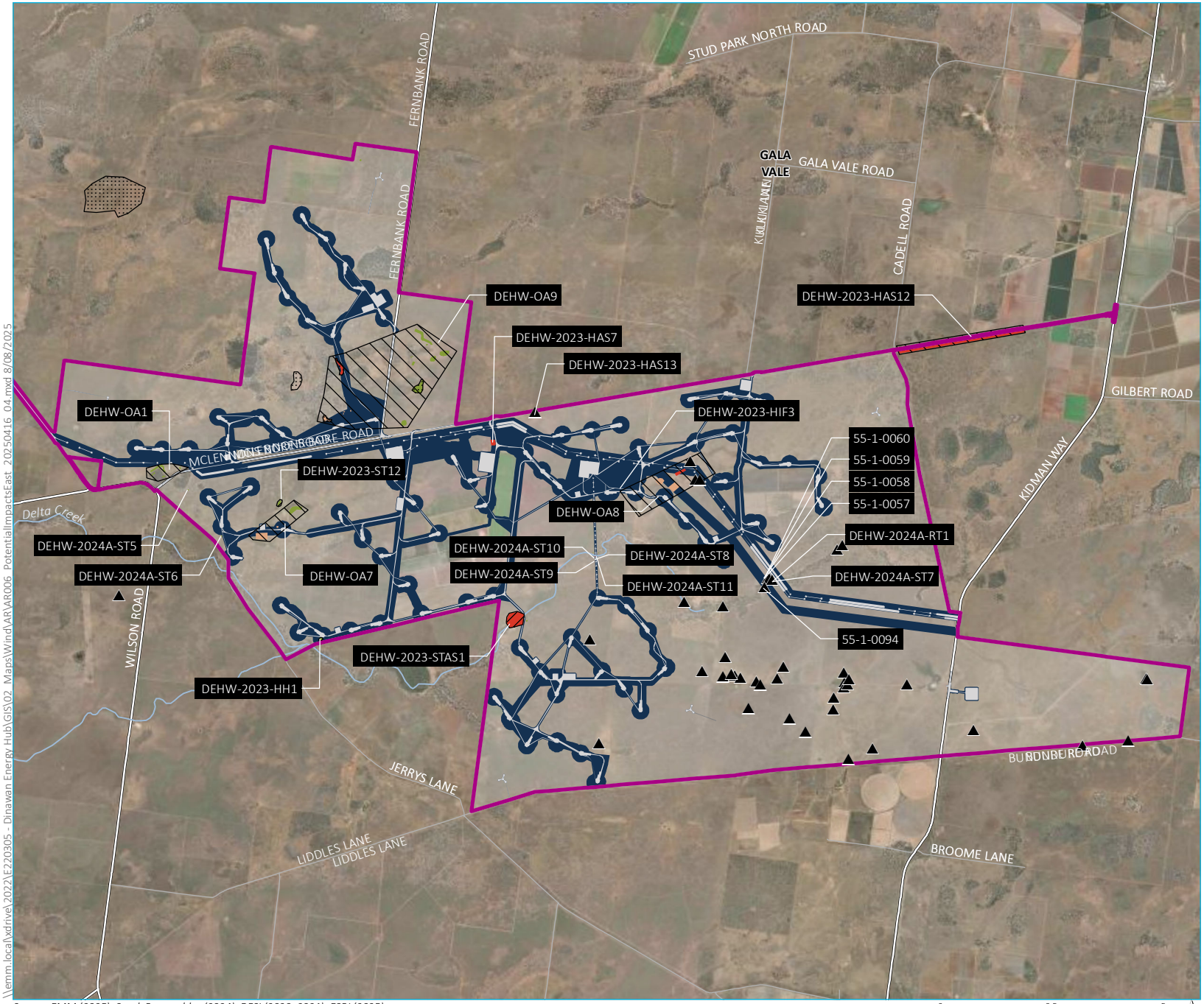
6.4.5 Potential impacts

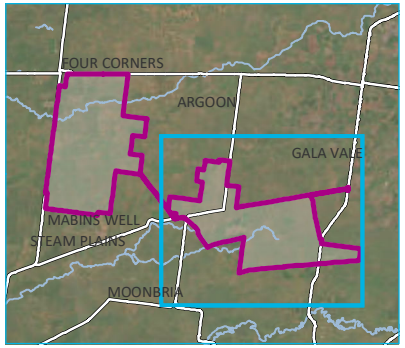
A total of 19 sites within the development corridor (refer Figure 6.4) will be impacted by the project. It is predicted that approximately 203 ha (23.7%) of these sites are within the development corridor, with approximately 25 ha (2.8%) within the development footprint. Given the large size of the occupation areas, in many instances, the curtilage predicted to experience direct impacts does not contain the identified discrete cultural materials that have been documented within each occupation area.

Two additional sites will be impacted by the amended project: a potential culturally modified tree (DEHW-2024A-ST9) and a hearth with an artefact scatter (DEHW-2024-HAS1).

Potential impacts to the 19 Aboriginal sites range from partial to complete loss of value, summarised in Table 6.14. It is noted that some sites (potential culturally modified trees) require further investigation and/or validation, so their status is tentative.

While the project will result in intergenerational/cumulative loss to cultural materials, it is considered that there will be some cultural heritage benefits. These include the long-term curation of cultural material that may be submitted to future academic research and study; a greater understanding of the past and contemporary values in the region; and opportunities for heritage interpretation and public outreach. Measures to mitigate impacts are provided in Section 6.4.6.





KEY

- Project area
- Development corridor
- Development footprint
- Existing AHIMS site

Project impact

- Directly impacted
- Potentially impacted
- No impact

Identified cultural materials

- Cultural site
- Occupation area
- Sand body

Existing environment

- Major road
- Minor road
- Watercourse (3rd order and higher)

Source: EMM (2025); Spark Renewables (2024); DFSI (2020, 2021); ESRI (2025)

0 2.5 5 km

GDA2020 MGA Zone 55

N

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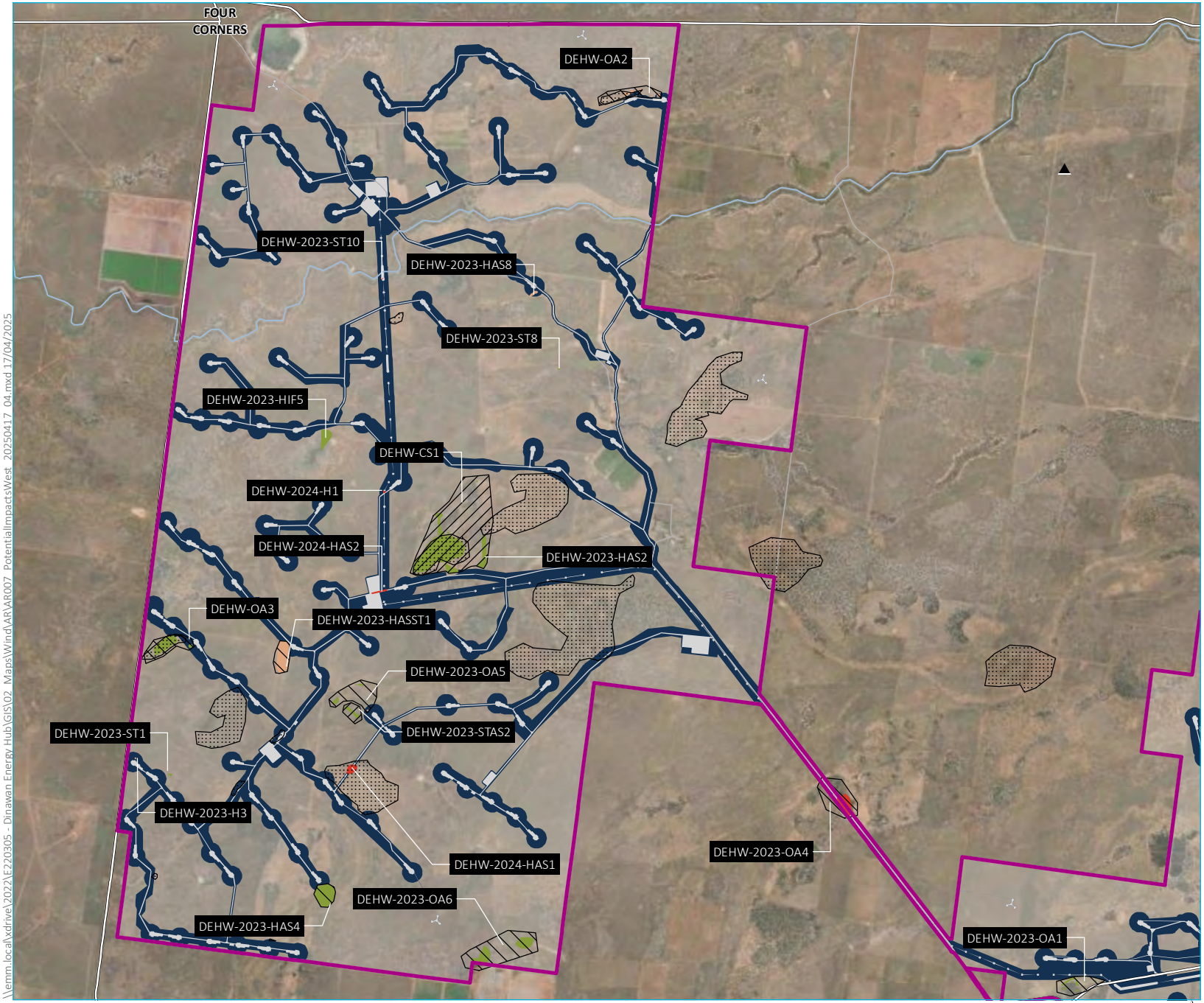
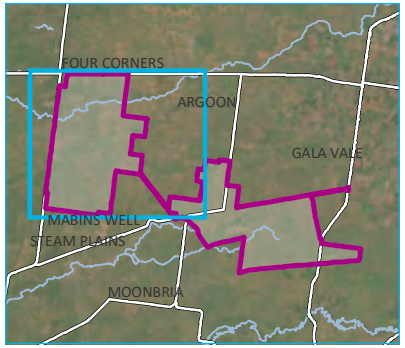
Potential impacts to identified Aboriginal sites - eastern area

Dinawan Wind Farm
Amendment Report
Figure 6.4a

EMM
creating opportunities





KEY

- Project area
- Development footprint
- Development corridor
- Existing AHIMS site

Project impact

- Directly impacted
- Potentially impacted
- No impact

Identified cultural materials

- Cultural site
- Occupation area
- Sand body

Existing environment

- Major road
- Minor road
- Watercourse (3rd order and higher)

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Source: EMM (2025); Spark Renewables (2024); DFSI (2020, 2021); ESRI (2025)

0 2.5 5 km

GDA2020 MGA Zone 55

N

Potential impacts to identified Aboriginal sites - western area

Dinawan Wind Farm
Amendment Report
Figure 6.4b

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Table 6.14 Summary of potential impacts to Aboriginal objects and/or sites

Site	AHIMS #	Incorporated sites	Site type	Status	Significance	Within development corridor	Within development footprint
Outside development corridor– no impact							
DEHW-2023-HAS1	54-3-0071	-	Hearth, artefact scatter	Valid	Moderate	No	No
DEHW-2023-HAS4	54-3-0070	-	Hearth, artefact scatter	Valid	Moderate	No	No
DEHW-2023-HAS13	55-1-0162	#55-1-0052, #55-1-0053	Hearth, artefact scatter	Valid	Moderate	No	No
DEHW-2023-HIF5	48-6-0283	-	Hearth, isolated find	Valid	Moderate	No	No
DEHW-2023-ST1	48-6-0273	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2023-ST8	48-6-0253	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2023-ST12	55-1-0144	-	Cultural site	Valid	Moderate	No	No
DEHW-2023-STAS2	48-6-0250	-	Cultural site	Valid	Moderate	No	No
DEHW-2024A-RT1	55-1-0181	-	Cultural site	Valid	Moderate	No	No
DEHW-2024A-ST5	55-1-0190	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2024A-ST6	55-1-0191	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2024A-ST7	55-1-0185	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2024A-ST8	55-1-0186	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2024A-ST10	55-1-0188	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2024A-ST11	55-1-0189	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2024A-ST12	55-1-0192	-	Potential culturally modified tree	Tentative	Moderate	No	No
DEHW-2024A-ST13	55-1-0193	-	Potential culturally modified tree	Tentative	Moderate	No	No

Site	AHIMS #	Incorporated sites	Site type	Status	Significance	Within development corridor	Within development footprint
DEHW-OA6	54-3-0076	#54-3-0068, #54-3-0067	Artefact scatter	Valid	Moderate	No	No
PEC-E-47	55-1-0057	-	Hearth	Valid	Moderate	No	No
PEC-E-48	55-1-0058	-	Potential culturally modified tree	Tentative	Moderate	No	No
PEC-E-49	55-1-0059	-	Potential culturally modified tree	Tentative	Moderate	No	No
PEC-E-50	55-1-0060	-	Hearth	Valid	Moderate	No	No
Commitment to avoid – no impact							
DEHW-2023-HH2	55-1-0196	-	Culturally modified tree	Valid	Moderate	Yes – 100% of site	No
DEHW-CS1	48-6-0310	#48-6-0260, #48-6-0249, #48-6-0248, #48-6-0247, #48-6-0271, #48-6-0270, #48-6-0268	Cultural site	Valid	High	Yes – 0.3% of site	No
DEHW-OA3	48-6-0308	#48-6-0266, #48-6-0252	Hearth, artefact scatter, archaeological deposit, culturally modified tree	Valid	High	Yes – 17.3% of site	No
Direct impact – no loss of value							
DEHW-2023-STAS1	55-1-0143	-	Cultural site	Valid	High	Yes – 9.3% of site	Yes – 4% of site

Site	AHIMS #	Incorporated sites	Site type	Status	Significance	Within development corridor	Within development footprint
DEHW-OA9	55-1-0170	#55-1-0156, #55-1-0155, #55-1-0154, #55-1-0160, #55-1-0140, #55-1-0139, #55-1-0138, #55-1-0151, #55-1-0150, #55-1-0149, #55-1-0168, DEHW-2024A-ST1, DEHW-2024A-ST2, DEHW-2024A-ST3, DEHW-2024A-ST4	Artefact scatter, archaeological deposit, culturally modified tree, hearth	Valid	High	Yes – 21% of site	Yes – 2% of site
Direct impact - partial loss of value[1]							
DEHW-2024-HAS1	48-6-0291	-	Hearth, artefact scatter	Valid	Moderate	Yes – 43% of site	Yes – 14% of site
DEHW-2023-HAS12	55-1-0163	-	Hearth, artefact scatter	Valid	High	Yes – 13.4% of site	Yes – 13.4% of site
DEHW-2023-HASST1	48-6-0264	-	Hearth, artefact scatter, culturally modified tree	Valid	High	Yes – 21.5% of site	No
DEHW-OA1	55-1-0172	#55-1-0161, #55-1-0148, #55-1-0147, #55-1-0146, #55-1-0145, #55-1-0142.	Hearth, artefact scatter, culturally modified tree	Valid	High	Yes – 3.8% of site	No
DEHW-OA2	49-4-0243	#49-4-0237, #49-4-0234	Hearth, artefact scatter	Valid	Moderate	Yes – 17.9% of site	Yes – 1% of site

Site	AHIMS #	Incorporated sites	Site type	Status	Significance	Within development corridor	Within development footprint
DEHW-OA4	49-4-0244	#49-4-0236, #49-4-0245, #48-6-0273	Hearth, artefact scatter, archaeological deposits, culturally modified tree	Valid	High	Yes – 20.6% of site	Yes – 7% of site
DEHW-OA5	48-6-0309	#48-6-0269, #48-6-0258, #48-6-0256, #48-6-0284	Hearth, artefact scatter	Valid	Moderate	Yes – 3.7% of site	No
DEHW-OA7	55-1-0171	#55-1-0152, #55-1-0141, #55-1-0158	Artefact scatter	Valid	Moderate	Yes – 35% of site	Yes – 6% of site
DEHW-OA8	55-1-0169	#55-1-0153, #55-1-0164, #55-1-0054, #55-1-0055, #55-1-0056, #55-1-0132, DEHW-2024A-AS3	Hearth, artefact scatter	Valid	Moderate	Yes – 50% of site	Yes – 6% of site
DEHW-BS1	N/A	See note 2	Low density artefact scatter	Valid	Low	Yes – intermittently dispersed across the project area	Yes – intermittently dispersed across the project area
Complete loss of value[1]							
DEHW-2023-H3	48-6-0257	-	Hearth	Valid	Moderate	Yes – 100% of site	No
DEHW-2023-HAS7	55-1-0165	-	Hearth, artefact scatter	Valid	Moderate	Yes – 86% of site	Yes – 1% of site
DEHW-2023-HAS8	48-6-0267	-	Hearth, artefact scatter	Valid	Moderate	Yes – 93% of site	No
DEHW-2023-ST10	48-6-0251	-	Potential culturally modified tree	Tentative	Moderate	Yes – 100% of site	Yes – 52% of site
DEHW-2024-H1	48-6-0289	-	Hearth	Valid	Moderate	Yes – 100% of site	Yes – 31% of site

Site	AHIMS #	Incorporated sites	Site type	Status	Significance	Within development corridor	Within development footprint
DEHW-2024-HAS2	48-6-0292	-	Hearth, artefact scatter	Valid	Moderate	Yes – 100% of site	Yes – 77% of site
DEHW-2024A-ST9	55-1-0187	-	Potential culturally modified tree	Tentative	Moderate	Yes – 100% of site	Yes – 33% of site

Notes: 1. Sites that intersect with the development footprint and/or development corridor may be subject to partial or complete loss of value. The extent of disturbance to each site will be confirmed during detailed design; however, it's assumed that sites with a higher percentage of overlap with the development footprint and/or development corridor will be subject to complete loss of value.

2. DEHW-BS1 incorporates DEHW-2023-AS1 (#49-4-0233), DEHW-2023-AS2 (#48-6-0240), DEHW-2023-AS9 (#55-1-0137), DEHW-2023-AS13 (#48-6-0246), DEHW-2023-AS15 (#48-6-0245), DEHW-2023-AS16 (#48-6-0244), DEHW-2023-AS17 (#54-3-0066), DEHW-2023-AS18 (#48-6-0243), DEHW-2023-AS19 (#48-6-0242), DEHW-2023-AS20 (#48-6-0241), DEHW-2023-AS21 (#55-1-0136), DEHW-2023-AS22 (#55-1-0135), DEHW-2023-AS23 (#55-1-0159), DEHW-2023-AS25 (#48-6-0263), DEHW-2023-AS26 (#48-6-0262), DEHW-2024-AS1 (#48-6-0286), DEHW-2024-AS2 (#48-6-0287), DEHW-2024-AS3 (#48-6-0288), #55-1-0131, DEHW-2024A-AS1, DEHW-2024A-AS2, DEHS-2023-AS7 (#55-1-0094), DEHW-2023-ASPAD1 (#55-1-0157), DEHW-2023-ASPAD6 (#48-6-0261), DEHW-2023-ASPAD7 (#54-3-0069) DEHW-2023-IF1 (#48-6-0282), DEHW-2023-IF2 (#48-6-0281), DEHW-2023-IF3 (#48-6-0280), DEHW-2023-IF4 (#48-6-0279), DEHW-2023-IF5 (#49-4-0241), DEHW-2023-IF6 (#48-6-0278), DEHW-2023-IF7 (#55-1-0166), DEHW-2023-IF8 (#49-4-0240), DEHW-2023-IF9 (#49-4-0239), DEHW-2023-IF10 (#48-6-0277), DEHW-2023-IF11 (#48-6-0276), DEHW-2023-IF12 (#48-6-0275), DEHW-2023-IF13 (#49-4-0238), DEHW-2024-IF1 (#48-6-0307), DEHW-2023-IFPAD1 (#48-6-0274), DEHW-2023-IFPAD2 (#54-3-0072), DEHW-2023-H1 (#48-6-0259), DEHW-2023-H5 (#48-6-0255), DEHW-2023-H6 (#48-6-0254), DEHW-2023-H7 (#48-6-0272), DEHW-2024-H2 (#48-6-0290), DEHW-2024A-H1, DEHW-2023-HAS11 (#48-6-0265), DEHW-2024-HAS3 (#48-6-0293), DEHW-2023-HIF1 (#49-4-0235), DEHW-2024-HIF2 (#48-6-0285), DEHW-2023-HIF3 (#55-1-0167).

6.4.6 Mitigation measures

The measures proposed to mitigate residual impacts to Aboriginal cultural heritage are provided in Table 6.15, which have been updated to align with the amended project layout and to address comments received from Heritage NSW. New mitigation measures are shown in **bold**.

Table 6.15 Management and mitigation measures for Aboriginal cultural heritage

Reference	Mitigation measure
AH1	The project will avoid impacts to the following identified Aboriginal objects and/or sites within or near the development corridor: • **hearths and associated cultural materials: DEHW-2023-HAS13 (#55-1-0162), DEHW-2023-HIF5 (#48-6-0283), PEC-E-47 (#55-1-0057), PEC-E-50 (#55-1-0060), DEHW-2023-HAS1 (#54-3-0071)** • **culturally modified trees: DEHW-2023-ST1 (#48-6-0273), DEHW-2023-ST8 (#48-6-0253), PEC-E-48 (#55-1-0058), PEC-E-49 (#55-1-0059), DEHW-2024A-ST5, DEHW-2024A-ST6, DEHW-2024A-ST7, DEHW-2024A-ST8, DEHW-2024A-ST10, DEHW-2024A-ST11, DEHW-2024A-ST12 and DEHW-2024A-ST13** • **occupation areas: DEHW-OA3 (#48-6-0308), DEHW-OA6 (#54-3-0076), and DEHW-2023-HAS4 (#54-3-0070)** • **cultural sites: DEHW-CS1 (#48-6-0310) and other significant cultural areas including three potential ring trees (DEHW-2023-STAS2 (#48-6-0250), DEHW-2023-ST12 (#55-1-0144) and DEHW-2024A-RT1), a potential culturally modified tree DEHW-2023-HH2 (#55-1-0196), and key identified cultural material components within a potential women's area DEHW-2023-STAS1 (#55-1-0143).** Site-specific avoidance measures developed to address this commitment will be integrated into AH4.
AH2	The project will investigate the micro-siting of project infrastructure and construction activities in consultation with an Aboriginal heritage specialist to avoid or minimise impacts to: • **hearths and associated cultural materials: DEHW-2023-H3 (#48-6-0257),** DEHW-2023-HAS8 (#48-6-0267), DEHW-2023-HAS7 (#55-1-0165), DEHW-2024-HAS2 (#48-6-0292), DEHW-2024-H1 (#48-6-0289), DEHW-2024-HAS1 (#48-6-0291) and DEHW-2023-HAS12 (#55-1-0163) • **culturally modified trees: DEHW-2023-ST10 (#48-6-0251) and DEHW-2024A-ST9** • **occupation areas: DEHW-2023-HASST1 (#48-6-0264), DEHW-OA1 (#55-1-0172), DEHW-OA2 (#49-4-0243), DEHW-OA4 (#49-4-0244), DEHW-OA5 (#48-6-0309), DEHW-OA7 (#55-1-0171), DEHW-OA8 (#55-1-0169), and DEHW-OA9 (#55-1-0170)** • **cultural site: DEHW-2023-STAS1 (#55-1-0143)** • **areas of higher archaeological potential including identified aeolian, paleochannels, and watercourse features, and the eastern fringes of Gilgai and ephemeral wetlands. These are prevalent in the western portion of the amended project area, where sand dunes and/or sandy soil profiles have been predicted and/or observed.** Management and any site-specific mitigation measures developed to address this commitment will be integrated into AH4.
AH3	**Additional archaeological field survey will be undertaken in sensitive landforms (i.e. wetlands, Gilgai, paleochannels, drainage lines or sand dunes) in discrete areas in the vicinity of T61W, T72W, T51W, T42W, T122W, T139W and T147W, and an access track and cabling corridor between T73W and T97W. Any Aboriginal objects, sites, places and/or deposits identified during these works will be integrated into AH4.**
AH4	An ACHMP will be prepared by a suitably qualified heritage professional in consultation with the RAPs and Heritage NSW. The ACHMP will describe: • processes, timing, communication methods and project involvement for maintaining Aboriginal community consultation and participation through the remainder of the project • content of a cultural heritage induction package for all project staff and contractors • methods for documenting and archival recording of any Aboriginal sites and/or objects that will be impacted by the project • recording and archaeological mitigation requirements for archaeological test/salvage excavations/monitoring of Aboriginal sites and/or objects that will be impacted by the project • methods for surface collection of identified isolated objects and stone artefact scatters that will be impacted by the project • methods for mitigation and/or recovery of culturally modified trees that will be impacted by the project

Reference	Mitigation measure
	• methods for delineation and protection of Aboriginal sites and/or objects within or in close proximity to the development corridor, including clear marking, appropriate screen for any gender-specific areas and surface protection • procedures for managing the unexpected discovery of Aboriginal objects, sites and/or human remains during the project • procedures for the curation and long-term management of recovered cultural materials • methods of post-excavation analysis and reporting of the archaeological investigations, including suitable collection and processing of stone artefacts, paleo-environmental, chronological and other soils from archaeological activities • a monitoring regime for implementing the above measures.
AH5	An inspection will be undertaken by a qualified arboriculturist of all tentatively identified culturally modified trees to confirm whether the modifications have formed through anthropogenic or natural processes. The findings of this inspection and the management of confirmed culturally modified trees will be described in the ACHMP (AH4).
AH6	An Aboriginal heritage-interpretation strategy and plan will be developed by an Aboriginal heritage specialist, in consultation with the RAPs. The plan will identify the interpretive Aboriginal heritage values of the project area and provide direction for interpretive installations and devices.
AH7	Consultation regarding cultural heritage management will be maintained with the RAPs.
AH8	A copy of the ACHA and all relevant AHIMS site recording forms and information for the project will be lodged with Heritage NSW and provided to each of the RAPs.

6.4.7 Conclusion

Field investigations completed as part of the ACHA identified 44 sites within the project area and surrounds. Of these, 25 will be avoided with residual impacts to 19 sites. Of the 19 sites predicted to be impacted, approximately 203 ha (23.7%) are within the development corridor, with approximately 25 ha (2.8%) within the development footprint.

An Aboriginal Cultural Heritage Management Plan will be developed for the project in consultation with DPHI, RAPs and Heritage NSW. The Aboriginal Cultural Heritage Management Plan will detail the management of known Aboriginal sites and mitigation measures to further avoid impacts to Aboriginal heritage values in the project area, along with unanticipated finds procedures and training and reporting protocols.

6.5 Historical heritage

A statement of heritage impact was prepared for the EIS by EMM and is provided in Appendix E.5 of the EIS. The statement of heritage impact was prepared in accordance with the *NSW Heritage Manual* (NSW Heritage Office and NSW Department of Urban Affairs and Planning 1996) and documents archaeological potential, including built heritage items of historical heritage significance, and includes desktop and field investigations of the project area.

An extensive search of national, State and local heritage registers found there are no listed heritage sites within 5 km of the project area. A historical heritage survey of the project area conducted by EMM archaeologists in July 2023 identified eight historical sites of local significance within the project area. The broader cultural landscape within the project area was also identified as holding historical value. In the EIS, all sites were outside the development footprint, with five sites intersected by the development corridor. For the amended project, the curtilage of one of the five sites (approximately 0.1 ha) now intersects the amended development footprint, with the five sites still intersected by the amended development corridor.

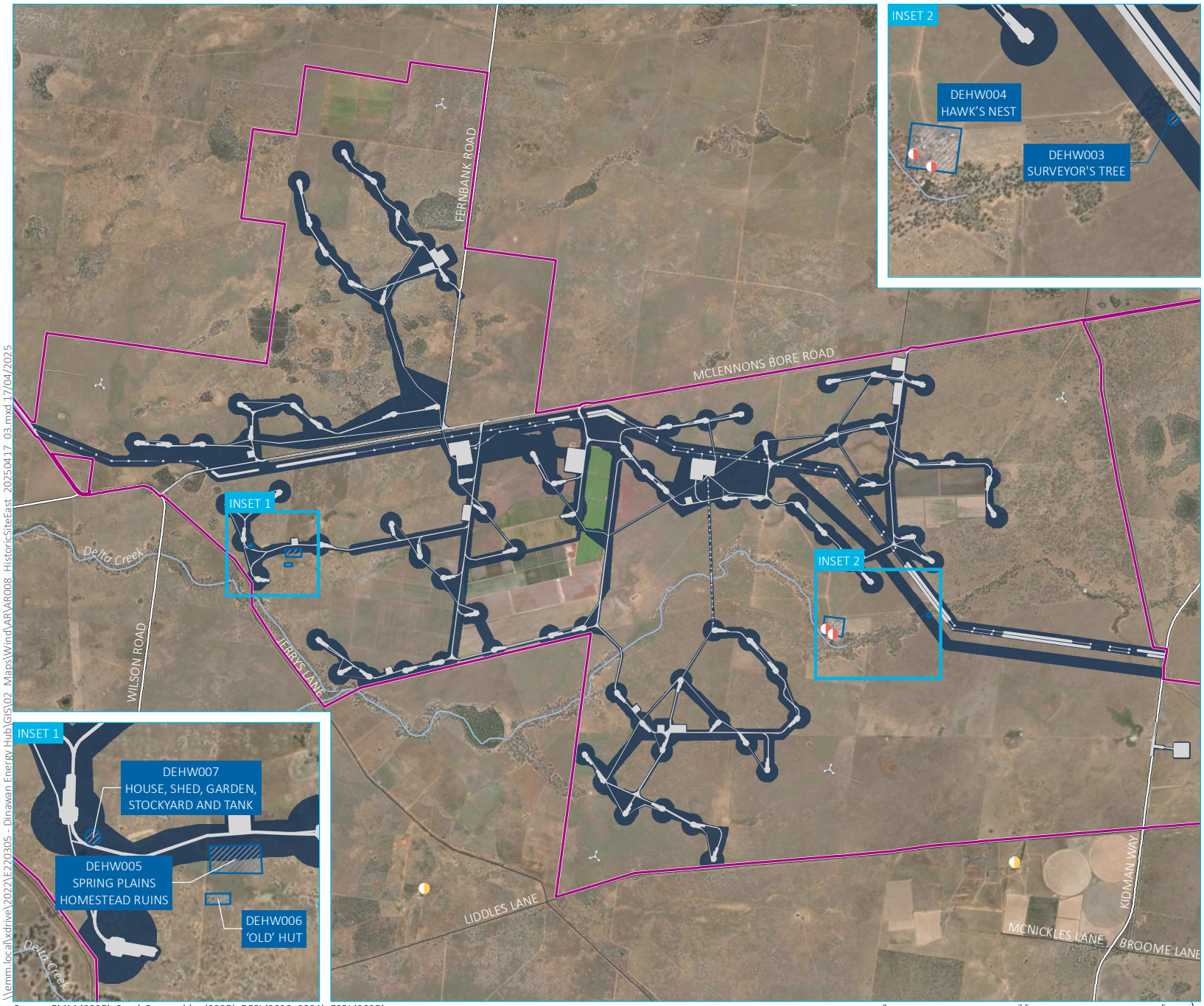
6.5.1 Potential impacts

Most sites remain outside the development footprint and direct impacts will be avoided (refer Table 6.16 and Figure 6.5). There is a small overlap of DEHW007 with the amended development footprint of up to 0.01 ha. Additional mitigation is proposed for this site to clearly demarcate areas where impacts are to be avoided with markers and signage to be installed during construction. Therefore, direct impacts will be avoided.

As outlined in the statement of heritage impact, direct impacts to historical sites within the development corridor, but outside the development footprint will be avoided. Should amendments to the project's development footprint be required during detailed design, direct impacts to identified heritage sites within the development corridor will be avoided to the extent possible. Management measures for two sites have been provided if impacts to these sites cannot be avoided following detailed design.

There remains potential for indirect impacts; however, these can be managed through the implementation of mitigation measures. The construction of the project also has the potential to cause impacts to unidentified relics that are related to the early colonial uses of the project area. The impacts of potential unexpected finds will be managed through the implementation of mitigation measures.

No additional risks to known historical heritage sites will occur as a result of the amended project.



KEY

- Project area
- Development corridor
- Development footprint
- Identified heritage site - surveyed

Residence

- Associated
- Non-associated

Existing environment

- Major road
- Minor road
- Watercourse (3rd order and higher)

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

Identified historical heritage sites - eastern area

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Figure 6.5a

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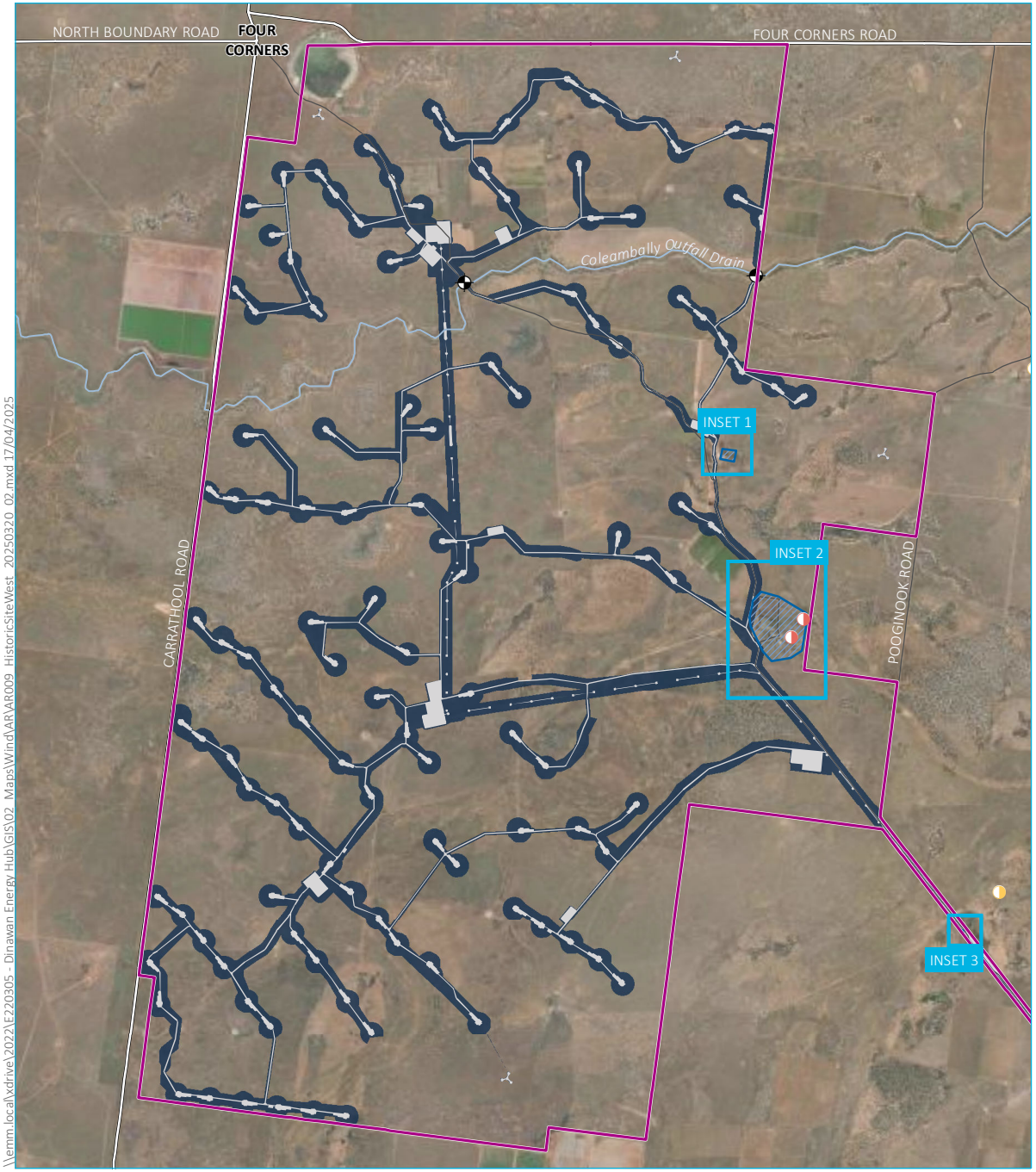

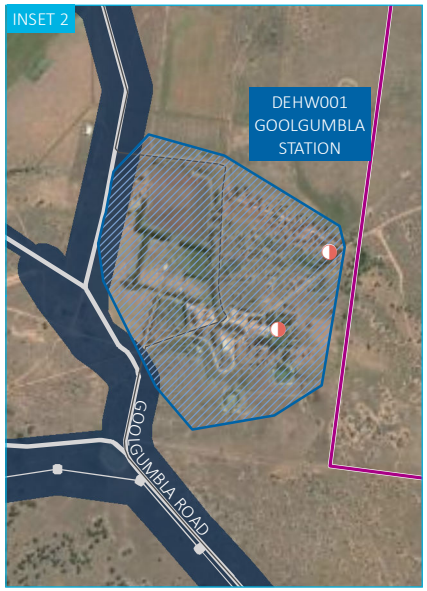

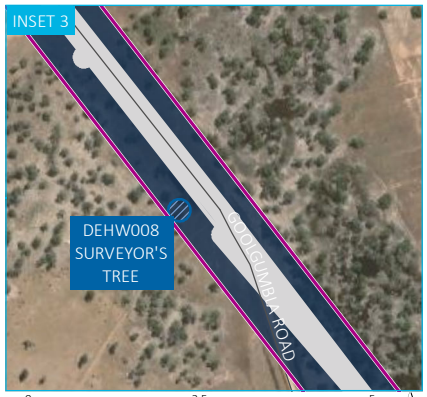

KEY

- Project area
- Development corridor
- Development footprint
- Identified heritage site - surveyed

Residence

- Associated
- Non-associated

Existing environment

- Bridge
- Major road
- Minor road
- Watercourse (3rd order and higher)

0 2.5 5 km

GDA2020 MGA Zone 55

N

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

Identified historical heritage sites - western area

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Figure 6.5b

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Table 6.16 Potential impacts to identified historical heritage sites

ID	Site name and description	Significance	Within EIS development footprint	Within EIS development corridor	Potential impacts in EIS	Within amended development footprint	Within amended development corridor	Potential impacts of amended project
DEHW001	Goolgumbla Station	Local	No	Yes	No direct impacts. Low indirect impacts from change to visual aesthetics. Negligible indirect impacts from vibration.	No	Yes	No change
DEHW002	Shearers quarters	Local	No	Yes	No direct impacts. Negligible indirect impacts from vibration.	No	No	No change
DEHW003	Surveyor's tree	Local	No	Yes	No direct impacts. Negligible indirect impacts from vibration.	No	Yes	No change
DEHW004	Hawk's Nest	Local	No	No	No direct impacts. Negligible indirect impacts from vibration.	No	No	No change
DEHW005	Spring Plains homestead ruins	Local	No	Yes	No direct impacts. Negligible indirect impacts from vibration.	No	Yes	No change
DEHW006	'Old' hut	Local	No	No	No direct impacts. Negligible indirect impacts from vibration.	No	No	No change
DEHW007	House, shed, garden, stockyard and tank	Local	No	Yes	No direct impacts. Negligible indirect impacts from vibration.	Yes – 0.01 ha overlap	Yes	Additional mitigation measures will ensure no direct impacts.
DEHW008	A native tree featuring a scar potentially of Aboriginal origin, marked with the inscription 'BM 38'. This site is identified in the ACHA as part of DEHW-OA4.	Local	No	No	No direct impacts. Negligible indirect impacts from vibration. Negligible indirect impacts from change to visual aesthetics.	No	Yes	No change

6.5.2 Mitigation measures

Proposed measures to manage and mitigate potential historical heritage impacts are outlined in Table 6.17, with new mitigation measures shown in **bold**.

Table 6.17 Historical heritage mitigation and management measures

ID	Management measures
HH1	The project's construction environmental management plan (CEMP) will provide the following to mitigate risks to heritage items during construction: • list of identified heritage sites • site-specific management measures outlined in mitigation measure HH2 (including clearly defined responsibilities and actions) • an unexpected finds protocol • heritage awareness and management training as part of the induction process • management measures to be implemented if there will be impacts to heritage items due to changes to the development footprint.
HH2	DEHW003, DEHW005, **DEHW007** and DEHW008 will be clearly demarcated with markers and signage. Construction personnel will be informed of any restrictions regarding DEHW003, DEHW005, **DEHW007** and DEHW008, before commencing work near these sites.
HH3	If the development footprint is amended in proximity of DEHW001 and impacts to the ram shed and stockyards cannot be avoided, archival recording of the site will be required prior to impacts occurring.
HH4	If the development footprint is amended in proximity of DEHW003 and impacts cannot be avoided, archival recording of the site will be required prior to impacts occurring. Subject to the easement requirements of the transmission line, Spark Renewables should consult with an arborist to determine whether the tree can be partially removed (i.e. maintained in situ below any height limitations for vegetation within the easement), whilst avoiding impacting the marking on the tree or its longevity.

6.5.3 Conclusion

The amendments will not change the predicted impacts to historical heritage assessed in the statement of heritage impact and EIS.

No identified heritage sites will be directly impacted by the construction and operation of the project within the development footprint. Should changes to the project's development footprint be required during detailed design, direct impacts to identified heritage sites within the development corridor will be avoided to the extent possible. Management measures for two sites have been provided if impacts to these sites cannot be avoided following detailed design.

Indirect impacts are predicted to be low to negligible. There will be a low adverse effect on the broader cultural landscape due to the placement of project infrastructure in a predominantly rural landscape.

6.6 Transport

A traffic impact assessment was prepared by EMM for the EIS and is provided in Appendix E.6 of the EIS.

Following the exhibition of the EIS, advice was received from TfNSW on the traffic impact assessment, including requirements to further consider the haulage route for OSOM loads, provide strategic concept designs and update the turn warrant assessments.

The amended project includes changes to the proposed access route for the project, including changes to site access points, removal of project-related vehicles from Cadell Road (south) and amendments to the proposed OSOM vehicle specifications and transport routes.

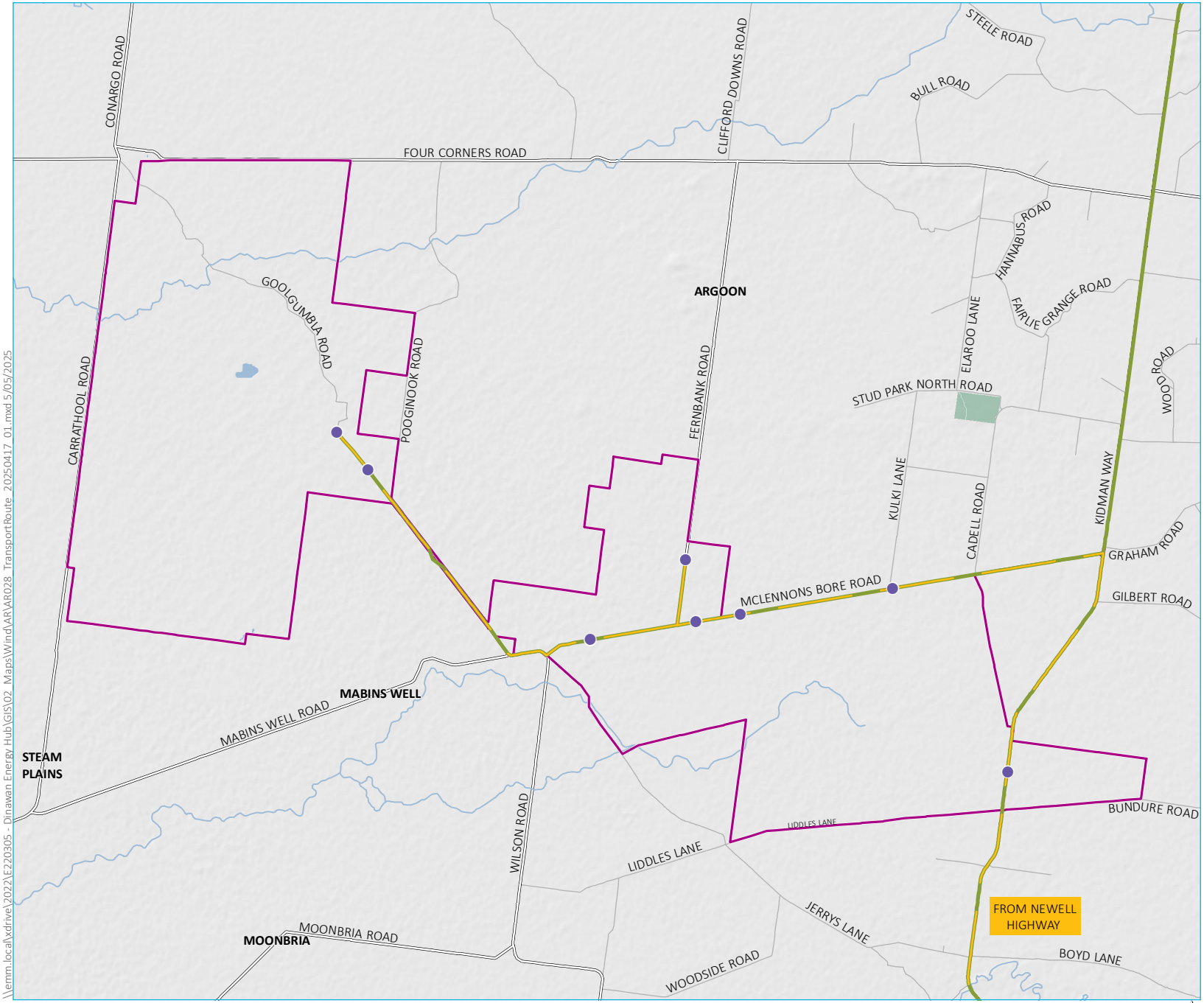
An addendum to the traffic impact assessment has been prepared to address the submissions from TfNSW and changes from the amended project, and is provided in Appendix D.5 of this report. A full list of TfNSW comments and where they have been addressed is provided in Section 4.14 of the submissions report.

6.6.1 Existing environment

The local road network is shown on Figure 6.6. Tube count traffic surveys were undertaken on Kidman Way and Goolgumbla Road for a seven-day period between 14 February 2024 and 21 February 2024 to determine existing traffic volumes. Existing traffic volumes on Kidman Way (bi-directionally) are around 860 vehicles per day, with approximately 45% heavy vehicles. Existing traffic volumes on Goolgumbla Road are around nine vehicles per day with no heavy vehicles recorded.

Key intersections that will be affected by project-related traffic were surveyed on 15 February 2024 (Section 3.3.1 of Appendix E.6 of the EIS). The morning (AM) and afternoon (PM) peak hours observed at each intersection were varied. Baseline AM and PM peak hour intersection traffic volumes are unchanged from the EIS and are shown in Figure 6.11 and Figure 6.12 of the EIS. A 1.6% annual growth rate was applied to calculate future baseline traffic volumes.

Traffic will be generated during construction and operation of the project. Site access points from the local road network are shown on Figure 6.6. Traffic associated with the project is proposed to travel along Kidman Way, McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road. The amended project excludes site access via Cadell Road.



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Source: EMM (2025); DFSI (2020, 2021); GA (2011); ABS (2021)

Transport route

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Figure 6.6

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6.6.2 Potential impacts

i Site access points

Eight site access points from public roads are proposed to provide access to the project area during construction and operation (Figure 1.3):

- **Kidman Way** (Kidman Way Eastern Site Access) – one site access point is proposed from Kidman Way approximately 1.7 km south of Cadell Road. This will be used to access the eastern accommodation facility. This is unchanged from the EIS.

- **McLennons Bore Road** – four site access points are proposed from McLennons Bore Road, approximately 8 km, 14 km, 16 km and 20 km west of Kidman Way. These will be used to access the eastern area. Vehicles using these access points will travel along Kidman Way and McLennons Bore Road. Two of these are new site access points (8 km and 20 km west of Kidman Way), included as part of the amended project.

- **Fernbank Road** – one site access point is proposed from Fernbank Road, approximately 2.5 km north of the intersection with McLennons Bore Road. This will be used for access to the eastern area. Vehicles using this access points will travel along Kidman Way, McLennons Bore Road and Fernbank Road. Two site access points proposed from Fernbank Road, 0.8 km and 3.3 km north of the intersection with McLennons Bore Road have been removed as part of the amended project.

- **Goolgumbla Road** – two site access points are proposed from Goolgumbla Road approximately 9 km and 11 km north of Mabens Well Road. These will be used for access to the western area, including the accommodation facility. Vehicles using these access points will travel along Kidman Way, McLennons Bore Road, Wilson Road and Goolgumbla Road. This is unchanged from the EIS.

ii Traffic generation and distribution

As outlined in the EIS, construction traffic for the project will consist of:

- light vehicles and shuttle buses transporting construction staff

- heavy vehicles (up to 36.5 m long) for construction activities to transport construction materials (including water, sand and aggregate), construction plant and equipment, and project components to the development footprint

- OSOM vehicles for deliveries of WTG components, power transformers and other large equipment.

Traffic distribution for light and heavy vehicles going to/from the development footprint during construction is unchanged from the EIS and likely to comprise:

- Traffic from the local workforce (that are not originating from the proposed accommodation facilities) – traffic will come via Kidman Way, from Griffith or Coleambally to the north, or from Jerilderie or Deniliquin to the south.

- Regional light and heavy vehicle traffic – traffic coming from the east via Narrandera or Wagga Wagga will travel west on Sturt Highway then turn south on Kidman Way, while traffic coming from the south on Newell Highway will turn north on Kidman Way.

The origins of OSOM vehicles will be confirmed during detailed design; however, it is anticipated that materials will come from Port of Newcastle, and the route assessment has been completed from this port. OSOM vehicles will access the development footprint from the south via Kidman Way and Newell Highway.

Two peak construction traffic scenarios remain applicable to the project:

- Month 15 (Stage 1) – initial peak construction, with construction activities occurring within the eastern area, with access via Kidman Way (predominantly accommodation facility traffic), McLennons Bore Road and Fernbank Road site access points.
- Month 37 (Stage 2) – a second construction peak, with construction activities occurring within the western area, with access via the Goolgumbla Road site access points.

The assessment has assumed a traffic distribution along Kidman Way of 50% to/from the north, and 50% to/from the south, for light and heavy vehicles (excluding OSOM vehicles).

As outlined in the EIS, cumulative traffic volumes have been determined based on a review of publicly available documentation for nearby proposed projects that have proposed the use of Kidman Way. These include Dinawan Solar Farm, Yanco Delta Wind Farm, VNI West and Argoon Wind Farm.

a Construction month 15 (Stage 1)

For month 15, it was assumed that approximately 75% of the peak construction workforce (450 of the 600 workers) will reside in the accommodation facility east of Kidman Way, and that shuttle buses will be used to transport the 450 workers to and from their active work areas. The remaining 150 workers are assumed to drive to and from the development footprint from other locations in the region.

The estimated daily traffic movements and peak hour movements for month 15 are unchanged from the EIS and are shown in Table 6.18.

Table 6.18 Estimated daily and peak hourly construction trips – month 15

Vehicle type	Daily		Peak hour[2]	
	Trips[1]	Movements	Peak AM movements	Peak PM movements
Light vehicles (excluding shuttle buses)[3]	153	306	153	153
Heavy vehicles	88	176	18	18
Shuttle bus (classified as light vehicles)	78	156	78	78
Total	**319**	**638**	**249**	**249**

Notes: 1. A 'trip' is defined as a vehicle entering the site once (1 movement) and a vehicle exiting the site once (1 movement).
2.Light vehicle and shuttle bus movements have been conservatively assumed to be incoming during morning peak and outgoing during evening peak hours.
3. For the purposes of the traffic assessment, it was conservatively assumed that the peak construction workforce will be 610 people, rather than the anticipated peak workforce of 600, contributing to 153 daily light vehicles from the project's local workforce.

The peak hour construction traffic volumes for month 15 have been revised to remove light vehicle movements from Cadell Road, which is no longer proposed to be used for the project. These have been combined with baseline traffic volumes and cumulative traffic volumes (from Dinawan Solar Farm, Yanco Delta Wind Farm and VNI West) to estimate the total traffic volumes (see Figure 2.1 of Appendix D.5 of this report).

b Construction month 37 (Stage 2)

For month 37, it was assumed that approximately 75% of the peak construction workforce (450 of 600 people) will reside in the accommodation facility west of Goolgumbla Road and that shuttle buses will be used to transport the 450 workers to and from their active work areas via internal access tracks. The remaining 150 workers are assumed to drive to and from the development footprint from other locations in the region.

The estimated daily traffic movements and peak hour movements for month 37 are unchanged from the EIS and are shown in Table 6.19.

Table 6.19 Estimated daily and peak hourly construction trips – month 37

Peak construction stage	Daily		Peak hour[1]	
	Trips	Movements	Peak AM movements	Peak PM movements
Light vehicles[1]	153	306	153	153
Heavy vehicles	100	200	20	20
Total	**253**	**506**	**173**	**173**

Notes: Light vehicle movements have been conservatively assumed to be incoming during morning peak and outgoing during evening peak hours.

The peak hour construction traffic volumes for month 37 have been revised to remove light vehicle movements from Cadell Road. These have been combined with baseline traffic volumes and cumulative traffic volumes (from Argoon Wind Farm) to estimate the total traffic volumes in Figure 2.2 of Appendix D.5 of this report.

c Construction oversize overmass vehicle movements

The origins of heavy and OSOM vehicles will be confirmed during detailed design; however, it is anticipated that major WTG components (blades and towers) and power transformers will come from the Port of Newcastle. Three potential OSOM vehicle routes from Port of Newcastle to the project area have been assessed as part of the amended project in Annexure B of the Addendum TIA (Appendix D.5 of this amendment report). A summary of this assessment is provided below:

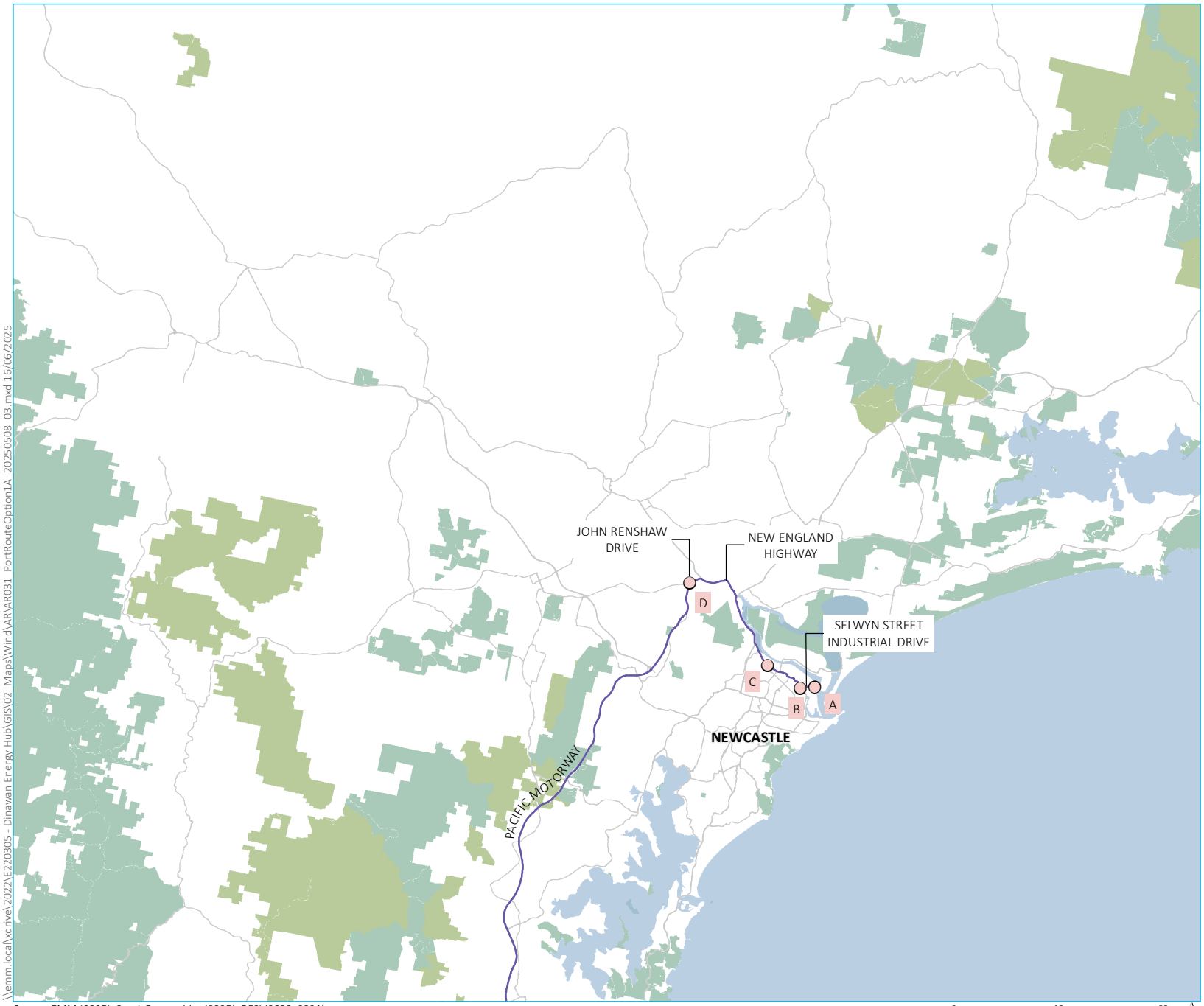
- Option 1 – suitable for OSOM vehicles with a loaded height of up to 5 m for vehicles transporting WTG blades. Roads used on this route are Selwyn Street, George Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, M1, NorthConnex tunnel, M2, M7, M5, Hume Highway, Sturt Highway, Newell Hwy, Kidman Way, Mclennons Bore Road and Wilson Road (refer to Figure 6.7).
    - Option 1a – an alternative option for vehicles to bypass the Wagga Wagga rail bridge in the town of Wagga Wagga. Roads used on this route are Sturt Highway, Eunony Bridge Road, Byrnes Road, West Bomen Road, Merino Road, Olympic Hwy and Sturt Highway (refer to Figure 6.7).
- Option 2 – suitable for OSOM vehicles with a loaded height of up to 6.1 m for vehicles transporting WTG towers. Roads used on this route are Selwyn street, George Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, Hunter Expressway, New England Highway, Golden Highway, Denman Road, Bengalla Road, Wybong Road, Golden Highway, Boothenba Road, Troy Bridge Road, Bunglegumbie Road, Mitchell Highway, Newell Highway, Compton Road, Showground Road, Newell Highway, Kidman Way, Mclennons Bore Rd, Wilson Rd (refer to Figure 6.8).

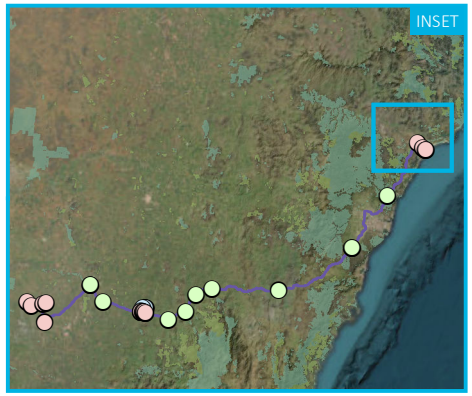
- Option 3 – suitable for OSOM vehicles with a loaded height of up to 5.3 m for all remaining loads. This route avoids roads with certain height restrictions and travels via Pennant Hills Road through Sydney instead of the NorthConnex Tunnel. Roads used on this route are Quayside Close, Selwyn Street, George Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, M1, Pennant Hills Road, M2, M7, Hume Motorway, Hume Highway, Sturt Highway, Newell Hwy, Kidman Way, Mclennons Bore Rd, Wilson Rd (refer to Figure 6.7).

Parking areas that can accommodate OSOM vehicles have been identified along the assessed routes and are labelled on Figure 6.7 (Option 1, 1a and 3) and Figure 6.8 (Option 2). Further detail is provided in Chapter 5 and Annexure B of the Addendum TIA (Appendix D.5 of this amendment report).

The OSOM vehicle route assessment (Appendix B of Appendix D.5 of this report) identified deficiencies in the existing road network to be addressed to enable use by the project's OSOM vehicles. These deficiencies are labelled on Figure 6.7 (Option 1, 1a and 3) and Figure 6.8 (Option 2). Works proposed to be completed as part of the project are identified in Table 6.20. Other works will be subject to further consultation with DPHI, EnergyCo and TfNSW. Further detail is provided in Chapter 5 and Annexure B of the Addendum TIA (Appendix D.5 of this amendment report).

The volume of OSOM loads remains unchanged from the EIS. It is estimated that there will be a total of 2,884 OSOM loads over the duration of the construction period. During peak construction periods, it is anticipated that there will be approximately 104 OSOM loads per month.





KEY

OSOM route option
- Option 1
- Option 1a - Wagga Bypass
- Option 3 - Pennant Hills Road
- Parking area
- Existing road network deficiencies - Option 1
- Existing road network deficiencies - Option 1a

Existing environment
- Major road
- NPWS reserve
- State forest

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

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GDA2020 MGA Zone 55

N

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OSOM route from Port of Newcastle to project area - Option 1, 1a and 3

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Figure 6.7a

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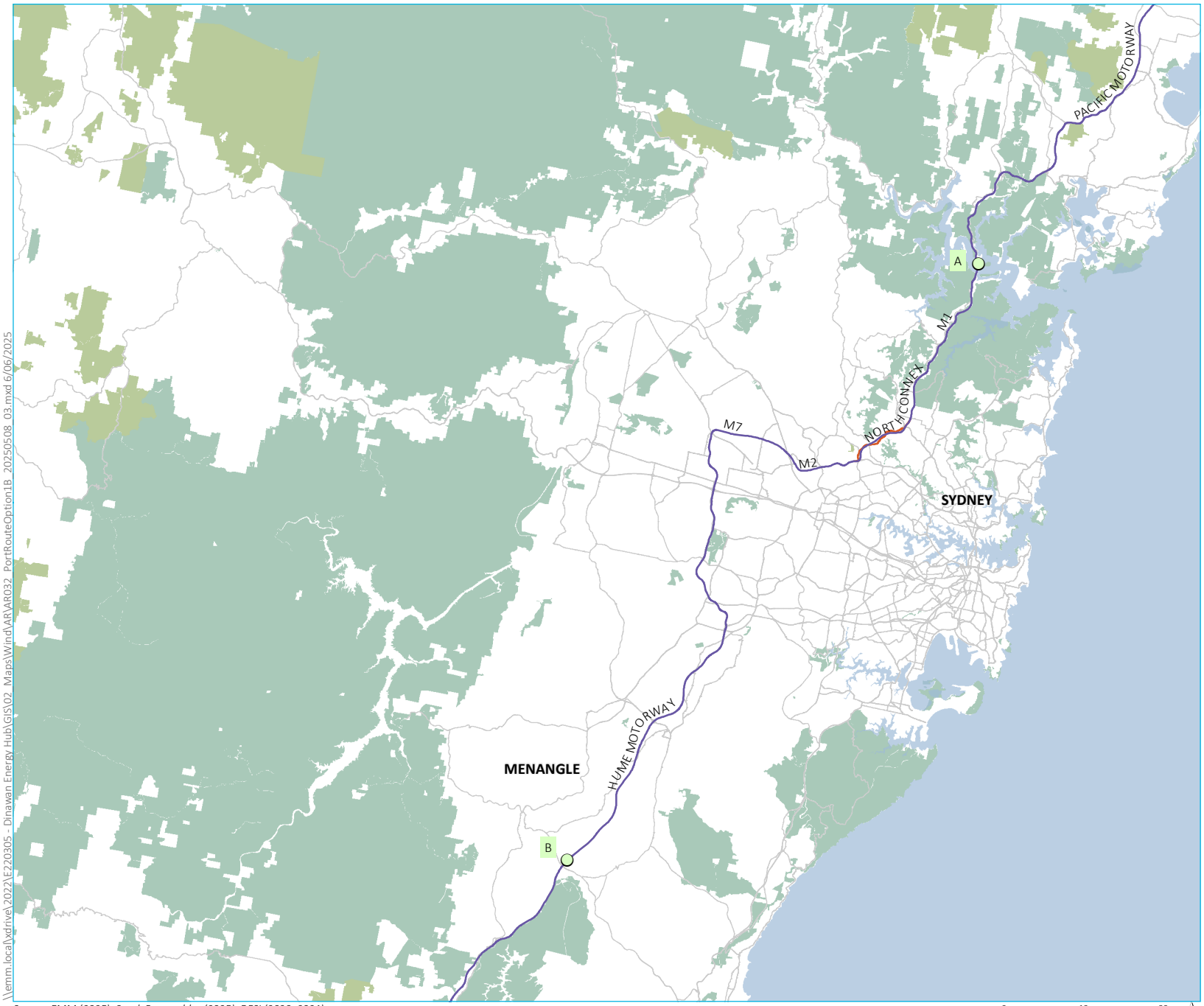

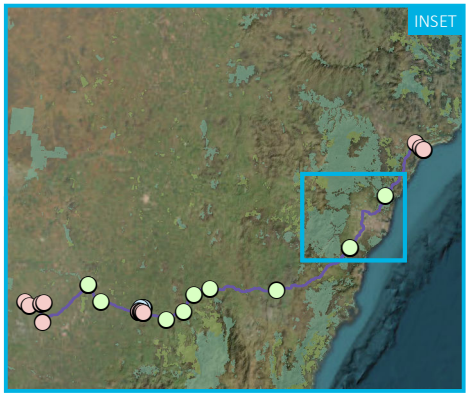

KEY

OSOM route option
- Option 1
- Option 1a - Wagga Bypass
- Option 3 - Pennant Hills Road
- Parking area
- Existing road network deficiencies - Option 1
- Existing road network deficiencies - Option 1a

Existing environment
- Major road
- NPWS reserve
- State forest

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

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GDA2020 MGA Zone 55

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OSOM route from Port of Newcastle to project area - Option 1, 1a and 3

Dinawan Wind Farm
Amendment Report
Figure 6.7b

EMM
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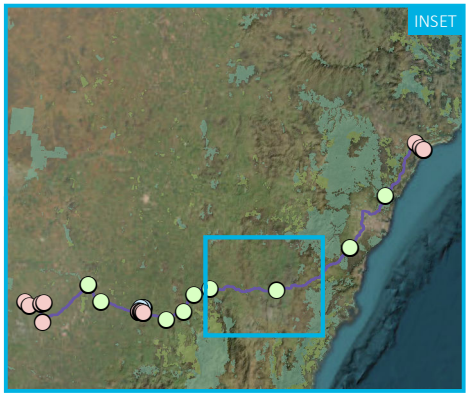

KEY

OSOM route option

- Option 1
- Option 1a - Wagga Bypass
- Option 3 - Pennant Hills Road
- Parking area
- Existing road network deficiencies - Option 1
- Existing road network deficiencies - Option 1a

Existing environment

- Major road
- NPWS reserve
- State forest

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

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OSOM route from Port of Newcastle to project area - Option 1, 1a and 3

Dinawan Wind Farm
Amendment Report
Figure 6.7c

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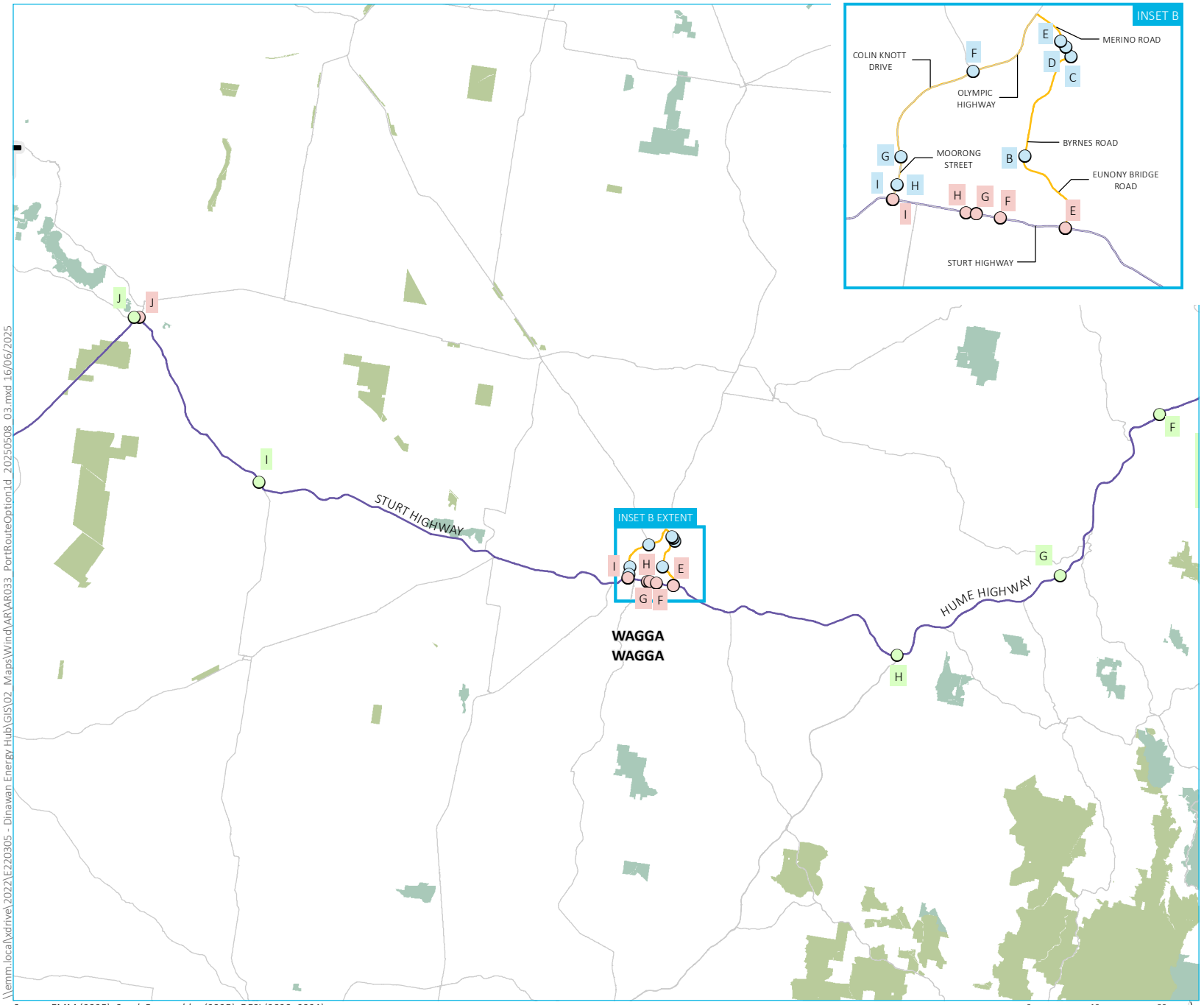

KEY

OSOM route option

- Option 1
- Option 1a - Wagga Bypass
- Option 3 - Pennant Hills Road
- Parking area
- Existing road network deficiencies - Option 1
- Existing road network deficiencies - Option 1a

Existing environment

- Major road
- NPWS reserve
- State forest

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

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OSOM route from Port of Newcastle to project area - Option 1, 1a and 3

Dinawan Wind Farm
Amendment Report
Figure 6.7d

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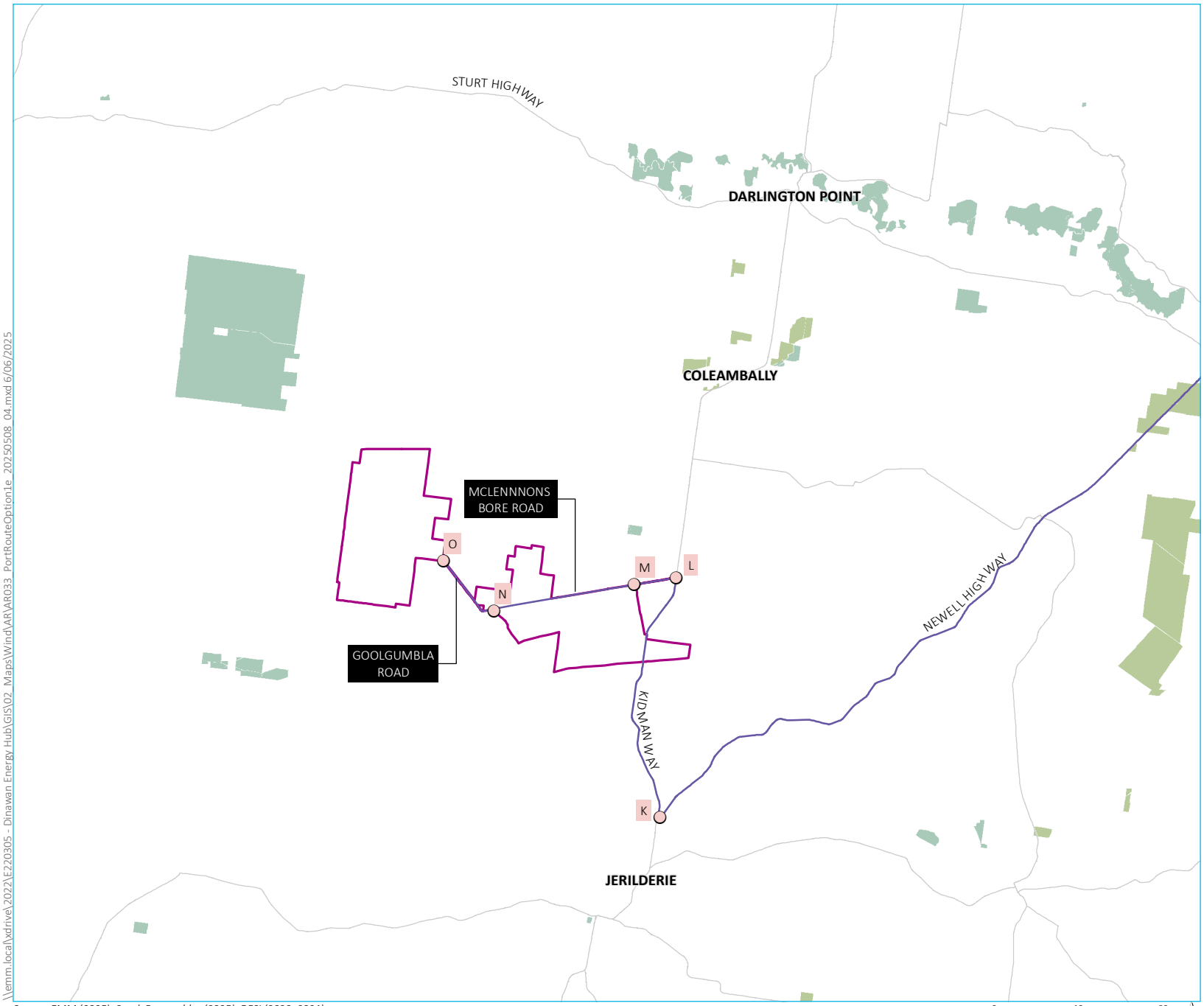

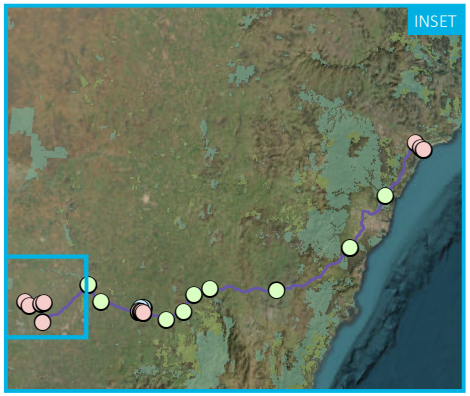

KEY

- Project area

OSOM route option

- Option 1
- Option 1a - Wagga Bypass
- Option 3 - Pennant Hills Road
- Parking area
- Existing road network deficiencies - Option 1
- Existing road network deficiencies - Option 1a
- NPWS reserve
- State forest

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

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GDA2020 MGA Zone 55

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OSOM route from Port of Newcastle to project area - Option 1, 1a and 3

Dinawan Wind Farm
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Figure 6.7e

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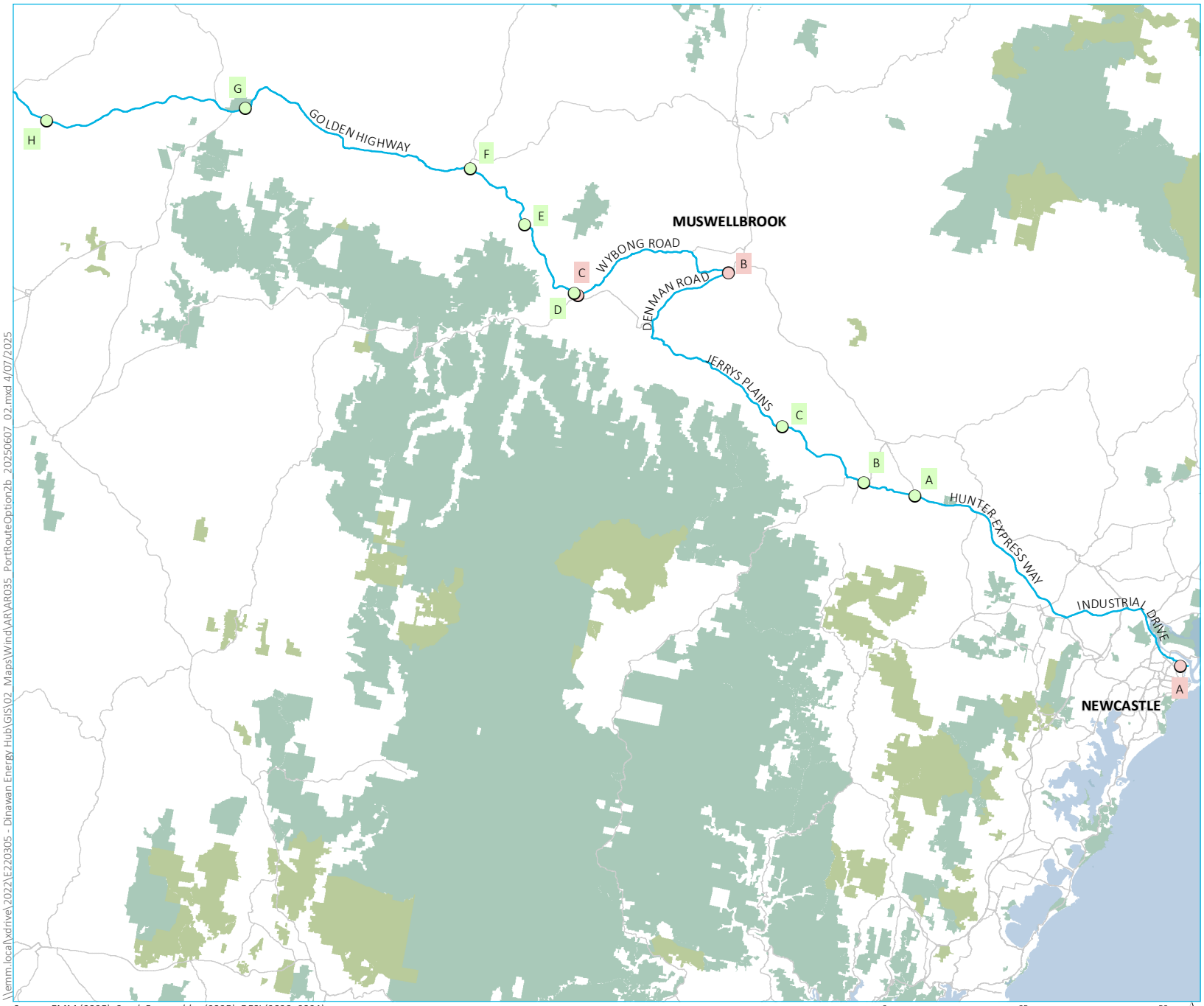

KEY

Project area

OSOM route option

Option 2

Parking area

Existing road network deficiencies

Existing environment

Major road

NPWS reserve

State forest

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

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GDA2020 MGA Zone 55

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OSOM route from Port of Newcastle to project area - Option 2

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Figure 6.8a

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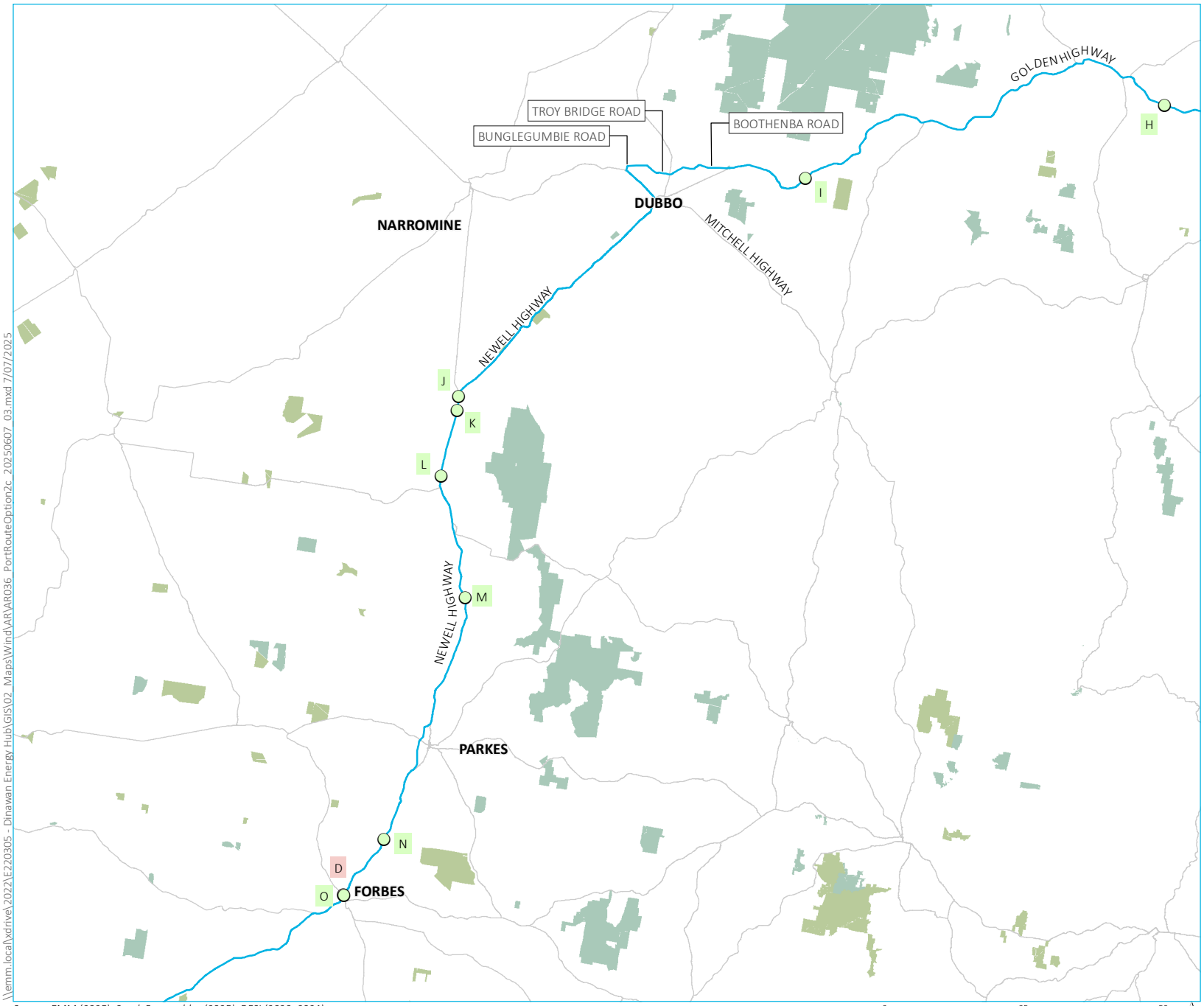

KEY

- Project area

OSOM route option

- Option 2
- Parking area
- Existing road network deficiencies

Existing environment

- Major road
- NPWS reserve
- State forest

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

0 25 50 km

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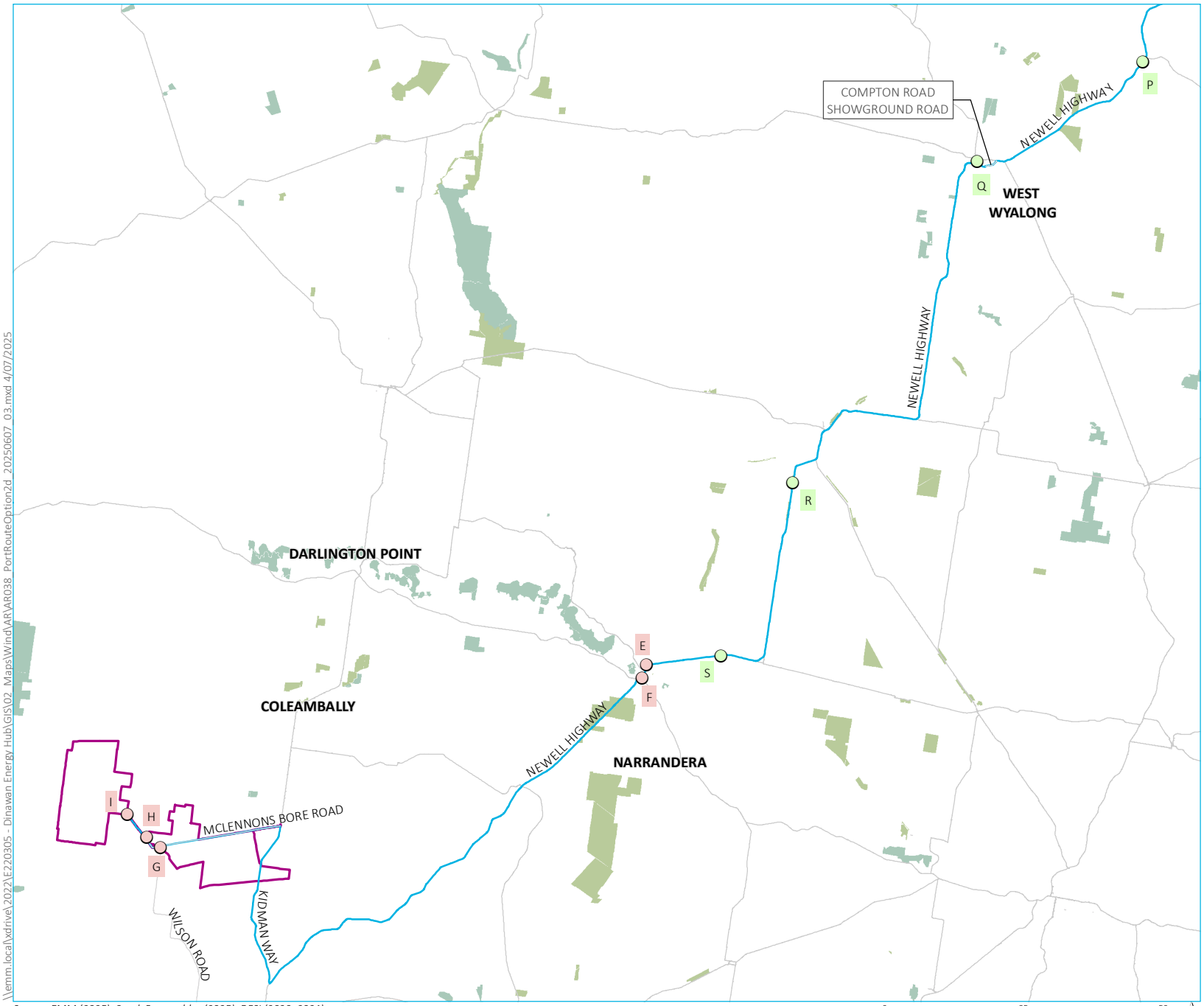
OSOM route from Port of Newcastle to project area - Option 2

Dinawan Wind Farm
Amendment Report
Figure 6.8b

EMM
creating opportunities



KEY

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OSOM route from Port of Newcastle to project area - Option 2

Dinawan Wind Farm
Amendment Report
Figure 6.8c

EMM
creating opportunities

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021)

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d Operation and decommissioning

As outlined in the EIS, during operation it is expected that there will be 102 inbound and 102 outbound movements per day, comprising:

- approximately 50 light vehicles per day (each undertaking two inbound and two outbound movements)
- approximately two heavy vehicles per day on an as-needed-basis (each undertaking one inbound and one outbound movement).

Additional heavy vehicle movements may be required during maintenance activities.

The majority of traffic will utilise the site access points on McLennons Bore Road, Fernbank Road and Goolgumbla Road; however, access may be required via Kidman Way for maintenance activities associated with the project's grid connection infrastructure.

During decommissioning, traffic generation is predicted to be less than half of the peak daily traffic volumes generated by construction. Traffic movements would primarily be transporting waste, plant and equipment away from site.

As operational and decommissioning traffic volumes will be significantly less than the project's construction traffic, the impacts on the road network are expected to be lower than during construction.

iii Intersection performance

The intersections at Kidman Way/McLennons Bore Road, Kidman Way/Cadell Road (south) and the proposed new site access intersection on Kidman Way were modelled using the SIDRA Intersection 9.1 software in the EIS.

The amended project has removed use of project-related vehicles from Cadell Road (south). This has consequently increased the volume of project-related traffic on Kidman Way. Modelling has been revised for the Kidman Way/McLennons Bore Road intersection due to an increase in vehicle volumes. There are no changes to vehicle volumes on Kidman Way south of Cadell Road (south), therefore the outcomes of the modelling completed in the EIS for the proposed new site access intersection on Kidman Way remains relevant for the amended project. Modelling for the Kidman Way/Cadell Road (south) intersection is not required as there will be no turning movements of project-related vehicles at this intersection for the amended project.

Intersections west of Kidman Way on local roads (McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road) that will be utilised by project-related traffic have not been modelled due to the low volumes of baseline traffic recorded during intersection surveys.

The key intersection performance indicator is level of service (LOS), a categorisation of average delay, intended for simple reference. For a priority-controlled intersection, the LOS is based on the delay experienced on the worst approach and turning movement.

The SIDRA modelling assessed intersection performance in the peak AM and PM periods. The modelling analysed scenarios including baseline traffic volumes, baseline plus construction traffic volumes, and a combination of baseline plus construction traffic as well as cumulative traffic volumes from surrounding developments. The scenarios are described in the traffic impact assessment (Appendix E.6 of the EIS) and the addendum to the traffic impact assessment (Appendix D.5 of this report).

The modelling predicts that all intersections will continue to perform satisfactorily, with LOS A or B for all scenarios, including when the project and cumulative traffic volumes are added.

Any queues from right turning traffic from Kidman Way onto McLennons Bore Road will not impede through-traffic on Kidman Way. Overall, all intersections will have significant spare capacity to accommodate the additional traffic volumes from the project and cumulative projects.

iv Mid-block capacity analysis

Mid-block capacity is a measure of the quality of traffic service along a section of road. At low traffic volumes and under ideal conditions, drivers are able to travel at their desired speed within the speed limit without interference. As traffic volumes increase, and as roadway, terrain and traffic conditions become less than ideal, drivers are affected by the presence of other vehicles on the road and bunches form in the traffic stream.

The mid-block capacities of Kidman Way and McLennons Bore Road were assessed in the EIS as these roads are the primary access route for all vehicles travelling to and from the development footprint. The assessment was based on peak hour traffic volumes. Other local roads that will be used to access the project were not assessed due to the low baseline traffic volumes.

For the peak construction periods (month 15 and month 37), the mid-block capacity of Kidman Way and McLennons Bore Road are expected to operate at either LOS A or B, an acceptable level of service. These results remain applicable for the amended project. The mid-block capacity of Kidman Way was undertaken at the Kidman Way Eastern Site Access intersection and the mid-block capacity of McLennons Bore Road was undertaken at the busiest location between Fernbank Road and Cadell Road. Therefore, changes to the use of Cadell Road (south) as part of the amended project will not impact the outcomes of the assessment.

v Road design and intersection standards

Road width design standards for low volume roads are defined by the *Guide to Road Design Part 3: Geometric Design* (Austroads 2021) for sealed roads and *Unsealed Roads Best Practice Guide* (ARRB 2020) for unsealed roads. Road width standards ensure safety and consistency for road users. The standards are based on daily traffic volumes.

The road widths of key roads listed in Section 6.6.1 were compared to road design standards for baseline traffic volumes and future traffic volumes. This found that parts of the proposed access route do not meet the minimum compliance criteria from Austroads and Australian Road Research Board guidelines for the current traffic volumes.

Kidman Way is currently an 8 m wide sealed road with 1 m wide unsealed shoulder on both sides. Given the project's construction activity is temporary, the current configuration of Kidman Way is considered to be satisfactory. Where intersection upgrades are proposed along Kidman Way, road width will be provided in accordance with relevant Austroads standards. This is unchanged from the EIS.

The sections of McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road that will be used by project-related traffic will be upgraded to meet the minimum 7 m unsealed road width requirements in the *Unsealed Roads Best Practice Guide* (ARRB 2020).

vi Oversize overmass and heavy vehicle swept paths

The amended project includes changes to the OSOM haulage route, site access locations and a reduction to the maximum length of vehicles required to transport OSOM loads. Swept path assessments have informed amendments to the development footprint at each of the site access points to ensure sufficient space is available to facilitate blade deliveries.

The swept paths undertaken to inform the development footprint at each site access location were conservatively based on a 100 m blade length with a full impact where the blade overhangs the trailer. Modelling was completed using a kinematic single-track model with a one-on-axle trailer, which is considered appropriate given OSOM vehicles will be manoeuvring at a low speed on flat terrain with gentle turns.

Swept path assessments are included in the strategic concept designs, amended OSOM route study and haulage route road upgrades in Appendix D.5.

vii Road safety assessment

A sight line is the distance a driver can see along a length of road. *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* (Austroads 2023) outlines the minimum sight line distances for intersections to ensure road users have adequate awareness of other road users. For a road with a 110 km/h design speed (10 km/h faster than the posted speed limit), the minimum safe intersection sight distance required for a general 2.5 second driver reaction time is 300 m.

Sight lines were assessed in the EIS at the existing intersections between Kidman Way and the site access points that will be used by project traffic. This is unchanged as part of the amended project. The EIS determined the following:

- Sight line distances meet the minimum requirement of 300 m at the intersections of Kidman Way/McLennons Bore Road, Kidman Way/Cadell Road (south), McLennons Bore Road/Fernbank Road and the new site access intersection on Kidman Way.

- Sight line distances at the Cadell Road/McLennons Bore Road intersection do not meet the minimum sight distance requirement due to the geometry of Cadell Road and density of roadside vegetation along Cadell Road. Subject to outcomes of engagement with Murrumbidgee Council, the major road priority at the intersection of McLennons Bore Road and Cadell Road is proposed to change from Cadell Road, to McLennons Bore Road. Give way signage will be installed on Cadell Road on both the north and south approaches. Alternatively, if the major road priority cannot be changed, truck warning signage will be installed on Cadell Road on both approaches to the intersection. Sight distances are predicted to be adequate for vehicles waiting to turn left or right onto McLennons Bore Road or continue straight through the intersection on Cadell Road.

- Sight line distances at the intersection of Wilson Road/McLennons Bore Road do not meet the minimum sight distance requirements due to the geometry of Wilson Road and density of roadside vegetation. Truck entry warning signage will be provided on Wilson Road in both directions from the Wilson Road/McLennons Bore Road intersection to address the potential hazard created by insufficient sight distance at this intersection.

viii Public transport, school zones, school buses, pedestrians and cyclists

As outlined in the EIS, no impacts to public transport, school zones, school buses, pedestrian or cycling routes are predicted for the amended project.

Car parking and accommodation will be provided on-site during construction. Shuttle buses will transport workers from the accommodation facility to their active work area during construction.

6.6.3 Mitigation measures

The proposed intersection and road upgrades for the project are provided in Table 6.20. Upgrade requirements to facilitate OSOM vehicles have been included in the schedule of road upgrades as part of the amended project. Further detail on the road network deficiencies identified for OSOM vehicles on the haulage route is provided in Section 5.2 of the Addendum TIA.

The WTG model selected will determine the exact dimensions of components requiring transport, and inform the detailed design of the road upgrades needed between the Port of Newcastle and the site access points. Consultation regarding the project's OSOM route will be ongoing with relevant road authorities (including TfNSW and local councils) and with EnergyCo. Applications for OSOM transport will also need be made to the National Heavy Vehicle Regulator (NHVR) based on the final routes.

Table 6.20 Haulage route (OSOM) and road upgrades to be implemented by the applicant

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
Newcastle LGA				
OSOM route option 1 – John Renshaw Drive onto the M1	18.4 km	Minor adjustments to street furniture to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
Forbes LGA				
OSOM route option 2 – Newell Highway/Dowling Street intersection	573 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
Wagga Wagga LGA				
OSOM route option 1 – Sturt Highway roundabout at Tasman Road	614.6 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1 – Sturt Highway roundabout at Kooringal Road	617.3 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1 – Sturt Highway roundabout at Norton Street	618.4 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1 – Sturt Highway roundabout at Pearson Street	621.5 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
OSOM route option 1A – Sturt Highway/Eunony Bridge Road intersection	615 km	Provision of hardstand area at the north-west corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	Section H.4
OSOM route option 1A – Eunony Bridge Road/Byrnes Road intersection	618.8 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Byrnes Road/West Bomen Road intersection	623 km	Provision of hardstand area at the north corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	Section H.6
OSOM route option 1A – West Bomen Road/Merino Road intersection	623.9 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Merino Road/Olympic Highway intersection	625.7 km	Minor adjustments to street furniture to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Olympic Highway (Colin Knott Dr) Roundabout at Horseshoe Road	629.3 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Olympic Highway (Moorong St) Roundabout at Traverse Street	634.4 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Olympic Highway (Moorong St) Roundabout at Kincaid Street	635.6 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
OSOM route option 1A – Olympic Highway (Moorong Street)/Sturt Highway intersection	636 km	Provision of hardstand area at the north-west corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles	Section H.5
Narrandera LGA				
OSOM route option 1 – Left hand bend of Sturt Highway at Newell Highway	711 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 2 – Newell Highway/Sturt Highway intersection	817 km	Minor adjustments to street furniture to facilitate OSOM vehicles.	Prior to use by OSOM vehicles	To be prepared in consultation with relevant road authority prior to construction.
Murrumbidgee LGA				
OSOM route option 1 – Kidman Way/Newell Highway intersection	802 km	Provision of hardstand area at the north-east corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles	Section H.3
Kidman Way – new intersection to access development corridor east of Kidman Way	823 km	New intersection: • Intersection upgrades to accommodate a 26-m-long truck and to allow the passage of the largest inbound OSOM vehicle. • Upgrade sealed road lanes and shoulders in the vicinity of the Kidman Way/Kidman Way Eastern Site Access intersection to Austroads standards. • Left turn bays and right turn bays on both approaches on Kidman Way.	Prior to construction of accommodation facility in the eastern area.	Section H.2
Kidman Way/McLennons Bore Road	833 km	Upgrade of existing intersection: • Intersection upgrades to accommodate a 36.5-m-long truck and to allow the passage of the largest OSOM vehicle. • Upgrade sealed road lanes and shoulders in vicinity of the Kidman Way/McLennons Bore Road intersection to Austroads standards. • Left turn bays and right turn bays on both approaches on Kidman Way.	Prior to construction of accommodation facility in the eastern area.	Section H.1

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
McLennons Bore Road/Cadell Road	838 km	Upgrade of existing intersection: • Subject to outcomes of engagement with Murrumbidgee Council, the major road priority at this intersection may change from Cadell Road to McLennons Bore Road. • Subject to Murrumbidgee Council's Local Traffic Committee's consideration, give-way signage will be installed on Cadell Road on both the north and south approaches. If required, additional truck warning signage will be provided on Cadell Road on both approaches to McLennons Bore Road.	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road	838 km	Road upgrade and widening: • Upgrade of dry weather road from Cadell Road to Kidman Way to an all-weather road and removal of existing signage relating to the use of this road during dry weather only. • Widening of unsealed gravel road (where necessary) to cater for construction traffic (8 m trafficable width and 1 m unsealed shoulder on both sides, totalling 10-m-wide unsealed carriageway or as otherwise agreed with Murrumbidgee Council).	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road/site access intersections	841 km, 847 km, 849 km, 853 km	New site access intersections: • Construct intersection to suit 36.5-m-long truck and to allow the passage of the largest OSOM vehicle.	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road/Fernbank Road	848 km	Upgrade of existing intersection: • Intersection upgrades to accommodate a 36.5-m-long truck and to allow the passage of the largest OSOM vehicle.	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
Fernbank Road	848 km	Road widening: • Widening of the unsealed gravel road between McLennons Bore Road and the site access points to cater for construction traffic (8 m trafficable width and 1 m unsealed shoulder on both sides, totalling 10-m-wide unsealed carriageway or as otherwise agreed with Murrumbidgee Council).	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
Fernbank Road/site access intersection	850 km	New site access intersection: • Construct intersection to suit 36.5-m-long truck and to allow the passage of the largest OSOM vehicle.	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road/Wilson Road	855 km	Upgrade of existing intersection • Intersection upgrades to accommodate a 36.5-m-long truck and to allow the passage of the largest OSOM vehicle.	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.
Wilson Road	855 km	Road widening: • Widening of the unsealed gravel road between McLennons Bore Road and Goolgumbla Road to cater for construction traffic (8 m trafficable width and 1 m unsealed shoulder on both sides, totalling 10-m-wide unsealed carriageway or as otherwise agreed with Murrumbidgee Council).	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.
Edward River LGA				
Goolgumbla Road	858 km	Road widening • Widening of the unsealed gravel road between Wilson Road and the site access points to cater for construction traffic (8 m trafficable width and 1 m unsealed shoulder on both sides, totalling 10-m-wide unsealed carriageway or as otherwise agreed with Edward River Council).	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 2 – Wilsons Road Stock Grids	967 km, 972.9 km	All stock grids to be upgraded to accommodate all proposed loads.	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.
Goolgumbla Road/site access intersections	866 km, 867 km	New site access intersections • Construct intersection to suit 36.5-m-long truck and to allow the passage of the largest OSOM vehicle.	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.

Notes: Chainage is based on distances described in Annexure A.2 of Appendix D.5 of this amendment report.

A summary of traffic management and mitigation measures for construction are outlined in Table 6.21. These will be included in the Construction Traffic Management Plan (CTMP).

Table 6.21 Transport mitigation measures – construction

ID	Mitigation measure
T1	A detailed Construction Traffic Management Plan (CTMP) will be developed in consultation with TfNSW, Edward River Council and Murrumbidgee Council prior to the commencement of works.
T2	**The Kidman Way/Kidman Way Eastern Site Access intersection will include:** • **dedicated turning bays for left-turning and right-turning vehicles from Kidman Way** • **upgrades on both the north and south approaches** • **upgrades designed for a 26m long B-double truck and to allow the passage of the largest OSOM vehicle.**
~~T3~~	~~The Kidman Way/Cadell Road (south) intersection will be upgraded to include:~~ ~~• a dedicated turning bay for left turning vehicles from Kidman Way~~ ~~• a widened shoulder on the eastern side of Kidman Way at the intersection~~ ~~• upgrades on both the north and south approaches~~ ~~• closure of right turn from Kidman Way north approach into Cadell Road (south), subject to consultation with TfNSW and Murrumbidgee Council~~ ~~• upgrades designed for light vehicle access.~~
T3	The Kidman Way/McLennons Bore Road intersection will be upgraded to include: • **a dedicated turning bay for left turning vehicles and a dedicated turning bay for right turning vehicles from Kidman Way** • upgrades on both the north and south approaches • upgrades designed for a 36.5-m-long truck and to allow the passage of the largest OSOM vehicle.
T4	Obtain a permit (from NHVR) to allow up to 36.5-m-long trucks as well as OSOM vehicles to use the road network as part of construction. Conditional approval will be requested from NHVR for 36.5-m-long trucks to access McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road, as it is currently only approved for 19-m-long heavy vehicles. Relevant councils will be consulted as part of the approval process.
T5	The following gravel roads will be widened to comply with the relevant Australian Road Research Board (ARRB) rural roads design guidelines (unless agreed otherwise with the relevant local council): • McLennons Bore Road • Fernbank Road from McLennons Bore Road to the site access point • Wilson Road between McLennons Bore Road and Goolgumbla Road • Goolgumbla Road between Wilson Road and the northern site access point.
T6	McLennons Bore Road between Cadell Road and Kidman Way will be upgraded from a dry weather road to an all-weather unsealed road and existing signage relating to the use of this road during dry weather only will be removed.
T7	All site access points will be constructed as per council's Rural Property Access standard to the satisfaction of **the relevant road authority**.
T8	Subject to outcomes of engagement with Murrumbidgee Council, the major road priority at the intersection of McLennons Bore Road and Cadell Road will change from Cadell Road to McLennons Bore Road. Give way signage will be installed on Cadell Road on both the north and south approaches. Alternatively, if the major road priority cannot be changed, truck warning signage will be installed on Cadell Road on both approaches to the intersection.
T9	At Wilson Road/McLennons Bore Road intersection, truck warning signage will be placed on Wilson Road to warn drivers of trucks turning at Wilson Road/McLennons Bore Road intersection.
T10	The McLennons Bore Road/Fernbank Road and McLennons Bore Road/Wilson Road intersections will be widened based on the recommendations of the swept path assessment to facilitate access by the longest vehicles requiring access via these intersections.

ID	Mitigation measure
T11	A dilapidation survey will be commissioned prior to the start of construction to assess the existing condition of the sections of McLennons Bore Road, ~~Cadell Road (south),~~ Fernbank Road, Wilson Road and Goolgumbla Road that will be used by vehicles associated with the project.
T12	A road maintenance strategy will be developed in consultation with Murrumbidgee Council and Edward River Council.
T13	**To prohibit light and heavy vehicle usage on Cadell Road, a 'Drivers Code of Conduct' will be prepared, which will clearly outline that this road is not to be used by project-related vehicles. The proponent is willing to work with Murrumbidgee Council on effective measures to prohibit development traffic from using Cadell Road.**
T17	**Haulage route (OSOM) and road upgrades and relevant timing is listed in Table 6.20 of the amendment report and will be implemented for the project.**

No specific traffic mitigation measures are proposed during operation, as all material impacts will be addressed through the construction phase mitigation measures.

A decommissioning plan will be prepared prior to decommissioning to address transport issues at the time of decommissioning and will include road and traffic management measures.

6.6.4 Conclusion

The development footprint will be accessed from Kidman Way, McLennons Bore Road, Fernbank Road and Goolgumbla Road. The amended project has removed the use of Cadell Road by project-related vehicles.

Construction vehicles will include light vehicles and shuttle buses transporting workers, and heavy and OSOM vehicles delivering materials, project components and equipment. At the peak of construction, an estimated 638 daily and 249 peak hour vehicle movements are anticipated. Approximately 2,884 OSOM loads are estimated to be required over the duration of the construction period, predominantly to deliver WTG components from the Port of Newcastle.

The level of service of key intersections and mid-block capacity on Kidman Way and McLennons Bore Road will not be adversely impacted during construction. With the implementation of the proposed mitigation measures, no significant impacts to traffic flow or road safety are expected.

Road and intersection upgrades are proposed to accommodate construction traffic using the local road network. The new intersections at the site access points will be designed for the largest heavy vehicles and OSOM vehicles that will be accessing the development footprint.

During operation it is expected that there will be 102 inbound and 102 outbound vehicles movements per day. These will result in negligible transport impacts.

With the implementation of the proposed road upgrades and traffic management measures, no significant transport impacts are predicted during construction, operation or decommissioning.

6.7 Water

A water resources assessment was prepared for the EIS and is included as Appendix E.7 of the EIS. The water resources assessment considers potential impacts to surface water, groundwater and flooding in general accordance with relevant guidelines and legislation.

The amendments to the project have reduced the extent of the development footprint and development corridor, which will reduce water-related impacts. This section provides an update to the description of the surface water, flooding, and groundwater environment presented in the EIS. The key findings presented in the water resources assessment remain applicable to the amended project due to the minor nature of the changes to the project's impact on water resources.

6.7.1 Potential impacts

i Water demand

Water demand and wastewater loads are unchanged for construction and operation of the amended project and are provided in Section A.4.5 in Appendix A of this report.

ii Surface water

Potential impacts to surface water quality and quantity from the amended project remain consistent with the EIS and will be managed through the implementation of environmental management measures such as stabilisation and revegetation. With mitigation, impacts are expected to be negligible to minor.

Watercourse crossings are required primarily for access tracks and electrical infrastructure across the project area. The number of watercourse crossings (particularly of higher order watercourses) has been minimised through the utilisation of existing access roads, tracks and crossings.

In the EIS, 10 locations were identified as needing further evaluation based on a combination of predicted flood extents (using 5% annual exceedance probability (AEP) flood model outputs) and stream order. The number of watercourse crossing locations are generally unchanged as a result of the amended project. The interaction between project components and predicted flood extents at these locations has the potential to result in localised changes in flow paths and instream velocity.

The interaction between project components and select watercourses was evaluated against the specific project component and the condition of the watercourse. The identified watercourse interactions are considered in Table 6.22 and Figure 6.9.

Table 6.22 Areas of development corridor within or adjacent to vegetated riparian zones

Area	Interaction identifer[1]	Stream order	Project component	Condition assessment
Stage 1 (eastern area)	1 – EAST	1st order	Site access and electrical cabling	Modified and degraded riparian vegetation associated with historical land use practices.
	2 – EAST	2nd order	Transmission line	
	3 – EAST	1st order	Site access	
	4 – EAST	1st order	Site access and electrical cabling	
	5 – EAST	1st order	WTG and associated infrastructure	
	6 – EAST	3rd order	Site access	Partially within riparian zone; however, outside remnant vegetation.
	7 – EAST	3rd order	Electrical cabling	Modified and degraded riparian vegetation associated with historical land use practices
Stage 2 (western area)	1 – WEST	2nd order	WTG and associated infrastructure	Modified and degraded riparian vegetation associated with historical land use practices.
	2 – WEST	Greater than 3rd order	Site access and electrical cabling	Coleambally Outfall Drain is a man-made structure. The watercourse has its margin controlled with earthen batters and bunding. Due to its man-made nature, the watercourse is expected to provide limited environment value.
	3 – WEST	Greater than 3rd order	Site access and electrical cabling	

Notes: 1. Interaction identifier aligns with labels shown on Figure 6.9.

iii Flooding

Existing flooding conditions for the project area and surrounds were modelled to determine the extent of:

- AEP – the likely flood depth for a flood with a select percentage chance of occurring in a given year
- probable maximum flood (PMF) – the largest flood that could conceivably be expected to occur at a particular location, usually estimated from probable maximum precipitation.

Interactions of existing flooding conditions (1% AEP) with the amended project are shown in Figure 6.10. Flood extents within the project area generally follow the alignment of watercourses and minor depressions for events up to 0.5% AEP. For the PMF event, more extensive inundation occurs over much of the landscape.

As outlined in the EIS, there is potential during construction for inundation of site works, compounds, storage areas and plant/equipment if these are located within flood prone areas. This could lead to undesirable flooding impacts either off-site or within the project area.

The amended project is considered to be compatible with the flood hazard, in that the majority of the infrastructure areas are either free of flooding or subject to low flood hazard that is generally safe for people, vehicles and buildings for events up to 1% AEP.

A detailed assessment of flooding at the worker accommodation facilities was undertaken to understand maximum flood depth and peak flood hazard within the nominated areas for these facilities. The maximum predicted flood depth within the areas proposed for the worker accommodation facilities is listed in Table 6.23 and shown in Figure D.1 in Appendix D.12.

Table 6.23 Maximum flood depth at the accommodation facilities

Accommodation facility	1% AEP	0.5% AEP	PMF
Stage 1	0.13 m	0.17 m	0.54 m
Stage 2 (north)	0.16 m	0.18 m	0.58 m
Stage 2 (south)	0 m	0 m	0 m

It is anticipated that a minimum 1% AEP flood immunity will be provided within the worker accommodation facilities, but this will be determined during detailed design.

The predicted peak flood hazard within the areas proposed for the worker accommodation facilities is listed in Table 6.24 and shown in Figure D.2 in Appendix D.12.

Table 6.24 Peak flood hazard at the accommodation facilities

Accommodation facility	1% AEP	0.5% AEP	PMF
Stage 1	H1	H1	H3
Stage 2 (north)	-	H1	H3
Stage 2 (south)	-	-	-

The peak flood hazard for both the 1% AEP and 0.5% AEP events is 'H1', which is defined by the *Australian Disaster Resilience Handbook* (AIDR 2017) as 'generally safe for people, vehicles and buildings'.

During a PMF event, the peak flood hazard within the accommodation facilities is predicted to increase for the Stage 1 and Stage 2 (north) accommodation facilities. During a PMF event, a small part of the accommodation facility footprint in these areas could experience a peak flood hazard rating of 'H3', which is defined by the *Australian Disaster Resilience Handbook* (AIDR 2017) as 'unsafe for vehicles, children and the elderly'.

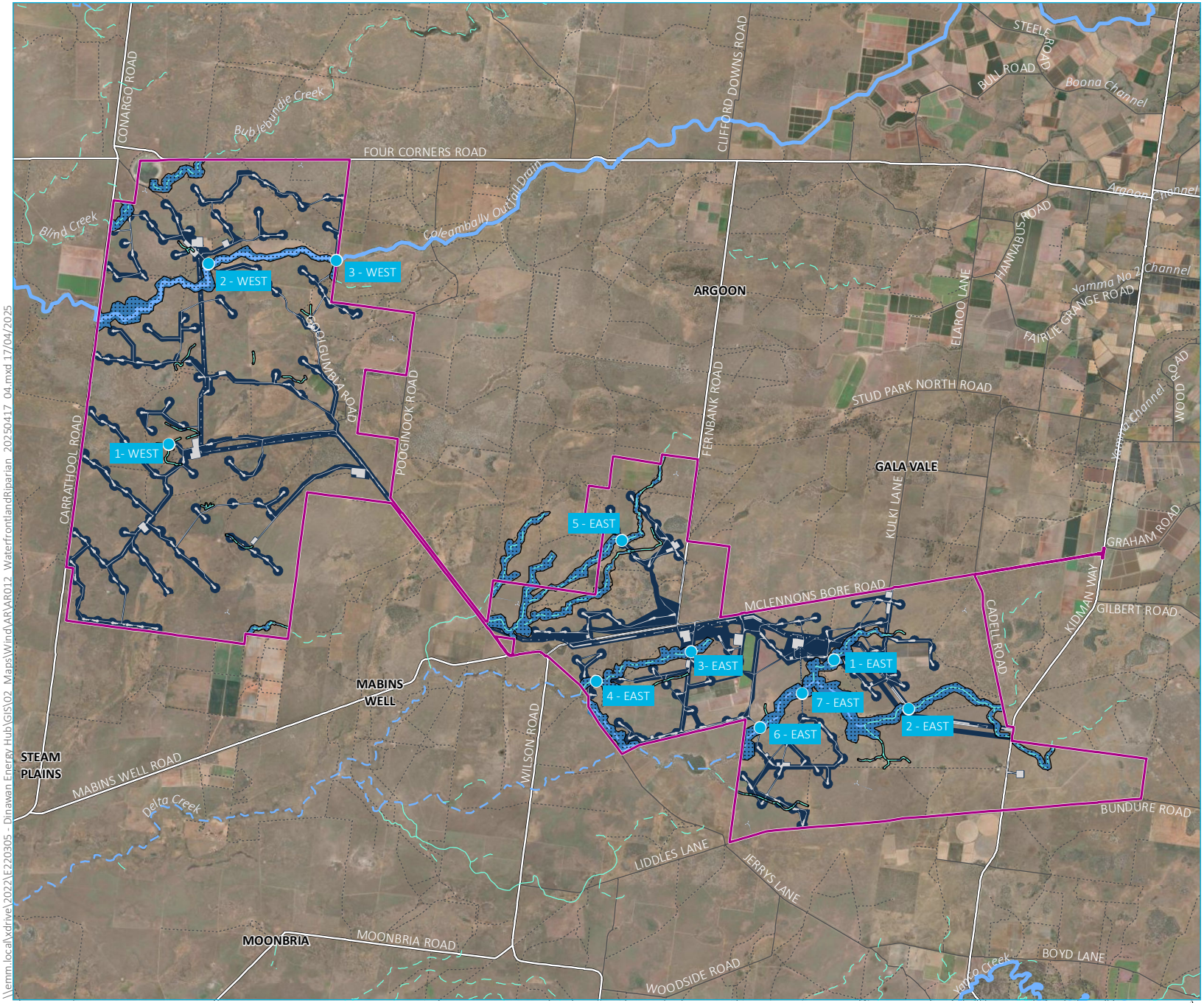
A flood management plan will be developed to describe required site management and protocols during flood events, as described in Appendix C.

iv Groundwater

Project construction will include excavation for foundations, borrow pits and underground services. Excavations for foundations, borrow pits and underground services will be relatively shallow (approximately 3–5 m below ground level) compared to groundwater levels in the project area, which are anticipated to be approximately 15–40 m below ground level. This is unchanged from the EIS.

Other potential impacts identified in the EIS are unchanged for the amended project (e.g. small reductions in infiltration of stormwater runoff and groundwater recharge and impacts to groundwater quality from spills during construction and operation).

With the implementation of standard mitigation measures (see Appendix C), no impacts to groundwater quality are expected.



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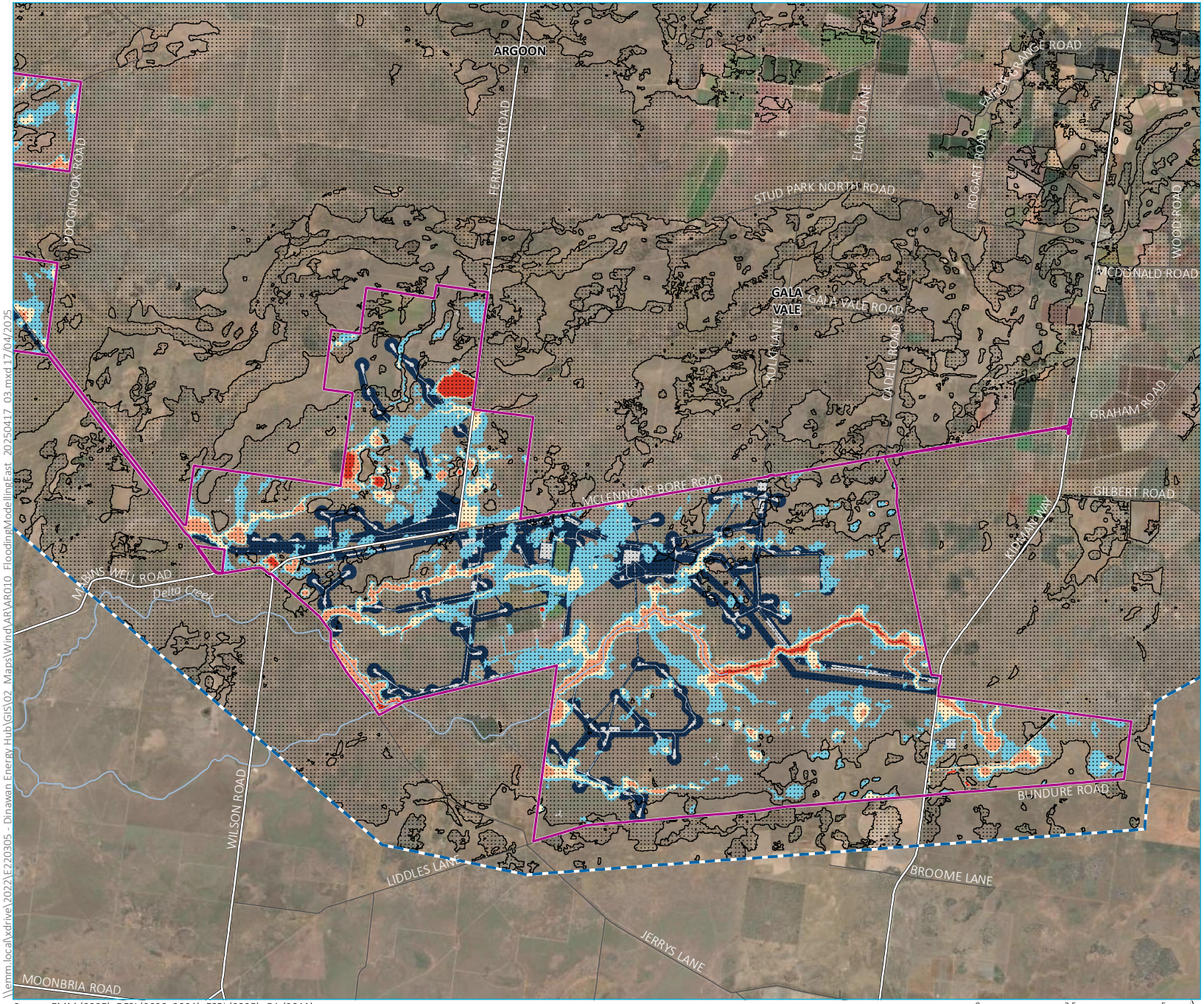
Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025); GA (2011); DPI (2013)

Waterfront land and riparian zones

Dinawan Wind Farm
Amendment Report
Figure 6.9

EMM
creating opportunities



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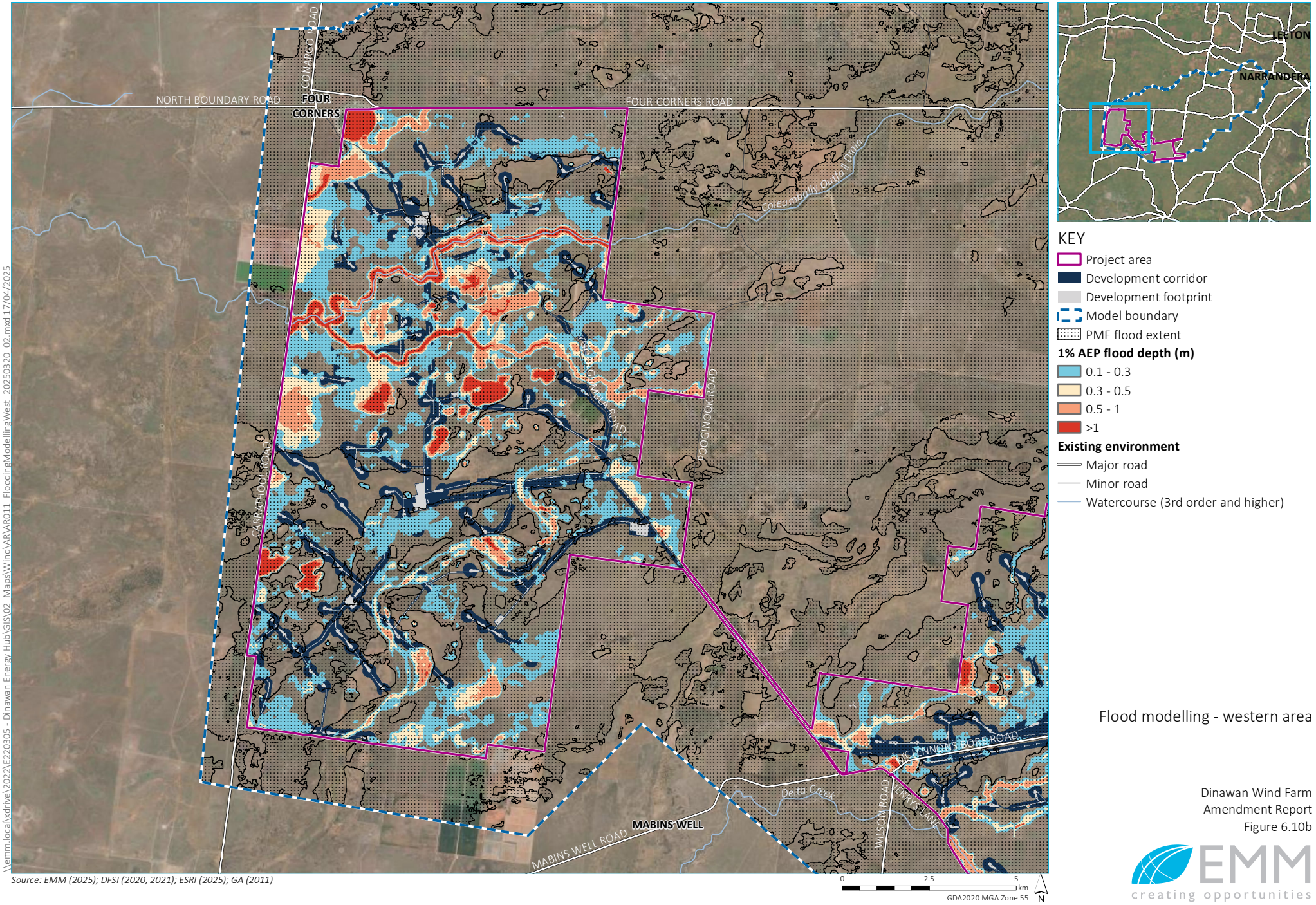
Source: EMM (2025); DFSI (2020, 2021); ESRI (2025); GA (2011)

Flood modelling - eastern area

Dinawan Wind Farm
Amendment Report
Figure 6.10a

EMM
creating opportunities



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Source: EMM (2025); DFSI (2020, 2021); ESRI (2025); GA (2011)

Flood modelling - western area

Dinawan Wind Farm
Amendment Report
Figure 6.10b

EMM
creating opportunities

6.7.2 Mitigation measures

The amendments do not require additional mitigation or management measures in relation to water impacts. As such, the proposed measures remain largely unchanged from the EIS and are listed in full in Appendix C.

6.7.3 Conclusion

The amended project will not change the predicted impacts to water resources assessed in the water resources assessment and EIS.

Further assessment has been undertaken to understand potential flooding impacts at the accommodation facilities. Subject to detailed design, it is anticipated that a minimum 1% AEP flood immunity will be provided within the accommodation facilities. A flood management plan will be developed to describe required site management and protocols during flood events.

The project's impacts on surface water and groundwater resources are anticipated to be substantially the same as outlined in the EIS with the implementation of recommended mitigation and management measures.

6.8 Air quality

As described within Section 6.8 of the EIS, the project may generate dust emissions in the development corridor during excavation works, material handling, and as a result of vehicle movements on unsealed tracks/areas. Impacts to air quality will be substantially the same for the amended project.

Given the distance between the development corridor and surrounding non-associated residences (mostly greater than 1 km), dust emissions from construction of the amended project are not anticipated to have significant impacts on nearby residences, and operational emissions from the amended project are expected to be negligible. Management measures will be implemented during construction to minimise dust emissions.

6.9 Land

A land and rehabilitation assessment was prepared for the EIS by EMM and is provided in Appendix E.8 of the EIS. The land and rehabilitation assessment assessed the potential impacts of the project to land, soils and agriculture.

The amendments to the project have reduced the extent of the development footprint. An assessment of the reduced impacts to land, soil and agriculture is provided in this section.

6.9.1 Existing environment

i Land and soil capability

As part of the EIS, land and soil capability (LSC) 'classes' were identified for the development corridor to show the capacity of the land to sustain certain land use practices while minimising soil and land degradation. At a state-scale, the development corridor is mapped as per *The Australian Soil Classification* (ASC) (Isbell & NCST 2021) as LSC Class 4 (moderate–low capability land) and Class 6 (low capability land), with Jerilderie (jex) the likely dominant soil landscape in the project area. The soil survey found the LSC classes in the project area are generally consistent with regional mapping, with LSC Class 3, 4, 5, and 6 present within the development corridor. The soil characteristics of the development corridor have not materially changed as a result of the amendments to the development corridor.

ii Agriculture

Land use within the development corridor is predominantly agricultural with approximately 6,311 ha used for grazing livestock and 453 ha used for cropping. The draft Stage Significant Agricultural Land (SSAL) map shows no mapped BSAL, Critical Industry Clusters or SSAL within the project area.

iii Erosion

Erosion hazard was assessed in accordance with *Managing urban stormwater: soils and construction* (Landcom 2004). The development footprint predominantly has a low erosion hazard based on average slope, with only localised areas of steep slopes (less than 0.05% of the project area) presenting a high erosion hazard, primarily associated with the constructed irrigation channels present on-site.

iv Other land uses

Land use in the project area has historically consisted of pastoral and agricultural uses. Agricultural activities can be a source of contamination, which has been assessed in Appendix D.6. No specific records of known contaminated sites were identified within the project area. Potential contaminating activities identified as part of the PSI include:

- historic agricultural land use
- use of farm machinery, irrigation equipment and farm shed chemical storage
- bulk fuel storage
- septic tanks
- waste disposal areas (i.e. burials and tips)
- the application of pesticides and/or herbicides and presence of former sheep dips.

Two small, mapped areas of 'high potential' acid sulfate soils (ASS) were identified within the western part of the project area within wetland environments. These areas are outside of the development corridor.

There are no other significant land uses in the project area, such as mining, quarries, mineral or petroleum rights.

6.9.2 Potential impacts

i Land and soil capability

The amendments have reduced the extent of the development footprint, therefore, reducing the extent of soil disturbance for the project, as shown in Table 6.25.

Table 6.25 LSC impacts for the project in the context of the South West REZ (based on available mapping)

Area	LSC class (ha)								Total (ha)
	1	2	3	4	5	6	7	8	
South West REZ	0	0	1,739	988,411	1,129,856	341,583	249,807	71,436	2,782,832
EIS development footprint	0	0	5	1,209	0	124	0	0	1,338
Amended development footprint			5	994		96			1,095
Percentage change			-	18% decrease		23% decrease			18% decrease

The development footprint represents a very small portion of land within the South West REZ (less than 0.05%).

ii Agriculture

The land within the development footprint will be temporarily unavailable for the current land use (i.e. sheep and cattle grazing with some cropping) during construction. In the EIS, the project was predicted to remove up to $574,784 in annual agricultural productivity based on estimates on livestock and cropping land use and regional productivity information. As the development footprint has been reduced from 1,339 ha to 1,095 ha, impacts to annual agricultural productivity during construction would be less than $574,784. Impacts to agricultural productivity during operation will be reduced and mitigated by the proposed continued use of the land for compatible agricultural enterprises.

Approximately 33 ha of travelling stock reserve is within the development corridor, which has slightly increased from 20.6 ha in the EIS. Spark Renewables will continue to engage with NSW Crown Lands regarding impacts to travelling stock reserves (refer Chapter 5 of the EIS and Section 4.2 of the submissions report).

Other agricultural impacts have not been materially changed by the amendments, such as increased biosecurity risks from increased weeds and pests, which will be managed by mitigation measures proposed in the EIS. The project will not impact the supply of water to the Coleambally Irrigation Area.

iii Erosion and sedimentation

As outlined in the EIS, in the absence of appropriate controls, soil disturbance associated with construction and operation, as well as ongoing land management practices, have the potential to result in erosion and sediment control impacts. These potential impacts are unchanged by the proposed amendments. Mitigation and management measures addressing these impacts are listed in Appendix C.

iv Land use

A land use conflict risk assessment (LUCRA) was prepared for the project using the *Land Use Conflict Risk Assessment Guideline* (DPI 2011) and is provided in Attachment E of the land and resources assessment in Appendix E.8 of the EIS. The amendments to the project have not changed the outcomes of the assessment.

v Contamination

Based on the findings of the PSI (Appendix D.6), the contamination risk within the project area is considered low except for two moderate risk contamination sources associated with existing fuel and chemical storage. Soil disturbance as part of construction and/or intrusive maintenance work during operations could lead to dermal contact and incidental ingestion at these discrete locations. Targeted soil sampling is proposed in areas where a moderate contamination risk has been identified to quantitatively assess the risk and inform appropriate material management/disposal/remediation measures during construction.

vi Decommissioning and rehabilitation

As outlined in the EIS, once the project reaches the end of its operational life, a decision will be made to either decommission or re-power the facility, subject to approval requirements.

If the project is decommissioned, all aboveground structures will be removed (unless otherwise agreed with landowners and regulators) and the site rehabilitated generally to its pre-existing land use, as far as practicable. Project infrastructure will be managed in accordance with the waste management hierarchy and contemporary waste management legislation. WTG foundations, including concrete structures, will typically be retained in situ and covered with soil and/or rock and revegetated. Underground cabling will typically be decommissioned and removed, unless the Planning Secretary agrees otherwise. These measures ensure the effective restoration of the land to its original condition, minimising any long-term environmental impact and enabling future land use flexibility.

Project infrastructure will be managed in accordance with the waste management hierarchy and contemporary waste management legislation.

Proposed rehabilitation mitigation and management measures are unchanged from the EIS, including soil stripping management practices and management measures for soil handling and erosion prevention, with species for rehabilitation to be cover crops, legumes and pasture species, as agreed with the landowners.

6.9.3 Mitigation measures

Proposed measures to manage and mitigate potential impacts to soil and land capability, agriculture, erosion and biosecurity are outlined in Table 6.26, with new mitigation measures shown in **bold**.

Table 6.26 Land, soil and erosion mitigation measures

ID	Mitigation measure
L1	Soil management measures to preserve soil resources will include: • avoiding and minimising soil disturbance to the extent practical • assessing topsoil depths to be stripped prior to stripping to minimise the mixing of topsoil and subsoil • preserving as much topsoil as possible • aiming to strip and manage different soils orders or mapping units separately • avoiding mixing topsoil with subsoil during soil handling operation • managing subsoils in separate layers to minimise introduction of constraints higher into the soil profile where subsoils exhibit variance of constraints with depth • avoiding stripping, handling or compacting soil following heavy rain periods that leaves the soil structure saturated • avoiding compaction of soil during stripping and stockpiling operation • applying ameliorants to topsoil and, where necessary, subsoil during stripping operation in accordance with a soil scientists' recommendations, with ameliorants applied prior to stripping each soil layer, to maximise mixing of the ameliorants during the stripping process • stockpiling topsoil separately from subsoil (where it is necessary to strip subsoil) • reinstating soil horizons in the correct order and depths, where possible • locating subsoils and topsoils so that stockpiled material is placed on the same underlying soil unit where practical • protecting stockpiles from erosion using soil stabilising polymers, cover crops or other forms of stabilisation • stabilising long-term topsoil stockpiles to minimise stockpile waterlogging, the generation of anaerobic conditions, help maintain topsoil biological viability and nutrient cycling and to create a seed store • testing stockpiled subsoil and topsoil to determine amelioration requirements prior to reinstatement • testing any imported soil materials to characterise and determine suitable usage and amelioration requirements prior to reinstatement.
L2	Undertake agricultural mitigation activities during the life of the project, including: • maintaining existing internal livestock fencing and other required infrastructure within the development footprint • avoiding interference with the operation of irrigation channels.
L3	The following will be implemented to manage impacts associated with weeds, pathogens and pest species: • implementing hygiene and washdown protocols, including washdown and inspection of vehicles, plant and machinery when moving from areas with known populations of weed and pest species • removing identified weeds through methods such as herbicide spraying, scalping and hand-pulling • managing importation of gravel, crushed rock or soil to ensure that the material is free from noxious weed seed • implementing measures to manage pest fauna species within the development footprint.
L4	The following erosion and sediment control measures, site rehabilitation and revegetation will be implemented in accordance with industry standard practice: • minimising the extent and duration of land disturbance • controlling water movement through the development footprint • minimising soil erosion • stabilising disturbed areas promptly • maximising sediment retention on site • maintaining drainage, erosion and sediment control measures • monitoring and adjusting drainage, erosion and sediment control practices to achieve the desired performance standard • constructing suitable watercourse crossings

ID	Mitigation measure
	• considering the erosion hazards posed by the dispersive subsoils while installing driven piles, excavation of cable and pipe trenches, construction of roads, tracks and ancillary facilities.
L5	An unexpected finds protocol will be developed for construction, operation and decommissioning. It will include procedures to identify potentially contaminated land, such as: • the observation of discolouration or staining of soils • visible signs of plant stress, presence of drums or other waste material • stockpiles, fill material or odours. If a potential source of contamination is identified, work within the affected area will cease until an assessment is completed to advise the need for further investigation or remediation.
L6	**Prior to commencement of earthworks, a materials management plan will be prepared and implemented. This will include targeted soil sampling in areas where a moderate contamination risk has been identified. The materials management plan will be prepared in conjunction with a CEMP and outline specific management measures during construction relating to:** • **spoil material generation – specifying the locations, indicative volumes and types of materials** • **the spoil management hierarchy – including strategies for reduction, reuse and disposal** • **handling and transportation of generated materials/spoil** • **stockpile management** • **spoil testing and classification regime.**

6.9.4 Conclusion

The amendments to the development footprint have reduced the extent of land that will be directly impacted by the project, therefore, the amended project is anticipated to reduce agriculture, soil and erosion-related impacts.

No significant impacts are expected to land and soil capability, agriculture, erosion and sedimentation, land use or contamination. Mitigation measures will be implemented to further reduce the potential for impacts to land.

It is anticipated that by implementing effective land management procedures during construction and operation and implementing effective decommissioning and rehabilitation at the end of project life, the project will have no permanent negative impacts on agricultural resources or enterprises.

6.10 Bushfire

A bushfire assessment report was prepared by Waratah Bushfire as part of the EIS in accordance with *Planning for bushfire protection* (RFS 2019) and is provided in Appendix E.12 of the EIS. The bushfire assessment report has been updated to incorporate the amended project layout and to address feedback received by NSW Rural Fire Service, Murrumbidgee Council and Edward River Council. It is provided in Appendix D.7 of this report.

6.10.1 Potential impacts

The amended project will reduce the area and amend the layout of the development corridor and development footprint but will not alter bushfire risks assessed in the EIS that require management during the construction and operation of the project. These risks are assessed in Chapter 5 of the bushfire assessment report (Appendix D.7 of this report).

6.10.2 Mitigation measures

The mitigation measures outlined in Section 5 of the bushfire assessment report (Appendix D.7) will be implemented to reduce and manage risks from bushfire. These measures are summarised below in Table 6.27. Mitigation measures have been amended from the EIS in response to submissions from stakeholders. New or amended mitigation measures are shown in **bold**.

Table 6.27 Bushfire mitigation measures

ID	Mitigation measure
BF1	A Fire Management Plan will be prepared that includes: • bushfire fuel management • site infrastructure plan • site access and internal road plan • APZs and their ongoing maintenance • location of hazards that may impact firefighting operations • activities that may be exempt on periods of total fire ban days • consideration of the Grain Harvesting and Fire Safety Guide (Appendix 1 of Appendix D.7) • recording of meteorological monitoring masts in the tall structures database maintained by Airservices Australia (Civil Aviation Safety Authority 2018) • warning lights or visible markers (such as orange balls) on meteorological monitoring masts to minimise risks during aerial firefighting operations • protocols for the rapid shut down of turbines in emergency situations ensuring acknowledgement of who has the authority to direct turbine shut-down procedures. The Fire Management Plan will be prepared in consultation with the Argoon **and Goolgumbla** Rural Fire Brigades, NSW RFS District Office for the Mid Murray Zone and Fire Rescue NSW.
BF2	A bushfire emergency management and evacuation plan will be prepared in consultation with NSW RFS in accordance with Table 6.8d of *Planning for Bush Fire Protection* (RFS 2019). It will be consistent with *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan* (RFS 2014). A copy of the bushfire emergency management and evacuation plan will be provided to the local emergency management committee prior to the start of construction.
BF3	The development footprint will be maintained to the standard of an inner protection area (IPA) in accordance with the requirements of Appendix 4 of *Planning for Bush Fire Protection* (RFS 2019) including: • a minimum 10 m wide APZ around WTGs • a minimum 14 m wide APZ between workers accommodation facilities and grassland hazards • a minimum 16 m wide APZ between workers accommodation facilities and woodland hazards • a minimum 36 m wide APZ between safe refuge buildings (radiant heat exposure equivalent to less than 10 kW/m^2) and grassland hazards • a minimum 42 m wide APZ between safe refuge buildings (radiant heat exposure equivalent to less than 10 kW/m^2) and woodland hazards
BF4	Landscape screening (if required) will ~~consider the~~ **address any** potential increase in fire risk by appropriate selection of type (species), density, height, location and overall width of the vegetation screening. Where landscaping is proposed to provide a visual screen: • landscaping will be located more than 100 m from workers accommodation facilities, or • landscaping within 100 m from workers accommodation facilities will be designed in accordance with Section A1.10 low threat vegetation–exclusions, or Appendix 4 of *Planning for Bush Fire Protection* (RFS 2019).
BF5	Buildings within the workers accommodation facilities, if constructed within 100 m of bushfire prone vegetation, will comply with Australian Standard *AS3959-2018 Construction of Buildings in Bushfire-prone Areas* or the relevant requirements of the *NASH Standard – Steel framed construction in bushfire areas* (incorporating amendment A – 2015). All new buildings constructed for the project will comply with the construction requirements in Section 7.5 of *Planning for Bush Fire Protection* (RFS 2019).
BF6	Internal access roads will provide access for local emergency service vehicles to WTGs, switchyards, substations, construction compounds and O&M buildings to support property protection activities. The design of worker accommodation facility access roads will comply with the property access road requirements outlined in Table 7.4a of *Planning for Bush Fire Protection* (RFS 2019).

ID	Mitigation measure
BF7	An adequate static water supply will be provided for firefighting purposes in accordance with Table 7.4a of *Planning for Bush Fire Protection*. Water supply for firefighting purposes will be located at the primary vehicle access points to the project area as well as at the worker accommodation facilities, construction compounds, O&M building, substations and grid connections and elsewhere as determined at the detailed design phase in consultation with Argoon **and Goolgumbla** Rural Fire Brigades, NSW RFS District Office for the Mid Murray Zone, and Fire and Rescue NSW. In addition to static water supply requirements, two mobile water supplies with a minimum capacity of 500 L each (e.g. vehicle-mounted tanks or standalone tankers) will be available on-site during construction and operation.
BF8	The provision of gas will comply with *Planning for Bush Fire Protection* (RFS 2019).
BF9	Spark Renewables will continue to consult with Argoon **and Goolgumbla** Rural Fire Brigades around specific weather conditions that may require works to temporarily cease during construction.
BF10	Spark Renewables will investigate options for firefighting training for construction and operational personnel, as well as opportunities to incentivise workforce participation in Argoon **and Goolgumbla** Rural Fire Brigades.
BF11	Spark Renewables will continue to engage with local aerial firefighting operators to develop procedures for their safe operation within the project area.

6.10.3 Conclusion

Bushfire risks will be managed through design and management measures in accordance with *Planning for bushfire protection* (RFS 2019), *A guide to developing a bush fire emergency management and evacuation plan* (RFS 2014) and applicable standards.

The amendments to the project will not alter bushfire risks. Bushfire risks will be managed through the implementation of mitigation measures outlined in Chapter 6 of the bushfire assessment report (Appendix D.7 of this report) and summarised in Table 6.27.

With the implementation and maintenance of the mitigation measures outlined in Section 6.10.2, the bushfire risk associated with the project will remain compliant to the objectives and specific performance criteria of *Planning for bushfire protection* (RFS 2019).

6.11 Hazards and risks

6.11.1 Telecommunications

A telecommunications impact assessment was prepared for the EIS by Middleton Group Engineering and is provided in Appendix E.10 of the EIS. An amended telecommunications impact assessment has been prepared by Middleton Group Engineering to reflect the amended project layout and is provided in Appendix D.10 of this report.

The amended project layout has removed WTGs which previously obstructed one point to point microwave link licenced by NSW Electricity Networks Operations Pty Limited (Link 2 on Figure 2 in Appendix E.10 of the EIS).

The other outcomes of the amended telecommunications impact assessment are unchanged from the EIS, with no impacts from the amended project on point-to-point microwave links; meteorological radar; mobile voice based communications; wireless and satellite services; broadcast and digital radio and television; and trigonometry stations and global positioning services (GPS).

Consultation with telecommunications stakeholders commenced during the preparation of the EIS and most stakeholders confirmed that no impacts are expected from the project. Bureau of Meteorology confirmed that no impacts are expected and proposed the implementation of mitigation measures that have been included in Section 6.11.6. A response remains outstanding from Telstra.

6.11.2 Health

A human health assessment considering electric and magnetic fields (EMF) was prepared for the EIS by Middleton Group Engineering and is provided in Appendix E.11 of the EIS. The human health assessment estimated the strength of EMF emitted by transmission lines and electrical cabling and assessed the potential impact on human health.

The amended project layout includes amendments to the location of proposed transmission infrastructure and electrical cabling. An amended human health assessment has been prepared by Middleton Group Engineering and is provided in Appendix D.11 of this report.

The outcomes of the amended human health assessment indicate that the risks to human health due to emitted EMF are within safe exposure limits.

6.11.3 Dangerous goods

A preliminary risk screening was prepared for the EIS by Sherpa Consulting to consider the storage, handling, and transport of dangerous goods. It is provided in Section 3 of Appendix E.13 of the EIS. The amendments have not changed the storage, handling and transport of dangerous goods, and hence the outcomes of the preliminary risk screening remain relevant for the amended project. Therefore, the project is not considered to be 'potentially hazardous' under the State Environmental Planning Policy (Resilience and Hazards) 2021 and does not require a preliminary hazard analysis.

6.11.4 Blade throw

A blade throw risk assessment was prepared for the EIS by Sherpa Consulting as part of a hazard and risk assessment and is provided in Section 4 of Appendix E.13 of the EIS.

The amendments have reduced the number of assessed WTG locations and altered the WTG layout. A technical memo has been prepared by Sherpa Consulting to assess the impacts of the amended project on the outcomes of the blade throw risk assessment and is provided in Appendix D.8 of this report. While the blade length for the amended project has been reduced from 100 m to 86 m, the blade throw risk has been conservatively assessed using a 100 m blade length.

Separation distances between WTGs and residences are generally unchanged, although the distance to the nearest WTG has increased for some non-associated residences, reducing risks associated with blade throw. There are five residences within 2.5 km of a WTG as shown in Table 6.28. Infrastructure (battery energy storage system (BESS) facilities) from two other approved and proposed developments was also assessed.

Table 6.28 Separation distances between WTGs and residences/BESS facilities

Receptor	Type	Distance to closest WTG (m)	
		EIS	Amended project
R156	Associated residence	1,177	1,155
R042	Associated residence	1,176	1,167
R019	Non-associated residence	2,041	2,057
R093	Associated residence	1,771	2,189
R084	Associated residence	1,675	2,264
Yanco Delta Wind Farm (approved)	BESS	1,600	2,525
Dinawan Solar Farm (proposed)	BESS	3,282	3,052

As the separation distances between WTGs and nearest receptors remain similar (and are greater for non-associated residences), blade throw risks to residences and BESS facilities are similar or lower for the amended project.

As outlined in the EIS, the acceptable risk for individual fatality in areas of residential land use is defined in *Hazardous Industry Planning Advisory Paper No. 4: Risk Criteria for Land Use Safety Planning* (HIPAP No. 4, DoP 2011) as 1 x 10^{-6} per year. As there are no residences within 750 m of a WTG, the HIPAP No. 4 individual fatality risk criterion for residential land use is met and societal risk from blade throw is expected to be negligible.

For blade throw impacts to BESS locations, the acceptable risk for accident propagation is defined in HIPAP No. 4 as 50 x 10^{-6} per year (i.e. 50 in a million per year). As the nearest BESS is located at least 2,525 m from the nearest WTG (T105 in the eastern area), the risk criterion for accident propagation is met.

6.11.5 Aviation safety

An aviation impact assessment was prepared by Aviation Projects for the EIS and is provided in Appendix E.9 of the EIS. The aviation impact assessment considers potential impacts to aviation safety, provides aviation safety advice based on relevant requirements of air safety regulations and procedures, and informs and documents consultation with relevant aviation agencies.

The amendments have reduced the number of assessed WTG locations and altered the WTG layout. An aviation impact assessment for the amended project has been prepared by Aviation Projects and is provided in Appendix D.9 of this report. The aviation impact assessment has conservatively assessed a 280 m blade tip height.

The amended project has altered potential impacts to the lowest safest altitude (LSALT) (i.e. how low aircraft can fly in a given area). The LSALT will need to be raised to 2300 feet above mean sea level for three additional air routes, with a total of four air routes and one grid LSALT to be raised:

- air route Q60 to be raised by 100 feet
- air route Q346 to be raised by 100 feet
- air route W419 to be raised by 200 feet (unchanged from EIS)
- air route W762 to be raised by 100 feet
- grid LSALT to be raised by 100 feet (unchanged from EIS).

The WTG with the highest elevation remains T125 in the eastern area with a similar height of 392.5 m Australian Height Datum or 1,287.7 feet above mean sea level. As outlined in the EIS, given the relatively flat nature of the terrain, the micro siting of the WTGs is not likely to result in a significant change in the maximum overall blade tip height of the project.

The amended project will not change proximity to nearby aerodromes. The project is outside controlled airspace, and no impacts are expected to aviation navigation facilities or air traffic controller surveillance.

6.11.6 Mitigation measures

A summary of the proposed measures to manage potential hazards and risks is provided in Table 6.29, which have been amended to include additional aerial firefighting mitigations and requests received from the Bureau of Meteorology as part of consultation on telecommunications impacts. New mitigation measures are shown in **bold**.

Table 6.29 Hazards and risks mitigation measures

ID	Mitigation measure
AV01	Spark Renewables will report the WTGs and meteorological monitoring masts to CASA in accordance with CASR 139.165 following detailed design and prior to construction.
AV02	'As constructed' details of WTG and meteorological monitoring masts coordinates and elevation will be provided to Airservices Australia.
AV03	Any obstacles that will be above 100 m above ground level (including temporary construction equipment) will be reported to Airservices Australia (Notice to Airmen offices) until they are incorporated in published operational documents. For example, a notification regarding crane operations may include: • the planned operational timeframe • the maximum height of the crane • the general area/route within which the crane will operate.
AV04	Project details, including the 'as constructed' location and height information of WTGs, meteorological monitoring masts and overhead transmission lines, will be provided to local and regional aircraft operators prior to construction, including nearby landowners to facilitate aerial application operations planning.
AV05	Spark Renewables will engage with local aerial agricultural operators and aerial firefighting operators emergency services providers regarding aircraft operations in the vicinity of the project.
AV06	**Spark Renewables will incorporate guidance from the Australasian Fire and Emergency Service Authorities Council in *Wind Farms and Bushfire Operations* (AFAC 2018) as part of preparation of the bushfire emergency management and evacuation plan. Spark Renewables will:** • **engage with relevant fire and land management agencies** • **ensure access is available to the project by emergency services response for on-ground firefighting operations** • **develop procedures to shut down affected wind turbines during emergency operations – where possible, blades should be stopped in the 'Y' or 'rabbit ear' position, as this positioning allows for the maximum airspace for aircraft to manoeuvre underneath the blades and removes one of the blades as a potential obstacle.**
AV07	Overhead transmission lines and/or supporting poles that could adversely affect aerial application operations will be identified in consultation with local aerial application operators and marked in accordance with Part 139 MOS 2019 Chapter 8 Division 10 section 8.110 (7) and section 8.110 (8) **and AS3891.2, Air navigation — Cables and their supporting structures — Marking and safety requirements.**
AV08	Spark Renewables will consult with Airservices Australia and CASA regarding changes to the LSALT and will consult with aviation authorities, local aerodrome owners/operators and local aerial agricultural operators regarding any changes to the LSALT from the project.
AV09	If required following consultation with CASA and Airservices Australia, temporary and permanent meteorological monitoring masts will be marked according to the requirements set out in MOS 139 Section 8.10 (as modified by the guidance in NASF Guideline D). Specifically: • marker balls, high visibility flags or high visibility sleeves will be placed on the outside guy wires • paint markings will be applied in alternating contrasting bands of colour to at least the top 1/3 of the mast • guy wire ground attachment points will have contrasting colours to the surrounding ground/vegetation.
AV10	Consultation with CASA and Airservices Australia will be completed to determine whether meteorological monitoring masts present an unacceptable risk to aviation safety. If a meteorological monitoring mast is assessed as likely to present an unacceptable risk to aviation safety, lighting will be installed. **An obstacle lighting plan has been prepared in Appendix D.13 of the amendment report.** Characteristics of obstacle lighting will be in accordance with CASA's *Manual of Standards*.
AV11	The rotor blades, nacelle and the mast supporting the WTGs will be painted predominantly white. No additional marking measures will be installed for WTGs.

ID	Mitigation measure
AV12	**Aviation hazard lighting requirements are subject to ongoing consultation with CASA. An indicative aviation obstacle lighting plan has been prepared in accordance with the *Wind Energy Guideline* (DPHI 2024a) and is provided in Appendix D.13 of the amendment report.**
DG1	If diesel is stored with other flammable liquids (e.g. gasoline), a separation distance of at least 10 m to the nearest development footprint boundary will be maintained to ensure that the SEPP screening threshold is not exceeded.
TEL1	Should impacts to wireless or satellite services at associated residences occur, Spark Renewables will engage with the landholders to identify a suitable alternative.
TEL2	**Based on engagement with Bureau of Meteorology on potential impacts to meteorological radars:** • **Spark Renewables will inform the Bureau of Meteorology of any changes to the location of proposed WTGs (excluding a 100 m micro siting allowance) and/or alterations to WTG height.** • **Where possible, Spark Renewables will inform the Bureau of Meteorology at least 2 weeks prior to any planned shutdown of the project (for maintenance or any other reason).** • **Spark Renewables will collaborate with the Bureau of Meteorology in the event of severe weather conditions to assist in matters of community safety.**

6.11.7 Conclusion

Consistent with the EIS, no significant risks and hazards have been identified for the amended project. The aviation impact assessment determined that risks associated with the project are tolerable with the implementation of mitigation measures outlined in Section 6.11.6, which include consultation with CASA, Airservices Australia and other relevant stakeholders.

6.12 Social

A social impact assessment (SIA) was prepared by EMM as part of the EIS and is provided in Appendix E.14 of the EIS. The SIA was prepared in accordance with the *Social impact assessment guideline for State significant projects* (SIA Guideline) (DPE 2023a) and the *Technical supplement: social impact assessment guideline for State significant projects* (SIA Technical Supplement) (DPE 2023b).

The amendments to the project will reduce the overall development footprint, but will not materially alter the aspects of the project which affect social impacts, such as the construction workforce size and construction timing and duration. The assessment of the project's social impacts presented in the EIS remains applicable to the amended project.

6.12.1 Potential impacts

The SIA found that social impacts to the local and regional areas will be largely associated with the demand for labour and the influx of the construction workforce, which will affect access to services, perceptions of safety and local community dynamics. There are no changes to the construction workforce, timing or duration.

Key social benefits will be predominantly associated with project employment, training, and business opportunities relating to direct and indirect economic activity from the project. Mitigation and enhancement strategies are proposed to minimise negative consequences and maximise the social benefits to the local community.

The reduced tip height and rotor diameter of the WTGs is anticipated to reduce impacts to visual amenity as the WTGs will be slightly less visible. Visual impacts are assessed in Section 6.1.The amended project will impact two additional identified Aboriginal heritage sites, assessed in Section 6.4. The amended project has reduced some impacts to biodiversity, including removing 26 WTGs with a 'high' collision risk and all WTGs with a 'very high'

collision risk, reducing the rotor swept area and reducing impacts to TECs. Other impacts identified in the SIA are expected to be substantially the same for the amended project.

6.12.2 Mitigation measures

The social management and mitigation measures have been amended to include the preparation of an accommodation facility management plan in response to advice received from Murrumbidgee Council. The amended social management and mitigation measures are provided in Table 6.30, with new mitigation measures shown in **bold**.

Table 6.30 Social mitigation and management measures

ID	Mitigation measure
S1	A Social Impact Management Plan (SIMP) will be implemented prior to construction. The SIMP will ~~aim to~~: • describe desired project social outcomes • outline post-approval engagement activities, including timing and purpose • describe a feedback procedure that will allow feedback and timely response throughout construction and operation • define targets to monitor performance over time, identify monitoring responsibilities, and methods to share outcomes. The SIMP will include methods for engaging stakeholders on their key interests to: manage impacts, enhance benefits, and provide suitable mechanisms for project feedback. Key stakeholders include Murrumbidgee and Edward River Councils, landowners, broader community, First Nations stakeholders, services and utilities, local businesses, and local workforces. An adaptive management approach to the implementation the SIMP is proposed, allowing Spark Renewables to manage and respond to changing circumstances and new information through ongoing monitoring and periodic review of mitigation strategies allowing for modification if required.
S2	An industry participation plan (IPP) will be implemented. The IPP will identify: • opportunities for supply of goods and services, employment and training, including Aboriginal participation, as well as sustainable procurement • metrics to track goals and requirements for each identified opportunity • engagement with Murrumbidgee and Edward River Councils, local businesses and the Coleambally Chamber of Commerce to inform an understanding of opportunities and limitations for procuring local goods and services, as well as aspirations amongst local businesses • online and offline methods to share and register interest in project opportunities.
S3	An Aboriginal participation plan (APP) will be implemented in consultation with First Nations stakeholders to optimise local capacity and aspirations through targeted participation initiatives within the regional area. This will include setting targets for First Nations participation in the project workforce and procurement. Commitments will be measurable, and a report of progress to the local First Nations community will contribute to the measurement of outcomes.
S4	Regular engagement (to be defined in the SIMP) with local businesses will advise of construction periods and the potential increase in trade or patronage. This will allow businesses with planning to maximise benefits of increased demand, and associated revenue.
S5	The project workforce will be encouraged, particularly during the construction phase, to support and contribute to the local and regional community through local spending. This may be done through initiatives such as provision of vouchers for use at local businesses, or promoting local business offerings, such as on notice boards at the accommodation facilities.
S6	Murrumbidgee and Edward River councils will be engaged to identify potential service constraints. Measures such as provision of on-site medical facilities and identification of preferred telehealth providers will be implemented to prevent excessive demand on GP services closest to the site.
S7	Temporary worker accommodation facilities will be used in preference to local short-term and rental accommodation. Local residents will be recruited for the construction workforce as far as possible.

ID	Mitigation measure
S8	**An accommodation facility management plan will be developed and implemented in consultation with Murrumbidgee Council/Edward River Council prior to commencement of construction to ensure accommodation facilities comply with relevant standards and requirements.**
S9	A Community Engagement Plan and Worker Code of Conduct (as part of the SIMP) will be developed and implemented to address perceived public safety risks. The plan will include engaging with community services, such as police and emergency services, so that they are familiar with the project in case of an incident.

6.12.3 Conclusion

The reduced extent of development footprint will reduce the likelihood of some social impacts, including impacts to biodiversity and the visual landscape. There has been an increase in the number of Aboriginal heritage sites impacted due to the amendments. All other social impacts and benefits identified in the SIA are not affected by the proposed amendments to the project.

As outlined in the EIS, an adaptive management approach is proposed, allowing Spark Renewables to manage and respond to changing circumstances and new information through ongoing monitoring and periodic review of mitigation strategies allowing for modification if required. This adaptive approach will ensure the effective management of the social impacts identified in this SIA and the enhancement of social benefits experienced by the community.

6.13 Economic

An economic assessment was prepared by Gillespie Economics as part of the EIS and is provided in Appendix E.15 of the EIS. The economic impacts and benefits of the project were assessed for the NSW State economy and the LGAs that are likely to experience economic impacts or benefits from the project, comprising Murrumbidgee, Edward River, Griffith, Leeton and Narrandera LGAs.

The amendments to the project will not materially alter the aspects of the project which affect economic impacts, such as the size of the workforce for construction or operation, the duration of construction and operation, and the estimated development cost for the project. The assessment of the project's economic impacts presented in the EIS remains applicable to the amended project.

6.13.1 Potential impacts

The economic assessment (Appendix E.15 of the EIS) found that regionally, the project will contribute an annual average of:

- $198 million and 486 direct and indirect jobs during construction
- $340 million and 87 direct and indirect jobs during operations.

Across the State, the project will contribute an annual average of:

- $351 million and 967 direct and indirect jobs during construction
- $380 million and 195 direct and indirect jobs during operations.

While the project will provide economic activity to the regional and NSW economy, it will also result in some reduction in regional economic activity from forgone agricultural activity. The reduction in extent of the development footprint will reduce the amount of land removed from agricultural production.

The construction phase of the project will result in a temporary reduction in up to 1,095 ha of land available for agricultural activity (predominantly used for sheep and cattle (beef) grazing). This has been reduced from 1,339 ha in the EIS. The economic activity impacts associated with this are assessed as negligible, and the regional economic benefits of the project significantly outweigh the economic impacts of foregone agricultural activity. Further, the project landholders that are directly affected by loss of revenue will be compensated through lease payments as part of the project.

During operation of the project, there will be opportunities for grazing in parts of the development footprint. The economic assessment found that the impact of reduced agricultural production during operation of the project will be negligible. The amendments to the project have removed 245 ha from the development footprint, further reducing impacts to agricultural production during operation.

6.13.2 Mitigation measures

The proposed amendments do not warrant additional mitigation or management measures in relation to economic impacts. As such, the proposed measures to manage and mitigate potential economic impacts remain unchanged from the EIS and are listed in full in Appendix C.

6.13.3 Conclusion

The construction and operation of the project will have net positive impacts on the level of economic activity in the regional and NSW economy.

The amended project has reduced the extent of the development footprint, and therefore there is a reduction in the total area that will be temporarily removed from agricultural production during construction and operation of the project. Spark Renewables will work in partnership with Murrumbidgee Council, Edward River Council and the local community to minimise potential impacts and maximise benefits to the regional economy.

6.14 Waste

The project will primarily produce waste streams during construction and decommissioning. In the EIS, indicative quantities of the main construction waste streams were approximately 11,600 tonnes. Minor quantities of waste will also continue to be generated during operation. The amendment will not alter the waste streams, quantities and management details presented in the EIS.

All wastes produced by the project will be classified, stored and handled in accordance with the *Waste Classification Guidelines – Part 1: Classifying Waste* (EPA 2014).

Following the exhibition of the EIS, four large-scale, licensed waste management facilities that accept commercial and demolition waste have been identified within 250 km of the project area (Table 6.31). These facilities are equipped to accept construction waste in compliance with environmental and regulatory standards.

Table 6.31 Waste management facilities with 250 km of the project area

Location	LGA	Solid waste quantities accepted per year (tonnes)	Distance to project area (km)
Tharbogant Waste Management Facility	Griffith City	35,000	99
Leeton Landfill	Leeton Shire Council	21,598	120
Wagga Wagga Waste Management Centre	Wagga Wagga	75,084	170

Location	LGA	Solid waste quantities accepted per year (tonnes)	Distance to project area (km)
Albury Waste Management Centre	Albury City	186,000	248

The combined annual waste capacity of the identified facilities demonstrates sufficient capacity to accommodate the project's construction waste volumes. Acceptance of project-related waste will not exceed the facilities' operational tolerances or impact their ability to service the wider community.

Letters of enquiry have been distributed to all identified facilities to confirm their capacity to accept the expected quantities of waste generated by the project. Consultation will continue and final quantities and arrangements will be confirmed to ensure compliance with waste management obligations.

6.15 Cumulative impacts

6.15.1 Overview

There are a range of renewable electricity generation and transmission developments proposed in the South West REZ in the vicinity of the project (see Figure 1.1). An assessment of the potential of known projects to generate cumulative impacts with the project was completed based on the *Cumulative impact assessment guidelines for State significant projects* (DPE 2022b). As outlined in the EIS, there are 13 recently approved or proposed SSD and SSI projects within approximately 50 km of the project area, as identified through DPHI's Major Projects Planning Portal at the time of writing the EIS. Of these, five projects are adjacent to or within 1 km of the project area:

- Dinawan Solar Farm (proposed – under assessment) – includes construction and operation of a 800 MW solar farm.
- Project EnergyConnect (approved – under construction) – includes construction and operation of a 330-kilovolt (kV) and 500-kV transmission line and the Dinawan Substation.
- Argoon Wind Farm (proposed – preparing EIS) – includes the construction and operation of a 901 MW wind farm and BESS.
- Victoria to New South Wales Interconnector West (VNI West) (proposed – preparing EIS) – includes construction and operation of a 500-kV transmission line.
- Yanco Delta Wind Farm (approved – not yet constructed) – includes construction and operation of a 1.5 GW wind farm.

Four additional SSD projects have been identified within 50 km of the project area beyond those identified in the EIS, shown in Table 6.32.

Table 6.32 Cumulative impacts with future projects

Project	Distance from project	Project status	Indicative timing	Local government area	Relevant cumulative impacts
Wanganella Wind Farm – includes construction and operation of a 840 MW wind farm and BESS.	35 km south-west	Proposed – preparing EIS.	Construction 2027–2028 (overlap possible). Operation expected to overlap.	Edward River	• biodiversity

Project	Distance from project	Project status	Indicative timing	Local government area	Relevant cumulative impacts
Boags Creek Solar Farm – includes construction and operation of a 300 MW solar farm and BESS.	40 km north-east	Proposed – preparing EIS.	18-month construction period from 2027/28 (overlap possible). Operation expected to overlap.	Murrumbidgee	• biodiversity
Booroorban (Saltbush) Wind Farm – includes construction and operation of a 680 MW wind farm and BESS.	44 km west	Proposed – preparing EIS.	30-month construction period from 2028 (overlap possible). Operation expected to overlap.	Edward River	• biodiversity
Devlins Bridge Wind Farm – includes construction and operation of a 400 MW wind farm.	50 km north-east	Proposed – preparing EIS.	24-month construction period from 2027 (overlap possible). Operation expected to overlap.	Narrandera	• biodiversity

6.15.2 Assessment of cumulative impacts

Transmission infrastructure to support the distribution of electricity generated by renewable energy developments in the South West REZ is currently either proposed (VNI West), approved (HumeLink) or under construction (Project EnergyConnect). The approval and successful construction of this infrastructure, along with the outcomes of the competitive South West REZ access process, will dictate which of the projects listed in Table 6.47 of the EIS and Table 6.32 of this report will be built. It is highly unlikely that all of the projects will be approved and built and therefore, this assessment of cumulative impacts is considered conservative.

The cumulative impacts of employment and workforce, housing and short-term accommodation, regional economy, agricultural production, population change, services, amenity, traffic, and biodiversity were assessed in the EIS.

For the additional projects identified in Table 6.32 of this report, no cumulative socio-economic, visual, traffic or amenity impacts are expected, due to large distances (at least 35 km) from the project. Cumulative impacts for biodiversity have been assessed below.

The amendment has reduced the cumulative impacts to biodiversity through further avoidance of impacts to native vegetation and known threatened species habitat.

All other cumulative impacts are not materially altered due to the amendment.

6.15.3 Mitigation measures

Project contributions towards cumulative impacts have been minimised where possible. A summary of mitigation measures proposed for the project is provided in Appendix C.

6.15.4 Conclusion

There are a range of renewable energy generation and transmission developments proposed in the South West REZ in the vicinity of the project, including transmission infrastructure to support the distribution of the electricity generated. The approval and successful construction of the transmission infrastructure, along with the outcomes of the competitive South West REZ access process, will be significant factors in determining which projects are built.

The cumulative impacts of employment and workforce; housing and short-term accommodation; regional economy; agricultural production; population change; services; amenity; traffic; and biodiversity have been assessed. There is the potential for cumulative social benefits and impacts from the simultaneous construction of multiple renewable energy projects, primarily due to the influx of workers and increased economic activity. The project's proposed construction accommodation facilities will minimise the contribution of the project to the negative cumulative impacts of projects in the region by ameliorating increased demand for labour and accommodation. The low population density around the project area will minimise the potential for cumulative amenity and traffic impacts. The cumulative impact of projects within the South West REZ will result in a reduction in the extent of native vegetation and TECs within the region which will be offset through the retirement of biodiversity credits.

7 Justification of amended project

This chapter provides a justification and evaluation of the amended project, having regard to the economic, environmental, and social impacts and benefits of the project and the principles of ecologically sustainable development.

7.1 Summary

The project is consistent with relevant Commonwealth, State, regional and local strategic plans and polices, in particular the *NSW Electricity Infrastructure Investment Roadmap* (DPIE 2020a), which sets out the plan to deliver REZs in NSW. The project, with an indicative capacity of around 1,200 MW, will contribute to the electricity generation and storage targets for the South West REZ.

The South West REZ was selected by the NSW Government following a detailed state-wide geospatial mapping exercise to identify optimal locations to host renewable electricity generation, including areas with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation (EnergyCo 2025).

The project area is favourable for the construction and operation of a wind farm due to the available wind resource, physical conditions (relatively flat topography and predominantly cleared, agricultural land), absence of biophysical strategic agricultural land and relatively few residences within close proximity. The project area adjoins the site of the Dinawan Substation, part of Project EnergyConnect, making it an optimal location for the export of electricity to the grid.

Were this project not to proceed, the project's benefits, including contributions to the generation of renewable energy and increased energy security, would not be realised. As renewable electricity generation and storage projects are needed in NSW, not proceeding with the project in its proposed location may encourage development in a less favourable location, resulting in undesired outcomes, such as greater requirements for grid connection infrastructure and greater environmental and social impacts.

The project will have both impacts and benefits on the surrounding natural and built environments. The impacts have been assessed and can be adequately managed through the proposed design, mitigation, and management during construction and operation. On balance, it is therefore considered that the project is in the public interest.

7.2 Design development

The development of the project since its inception has been flexible and iterative. This has allowed the design to be efficiently revised in response to environmental and social constraints as they were identified.

Spark Renewables has maximised the avoidance of potential environmental impacts throughout the project refinement process (refer to Section 2.5). This has followed the principles of avoiding vegetation clearance where practicable, maximising use of previously disturbed land, limiting the footprint for project infrastructure to the minimum required, protecting significant heritage values and minimising impacts on neighbouring landholders.

The amendments have reduced the EIS development footprint by a further 18%, resulting in further avoidance and minimisation of environmental impacts, particularly biodiversity impacts. The amended development footprint reduces impacts to TECs listed under the BC Act from 604.7 ha to 507.04 ha (16% reduction from EIS) and reduces impacts to TECs listed under the EPBC Act from 264.9 ha to 205.6 ha (22% reduction from EIS).

The amended development corridor and amended development footprint have been optimised for the project's infrastructure based on inputs provided during consultation activities with regulatory and community stakeholders, environmental assessments and the functional requirements of project infrastructure.

Where potential impacts cannot be avoided, mitigation measures will be implemented to manage residual impacts. Residual biodiversity impacts will be offset by retiring biodiversity credits, which may include establishing local biodiversity stewardship sites and payment into the Biodiversity Conservation Fund.

7.3 Strategic context

The project is supported by Commonwealth, State, regional and local plans and policies and will support meeting the Commonwealth and State governments' renewable energy generation targets and GHG emission reduction targets. Importantly, the project will contribute to the continued growth of renewable energy generation and storage capacity in the South West REZ.

7.4 Objects of the EP&A Act

An assessment of the consistency of the project with the objects in section 1.3 of the EP&A Act is provided in Table 7.1 of the EIS. The project is consistent with the objectives of the EP&A Act.

7.5 Consideration of community views

Consultation conducted for the project is described in Chapter 5 of the EIS and Chapter 5 of this amendment report. Feedback from the community included both positive and negative views on a range of topics.

Some stakeholders recognised the benefits of the project. In particular, stakeholders acknowledged the project as a source of local economic benefits including opportunities for procurement and employment. The community was also interested in understanding the project's role in the energy transition and the South West REZ. Some stakeholders expressed concerns regarding the potential cumulative impacts of multiple renewables and transmission projects proposed to occur concurrently in the region. Community benefit sharing has been discussed with the community, who have provided valuable feedback regarding the community's needs. Bushfire risks were identified as a key concern by several community members, while some recognised potential benefits for fire management including improved monitoring and additional accessible water storage for firefighting.

Some concerns were raised by community stakeholders regarding the loss of native flora and fauna, groundwater drawdown and associated water availability, visual amenity impacts. Other matters raised included the potential for the construction workforce to affect housing supply and how decommissioning and rehabilitation of the area would be managed at the end of the project life.

During the public exhibition of the EIS, 89 public submissions were received by DPHI. Of the 89 submissions received, 82 were from individuals and 7 were from organisations. There were 86 objections to the project and 3 comments. In addition, 23 regulatory agencies provided advice on the project, including Murrumbidgee Council and Edward River Council. These have been addressed in a submissions report for the project.

7.6 Summary of project impacts

The EIS and this amendment report considers the potential impacts associated with the project, as well as the need for the project and alternative development options. This section summarises the potential impacts and provides a justification for the project on environmental, economic and social grounds.

7.6.1 Environmental

Potential impacts to the biophysical and social environment have been considered as follows:

- Landscape and visual – the project will have a low to negligible visual impact on non-associated residences within 8 km of a WTG location, due to a combination of distance, existing intervening vegetation and low visual sensitivity of the landscape. No visual screening planting is proposed. There are no key public viewpoint locations within 8 km of a WTG location. Key viewpoints greater than 8 km from the project area were assessed. Views towards the project will be screened by existing vegetation at each location.

- Noise and vibration – noise and vibration from the project are not predicted to adversely impact non-associated residences. Three non-associated residences (R019, R079 and R088) within proximity to the development footprint will temporarily be within a noise affected area during the construction phase. Construction noise management measures will be implemented during haulage route road upgrades to reduce impacts at nearby receivers.

- Biodiversity – avoidance and minimisation of biodiversity impacts has enabled the progressive refinement of the development corridor and development footprint, with avoidance of areas of higher conservation value, identified threatened species habitat and/or native vegetation maximised to the extent possible. Residual impacts to biodiversity include: removal of 948.24 ha of native vegetation (including impacts to listed TECs); impacts to 19 species credit species (impacts to either habitat or individuals); and impacts to 9 hollow-bearing trees and 16 scattered trees. Residual impacts that are not able to be avoided will be offset through the biodiversity offset strategy.

- Aboriginal cultural heritage – avoidance of Aboriginal cultural heritage values has been a key aspect of the project design and refinement process, with areas of higher archaeological potential avoided from commencement of the project. Following field surveys and project refinement, 25 identified sites were avoided, with residual impacts to 19 sites. Impacts to Aboriginal heritage values will be managed through the implementation of an Aboriginal Cultural Heritage Management Plan prepared in consultation with the RAPs.

- Historical heritage – there are eight identified historical heritage sites within the project area. Of these, five sites are intersected by the development corridor (but are outside the development footprint), with the curtilage of one site intersected by the development footprint. No identified heritage sites will be directly impacted by the construction and operation of the project within the development footprint. Should changes to the project's development footprint be required during further detailed design, direct impacts to identified heritage items within the development corridor will be avoided to the extent possible. Indirect impacts are predicted to be low to negligible.

- Transport – traffic modelling identified that key intersections and roads have sufficient additional capacity to absorb construction vehicle movements. Road upgrades are proposed to enhance road condition and safety, including widening sections of McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road, constructing a new site access intersection on Kidman Way and upgrading existing intersections at Kidman Way/McLennons Bore Road. Additional hardstand is proposed to facilitate OSOM movements at four locations along the haulage route.

- Water – the project design has minimised impacts to water resources by avoiding watercourses, infrastructure associated with CICL, flood prone areas and groundwater receptors as far as practicable. Project activities are not anticipated to intersect the regional water table and, therefore, groundwater availability for existing users is not expected to be impacted. Potential construction phase impacts, including degradation of surface water quality, physical impacts to watercourses, and altered water

quantity from increased site runoff, will be avoided or minimised through the implementation of the proposed mitigation measures.

- Flooding – residual flood risks will be managed through construction phase planning. The majority of the infrastructure areas, including the accommodation facilities, have been sited so that they are either outside modelled flood extents (for events up to a 1% AEP) or subject to low flood hazard that is generally safe for people, vehicles and buildings.

- Air quality – dust emissions from construction of the project are not anticipated to have significant impacts on nearby residences, and operational emissions from the project are expected to be negligible.

- Land – project construction will result in a temporary change of land use within the development footprint. Impacts to agricultural productivity during operations will be reduced and mitigated by the proposed continued use of the land for compatible agricultural enterprises. Land management practices will avoid or minimise potential impacts to neighbouring agricultural operations and ensure that the development footprint can be returned to a productive agricultural use at the end of operations. The application of the proposed land and rehabilitation mitigation measures will prevent significant impacts on soil quality and quantity, erosion and sedimentation, and the introduction of weeds, pathogens and pest species.

- Hazards and risks – no significant hazards and risks have been identified for the project. Aviation risks associated with the project are tolerable with the implementation of mitigation measures, which include consultation with CASA, Airservices Australia and other relevant stakeholders.

7.6.2 Economic

The construction and operation of the project will have net positive impacts on economic activity in the State, with an annual contribution of:

- Construction – $351 million and 967 direct and indirect jobs across the State

- Operation – $380 million and 195 direct and indirect jobs across the State.

Spark Renewables will work in partnership with Murrumbidgee Council, Edward River Council and the local community to minimise potential impacts and maximise benefits to the regional economy.

Spark Renewables, Murrumbidgee Council and Edward River Council have agreed on a community benefit sharing program that is predominantly delivered in partnership with the respective councils through VPAs. Indicative terms for the VPAs are outlined in Section 5.3.

7.6.3 Social

The project is justified on social grounds as:

- the main issues raised by the local community have been addressed and mitigated

- it will contribute to the local and regional economy

- it will provide direct and indirect benefits through the use of services and facilities both locally and regionally.

It will also generate energy from a renewable energy source, reducing the amount of electricity that needs to be generated using fossil fuels, reducing the climate change impacts of electricity generation, and meeting the need for replacement power as ageing coal-fired power stations are progressively closed.

Mitigation and management measures have been proposed for each of the identified potential negative social impacts to minimise negative consequences and to maximise social benefits for the local community.

7.7 Ecologically sustainable development

The principles of ecologically sustainable development as outlined in part 8, division 5, section 193 of the EP&A Regulation have been addressed for the project in Chapter 7 of the EIS and summarised below:

- Precautionary principle – The project has been designed with regard to the precautionary principle, and in response to legislation, policies, and guidelines, to ensure that it does not pose an unacceptable risk to human health or the environment. Management measures have been proposed to avoid or minimise the threat of serious or irreversible damage to the environment to the extent practicable.

- Social equity including inter-generational equity – The project will contribute to the sustainable transition of electricity generation in NSW to a more reliable, more affordable and cleaner energy future and contribute to a net reduction in GHG emissions. Once decommissioned, the land within the development corridor can be rehabilitated to its current use if required, enabling a return to agricultural production, which would provide benefits for future generations.

- Conservation of biological diversity and maintenance of ecological integrity – The development corridor has been refined to avoid areas of high biodiversity value once these areas were identified by extensive vegetation mapping and targeted surveys as part of the BDAR. Residual impacts that are not able to be avoided or minimised by mitigation measures, will be offset through a biodiversity offset strategy, with a preference for the establishment of stewardship sites near the project and generation of like for like credits. Payments into the Biodiversity Conservation Fund may also be made.

- Improved valuation and pricing of environmental resources – The purpose of the project is to generate renewable electricity, which supports the transition away from fossil fuel electricity generation, thereby contributing to a net reduction in the generation of pollution and the use of non-renewable natural resources. Spark Renewables accepts the financial costs associated with the measures required for the project to avoid, minimise, mitigate and manage potential environmental and social impacts and for the appropriate decommissioning required for project infrastructure.

7.8 How compliance will be ensured

As outlined in the EIS, a monitoring and management framework will be developed to oversee the project's impacts. This framework will track progress of mitigation and management strategies, compare actual impacts with predicted ones, and identify how progress will be captured and reported to stakeholders, including neighbouring landholders, communities, and government. It will include key performance indicators, targets, and outcomes, assign responsibilities, and describe mechanisms for adaption of management measures when required. A continuous improvement approach will review impacts and management measures to enhance their effectiveness.

7.9 Key uncertainties and proposed measures

Key uncertainties associated with the impact assessment and the measures proposed to address these are as follows:

- Collision risks with bird and bat species associated with turbine strike during operation of the project. The amended BDAR (Appendix D.3) identifies that the level at which turbine strike is likely to occur is difficult to accurately predict prior to commissioning of turbines, and as such impacts are considered uncertain. A monitoring and adaptive management approach has been developed to ensure that any impacts are

identified as early as possible, management measures are implemented to minimise the potential for the impact to reoccur (where possible) and, if relevant, offsets are calculated and provided.

- The project's generation capacity and connection to the electricity grid is dependent on the construction of electricity grid infrastructure (including Dinawan Substation). For the purposes of this amendment report, it has been assumed that the project will connect to the Dinawan Substation site.

- Potential cumulative impacts associated with the project have been assessed (refer to Section 6.15). However, uncertainty remains as to which other projects in the region will proceed, and the timing of any projects that do proceed. Project monitoring will consider cumulative impacts.

7.10 Conclusion

The project involves the development and operation of a large-scale wind electricity generation facility with associated infrastructure. The project will be within the NSW Government declared South West REZ and will play an important part in achieving the objectives of the REZ. It will also provide significant economic stimulus to the region through construction jobs and associated flow-on benefits.

The project will provide the following overall benefits:

- contribution to energy security and reliability in NSW by diversifying the State's electricity generation mix in preparation for the retirement of the remaining large-scale coal-fired power generation

- contribution to reducing GHG emissions from electricity generation, reducing the impacts of climate change and the community and the environment

- alignment with Commonwealth and NSW Government electricity policies and strategies and regional plans

- provision of ongoing economic benefits for both the local economy within the Murrumbidgee LGA, Edward River LGA and more broadly, the regional economy

- provision of significant employment and business opportunities during construction.

Spark Renewables is committed to delivering a project that provides a positive legacy for the local community. The residual environmental and social impacts identified throughout the EIS will be managed through the mitigation, management and offsetting measures.

Abbreviations

Abbreviation	Term
AC	alternating current
ACHA	Aboriginal cultural heritage assessment
ACM	asbestos containing material
AEMO	Australian Energy Market Operator
AEP	annual exceedance probability
AHIMS	Aboriginal Heritage Information Management Information System
ASS	acid sulfate soils
BESS	battery energy storage system
BSAL	biophysical strategic agricultural land
CEMP	construction environmental management plan
CICL	Coleambally Irrigation Co operative Limited
DA	development application
DA	development application
dB(A)	decibels on the A weighted scale
DPHI	NSW Department of Planning, Housing and Infrastructure
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	environmental impact statement
EIS	environmental impact statement
EMF	electric and magnetic fields
EMM	EMM Consulting Pty Limited
ESD	ecologically sustainable development
GHG	greenhouse gas
GPS	global positioning services
GW	gigawatt
ha	hectares
HIPAP	Hazardous Industry Planning Advisory Paper
INCIRP	International Commission on Non-Ionizing Radiation Protection
IPC	Independent Planning Commission
km	kilometres
LGA	local government area
LRET	Large Scale Renewable Energy Target
LSALT	lowest safest altitude

Abbreviation	Term
LSC	land and soil capability
LUCRA	land use conflict risk assessment
LVIA	landscape and visual impact assessment
m	metres
m2	square metre
MW	megawatts
NEM	National Electricity Market
NSW	New South Wales
O&M	operation and maintenance
Origin	Origin Energy Power Limited
OSOM	oversize/overmass
PCT	plant community types
PMF	probable maximum flood
RAP	registered Aboriginal party
REZ	renewable energy zone
SIA	social impact assessment
SIMP	social impact management plan
SSAL	Stage Significant Agricultural Land
SSD	State significant development
TEC	threatened ecological community
TNB	Tenaga Nasional Berhad
VNI West	Victoria to NSW Interconnector West
VPA	voluntary planning agreement
WTG	wind turbine generator

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Appendix A
Amended project description

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A.1 Overview

The project includes the installation, operation, maintenance and decommissioning of a wind farm with up to 200 WTGs and supporting infrastructure (Figure A.1). The project will have a generation capacity of up to approximately 1.2 GW.

The project area; physical layout and design; activities and project timing are detailed in the following sections. An overview of the project is provided in Table A.1.

Table A.1 Project overview

Project element	Summary
Project area	The project area is comprised of 314 land parcels and is approximately 34,510 ha.
Development corridor	The development corridor (approximately 6,383 ha) is the envelope within which the project will be developed, providing the necessary flexibility for component placement during detailed design (i.e. micro-siting).
Development footprint (subset of development corridor)	The development footprint (approximately 1,095 ha) is the indicative extent of the project's ground disturbance area, including earthworks, associated with permanent infrastructure and temporary construction facilities. It is approximately 18% of the development corridor area. Approval is sought for disturbance equal to the total area of the development footprint. The exact location of the development footprint will be determined during detailed design.
Generation capacity	Approximately 1.2 GW(AC).
Project stages	The project area comprises an eastern area (within the Murrumbidgee LGA) and a western area (predominantly within the Edward River LGA). The wind farm will be developed in two stages: • Stage 1 – eastern area • Stage 2 – western area.
Key infrastructure	• up to 200 WTGs (up to 250 m tall, ground to maximum tip height) including: – tower, nacelle, rotor and blades – concrete foundations – hardstand pad – electrical infrastructure • electrical collection system, collector substations and control rooms • electricity transmission line infrastructure (above ground and underground) • electricity transmission line infrastructure connecting the collector substations to the Dinawan Substation site • operation and maintenance (O&M) infrastructure, including: – site offices and amenities – equipment and maintenance sheds – laydown, storage and parking areas • other permanent infrastructure, including: – hardstands – water tanks – permanent meteorological monitoring masts (up to 200 m tall) – new/upgraded access tracks – access points from the public road network • temporary construction facilities, including: – worker accommodation facilities – construction compounds – site offices and amenities

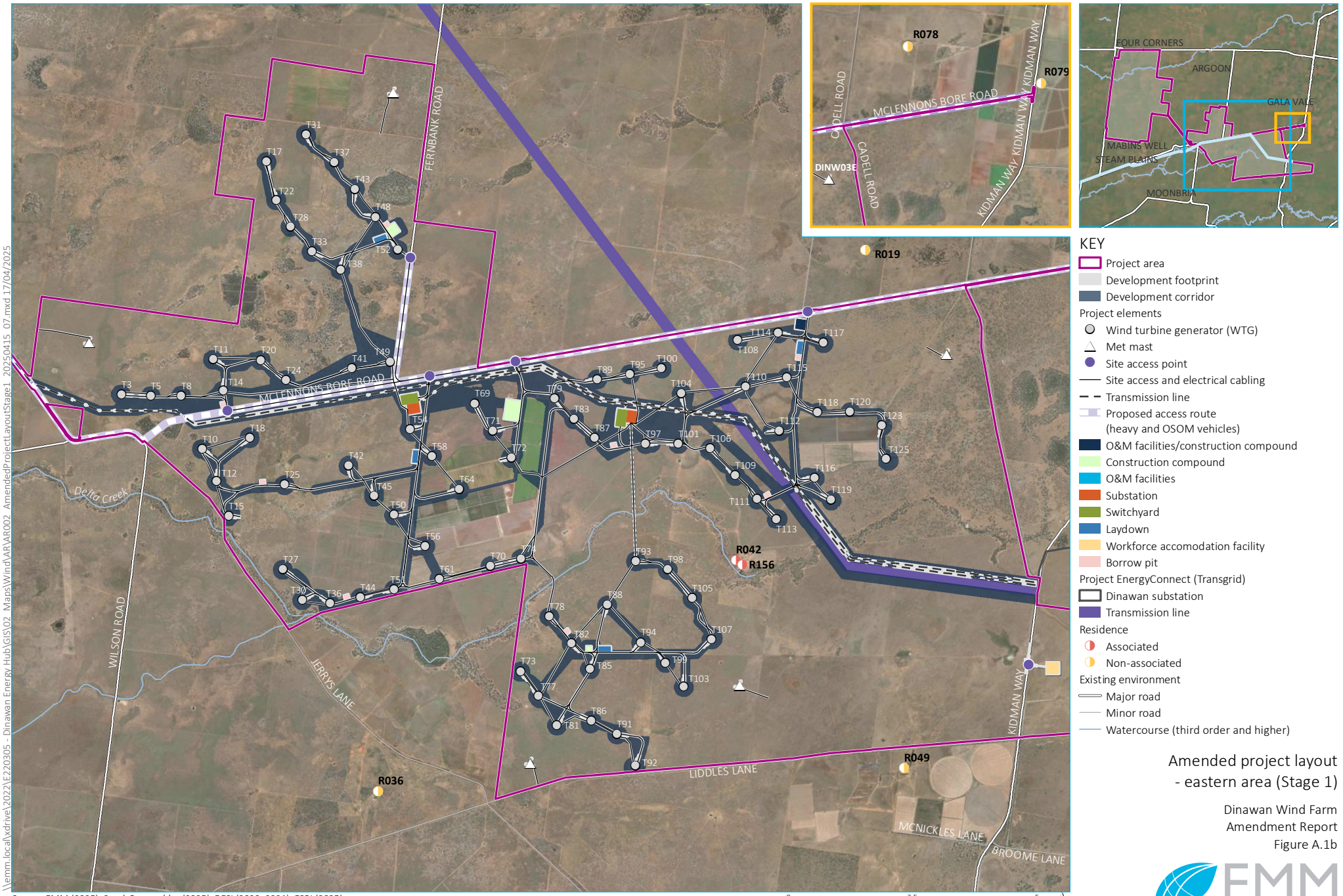
Project element	Summary
	– concrete batching plants – construction materials storage (including stockpiles) – laydown areas – temporary meteorological monitoring masts (up to 200 m tall) – water tanks – water and sediment management infrastructure – storage and parking areas – borrow pits.
Workforce	Approximately 600 personnel during peak construction. Up to 50 full-time employees and varying numbers of contractors during operation.
Hours of operation	Standard day-time construction hours (7:00 am to 6:00 pm Monday to Friday and 8:00 am to 1:00 pm Saturday). Exceptions to these hours may include: • deliveries by heavy vehicles and RAVs outside of peak traffic times • concrete batching and pouring • crane movements between WTG sites • activities that are inaudible at non-associated residences • activities for WTG construction hindered by adverse weather conditions. Once operational, the project will operate continuously 24 hours per day, 7 days per week.
Project life	Construction: approximately 36 months for each stage (approximately 60 months total to allow for overlap between stages). Operation: 25–35 years with the potential to extend the operational life.
Roads	Site access points will be on Kidman Way, McLennons Bore Road, Fernbank Road and Goolgumbla Road. Upgrades to the public road network: • local intersection improvements at: – Kidman Way/McLennons Bore Road – McLennons Bore Road/Fernbank Road – McLennons Bore Road/Wilson Road – Wilson Road/Goolgumbla Road • haulage route road upgrades to facilitate OSOM movements at: – the intersection of Kidman Way/Newell Highway, Bundure – the intersection of Sturt Highway/Eunony Bridge Road, East Wagga Wagga – the intersection of Olympic Highway (Moorong Street)/Sturt Highway, Wagga Wagga – the intersection of Byrnes Road/West Bomen Road, Bomen. • road upgrades on: – McLennons Bore Road – Fernbank Road – Wilson Road – Goolgumbla Road. An internal network of access tracks within the development corridor will be used to access: • the eastern area from McLennons Bore Road and Fernbank Road • the western area from Goolgumbla Road.

Project element	Summary
Transport	• Maximum daily heavy vehicle movements (construction, upgrading and decommissioning): 176 • Maximum daily light vehicle movements (construction, upgrading and decommissioning): 462 Movements account for one vehicle entering the site and one vehicle leaving the site. Daily heavy vehicle movements exclude restricted access vehicles (RAVs), which will be used to transport WTG and infrastructure components from Port of Newcastle. Plant, equipment and other bulk construction materials will be sourced based on availability of suppliers/contractors.
Subdivision	Subdivision of lots may be required to create new allotments for the substations and switchyards.
Decommissioning and rehabilitation	All aboveground structures will be removed and the land disturbed by the project will be rehabilitated to its pre-existing land use, as far as practicable unless otherwise agreed with landowners and regulators.
Biodiversity offset staging	The amended BDAR (Appendix D.3 of the amendment report) considers the staged retirement of the project's biodiversity credit liability. It considers three stages: • early works (largely associated with public road upgrades and establishment of construction compounds and an accommodation facility) • Stage 1 (part of Stage 1 (eastern area)) • Stage 2 (the remainder of Stage 1 (eastern area) and all of Stage 2 (western area)).

A.2 Project refinement and flexibility

Project infrastructure will be contained within the development corridor, which will provide the necessary flexibility for further detailed design (micro-siting) of the development footprint.

The development application seeks approval for disturbance of up to 1,095 ha, indicatively shown as the development footprint, wholly within the development corridor. As part of detailed design, the development footprint may move within the development corridor to facilitate optimal placement of infrastructure.



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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

Amended project layout - eastern area (Stage 1)

Dinawan Wind Farm
Amendment Report
Figure A.1b

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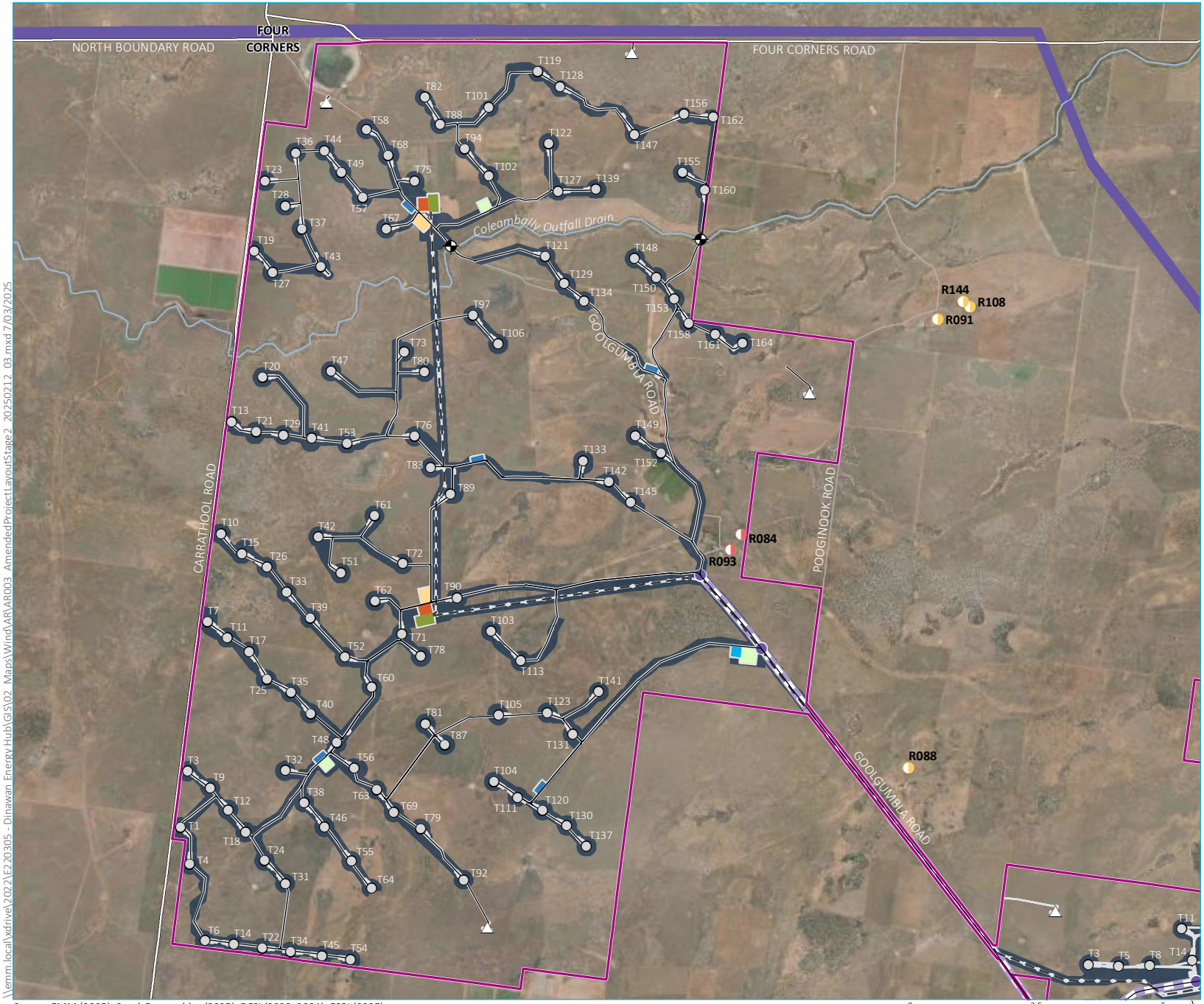

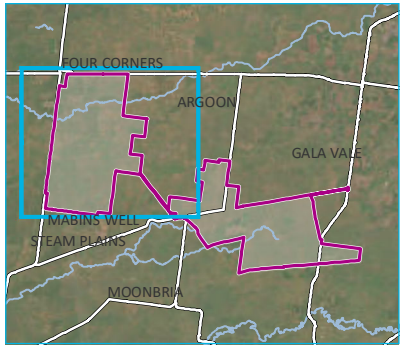

KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Met mast
- Site access point
- Site access and electrical cabling
- Transmission line
- Proposed access route (heavy and OSOM vehicles)
- O&M facilities
- Substation
- Switchyard
- Laydown
- Workforce accomodation facility
- Borrow pit
- Construction compound

Project EnergyConnect (Transgrid)

- Transmission line

Residence

- Associated
- Non-associated

Existing environment

- Bridge
- Major road
- Minor road
- Watercourse (third order and higher)

Amended project layout - western area (Stage 2)

Dinawan Wind Farm
Amendment Report
Figure A.1b

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

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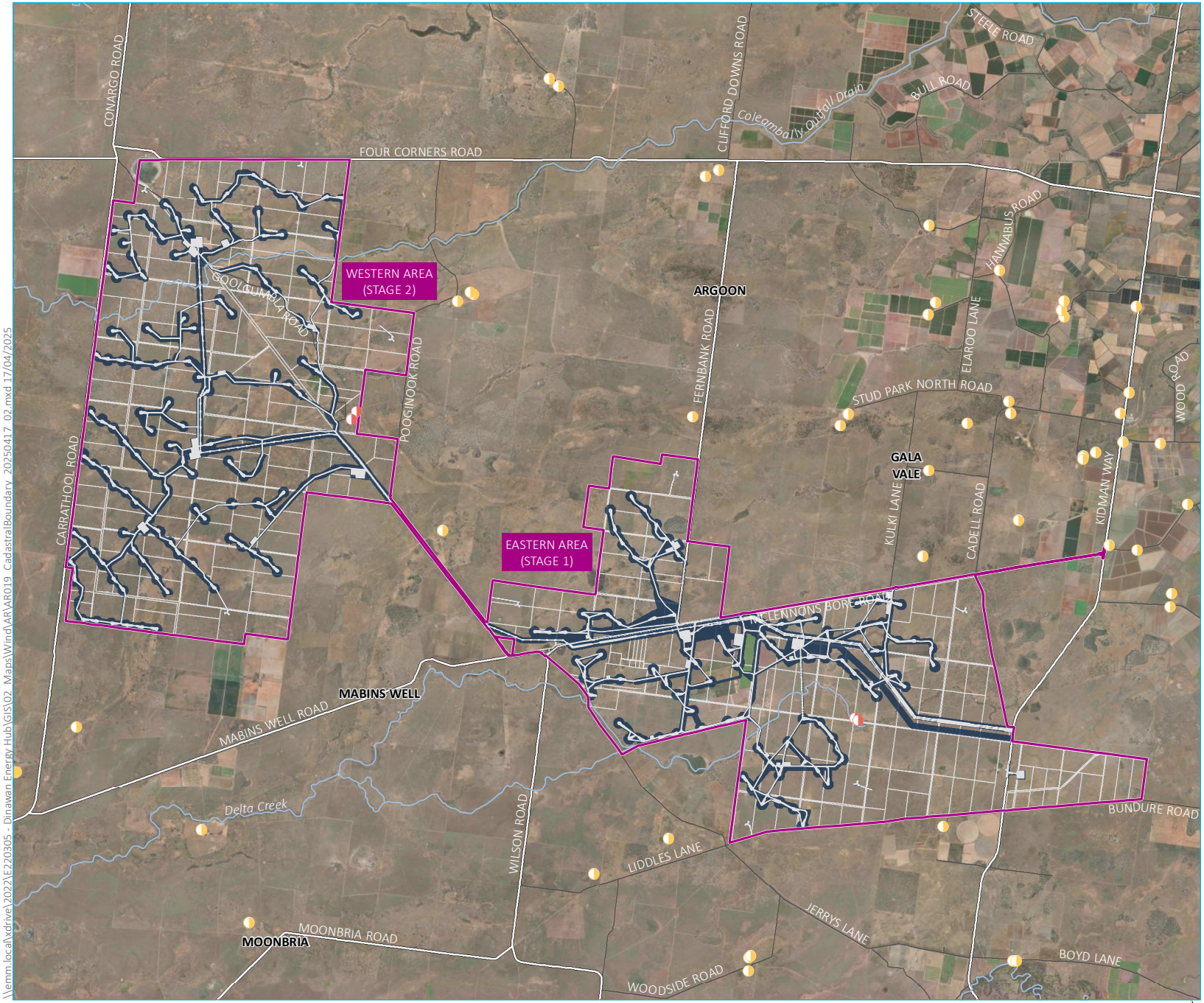

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

Cadastral boundaries within the project area

Dinawan Wind Farm
Amendment Report
Figure A.2

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A.3 Physical layout and design

The physical layout and design of the project is summarised in Table A.2 and described in the following sections. An indicative project layout is provided in Figure A.1.

Table A.2 Key project components

Project component	Proposed to be constructed	Options assessed
Permanent infrastructure		
Wind turbine generators (WTG) and hardstand areas	Up to 200 WTGS as shown in Figure A.1, each with an approximate 20 m wide foundation and 90 m by 60 m hardstand area.	-
Collector substations and switchyards	Up to four substations and switchyards, as shown in Figure A.1.	-
Operation and maintenance (O&M) facilities	Two O&M facilities, and laydown areas, as shown in Figure A.1.	-
Permanent meteorological monitoring masts	Up to nine permanent meteorological monitoring masts, up to 200 m tall, as shown in Figure A.1.	-
Network connection	Overhead transmission lines (330 kV) will connect the collector substations to the Dinawan Substation site. Indicative transmission line corridors are provided on Figure A.1.	-
Site access points	Eight site access points, as shown in Figure A.1.	-
Temporary infrastructure		
Construction compounds	Up to seven construction compounds, as shown in Figure A.1.	-
Worker accommodation facilities	Up to two accommodation facilities, as shown in Figure A.1.	Three locations have been assessed.

A.3.1 Wind turbines

i General

The wind farm will have a generation capacity of up to approximately 1.2 GW. The project will include the installation of up to 200 WTGs across the eastern and western areas of the project area (Figure A.1), positioned to balance maximisation of electricity generation from the available wind resource, with minimisation of environmental impacts.

The amended layout in Figure A.1 includes:

- up to 84 WTGs in the eastern area
- up to 116 WTGs in the western area.

The proposed layout is indicative and will be optimised during detailed design. The number of WTGs will not exceed 200 in total. The selection of the final WTG model for construction may also result in amendments to the proposed layout.

Each WTG will have three blades with the rotor and nacelle mounted on a tower, with an internal ladder or lift. Components of a typical WTG are illustrated in Figure A.3.

Indicative coordinates for each WTG are provided in Appendix F. Allowance for micro-siting of WTGs by up to 100 m radius from these locations is required and has been included in the development footprint and development corridor. Other infrastructure components, including collector substations, O&M facilities, temporary construction facilities, electrical cabling and access tracks, will also be micro-sited within the development corridor.

Micro-siting will allow design refinements that will benefit constructability and plant and equipment access without requiring a modification to the development application.

ii Foundations

Each WTG will have a foundation approximately 20 m wide (approximately 400 m^2) to a depth of approximately 3–5 m. The size, depth and type of each foundation will be determined as part of detailed design based on geotechnical conditions.

Topsoil and spoil from excavations will be stockpiled for reuse to backfill over the foundation and/or as part of vegetation rehabilitation around the WTG. Excess material will be utilised elsewhere within the development corridor (e.g. to form access tracks) or be exported off-site for beneficial reuse.

iii Hardstand

A permanent hardstand, approximately 90 m by 60 m (approximately 5,400 m^2), will be established at each WTG during construction. This will be used as a laydown area and by the plant and equipment installing the WTG components. The hardstand will be used for maintenance and repair of the WTG during operation.

A.3.2 Electrical collection system

Electricity produced by each WTG will be transformed from low-voltage to medium-voltage (33 kV or greater) by a transformer located within the nacelle or adjacent to the WTG.

A network of underground and overhead powerlines within the development corridor will connect WTGs to up to four collector substations. Connections will include power, earthing, and communications cables. The exact routes of overhead and underground lines will be determined as part of detailed design.

Underground cables will be installed at least 600 millimetres (mm) below ground level.

The project electrical network is expected to comprise 33 kV circuits between the WTGs and collector substations, and a 132 kV or 330 kV transmission line between the collector substations and Dinawan Substation. Overhead electricity lines will be between 20 and 80 m tall depending on the capacity of the line and type of power pole/transmission tower. The distance between power poles and transmission towers will be dependent on the type used.

The eastern area and western area will be connected via an underground or overhead line, predominantly within the road reserve of Goolgumbla Road. An indicative alignment for this infrastructure is shown on Figure A.1.

Powerlines may need to cross Coleambally Outfall Drain and other unnamed watercourses. Overhead and/or underground (installed by horizontal directional drilling) crossings may be used. Physical disturbance within the drain, waterfront land and associated riparian corridors will be avoided to the extent possible.

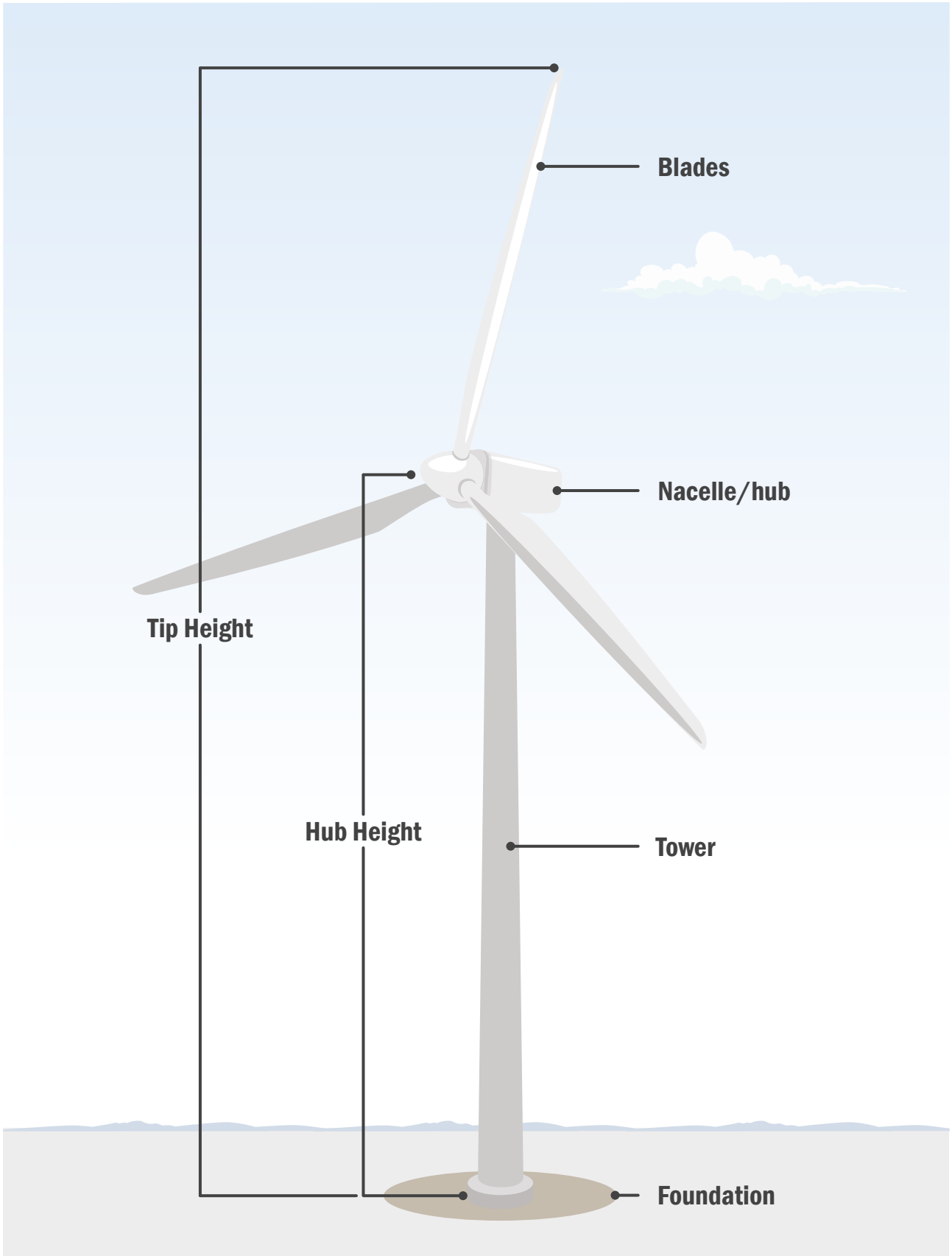


Figure A.3 **Wind turbine generator components**

A.3.3 Collector substations and switchyards

Collector substations will convert 33 kV AC electricity from the WTGs to 330 kV for export to the Dinawan Substation. Indicative sites for the collector substations and switchyards are provided on Figure A.1 and an indicative collector substation is shown in Photograph A.1. Ancillary infrastructure may also be placed within the substation and/or switchyard site.

Photograph A.1 Example of a substation

Subdivision of lots may be required for the construction, operation and maintenance of each substation and/or switchyard. If subdivision occurs, it is envisaged that the subdivided lot would be consolidated back into a single lot at the end of the operational life of the substation and/or switchyard.

Substations and switchyards are located on land zoned RU1 Primary Production under the Jerilderie and Conargo LEPs (refer Figure 2.2 of the EIS), with associated minimum lot sizes of at least 200 ha. The subdivision of any lots selected for the collector substations and/or switchyards will result in lot sizes that are less than the minimum lot size under the relevant LEPs. Notwithstanding, in accordance with section 4.38 of the EP&A Act, any proposed subdivision will be permissible subject to the approval of the Minister for Planning and Public Spaces or their delegate.

Murrumbidgee Council, Edward River Council, DPHI and the project landholders will be consulted about any proposed subdivisions.

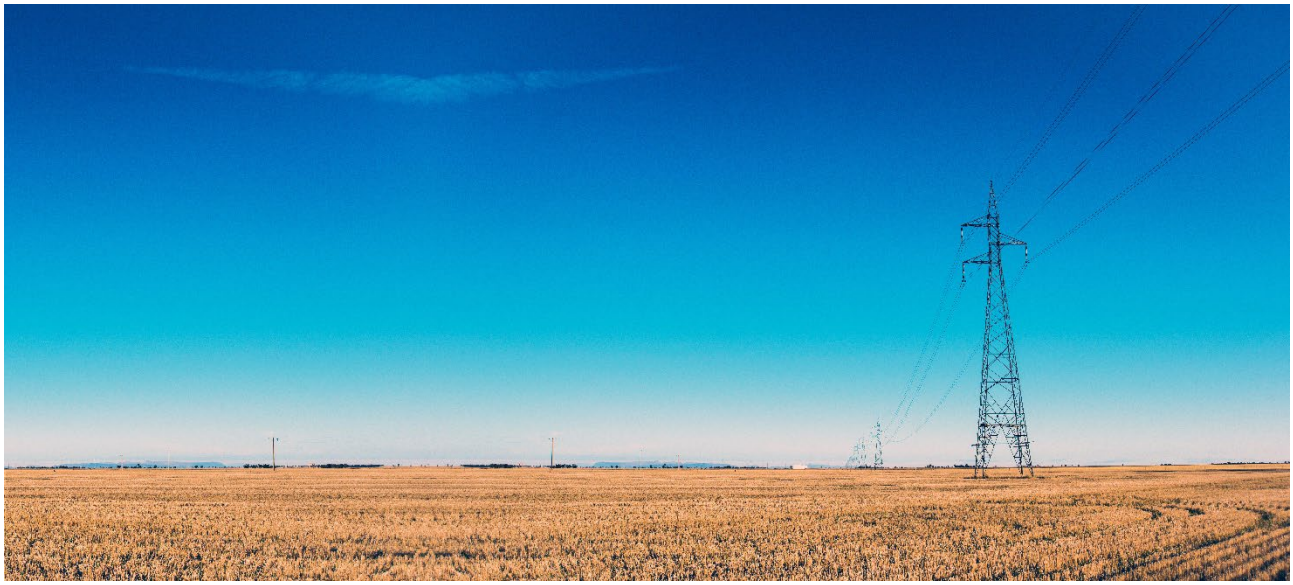
A.3.4 Network connection

The Dinawan Substation site, part of Project EnergyConnect, is the preferred point of connection to Transgrid's network. The Dinawan Substation will be constructed on land adjacent to the project area (Figure A.1).

Overhead 330 kV transmission lines will connect the collector substations to the Dinawan Substation site. Indicative transmission line corridors are provided on Figure A.1 and an example of an overhead transmission line is shown in Photograph A.2. The overhead transmission lines will be within the development corridor, with the design and location determined as part of detailed design.

The project's overhead transmission line will cross Kidman Way before entering Dinawan Substation site. The transmission towers are expected to be 40–80 m tall. The distance between transmission towers will be dependent on the type of structure used. A conceptual representation of the transmission lines crossing Kidman Way is provided in Figure A.4

Overhead 330 kV transmission lines within the development corridor are part of this application. The portion of the transmission line and connection infrastructure within Project EnergyConnect's project area (i.e. Lot 1 of DP 1282091) at Dinawan Substation is as defined in *EnergyConnect (NSW – Eastern Section) Environmental Impact Statement* (Transgrid 2022) and as approved under SSI-9172452.



Photograph A.2 Example of an overhead transmission line

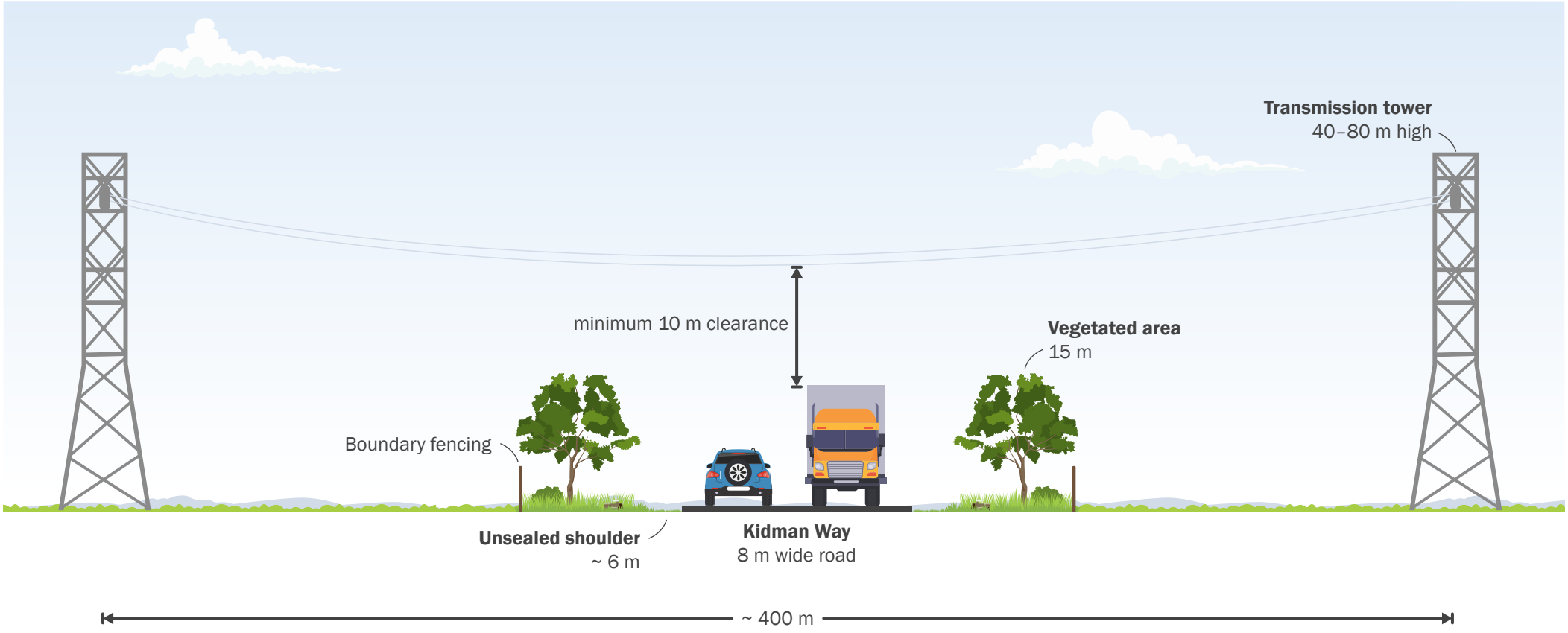


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Figure A.4 Overhead transmission line across Kidman Way

A.3.5 Supporting infrastructure

i Construction

a Worker accommodation facilities

Temporary worker accommodation facilities for non-local construction employees (where skills cannot be sourced locally) are proposed in the eastern area for Stage 1 and the western area for Stage 2. Indicative locations are shown on Figure A.1. Each accommodation facility will be established early in the construction phase for each stage of the project. Each facility will accommodate up to 450 workers.

Construction of each accommodation facility is estimated to take approximately nine months. Accommodation facilities will be operational throughout construction of the project. Demobilisation and rehabilitation of the accommodation facility is estimated to be approximately six months.

The indicative location of the accommodation facility in the eastern area is shown in Figure A.1. This accommodation facility will be co-located with the temporary Dinawan Solar Farm worker accommodation facility, if Dinawan Solar Farm (SSD-50725959) is approved.

The indicative locations for the two accommodation facility options in the western area are shown in Figure A.1.

Each accommodation facility site is approximately 6 ha and will include:

- modular and relocatable single rooms/quarters
- office building(s)
- mess area (including stores, kitchen and dining area)
- laundry facilities
- toilet and shower facilities
- car and shuttle bus parking area
- a medical centre or first aid room staffed by personnel with suitable first-aid/medical training
- recreation areas.

The layout of the accommodation facilities will be determined during detailed design. An indicative layout of the eastern accommodation facility is provided in Figure A.5. All components will be within the development corridor.

Each facility will principally accommodate employees and long-stay contractors, and will have the capacity to accommodate approximately 75% (450 people) of the project's peak construction workforce (600 people) on the basis that approximately 25% of the workforce will be locally based.

The facilities will use modular and relocatable single rooms/quarters and will be 'scaled up' and 'scaled down' based on construction workforce requirements.

Emergency procedures for the accommodation facility will be addressed as part of a fire management plan and bushfire emergency management and evacuation plan (BF2) and flood management protocols (W7).

Figure A.5 Indicative layout of accommodation facility

b Concrete batching plants

Concrete will be used for WTG foundations, as well as other infrastructure within the development corridor, including pads for collector substations and O&M facilities. Up to seven temporary concrete batching plants will be required. These will be located within the construction compounds. Typically only one concrete batching plant will be operating at any point in time with the infrastructure relocated between the construction compounds.

Concrete batching plants will typically include cement silos, stockpile areas for aggregate and admixture, water and waste water storage tanks, bunded refuelling bay and parking.

Water for concrete production will be transported to site via water trucks and/or sourced from groundwater bores (subject to water quality). Concrete production materials, including cement, aggregate and sand, needed for concrete production will generally be sourced from local or regional suppliers.

c Temporary supporting infrastructure

Other temporary supporting infrastructure during construction will include:

- construction compounds
- site offices and amenities
- construction materials storage (including stockpiles)
- laydown areas
- temporary meteorological monitoring masts (up to 200 m tall)
- water tanks
- water and sediment management infrastructure
- storage and parking areas
- borrow pits.

ii Operation

Permanent supporting infrastructure during operation will include:

- O&M facilities, including offices, amenities, equipment storage sheds and parking, in the eastern and western areas (Figure A.1 and Photograph A.3)
- laydown areas
- up to 10 permanent meteorological monitoring masts, up to 200 m tall (Figure A.1).
- hardstands
- water tanks.

Hardstands and water tanks will be within the development corridor, with locations determined as part of detailed design.

Security fencing will be installed around the perimeter of high voltage electrical equipment such as the collector substations. Signage will clearly identify hazards within the development corridor.

Lighting, security cameras and weather stations will be installed where necessary for safety, operational maintenance, and security purposes. Lightning protection will be provided as required.

Areas within the development corridor may be landscaped as required.

Photograph A.3 Example of an operations and maintenance facility

A.3.6 Transport

i Transport and site access

Transport to the site will be from Kidman Way, which connects to the regional road network including Sturt Highway to the north and Newell Highway to the south.

Project components, infrastructure, plant and equipment and construction materials will be transported to the development corridor by general access heavy vehicles and restricted access vehicles (RAVs). A RAV is a heavy vehicle that exceeds a prescribed weight and/or dimension limits specified by the National Heavy Vehicle Regulator. RAVs will include oversize/overmass (OSOM) vehicles which generally transport a large indivisible item and exceed the prescribed mass or dimension requirements.

Heavy and light vehicles, including RAVs, will access the project area from Kidman Way via the intersection with McLennons Bore Road. Vehicles will travel along McLennons Bore Road to access Fernbank Road, Wilson Road and Goolgumbla Road to designated site access points (Figure A.1). Kidman Way is an approved route for vehicles up to 36.5 m long.

Project components, infrastructure, plant and equipment and construction materials will be sourced from various locations within NSW and Australia depending on the suppliers/contractors and availability.

Some project components, such as WTG components, substation equipment and O&M components, will be imported from outside of Australia. Imported project components will be delivered to site from the Port of Newcastle and transported to the project area using RAVs for OSOM loads.

Other heavy plant and equipment, such as cranes to erect WTGs, earthmoving equipment and other loads that exceed mass or size restrictions for the road network will also be transported to site using RAVs.

Light and heavy vehicles will also access the accommodation facility for the eastern area from a site access point on Kidman Way (Figure A.1).

Site access points are shown on Figure A.1 and listed in Table A.3. New intersections are proposed at these locations for project-related traffic.

Table A.3 Site access points

Road	Site access	Project stage
McLennons Bore Road	Four site access points providing access to the development corridor on the northern and southern side of McLennons Bore Road.	Stage 1
Fernbank Road	One site access point providing access to the development corridor west of Fernbank Road.	Stage 1
Kidman Way	One site access point providing access to the accommodation facility in the eastern area.	Stage 1
Goolgumbla Road	Two site access points providing access to the development corridor off Goolgumbla Road.	Stage 2

ii Road and intersection upgrades

Local road and intersection upgrades are proposed to facilitate vehicle movements to the site access points. The proposed road and intersection upgrades are listed in Table A.4 and further detail is provided in Section 6.6 of the amendment report. One new intersection is proposed on Kidman Way which will provide access to the development corridor east of Kidman Way, where the accommodation facility for the eastern area will be located. The intersection will be constructed within the development footprint and Kidman Way road reserve.

Proposed road and intersection upgrades are described in the traffic impact assessment (Appendix E.6 of the EIS) and the addendum to the traffic impact assessment (Appendix D.5 of the amendment report).

Table A.4 Road and intersection upgrades

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
Newcastle LGA				
OSOM route option 1 – John Renshaw Drive onto the M1	18.4 km	Minor adjustments to street furniture to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
Forbes LGA				
OSOM route option 2 – Newell Highway/Dowling Street intersection	573 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
Wagga Wagga LGA				
OSOM route option 1 – Sturt Highway roundabout at Tasman Road	614.6 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1 – Sturt Highway roundabout at Kooringal Road	617.3 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1 – Sturt Highway roundabout at Norton Street	618.4 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1 – Sturt Highway roundabout at Pearson Street	621.5 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Sturt Highway/Eunony Bridge Road intersection	615 km	Provision of hardstand area at the north-west corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	Section H.4
OSOM route option 1A – Eunony Bridge Road/Byrnes Road intersection	618.8 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
OSOM route option 1A – Byrnes Road/West Bomen Road intersection	623 km	Provision of hardstand area at the north corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	Section H.6
OSOM route option 1A – West Bomen Road/Merino Road intersection	623.9 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Merino Road/Olympic Highway intersection	625.7 km	Minor adjustments to street furniture to facilitate OSOM vehicles.	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Olympic Highway (Colin Knott Dr) Roundabout at Horseshoe Road	629.3 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Olympic Highway (Moorong St) Roundabout at Traverse Street	634.4 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Olympic Highway (Moorong St) Roundabout at Kincaid Street	635.6 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles.	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 1A – Olympic Highway (Moorong Street)/Sturt Highway intersection	636 km	Provision of hardstand area at the north-west corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles	Section H.5
Narrandera LGA				
OSOM route option 1 – Left hand bend of Sturt Highway at Newell Highway	711 km	Amendments to existing road infrastructure within existing road pavement to facilitate OSOM vehicles	Prior to use by OSOM vehicles	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 2 – Newell Highway/Sturt Highway intersection	817 km	Minor adjustments to street furniture to facilitate OSOM vehicles.	Prior to use by OSOM vehicles	To be prepared in consultation with relevant road authority prior to construction.

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
Murrumbidgee LGA				
OSOM route option 1 – Kidman Way/Newell Highway intersection	802 km	Provision of hardstand area at the north-east corner of the intersection to facilitate OSOM vehicles	Prior to use by OSOM vehicles	Section H.3
Kidman Way – new intersection to access development corridor east of Kidman Way	823 km	New intersection	Prior to construction of accommodation facility in the eastern area.	Section H.2
Kidman Way/McLennons Bore Road	833 km	Upgrade of existing intersection	Prior to construction of accommodation facility in the eastern area.	Section H.1
McLennons Bore Road/Cadell Road	838 km	Upgrade of existing intersection	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road	838 km	Road upgrade and widening	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road/site access intersections	841 km, 847 km, 849 km, 853 km	New site access intersections	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road/Fernbank Road	848 km	Upgrade of existing intersection	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
Fernbank Road	848 km	Road widening:	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
Fernbank Road/site access intersection	850 km	New site access intersection	Prior to construction of accommodation facility in the eastern area.	To be prepared in consultation with relevant road authority prior to construction.
McLennons Bore Road/Wilson Road	855 km	Upgrade of existing intersection	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.

Road/intersection	Chainage (distance from port)[1]	Treatment	Timing	Relevant concept design
Wilson Road	855 km	Road widening	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.
Edward River LGA				
Goolgumbla Road	858 km	Road widening	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.
OSOM route option 2 – Wilsons Road Stock Grids	967 km, 972.9 km	All stock grids to be upgraded to accommodate all proposed loads.	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.
Goolgumbla Road/site access intersections	866 km, 867 km	New site access intersections	Prior to commencement of Stage 2	To be prepared in consultation with relevant road authority prior to construction.

Notes: Chainage is based on distances described in Annexure A.2 of Appendix D.5 of this amendment report.

iii Internal access tracks

An internal network of unsealed access tracks will be established within the development footprint. The internal tracks will provide access during construction, for maintenance during operation, and for emergency response.

The tracks will consist of upgraded existing tracks, where possible, and new tracks. Subject to detailed design, internal access tracks will be 2–6 m wide. Some sections may be wider to allow general access heavy vehicle and RAV movements.

Tracks will be available for use for agricultural activities within the project area.

Existing bridges across the Coleambally Outfall Drain and other unnamed watercourses will be utilised for site access (Table A.1). Existing bridges will undergo further assessment and may require upgrades to be undertaken in consultation with the asset owner, CICL.

A.3.7 Services

There is no existing water, sewerage or electricity infrastructure on-site to support the construction workforce. During construction, the accommodation facilities will require water, telecommunications, sewage treatment, electricity, diesel, grease and waste management. This includes the following:

- Potable water will be delivered by truck, and stored in tanks that are connected to the units and communal infrastructure. Rainwater tank/s will be installed to capture water that can be used for non-potable functions such as toilet flushing, laundry, vehicle washing and landscape irrigation.
- An on-site sewage treatment plant will be installed and will produce treated wastewater that can be used during construction of the project. Subject to appropriate treatment, treated water may be used to supplement rainwater captured for non-potable functions such as toilet flushing. The processing capacity of the on-site sewage treatment plant will be below the threshold specified in Section 36 of Schedule 1 of the NSW *Protection of the Environment Operations Act 1997*, and therefore an environment protection licence (EPL) will not be required for this part of the project.
- The cellular network will be used for telecommunications during construction.
- Electricity may be sourced from the local distribution network (where available), on-site using solar panels/batteries and diesel generation where access to the grid is unavailable.
- Diesel will be delivered and stored within bunded storage tanks that comply with the relevant standards.
- The accommodation facilities kitchens will be equipped with a grease trap that will be pumped out regularly.
- The accommodation facilities will generate putrescible waste, recyclable waste and general waste. Waste will be collected and stored in waste bins that are emptied and removed by truck to licensed landfill and recycling centres, which have the required capacity, at least weekly. No waste will be deposited on site.

On-site sewerage collection/treatment infrastructure will continue to be used during operation.

There is an existing 11 kV overhead transmission line that crosses McLennons Bore Road close to its intersection with Cadell Road. Murrumbidgee Council and the asset owner, Essential Energy, will be consulted if impacts to this asset are identified during detailed design. Temporary adjustments to part of the 11 kV line may be required to enable safe passage of OSOM vehicles. This could involve raising the line to an appropriate height at the site access point or burying part of the line.

A.4 Uses and activities

A.4.1 Early works

Early works will commence prior to construction, and will include, but are not limited to:

- road/intersection upgrades and maintenance works on the public road network
- site, building and/or road surveys to inform infrastructure placement
- installation of fencing
- artefact survey and/or salvage
- overhead line safety marking
- geotechnical investigations including drilling and/or surveying
- installation of temporary meteorological masts.

A.4.2 Construction

i Site preparation

Staged site preparation works will include:

- construction of site access points
- construction of worker accommodation facilities
- earthworks
- upgrading existing tracks/construction of new access tracks within the development corridor
- upgrading existing bridges across the Coleambally Outfall Drain (western area only, if required)
- establishment of temporary construction infrastructure described in Section A.3.5i
- ongoing geotechnical investigations to confirm ground conditions.

Earthworks will include excavation of foundations (including for WTGs, transmission infrastructure and hardstands), access track formation, drainage works, and pad formation.

Management measures to mitigate potential impacts on the environment and receptors will be implemented as part of site preparation works. These will include erosion and sediment controls such as drainage channel improvements and construction of sediment control ponds. Grading adjacent to first and second order streams and drainage channels may be required to manage erosion during construction.

Laydown areas, waste handling, and fuel and chemical storage areas will be strategically placed to minimise potential environmental impacts during construction.

ii Worker accommodation facilities

As described in Section A.3.5ia, worker accommodation facilities will be constructed progressively as construction of the project progresses (each up to 450-person capacity).

Construction of the worker accommodation facilities will require stripping of topsoil where necessary, and construction of hardstand, walkways and carparks. Minor earthworks, including levelling, may be required prior to delivery and construction of prefabricated demountable units and utility infrastructure. The need for heavy earthworks and compaction is expected to be low due to the flat topography of the development footprint and will be minimised as much as practicable.

The facilities will be designed and operated to comply with *Planning for Bushfire Protection* (RFS 2019) and *AS3959-2018 Construction in Fire Prone Areas*. The accommodation facility development footprints will provide an asset protection zone (APZ) between bushfire hazards and buildings (including roads) that is compliant with the relevant standards.

Each facility will be operated by about 5–10 staff (including administration, cleaning, food preparation, maintenance and security staff). Once operational, each accommodation facility will be used for 24 hours a day, 7 days a week. Where possible, local businesses will be engaged to supply goods and services to the facility, typically consisting of laundry, cleaning and catering.

The facility operator will implement a safety management system that is compliant with relevant legislative requirements, standards, and codes of practices and include processes and procedures to respond to and manage emergencies.

Following the completion of project construction, the accommodation facility may be maintained for use by the construction workforce associated with other developments in the region, if this is approved as part of future development applications. Otherwise, the accommodation facility will be decommissioned.

The prefabricated demountable units will be removed as the construction workforce decreases. Once construction is complete, communal infrastructure, such as the dining hall, water storage and fencing will be removed to enable the site to be generally restored to its former condition.

iii Construction activities

Construction activities will include:

- construction of hardstand areas
- delivery of project infrastructure (including WTG components)
- construction of footings for the WTGs and permanent meteorological monitoring masts
- erection of permanent meteorological monitoring masts and WTG components
- erecting power poles and transmission towers, and stringing lines and/or trenching and line installation
- installation of substations
- construction of O&M facilities
- test and commission project infrastructure
- rehabilitation and revegetation.

The majority of infrastructure will be prefabricated, and delivered and assembled on site.

iv Construction plant and equipment

Plant and equipment required for the construction of the project will include:

- earthmoving plant

- cable trenching and laying equipment
- material handling equipment (including forklifts and cranes)
- machinery and equipment for connection infrastructure establishment
- water trucks for dust suppression
- light vehicles for personnel transport.

v Workforce

A workforce of approximately 600 personnel will be on-site during peak construction.

The construction workforce will be sourced from the local area as far as practicable.

Non-local construction staff will use the temporary construction accommodation facilities for the project, Project EnergyConnect's Dinawan accommodation facility (subject to agreement with Transgrid) and if required, available rental, motel and other accommodation in surrounding townships and regional centres (including Coleambally, Griffith, Deniliquin, Narrandera, Jerilderie and Darlington Point).

A.4.3 Operation

i Activities

The WTGs and infrastructure will be maintained during operation to ensure ongoing efficient electricity generation, energy storage and site operation. Maintenance will include:

- servicing WTGs, collector substations, and other infrastructure, with repair or replacement of components where required
- vegetation maintenance
- weed and pest management
- fence and access road management
- internal track management
- drainage and erosion management
- landscaping (if required).

The O&M facilities will include site offices, amenities, equipment and maintenance sheds, laydown, storage and parking for operation. There will be O&M facilities for both the eastern and western areas (see Figure A.1).

Light vehicle access will be required throughout operation. Heavy vehicles will also be required on occasions for operational and maintenance activities.

Security monitoring will be undertaken by the operational workforce. Security cameras may be utilised to assist with monitoring project infrastructure.

Livestock will graze within the development corridor during operation.

ii Workforce

Project operation will require up to 50 full-time employees. Project operation will be supported by contractor roles for vegetation, weed and pest management, cleaning, equipment calibration and internal road maintenance.

A.4.4 Decommissioning

Once the project reaches the end of its operational life, a decision will be made to either decommission or re-power the facility, subject to approval requirements.

If the project is decommissioned, all aboveground structures will be removed (unless otherwise agreed with landowners and regulators) and the site rehabilitated generally to its pre-existing land use, as far as practicable. Project infrastructure will be managed in accordance with the waste management hierarchy and contemporary waste management legislation.

If re-powering is proposed, stakeholders will be consulted and the required approvals sought.

A.4.5 Water demand

Water will be required during construction and operation. An estimate of water demand is provided in Table A.5.

Table A.5 Indicative water demand

Activity	Water requirement	Source
Construction (non-potable)	176 megalitres (ML) over 5 years	Water will be sourced primarily from existing extraction bores that are owned by landholders associated to the project, where each bore has an applicable water access license (WAL). Demand for groundwater will be minimised by opportunistic use of water from rainwater tanks collecting roof runoff, reuse of water captured by construction sediment basins and extraction from existing landholder dams in accordance with harvestable rights.
Construction (potable)	188 ML over 5 years	Trucked to site by commercial water provider.

During operation, non-potable water will continue to be sourced from groundwater sources via existing landowner bores. This will be supplemented by sources such as potable water trucked into site and stored in tanks.

A.5 Timing

A.5.1 Early works

Early works will be undertaken ahead of commencement of construction as described in Section A.4.1.

A.5.2 Construction

Project construction is expected to commence in 2026, subject to receiving the required approvals. Construction is expected to be completed over approximately 60 months.

It is anticipated that the project will be constructed in two stages (see Section A.5.4).

Construction activities will be undertaken during standard construction hours (7:00 am to 6:00 pm Monday to Friday and 8:00 am to 1:00 pm Saturday). Exceptions to these hours may include:

- deliveries by heavy vehicles and RAVs outside of peak traffic times

- concrete batching and pouring
- crane movements between WTG sites
- activities that are inaudible at non-associated residences
- activities for WTG construction hindered by adverse weather conditions.

The relevant council and surrounding landholders will be notified of any work outside of standard construction hours.

A.5.3 Operation

Stage 1 of the project is expected to be commissioned in 2027–2028, subject to the availability of grid access.

The project will operate continuously, 24 hours per day, 7 days per week.

The operational lifespan of the project is expected to be in excess of 25–30 years, depending on the nature of WTG technology and energy market demands.

A.5.4 Staging

i Construction staging

The project's generation capacity and connection to the electricity grid will be dependent on the outcomes of the South West REZ Access Scheme and the construction of electricity distribution infrastructure, including Dinawan Substation. The staging of the project will be determined as part of detailed design; however, it's anticipated that the stages of the project will include:

- an early works package (largely associated with public road upgrades and establishment of construction compounds and an accommodation facility in Stage 1 (eastern area))
- Stage 1 (eastern area) - construction of WTGs and associated infrastructure
- Stage 2 (western area) - construction of WTGs and associated infrastructure.

There may be some overlap in construction of Stage 1 and Stage 2.

As a conservative assumption, technical studies prepared for the EIS and this report have assessed the concurrent construction of the eastern part of Dinawan Wind Farm (i.e. Stage 1) and the adjoining Dinawan Solar Farm (subject to a separate application) as this scenario would have the greatest construction workforce demands and vehicle movements.

ii Staging biodiversity offset credit retirements

As described in the Biodiversity Development Assessment Report (BDAR) (Appendix D.3 of the amendment report), biodiversity credits will be retired to compensate for biodiversity impacts. It is proposed to retire the project's biodiversity credit liability in three stages:

- early works (largely associated with public road upgrades and establishment of construction compounds and an accommodation facility in Stage 1 (eastern area))
- Stage 1 (part of Stage 1 (eastern area))
- Stage 2 (the remainder of Stage 1 (eastern area) and all of Stage 2 (western area)).

Offset staging will be confirmed prior to the commencement of construction.

iii Operation and decommissioning

Following construction, subsequent phases of the project will be:

- operation (25–35 years)
- decommissioning (1–2 years).

Appendix B
Amended statutory context

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Table B.1 Mandatory considerations for the project

Statutory document	Section reference	Mandatory consideration	Section in EIS/amendment report
Considerations under the EP&A Act and EP&A Regulation			
Environmental Planning and Assessment Act 1979	Section 1.3	Relevant objects of the Act	Section 7.4 of the EIS and amendment report
	Section 4.15(1)	Matters for consideration—general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:	
		(a) the provisions of— (i) any relevant environmental planning instruments, and … (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), That apply to the land to which the development application relates.	See below
		(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.	Chapter 6 of the EIS and amendment report
		(c) the suitability of the site for the development.	Section 2.3 of the EIS and amendment report
		(e) the public interest.	Chapter 7 of the EIS and amendment report
Environmental Planning and Assessment Regulation 2021	Division 1, section 24	(1) A development application must— (a) be in the approved form, and (b) contain all of the information and documents required by: (i) the approved form, and (ii) the Act of this Regulation, and (c) be submitted on the NSW planning portal.	The EIS will be submitted via the NSW planning portal and has been prepared in the approved form.

Statutory document	Section reference	Mandatory consideration	Section in EIS/amendment report
	Division 5, section 190	(1) An environmental impact statement must contain the following information –	
		(a) the name, address and professional qualifications of the person who prepared the statement,	Certification page
		(b) the name and address of the responsible person,	Section 1.4 of the amendment report
		(c) the address of the land— (i) to which the development application relates, or (ii) on which the activity or infrastructure to which the statement relates will be carried out,	Appendix E
		(d) a description of the development, activity or infrastructure,	Chapter 3 of the EIS and amendment report
		(e) an assessment by the person who prepared the statement of the environmental impact of the development, activity or infrastructure, dealing with the matters referred to in this Division.	This table
		(2) The person preparing the statement must have regard to—	
		(a) for State significant development—the *State Significant Development Guidelines*	The EIS was prepared in accordance with the *State significant development guidelines – preparing an environmental impact statement* (DPE 2022). This amendment report has been prepared in accordance with *State significant development guidelines – preparing an amendment report* (DPE 2022).
		(3) An environmental impact statement must also contain a declaration by the person who prepared the statement of the following—	
		(a) the statement has been prepared in accordance with this Division, and	Certification page
		(b) the statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure, and	
		(c) the information contained in the statement is not false or misleading.	

Statutory document	Section reference	Mandatory consideration	Section in EIS/amendment report
		(d) for State significant development or State significant infrastructure—the statement contains the information required under the Registered Environmental Assessment Practitioner Guidelines.	Certification page
	Division 5, section 192	(1) An environmental impact statement must contain the following –	
		(a) a summary of the environmental impact statement,	Executive summary
		(b) a statement of the objectives of the development, activity or infrastructure,	Section 2.1 of the EIS and amendment report
		(c) an analysis of feasible alternatives to the carrying out of the development, activity or infrastructure, considering its objectives, including the consequences of not carrying out the development, activity or infrastructure,	Section 2.7 of the EIS and Section 2.5 of the amendment report
		(d) an analysis of the development, activity or infrastructure, including—	
		(i) a full description of the development, activity or infrastructure, and	Chapter 3 of the EIS and amendment report
		(ii) a general description of the environment likely to be affected by the development, activity or infrastructure and a detailed description of the aspects of the environment that are likely to be significantly affected, and	Section 2.4 and Chapter 6 of the EIS and amendment report
		(iii) the likely impact on the environment of the development, activity or infrastructure, and	Chapter 6 of the EIS and amendment report
		(iv) a full description of the measures to mitigate adverse effects of the development, activity or infrastructure on the environment, and	Chapter 6 of the EIS and amendment report Appendix C of the amendment report
		(v) a list of the approvals that must be obtained under another Act or law before the development, activity or infrastructure may lawfully be carried out,	Table 4.1 of the EIS
		(e) a compilation, in a single section of the environmental impact statement, of the measures referred to in paragraph (d)(iv),	Appendix C of the amendment report
		(f) the reasons justifying the carrying out of the development, activity or infrastructure, considering biophysical, economic and social factors, including the principles of ecologically sustainable development set out in section 193.	Chapter 7 of the EIS and amendment report

Statutory document	Section reference	Mandatory consideration	Section in EIS/amendment report
Mandatory relevant considerations under EPIs			
Transport and Infrastructure SEPP	Section 2.48 (other development)	This section applies to a development application for development carried out within 5 m of an exposed overhead electricity power line. (2) Before determining a development application for development to which this section applies, the consent authority must: a) give written notice to the electricity supply authority for the area in which the development is to be carried out, inviting comments about potential safety risks, and a) take into consideration any response to the notice that is received within 21 days after the notice is given.	Section 3.3.7 of the EIS and Section A.3.7 of the amendment report
	Section 2.122 (traffic generating development)	(4) Before determining a development application for development to which this section applies, the consent authority must: … (b) take into consideration: … (ii) the accessibility of the site concerned, including— (A) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and (B) the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and (iii) any potential traffic safety, road congestion or parking implications of the development.	Section 6.6 of the EIS and amendment report Appendix D.5 (transport) of the amendment report
Resilience and Hazards SEPP	Part 2, Section 3.7	In determining whether a development is— (a) a hazardous storage establishment, hazardous industry or other potentially hazardous industry, or (b) an offensive storage establishment, offensive industry or other potentially offensive industry, consideration must be given to current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development.	Section 6.11 of the EIS and amendment report

Statutory document	Section reference	Mandatory consideration	Section in EIS/amendment report
Resilience and Hazards SEPP	Part 4, Section 4.6	**Contamination and remediation to be considered in determining development application** … (2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subsection (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines. (3) The applicant for development consent must carry out the investigation required by subsection (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.	Section 6.9 of the EIS and amendment report Appendix D.6 of the amendment report
Jerilderie LEP, Murrumbidgee LEP, Conargo LEP	Clause 2.3(2)	**Zone objectives** The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.	Table 2.1 of the amendment report
Jerilderie LEP, Murrumbidgee LEP, Conargo LEP	Clause 6.1	Earthworks (3) Before granting development consent for earthworks, the consent authority must consider the following matters— (a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality of the development, (b) the effect of the development on the likely future use or redevelopment of the land, (c) the quality of the fill or the soil to be excavated, or both, (d) the effect of the development on the existing and likely amenity of adjoining properties, (e) the source of any fill material and the destination of any excavated material, (f) the likelihood of disturbing relics, (g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area, (h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.	Earthworks will be required as part of the construction of the project (Chapter 3 of the EIS and amendment report). The impact of earthworks within the development corridor has been assessed as part of the EIS and amendment report (Chapter 6) and appropriate measures to mitigate impacts are proposed (Appendix C of the amendment report).

Statutory document	Section reference	Mandatory consideration	Section in EIS/amendment report
Jerilderie LEP, Murrumbidgee LEP Conargo LEP	Clause 6.4 Clause 6.3 Clause 6.3	**Terrestrial biodiversity** Before determining a development application for development on land to which this clause applies, the consent authority must consider— (a) whether the development is likely to have— (i) any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and (ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and (iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and (iv) any adverse impact on the habitat elements providing connectivity on the land, and (b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.	Section 6.3 and Appendix D.3 (biodiversity) of the amendment report
Jerilderie LEP	Clause 6.5	**Groundwater vulnerability** Before determining a development application for development on land to which this clause applies, the consent authority must consider the following— (a) the likelihood of groundwater contamination from the development (including from any on-site storage or disposal of solid or liquid waste and chemicals), (b) any adverse impacts the development may have on groundwater dependent ecosystems, (c) the cumulative impact the development may have on groundwater (including impacts on nearby groundwater extraction for a potable water supply or stock water supply), (d) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.	Section 6.7 of the EIS and amendment report and Appendix E.7 (water) of the EIS
Jerilderie LEP Conargo LEP	Clause 6.7 Clause 6.6	**Wetlands** Before determining a development application for development on land to which this clause applies, the consent authority must consider— (a) whether or not the development is likely to have any significant adverse impact on the following— (i) the condition and significance of the existing native fauna and flora on the land, (ii) the provision and quality of habitats on the land for indigenous and migratory species, (iii) the surface and groundwater characteristics of the land, including water quality, natural water flows and salinity, and (b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.	Section 6.3 and Appendix D.3 (biodiversity) of the amendment report Section 6.7 of the EIS and amendment report and Appendix E.7 (water) of the EIS

Statutory document	Section reference	Mandatory consideration	Section in EIS/amendment report
Considerations under other legislation			
NSW *Biodiversity Conservation Act 2016*	Section 7.14	(2) The Minister for Planning, when determining in accordance with the *Environmental Planning and Assessment Act 1979* any such application, is to take into consideration under that Act the likely impact of the proposed development on biodiversity values as assessed in the biodiversity development assessment report. The Minister for Planning may (but is not required to) further consider under that Act the likely impact of the proposed development on biodiversity values.	Section 6.3 and Appendix D.3 (biodiversity) of the amendment report

Appendix C
Amended mitigation measures

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Spark Renewables commits to implementing the mitigation measures consolidated in Table C1.

New or updated mitigation measures as a result of the amendments have been **bolded**. Removed mitigation measures as a result of the amendments have been shown as ~~strikethrough~~. Other minor changes to wording have also been made in some instances to improve clarity.

Table C.1 Summary of mitigation measures

ID	Mitigation measures
Landscape and visual	
LV1	The WTGs will have a predominantly matte white (or other non-reflective) finish.
~~LV2~~	~~Visual screening planting will be undertaken at non-associated residence R019, or as otherwise agreed with the landowner. An indicative example of visual screening is provided in Appendix E of the LVIA (Appendix E.1 of the EIS). The following general guidelines for planning landscaping and visual screening will be adopted:~~ ~~• planting will occur post-construction in consultation with the landowner~~ ~~• planting will remain in keeping with existing landscape character~~ ~~• species selection will be typical of the area, with a preference for locally native species~~ ~~• planting layout will avoid screening views of the broader landscape~~ ~~• landscaping will avoid the clearing of existing vegetation, and where required, reinstate any lost vegetation.~~
LV2	The following mitigation measures will be ~~considered~~ **implemented** during detailed design of the project to mitigate the visual impact of transmission lines: • selecting routes for overhead transmission lines to reduce visibility from surrounding areas and minimise vegetation loss • using subtle colours and a low reflectivity surface treatment on power poles to ensure that glint is minimised.
LV3	The following mitigation measures will be ~~adopted~~ **implemented** to reduce residual visual impacts from O&M facilities: • siting O&M facilities to ensure minimal screening vegetation loss • using a recessive colour palette to blend structures into the existing landscape • avoiding unnecessary lighting, signage on fences and logos.
LV4	**Aviation hazard lighting that is required on the WTGs or meteorological monitoring masts will be designed to minimise the impact of lighting, in consultation with relevant aviation authorities.**
Noise and vibration	
N1	Background noise monitoring will verify existing background noise levels prior to construction.
N2	Noise modelling will be updated prior to construction to confirm that the final WTG layout complies with the noise assessment criteria.
N3	A construction noise management plan will be prepared to manage noise during construction, and will include specific measures to minimise noise at assessment locations that are noise affected.
N4	Construction work activities will be scheduled to minimise noise impacts, including: • with the exception of the categories below, construction will be undertaken during standard construction hours: – Monday to Friday 7 am to 6 pm – Saturday 8 am to 1 pm – no work on Sundays or public holidays • works outside the standard hours listed above will be within the following categories: – deliveries by heavy vehicles and RAVs outside of peak traffic times – concrete batching and pouring – crane movements between WTG sites – activities that are inaudible at non-associated residences – activities for WTG construction hindered by adverse weather conditions.

ID	Mitigation measures
N5	Construction infrastructure, including construction compounds, and plant and equipment will be placed to minimise noise impacts by: • placing fixed plant and equipment as far as practicable from non-associated residences • locating the site access points, construction compounds and parking areas as far as practicable from non-associated residences • maximising acoustic shielding by the use of temporary site buildings and materials stockpiles as noise barriers to R019, R079 and R088, where practicable.
N6	Residents in R019, R079 and R088 (which will be potentially impacted by construction noise) will be consulted to determine appropriate measures to minimise the effects of any impacts.
N7	Construction work practices to manage construction noise on-site and construction-related traffic will be documented in the construction noise management plan and will be implemented to minimise noise impacts.
N8	**Once further information is available on construction duration and timing for public road upgrades at the intersection of Eunony Bridge Road and Sturt Highway, Spark Renewables will engage with relevant receivers to discuss total construction time; what works are expected to be noisy; the duration of these works; what is being done to minimise noise; when respite periods will occur; and ongoing communication and complaint methods.**
Biodiversity	
B1	Detailed design of the project will: • avoid and minimise the loss of native vegetation and habitat, including consideration of the results of additional biodiversity surveys in **Spring 2025** • avoid and minimise impacts to breeding habitat for fauna, including threatened species to the extent possible.
B2	A BMP will be prepared by a qualified ecologist in consultation with CPHR. The BMP will include: • a plan for adaptive management and for implementing, evaluating and reporting on the effectiveness of all mitigation measures • survey requirements prior to micro-siting of infrastructure within the development corridor (including criteria that must be met to ensure there is no increase to biodiversity impacts as a result of micro-siting during detailed design) • figures showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features, revegetation areas and retained tree hollows • pre-clearing survey requirements and clearing protocols (including specific measures for threatened species, nests, construction in waterways and removal of dams) • procedures for unexpected threatened species finds (including relocation requirements) • procedures for monitoring of retained threatened flora species • procedures for fauna handling, monitoring and management, including identification and reporting of fauna mortalities • speed limits for project-related vehicles on local roads and access tracks • sub-plans for weed and biosecurity management, pest animal management and rehabilitation management • measures to reduce the risk of spreading weeds and pathogens, and other biosecurity items into or out of the development footprint, including: – collection of baseline weed and invasive pest data to determine if an increase of key emerging weeds or invasive pests occurs during construction or operation – consultation with Local Land Services and neighbouring landholders on fox control and baiting programs • training and education awareness for all staff on key threatened species, both flora and fauna, relevant to the region and project • monitoring of soil and water controls to prevent indirect impacts associated with water pollution to all waterways • biodiversity performance targets, monitoring criteria, corrective actions, timing and responsibilities • annual reporting and consultation requirements.
B3	Noise during construction will be managed as part of the construction noise management plan (NMP). The NMP will include noise management strategies for construction works adjacent to known breeding habitats.
B4	Shading and artificial light impacts will be minimised where possible through detailed design and lighting will be designed in general accordance with AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting.

ID	Mitigation measures
B5	Adaptive management strategies within the BMP will ~~consider~~ **include** any new and relevant data from ongoing assessment and monitoring. This will include measures to monitor predicted and uncertain impacts that will trigger adaptive management actions, allowing effective and quick responses. The strategies will include consideration of impacts on biodiversity that are uncertain such as: • inadvertent impacts to native vegetation adjacent to the development footprint • introduction of pests, pathogens and weeds to native vegetation adjacent to the development footprint and further afield • degradation of downstream habitats via worsening of water quality or alteration to hydrological processes • vehicle strikes.
B6	Measures will be implemented to protect vegetation and fauna habitat outside the development footprint, including minimising indirect impacts, especially to known threatened flora species and potential fauna species.
B7	The **draft BBAMP (Appendix 9 of Appendix D.3) will be updated** in consultation with DPHI and CPHR prior to operation and will: • address the prescribed impacts associated with blade strike impacts • include trigger levels to manage impacts during operation (including timing of implementation of additional mitigation measures) – the purpose of these triggers will be to identify unacceptable events and subsequent mitigation measures, providing an ongoing feedback loop and reducing the potential for the project to result in substantial unforeseen operational impacts to bird and bat species • develop the impact monitoring framework, including baseline and operation monitoring.
Aboriginal heritage	
AH1	The project will avoid impacts to the following identified Aboriginal objects and/or sites within or near the development corridor: • **hearths and associated cultural materials: DEHW-2023-HAS13 (#55-1-0162), DEHW-2023-HIF5 (#48-6-0283), PEC-E-47 (#55-1-0057), PEC-E-50 (#55-1-0060), DEHW-2023-HAS1 (#54-3-0071)** • **culturally modified trees: DEHW-2023-ST1 (#48-6-0273), DEHW-2023-ST8 (#48-6-0253), PEC-E-48 (#55-1-0058), PEC-E-49 (#55-1-0059), DEHW-2024A-ST5, DEHW-2024A-ST6, DEHW-2024A-ST7, DEHW-2024A-ST8, DEHW-2024A-ST10, DEHW-2024A-ST11, DEHW-2024A-ST12 and DEHW-2024A-ST13** • **occupation areas: DEHW-OA3 (#48-6-0308), DEHW-OA6 (#54-3-0076), and DEHW-2023-HAS4 (#54-3-0070)** • **cultural sites: DEHW-CS1 (#48-6-0310) and other significant cultural areas including three potential ring trees (DEHW-2023-STAS2 (#48-6-0250), DEHW-2023-ST12 (#55-1-0144) and DEHW-2024A-RT1), a potential culturally modified tree DEHW-2023-HH2 (#55-1-0196), and key identified cultural material components within a potential women's area DEHW-2023-STAS1 (#55-1-0143).** Site-specific avoidance measures developed to address this commitment will be integrated into AH4.
AH2	The project will investigate the micro-siting of project infrastructure and construction activities in consultation with an Aboriginal heritage specialist to avoid or minimise impacts to: • **hearths and associated cultural materials: DEHW-2023-H3 (#48-6-0257), DEHW-2023-HAS8 (#48-6-0267), DEHW-2023-HAS7 (#55-1-0165), DEHW-2024-HAS2 (#48-6-0292), DEHW-2024-H1 (#48-6-0289), DEHW-2024-HAS1 (#48-6-0291) and DEHW-2023-HAS12 (#55-1-0163)** • **culturally modified trees: DEHW-2023-ST10 (#48-6-0251) and DEHW-2024A-ST9** • **occupation areas: DEHW-2023-HASST1 (#48-6-0264), DEHW-OA1 (#55-1-0172), DEHW-OA2 (#49-4-0243), DEHW-OA4 (#49-4-0244), DEHW-OA5 (#48-6-0309), DEHW-OA7 (#55-1-0171), DEHW-OA8 (#55-1-0169), and DEHW-OA9 (#55-1-0170)** • **cultural site: DEHW-2023-STAS1 (#55-1-0143)** • **areas of higher archaeological potential including identified aeolian, paleochannels, and watercourse features, and the eastern fringes of Gilgai and ephemeral wetlands. These are prevalent in the western portion of the amended project area, where sand dunes and/or sandy soil profiles have been predicted and/or observed.** Management and any site-specific mitigation measures developed to address this commitment will be integrated into AH4.
AH3	**Additional archaeological field survey will be undertaken in sensitive landforms (i.e. wetlands, Gilgai, paleochannels, drainage lines or sand dunes) in discrete areas in the vicinity of T61W, T72W, T51W, T42W, T122W, T139W and T147W, and an access track and cabling corridor between T73W and T97W. Any Aboriginal objects, sites, places and/or deposits identified during these works will be integrated into AH4.**

ID	Mitigation measures
AH4	An ACHMP will be prepared by a suitably qualified heritage professional in consultation with the RAPs and Heritage NSW. The ACHMP will describe: • processes, timing, communication methods and project involvement for maintaining Aboriginal community consultation and participation through the remainder of the project • content of a cultural heritage induction package for all project staff and contractors • methods for documenting and archival recording of any Aboriginal sites and/or objects that will be impacted by the project • recording and archaeological mitigation requirements for archaeological test/salvage excavations/monitoring of Aboriginal sites and/or objects that will be impacted by the project • methods for surface collection of identified isolated objects and stone artefact scatters that will be impacted by the project • methods for mitigation and/or recovery of culturally modified trees that will be impacted by the project • methods for delineation and protection of Aboriginal sites and/or objects within or in close proximity to the development corridor, including clear marking, appropriate screen for any gender-specific areas and surface protection • procedures for managing the unexpected discovery of Aboriginal objects, sites and/or human remains during the project • procedures for the curation and long-term management of recovered cultural materials • methods of post-excavation analysis and reporting of the archaeological investigations, including suitable collection and processing of stone artefacts, paleo-environmental, chronological and other soils from archaeological activities • a monitoring regime for implementing the above measures.
AH5	An inspection will be undertaken by a qualified arboriculturist of all tentatively identified culturally modified trees to confirm whether the modifications have formed through anthropogenic or natural processes. The findings of this inspection and the management of confirmed culturally modified trees will be described in the ACHMP (AH4).
AH6	An Aboriginal heritage-interpretation strategy and plan will be developed by an Aboriginal heritage specialist, in consultation with the RAPs. The plan will identify the interpretive Aboriginal heritage values of the project area and provide direction for interpretive installations and devices.
AH7	Consultation regarding cultural heritage management will be maintained with the RAPs.
AH8	A copy of the ACHA and all relevant AHIMS site recording forms and information for the project will be lodged with Heritage NSW and provided to each of the RAPs.
Historical heritage	
HH1	The project's construction environmental management plan (CEMP) will provide the following to mitigate risks to heritage items during construction: • list of identified heritage sites • site-specific management measures outlined in mitigation measure HH2 (including clearly defined responsibilities and actions) • an unexpected finds protocol • heritage awareness and management training as part of the induction process • management measures to be implemented if there will be impacts to heritage items due to changes to the development footprint.
HH2	DEHW003, DEHW005, **DEHW007** and DEHW008 will be clearly demarcated with markers and signage. Construction personnel will be informed of any restrictions regarding DEHW003, DEHW005, **DEHW007** and DEHW008, before commencing work near these sites.
HH3	If the development footprint is amended in proximity of DEHW001 and impacts to the ram shed and stockyards cannot be avoided, archival recording of the site will be required prior to impacts occurring.

ID	Mitigation measures
HH4	If the development footprint is amended in proximity of DEHW003 and impacts cannot be avoided, archival recording of the site will be required prior to impacts occurring. Subject to the easement requirements of the transmission line, Spark Renewables should consult with an arborist to determine whether the tree can be partially removed (i.e. maintained in situ below any height limitations for vegetation within the easement), whilst avoiding impacting the marking on the tree or its longevity.
Transport	
T1	A detailed Construction Traffic Management Plan (CTMP) will be developed in consultation with TfNSW, Edward River Council and Murrumbidgee Council prior to the commencement of works.
T2	**The Kidman Way/Kidman Way Eastern Site Access intersection will include:** • **dedicated turning bays for left-turning and right-turning vehicles from Kidman Way** • **upgrades on both the north and south approaches** **upgrades designed for a 26m long B-double truck and to allow the passage of the largest OSOM vehicle.**
~~T3~~	~~The Kidman Way/Cadell Road (south) intersection will be upgraded to include:~~ ~~• a dedicated turning bay for left turning vehicles from Kidman Way~~ ~~• a widened shoulder on the eastern side of Kidman Way at the intersection~~ ~~• upgrades on both the north and south approaches~~ ~~• closure of right turn from Kidman Way north approach into Cadell Road (south), subject to consultation with TfNSW and Murrumbidgee Council~~ • upgrades designed for light vehicle access.
T3	The Kidman Way/McLennons Bore Road intersection will be upgraded to include: • **a dedicated turning bay for left turning vehicles and a dedicated turning bay for right turning vehicles from Kidman Way** • upgrades on both the north and south approaches • upgrades designed for a 36.5-m-long truck and to allow the passage of the largest OSOM vehicle.
T4	Obtain a permit (from NHVR) to allow up to 36.5-m-long trucks as well as OSOM vehicles to use the road network as part of construction. Conditional approval will be requested from NHVR for 36.5-m-long trucks to access McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road, as it is currently only approved for 19-m-long heavy vehicles. Relevant councils will be consulted as part of the approval process.
T5	The following gravel roads will be widened to comply with the relevant Australian Road Research Board (ARRB) rural roads design guidelines (unless agreed otherwise with the relevant local council): • McLennons Bore Road • Fernbank Road from McLennons Bore Road to the site access point • Wilson Road between McLennons Bore Road and Goolgumbla Road • Goolgumbla Road between Wilson Road and the northern site access point.
T6	McLennons Bore Road between Cadell Road and Kidman Way will be upgraded from a dry weather road to an all-weather unsealed road and existing signage relating to the use of this road during dry weather only will be removed.
T7	All site access points will be constructed as per council's Rural Property Access standard to the satisfaction of **the relevant road authority**.
T8	Subject to outcomes of engagement with Murrumbidgee Council, the major road priority at the intersection of McLennons Bore Road and Cadell Road will change from Cadell Road to McLennons Bore Road. Give way signage will be installed on Cadell Road on both the north and south approaches. Alternatively, if the major road priority cannot be changed, truck warning signage will be installed on Cadell Road on both approaches to the intersection.
T9	At Wilson Road/McLennons Bore Road intersection, truck warning signage will be placed on Wilson Road to warn drivers of trucks turning at Wilson Road/McLennons Bore Road intersection.
T10	The McLennons Bore Road/Fernbank Road and McLennons Bore Road/Wilson Road intersections will be widened based on the recommendations of the swept path assessment to facilitate access by the longest vehicles requiring access via these intersections.

ID	Mitigation measures
T11	A dilapidation survey will be commissioned prior to the start of construction to assess the existing condition of the sections of McLennons Bore Road, ~~Cadell Road (south),~~ Fernbank Road, Wilson Road and Goolgumbla Road that will be used by vehicles associated with the project.
T12	A road maintenance strategy will be developed in consultation with Murrumbidgee Council and Edward River Council.
T13	**To prohibit light and heavy vehicle usage on Cadell Road, a 'Drivers Code of Conduct' will be prepared, which will clearly outline that this road is not to be used by project-related vehicles. The proponent is willing to work with Murrumbidgee Council on effective measures to prohibit development traffic from using Cadell Road.**
T17	**Haulage route (OSOM) and road upgrades and relevant timing is listed in Table 6.20 of the amendment report and will be implemented for the project.**
Water	
W1	Management measures to address potential impacts to surface water and groundwater during construction will include: • appropriate siting of proposed infrastructure within the development footprint to minimise disturbance to existing drainage lines and overland flow paths • designing earthworks to maintain the prevailing surface gradients and fall towards existing drainage lines, to minimise changes to existing flow paths • providing general surface drainage infrastructure comprising: – diversion of upslope runoff around infrastructure – surface drainage measures to control runoff generated within the development footprint, minimise soil erosion and direct runoff towards receiving drainage lines – sheet flow conditions will be maximised, and construction of diversion drains, channels and table drains will be minimised to the extent practicable – treatments to armour earthwork batters and site drainage where needed for scour protection, where flow concentrations cannot be avoided – retention of existing flow paths where possible and minimise catchment diversions, with the objective of minimising changes to flow regimes in receiving watercourses • stabilising disturbed areas and progressively rehabilitating soils as early as practicable • maintaining drainage, erosion and sediment control measures, including monitoring and adjustment protocols to achieve the desired performance standard • capturing stormwater runoff from buildings in rainwater tanks for use on-site, to minimise demand for imported water • storing hazardous material in accordance with Australian Standards • maintaining spill kits on-site at all times during construction and operation • considering weather preparedness and response planning.
W2	Specific stormwater management measures for the substation and switchyard areas will include: • diverting clean runoff away from potentially oil-contaminated areas • bunding potentially oil-contaminated areas • providing stormwater treatment device(s) to remove oil/grease, hydrocarbons and sediment from runoff prior to discharge to the downstream drainage system.
W3	Specific stormwater management measures for the concrete batching plants during construction will include: • diverting clean runoff away from cement and concrete handling areas and stockpiles • maximising recycling of process wastewater, with dedicated storages for excess wastewater that will be manually emptied via vacuum truck and disposed of off-site • bunded areas for refuelling.
W4	Management measures to address ongoing site-specific risks to surface water and groundwater during operation will include: • rehabilitating temporary works and construction disturbance areas not being utilised for operation • maintaining stabilised and vegetated surfaces, drainage and sediment and erosion control measures throughout operation.

ID	Mitigation measures
W5	Erosion and sediment control measures and site rehabilitation and revegetation will be implemented in accordance with best practice comprising *Managing Urban Stormwater: Soils and Construction – Volume 1* (Landcom 2004) and *Volume 2A* (DECC 2008) and *Best Practice Erosion and Sediment Control* (IECA 2008). Measures and principles will include: • minimising the extent and duration of land disturbance • controlling water movement through the development footprint • minimising soil erosion • promptly stabilising disturbed areas • maximising sediment retention on-site • maintain drainage, erosion and sediment control measures • monitor and adjust drainage, erosion and sediment control practices to achieve the desired performance standard • construction of suitable watercourse crossings • consideration of the erosion hazard specifically posed by the dispersive subsoils.
W6	Progressive erosion and sediment control plans will be developed for all discrete disturbance areas.
W7	Flood management protocols will be developed and implemented in the event of flood events that could impact construction sites or access, including: • suitable early warning/prediction measures and communication protocols • site preparedness activities and procedures • triggers for closure, evacuation and recovery • emergency response and support.
W8	Temporary construction infrastructure will be designed and constructed to: • ~~consider~~ **manage** flood risk, including overland flow paths and mainstream flood risk, in the placement of temporary works, plant, materials and workforce facilities • ensure that temporary works minimise off-site flooding impacts as far as practical.
W9	Permanent infrastructure will be designed and constructed to: • locate sensitive infrastructure (e.g. substations) on high ground above 1% AEP event flood levels (or other suitable level of flood immunity as determined during detailed design) and to avoid or otherwise divert local overland flow paths around infrastructure • ensure finished ground levels are constructed at-grade and not materially higher than existing levels in areas subject to existing mainstream flooding, in order to minimise potential off-site flooding impacts as far as practical. Where a change in ground level is proposed in areas, as part of future design stages or refinements, assessment of the change should be quantified to confirm off-site flooding impacts do not occur. If changes in the project layout or changes in the landform are required and there is a risk of flooding, then flood modelling will be conducted to confirm the flood behaviour due to the project.
W10	Flood management protocols will be developed and implemented for operations.
W11	Watercourse crossings and stormwater outlets will be designed and constructed to: • ~~consider~~ **address** the appropriate level of serviceability and flood immunity required for the project • ~~consider~~ **address** local hydraulic conditions and minimise scour potential • minimise local flooding impacts • be consistent with: – *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (DPI Fisheries 2003) – *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI 2013)
W12	Removal of any private irrigation infrastructure (i.e. not owned by CICL) within the development footprint will be in agreement with relevant landowners. If infrastructure is removed for the project, it will be reinstated following the project, or as otherwise agreed with landowners.
W13	Spark Renewables will continue to consult with CICL regarding cable crossings of irrigation infrastructure during detailed design. Designs, construction methods and timing will be agreed with CICL prior to implementation.

ID	Mitigation measures
W14	All relevant water licensing and approvals will be obtained to support water supply arrangements for construction and operation if alternative sources are required.
W15	Temporary and permanent on-site wastewater management and effluent reuse systems will: • be appropriate for each site based on consideration of the project layout, site conditions and relevant environmental constraints (e.g. sensitive surface or groundwater water features) • be designed, constructed, operated, maintained and decommissioned in accordance with best practise and relevant guidelines and standards and in consultation with the relevant Council.
Air quality	
AQ1	A CEMP will be prepared and will include measures to manage off-site air quality impacts including: • monitoring and modifying working practices by limiting activity during periods of adverse weather (hot, dry and windy conditions) • applying dust suppression measures to active work areas where necessary • revegetating earthworks and disturbed areas to stabilise surfaces as soon as practicable • imposing vehicle speed limits along internal roads and work areas during construction • ensuring vehicle loads entering and leaving the project area are covered to prevent escape of materials during transport.
Land	
L1	Soil management measures to preserve soil resources will include: • avoiding and minimising soil disturbance to the extent practical • assessing topsoil depths to be stripped prior to stripping to minimise the mixing of topsoil and subsoil • preserving as much topsoil as possible • aiming to strip and manage different soils orders or mapping units separately • avoiding mixing topsoil with subsoil during soil handling operation • managing subsoils in separate layers to minimise introduction of constraints higher into the soil profile where subsoils exhibit variance of constraints with depth • avoiding stripping, handling or compacting soil following heavy rain periods that leaves the soil structure saturated • avoiding compaction of soil during stripping and stockpiling operation • applying ameliorants to topsoil and, where necessary, subsoil during stripping operation in accordance with a soil scientists' recommendations, with ameliorants applied prior to stripping each soil layer, to maximise mixing of the ameliorants during the stripping process • stockpiling topsoil separately from subsoil (where it is necessary to strip subsoil) • reinstating soil horizons in the correct order and depths, where possible • locating subsoils and topsoils so that stockpiled material is placed on the same underlying soil unit where practical • protecting stockpiles from erosion using soil stabilising polymers, cover crops or other forms of stabilisation • stabilising long-term topsoil stockpiles to minimise stockpile waterlogging, the generation of anaerobic conditions, help maintain topsoil biological viability and nutrient cycling and to create a seed store • testing stockpiled subsoil and topsoil to determine amelioration requirements prior to reinstatement • testing any imported soil materials to characterise and determine suitable usage and amelioration requirements prior to reinstatement.
L2	Undertake agricultural mitigation activities during the life of the project, including: • maintaining existing internal livestock fencing and other required infrastructure within the development footprint • avoiding interference with the operation of irrigation channels.
L3	The following will be implemented to manage impacts associated with weeds, pathogens and pest species: • implementing hygiene and washdown protocols, including washdown and inspection of vehicles, plant and machinery when moving from areas with known populations of weed and pest species • removing identified weeds through methods such as herbicide spraying, scalping and hand-pulling • managing importation of gravel, crushed rock or soil to ensure that the material is free from noxious weed seed • implementing measures to manage pest fauna species within the development footprint.

ID	Mitigation measures
L4	The following erosion and sediment control measures, site rehabilitation and revegetation will be implemented in accordance with industry standard practice: • minimising the extent and duration of land disturbance • controlling water movement through the development footprint • minimising soil erosion • stabilising disturbed areas promptly • maximising sediment retention on site • maintaining drainage, erosion and sediment control measures • monitoring and adjusting drainage, erosion and sediment control practices to achieve the desired performance standard • constructing suitable watercourse crossings • considering the erosion hazards posed by the dispersive subsoils while installing driven piles, excavation of cable and pipe trenches, construction of roads, tracks and ancillary facilities.
L5	An unexpected finds protocol will be developed for construction, operation and decommissioning. It will include procedures to identify potentially contaminated land, such as: • the observation of discolouration or staining of soils • visible signs of plant stress, presence of drums or other waste material • stockpiles, fill material or odours. If a potential source of contamination is identified, work within the affected area will cease until an assessment is completed to advise the need for further investigation or remediation.
L6	**Prior to commencement of earthworks, a materials management plan will be prepared and implemented. This will include targeted soil sampling in areas where a moderate contamination risk has been identified. The materials management plan will be prepared in conjunction with a CEMP and outline specific management measures during construction relating to:** • **spoil material generation – specifying the locations, indicative volumes and types of materials** • **the spoil management hierarchy – including strategies for reduction, reuse and disposal** • **handling and transportation of generated materials/spoil** • **stockpile management** • **spoil testing and classification regime.**
Bushfire	
BF1	A Fire Management Plan will be prepared that includes: • bushfire fuel management • site infrastructure plan • site access and internal road plan • APZs and their ongoing maintenance • location of hazards that may impact firefighting operations • activities that may be exempt on periods of total fire ban days • consideration of the Grain Harvesting and Fire Safety Guide (Appendix 1 of Appendix D.7) • recording of meteorological monitoring masts in the tall structures database maintained by Airservices Australia (Civil Aviation Safety Authority 2018) • warning lights or visible markers (such as orange balls) on meteorological monitoring masts to minimise risks during aerial firefighting operations • protocols for the rapid shut down of turbines in emergency situations ensuring acknowledgement of who has the authority to direct turbine shut-down procedures. The Fire Management Plan will be prepared in consultation with the Argoon **and Goolgumbla** Rural Fire Brigades, NSW RFS District Office for the Mid Murray Zone and Fire Rescue NSW.

ID	Mitigation measures
BF2	A bushfire emergency management and evacuation plan will be prepared in consultation with NSW RFS in accordance with Table 6.8d of *Planning for Bush Fire Protection* (RFS 2019). It will be consistent with *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan* (RFS 2014). A copy of the bushfire emergency management and evacuation plan will be provided to the local emergency management committee prior to the start of construction.
BF3	The development footprint will be maintained to the standard of an inner protection area (IPA) in accordance with the requirements of Appendix 4 of *Planning for Bush Fire Protection* (RFS 2019) including: • a minimum 10 m wide APZ around WTGs • a minimum 14 m wide APZ between workers accommodation facilities and grassland hazards • a minimum 16 m wide APZ between workers accommodation facilities and woodland hazards • a minimum 36 m wide APZ between safe refuge buildings (radiant heat exposure equivalent to less than 10 kW/m^2) and grassland hazards • a minimum 42 m wide APZ between safe refuge buildings (radiant heat exposure equivalent to less than 10 kW/m^2) and woodland hazards
BF4	Landscape screening (if required) will ~~consider the~~ **address any** potential increase in fire risk due to the type (species), density, height, location and overall width of the vegetation screening. Where landscaping is proposed to provide a visual screen: • landscaping will be located more than 100 m from workers accommodation facilities, or • landscaping within 100 m from workers accommodation facilities will be designed in accordance with Section A1.10 low threat vegetation–exclusions, or Appendix 4 of *Planning for Bush Fire Protection* (RFS 2019).
BF5	Buildings within the workers accommodation facilities, if constructed within 100 m of bushfire prone vegetation, will comply with Australian Standard *AS3959-2018 Construction of Buildings in Bushfire-prone Areas* or the relevant requirements of the *NASH Standard – Steel framed construction in bushfire areas* (incorporating amendment A – 2015). All new buildings constructed for the project will comply with the construction requirements in Section 7.5 of *Planning for Bush Fire Protection* (RFS 2019).
BF6	Internal access roads will provide access for local emergency service vehicles to WTGs, switchyards, substations, construction compounds and O&M buildings to support property protection activities. The design of worker accommodation facility access roads will comply with the property access road requirements outlined in Table 7.4a of *Planning for Bush Fire Protection* (RFS 2019).
BF7	An adequate static water supply will be provided for firefighting purposes in accordance with Table 7.4a of *Planning for Bush Fire Protection*. Water supply for firefighting purposes will be located at the primary vehicle access points to the project area as well as at the worker accommodation facilities, construction compounds, O&M building, substations and grid connections and elsewhere as determined at the detailed design phase in consultation with Argoon **and Goolgumbla** Rural Fire Brigades, NSW RFS District Office for the Mid Murray Zone, and Fire and Rescue NSW. In addition to static water supply requirements, two mobile water supplies with a minimum capacity of 500 L each (e.g. vehicle-mounted tanks or standalone tankers) will be available on-site during construction and operation.
BF8	The provision of gas will comply with *Planning for Bush Fire Protection* (RFS 2019).
BF9	Spark Renewables will continue to consult with Argoon **and Goolgumbla** Rural Fire Brigades around specific weather conditions that may require works to temporarily cease during construction.
BF10	Spark Renewables will investigate options for firefighting training for construction and operational personnel, as well as opportunities to incentivise workforce participation in Argoon **and Goolgumbla** Rural Fire Brigades.
BF11	Spark Renewables will continue to engage with local aerial firefighting operators to develop procedures for their safe operation within the project area.
Hazards and risks	
AV01	Spark Renewables will report the WTGs and meteorological monitoring masts to CASA in accordance with CASR 139.165 following detailed design and prior to construction.
AV02	'As constructed' details of WTG and meteorological monitoring masts coordinates and elevation will be provided to Airservices Australia.

ID	Mitigation measures
AV03	Any obstacles that will be above 100 m above ground level (including temporary construction equipment) will be reported to Airservices Australia (Notice to Airmen offices) until they are incorporated in published operational documents. For example, a notification regarding crane operations may include: • the planned operational timeframe • the maximum height of the crane • the general area/route within which the crane will operate.
AV04	Project details, including the 'as constructed' location and height information of WTGs, meteorological monitoring masts and overhead transmission lines, will be provided to local and regional aircraft operators prior to construction, including nearby landowners to facilitate aerial application operations planning.
AV05	Spark Renewables will engage with local aerial agricultural operators and aerial firefighting operators emergency services providers regarding aircraft operations in the vicinity of the project.
AV06	**Spark Renewables will incorporate guidance from the Australasian Fire and Emergency Service Authorities Council in *Wind Farms and Bushfire Operations* (AFAC 2018) as part of preparation of the bushfire emergency management and evacuation plan. Spark Renewables will:** • **engage with relevant fire and land management agencies** • **ensure access is available to the project by emergency services response for on-ground firefighting operations** • **develop procedures to shut down affected wind turbines during emergency operations – where possible, blades should be stopped in the 'Y' or 'rabbit ear' position, as this positioning allows for the maximum airspace for aircraft to manoeuvre underneath the blades and removes one of the blades as a potential obstacle.**
AV07	Overhead transmission lines and/or supporting poles that could adversely affect aerial application operations will be identified in consultation with local aerial application operators and marked in accordance with Part 139 MOS 2019 Chapter 8 Division 10 section 8.110 (7) and section 8.110 (8) **and AS3891.2, Air navigation — Cables and their supporting structures — Marking and safety requirements.**
AV08	Spark Renewables will consult with Airservices Australia and CASA regarding changes to the LSALT and will consult with aviation authorities, local aerodrome owners/operators and local aerial agricultural operators regarding any changes to the LSALT from the project.
AV09	If required following consultation with CASA and Airservices Australia, temporary and permanent meteorological monitoring masts will be marked according to the requirements set out in MOS 139 Section 8.10 (as modified by the guidance in NASF Guideline D). Specifically: • marker balls, high visibility flags or high visibility sleeves will be placed on the outside guy wires • paint markings will be applied in alternating contrasting bands of colour to at least the top 1/3 of the mast • guy wire ground attachment points will have contrasting colours to the surrounding ground/vegetation.
AV10	Consultation with CASA and Airservices Australia will be completed to determine whether meteorological monitoring masts present an unacceptable risk to aviation safety. If a meteorological monitoring mast is assessed as likely to present an unacceptable risk to aviation safety, lighting will be installed. **An indicative obstacle lighting plan has been prepared in Appendix D.13 of the amendment report.** Characteristics of obstacle lighting will be in accordance with CASA's *Manual of Standards*.
AV11	The rotor blades, nacelle and the mast supporting the WTGs will be painted predominantly white. No additional marking measures will be installed for WTGs.
AV12	**Aviation hazard lighting requirements are subject to ongoing consultation with CASA. An indicative aviation obstacle lighting plan has been prepared in accordance with the *Wind Energy Guideline* (DPHI 2024a) and is provided in Appendix D.13 of the amendment report.**
DG1	If diesel is stored with other flammable liquids (e.g. gasoline), a separation distance of at least 10 m to the nearest development footprint boundary will be maintained to ensure that the SEPP screening threshold is not exceeded.
TEL1	Should impacts to wireless or satellite services at associated residences occur, Spark Renewables will engage with the landholders to identify a suitable alternative.

ID	Mitigation measures
TEL2	**Based on engagement with Bureau of Meteorology on potential impacts to meteorological radars:** • **Spark Renewables will inform the Bureau of Meteorology of any changes to the location of proposed WTGs (excluding a 100 m micro siting allowance) and/or alterations to WTG height.** • **Where possible, Spark Renewables will inform the Bureau of Meteorology at least 2 weeks prior to any planned shutdown of the project (for maintenance or any other reason).** • **Spark Renewables will collaborate with the Bureau of Meteorology in the event of severe weather conditions to assist in matters of community safety.**
Social	
S1	A Social Impact Management Plan (SIMP) will be implemented prior to construction. The SIMP will ~~aim to~~: • describe desired project social outcomes • outline post-approval engagement activities, including timing and purpose • describe a feedback procedure that will allow feedback and timely response throughout construction and operation • define targets to monitor performance over time, identify monitoring responsibilities, and methods to share outcomes. The SIMP will include methods for engaging stakeholders on their key interests to: manage impacts, enhance benefits, and provide suitable mechanisms for project feedback. Key stakeholders include Murrumbidgee and Edward River Councils, landowners, broader community, First Nations stakeholders, services and utilities, local businesses, and local workforces. An adaptive management approach to the implementation the SIMP is proposed, allowing Spark Renewables to manage and respond to changing circumstances and new information through ongoing monitoring and periodic review of mitigation strategies allowing for modification if required.
S2	An industry participation plan (IPP) will be implemented. The IPP will identify: • opportunities for supply of goods and services, employment and training, including Aboriginal participation, as well as sustainable procurement • metrics to track goals and requirements for each identified opportunity • engagement with Murrumbidgee and Edward River Councils, local businesses and the Coleambally Chamber of Commerce to inform an understanding of opportunities and limitations for procuring local goods and services, as well as aspirations amongst local businesses • online and offline methods to share and register interest in project opportunities.
S3	An Aboriginal participation plan (APP) will be implemented in consultation with First Nations stakeholders to optimise local capacity and aspirations through targeted participation initiatives within the regional area. This will include setting targets for First Nations participation in the project workforce and procurement. Commitments will be measurable, and a report of progress to the local First Nations community will contribute to the measurement of outcomes.
S4	Regular engagement (to be defined in the SIMP) with local businesses will advise of construction periods and the potential increase in trade or patronage. This will allow businesses with planning to maximise benefits of increased demand, and associated revenue.
S5	The project workforce will be encouraged, particularly during the construction phase, to support and contribute to the local and regional community through local spending. This may be done through initiatives such as provision of vouchers for use at local businesses, or promoting local business offerings, such as on notice boards at the accommodation facilities.
S6	Murrumbidgee and Edward River councils will be engaged to identify potential service constraints. Measures such as provision of on-site medical facilities and identification of preferred telehealth providers will be implemented to prevent excessive demand on GP services closest to the site.
S7	Temporary worker accommodation facilities will be used in preference to local short-term and rental accommodation. Local residents will be recruited for the construction workforce as far as possible.
S8	**An accommodation facility management plan will be developed and implemented in consultation with Murrumbidgee Council/Edward River Council prior to commencement of construction to ensure accommodation facilities comply with relevant standards and requirements.**

ID	Mitigation measures
S9	A Community Engagement Plan and Worker Code of Conduct (as part of the SIMP) will be developed and implemented to address perceived public safety risks. The plan will include engaging with community services, such as police and emergency services, so that they are familiar with the project in case of an incident.
Economic	
ECON1	Employment of regional residents will be prioritised where they have the required skills and experience.
ECON2	Spark Renewables will participate in business groups, events and programs in the regional community.
ECON3	Non-labour inputs to production will be sourced locally where local producers can be cost and quality competitive.
ECON4	A Community Benefit Fund will be established and managed through VPAs with Murrumbidgee Council and Edward River Council.
ECON5	Lease payments will be paid to project landowners to provide an alternative drought-proof income with potential flow-on benefits to the regional economy.
ECON6	Agricultural activities will continue during project operation, where consistent with the landholders' requirements.
Waste	
WAS1	All waste will be managed in accordance with the requirements of the NSW *Protection of the Environment Operations Act 1997* and the NSW *Waste Avoidance and Resource Recovery Act 2001*.
WAS2	All wastes will be classified, stored and handled in accordance with the *Waste Classification Guidelines – Part 1: Classifying Waste* (EPA 2014), with appropriate segregation of waste streams to maximise reuse and recycling of suitable waste streams.
WAS3	Waste will be managed in accordance with the waste hierarchy, in order of preference: • avoid/reduce waste production • recover resources for reuse • recycle or dispose of waste at licenced facilities.
WAS4	A detailed waste management plan will be prepared prior to each project phase identifying the type, quantity, classification and management of waste.
WAS5	As part of decommissioning, Spark Renewables will maximise opportunities to recover/recycle decommissioned infrastructure and equipment.

Appendix D
Technical assessments

D.1	Addendum to landscape and visual impact assessment
D.2	Technical letter (noise)
D.3	Amended biodiversity development assessment report
D.4	Amended Aboriginal cultural heritage assessment
D.5	Addendum traffic impact assessment
D.6	Preliminary site investigation
D.7	Amended bushfire assessment
D.8	Technical letter (blade throw)
D.9	Amended aviation impact assessment
D.10	Amended telecommunications impact assessment
D.11	Amended human health assessment
D.12	Flood mapping – worker accommodation facilities
D.13	Indicative aviation obstacle lighting plan

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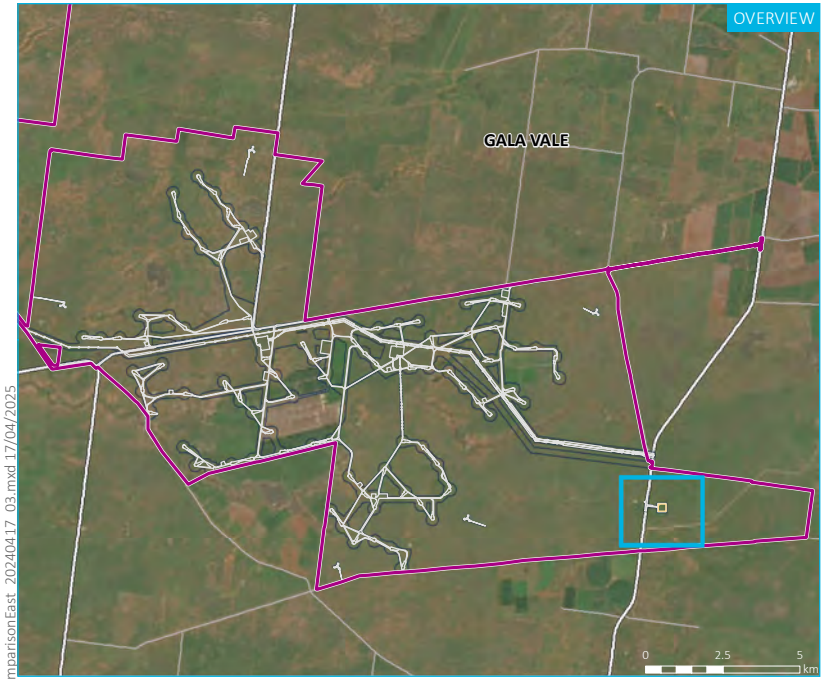
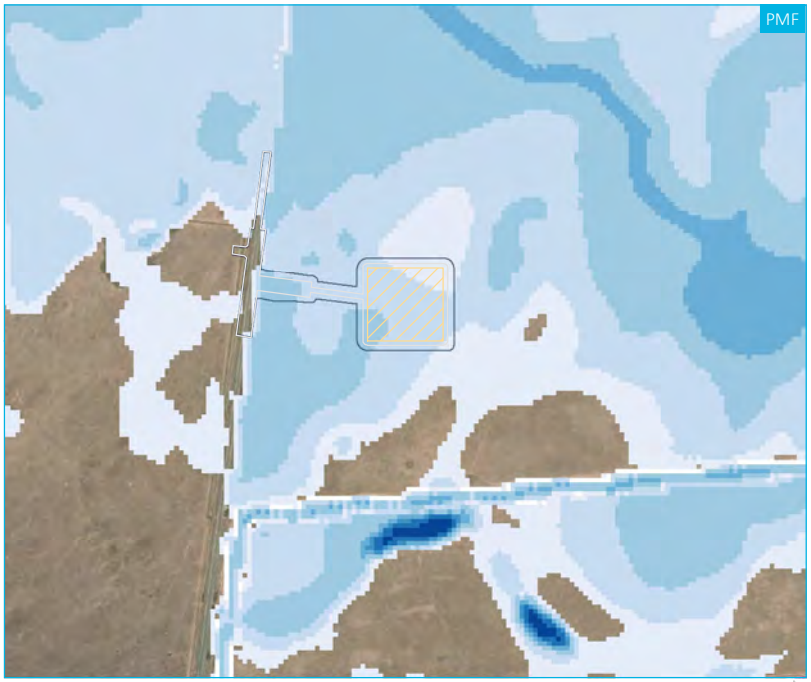
D.12 Flood mapping – work accommodation facilities





KEY

- Project area
- Development footprint
- Development corridor
- Workforce accomodation facility

Flood depth (m)

- 0.1 - 0.25
- 0.25 - 0.5
- 0.5 - 1
- 1 - 1.5
- 1.5 - 2
- 2 - 3
- > 3

Existing environment

- Major road
- Minor road

\\emm.local\xdrive\2022\E220305 - Dinawan Energy Hub\GIS\02 Maps\Wind\AR\AR013 FloodExtentComparisonEast 20240417 03.mxd 17/04/2025

Source: EMM (2025); Spark (2025); DFSI (2020, 2021); ESRI (2025)

0 1 2 km

GDA2020 MGA Zone 55

N

Comparison between 1%, 0.5% and PMF flood extent and depth at worker acommodation facility - Stage 1 - eastern area

Dinawan Wind Farm
Amendment Report
Figure D.1a

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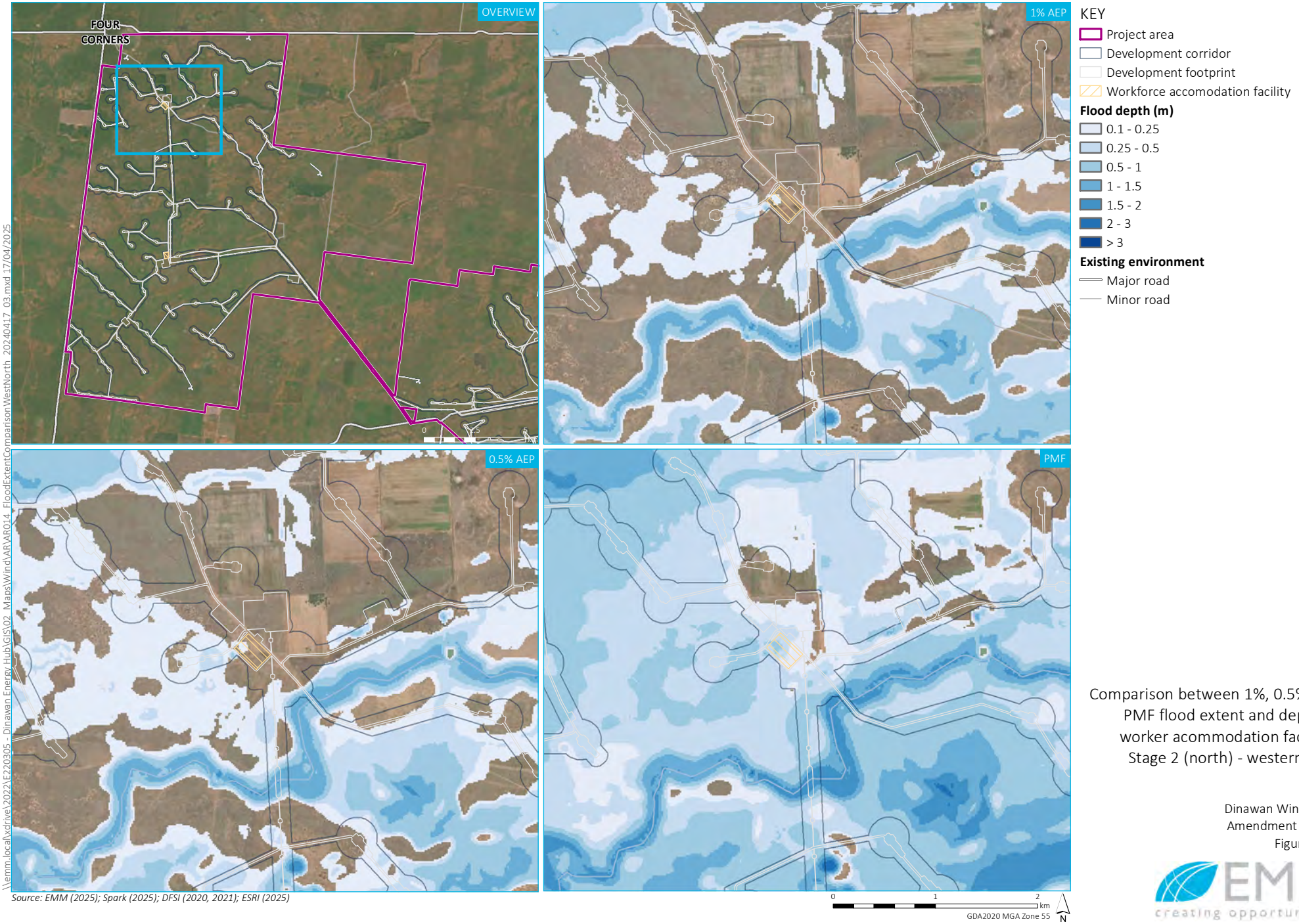

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Source: EMM (2025); Spark (2025); DFSI (2020, 2021); ESRI (2025)

Comparison between 1%, 0.5% and PMF flood extent and depth at worker acommodation facility - Stage 2 (north) - western area

Dinawan Wind Farm
Amendment Report
Figure D.1b

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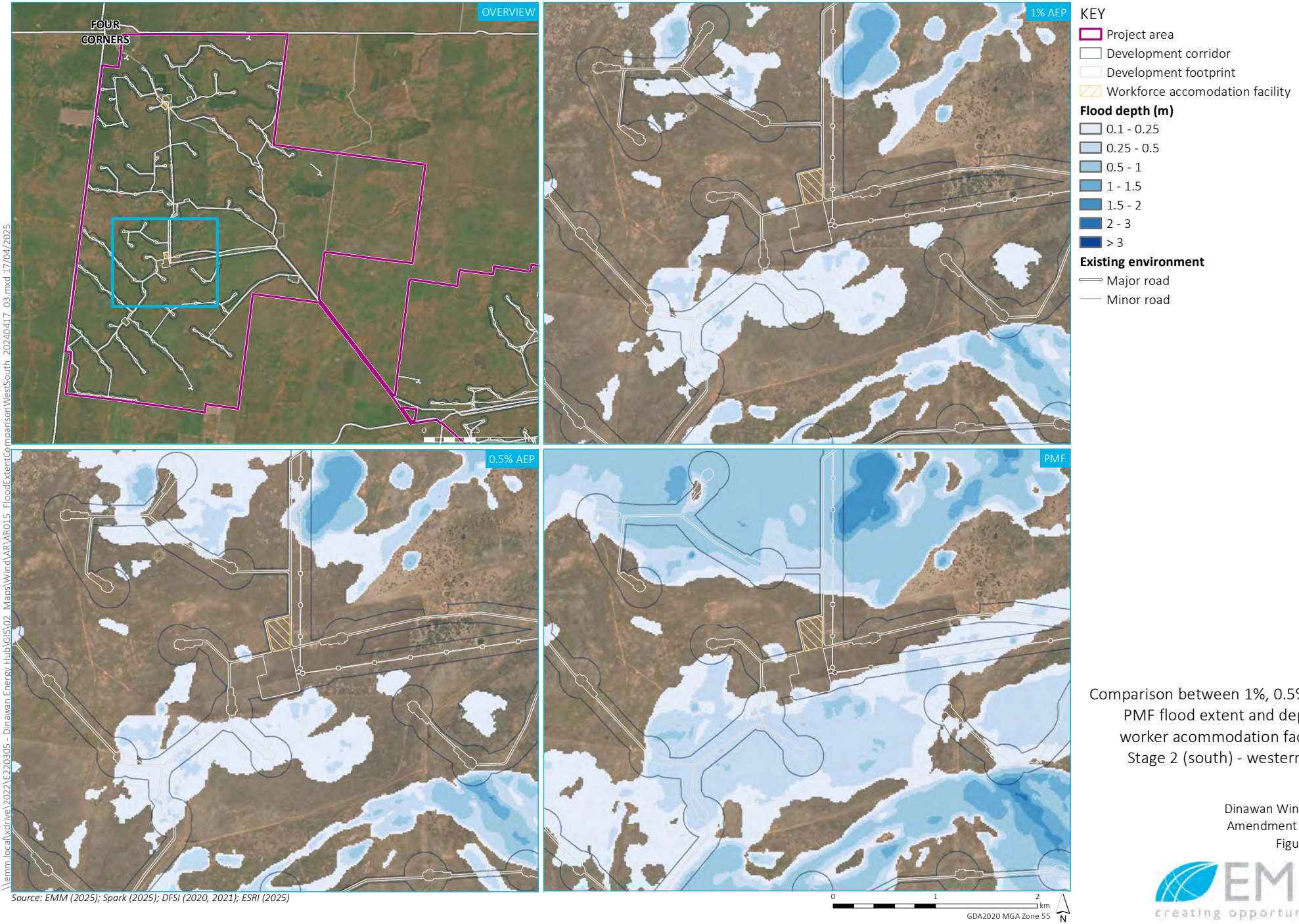

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Source: EMM (2025); Spark (2025); DFSI (2020, 2021); ESRI (2025)

Comparison between 1%, 0.5% and PMF flood extent and depth at worker acommodation facility - Stage 2 (south) - western area

Dinawan Wind Farm
Amendment Report
Figure D.1c

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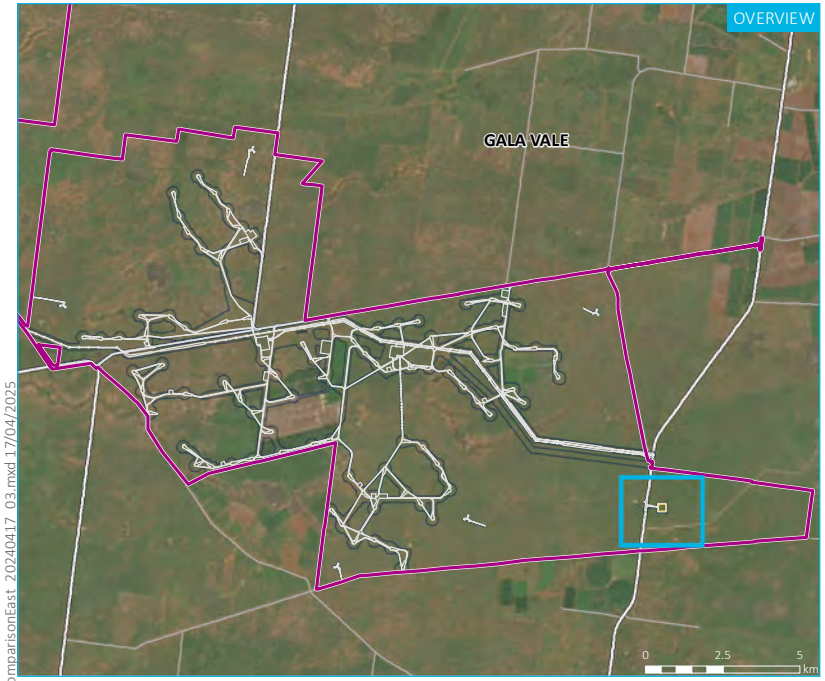

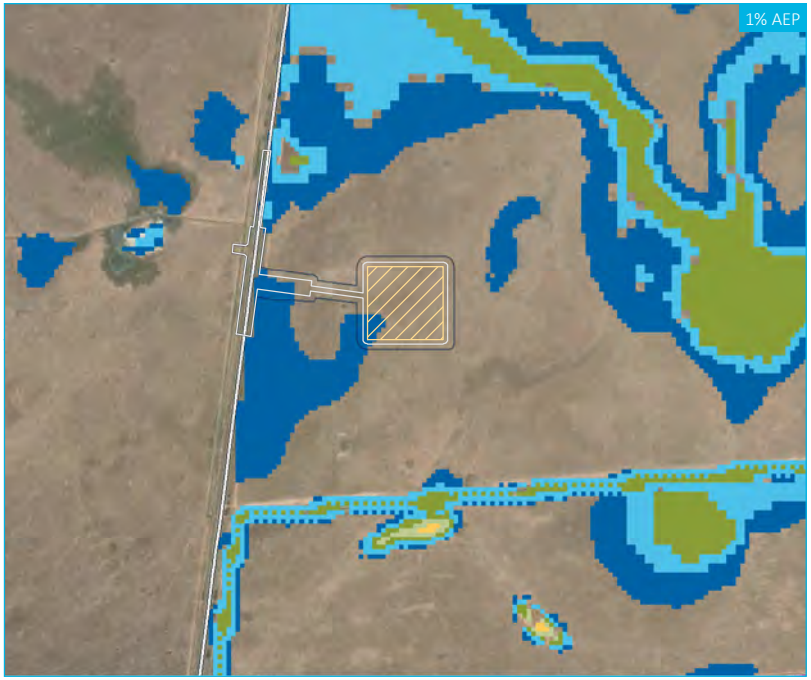

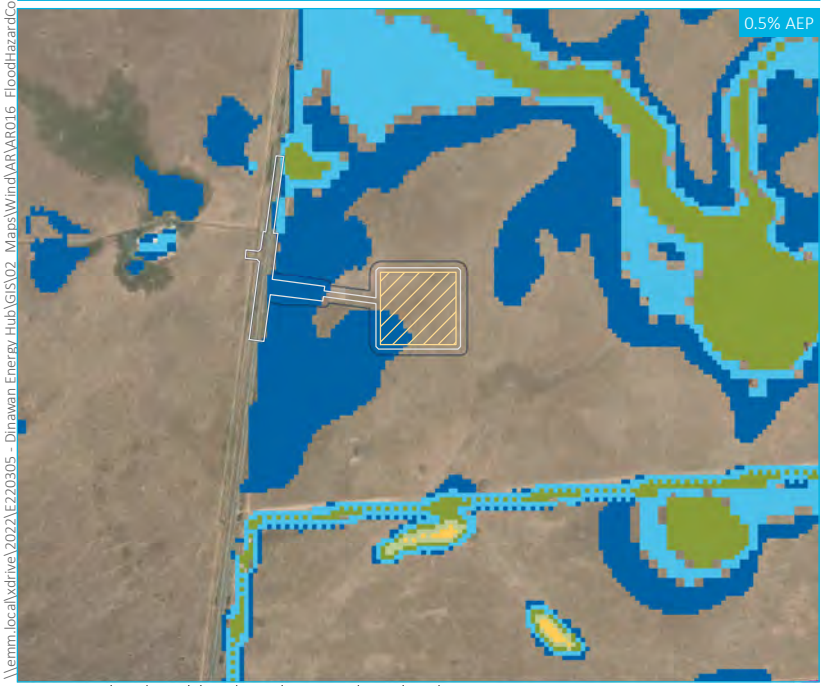

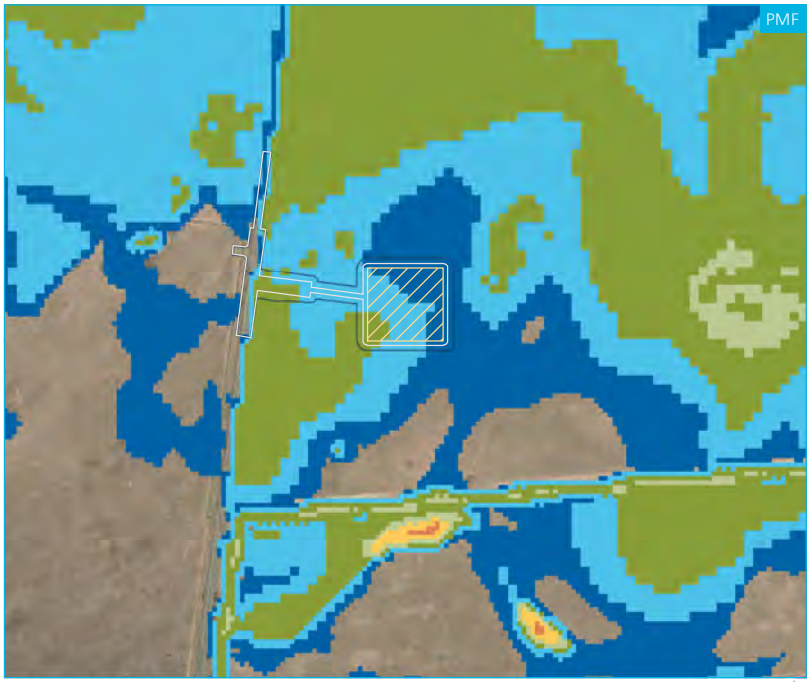

KEY

- Project area
- Development footprint
- Development corridor
- Workforce accomodation facility

Peak flood hazard

- H1
- H2
- H3
- H4
- H5
- H6

Existing environment

- Major road
- Minor road

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Source: EMM (2025); Spark (2025); DFSI (2020, 2021); ESRI (2025)

0 1 2 km

GDA2020 MGA Zone 55

N

Comparison between 1%, 0.5% and PMF flood hazard at worker accommodation facilities - Stage 1 - eastern area

Dinawan Wind Farm
Amendment Report
Figure D.2a

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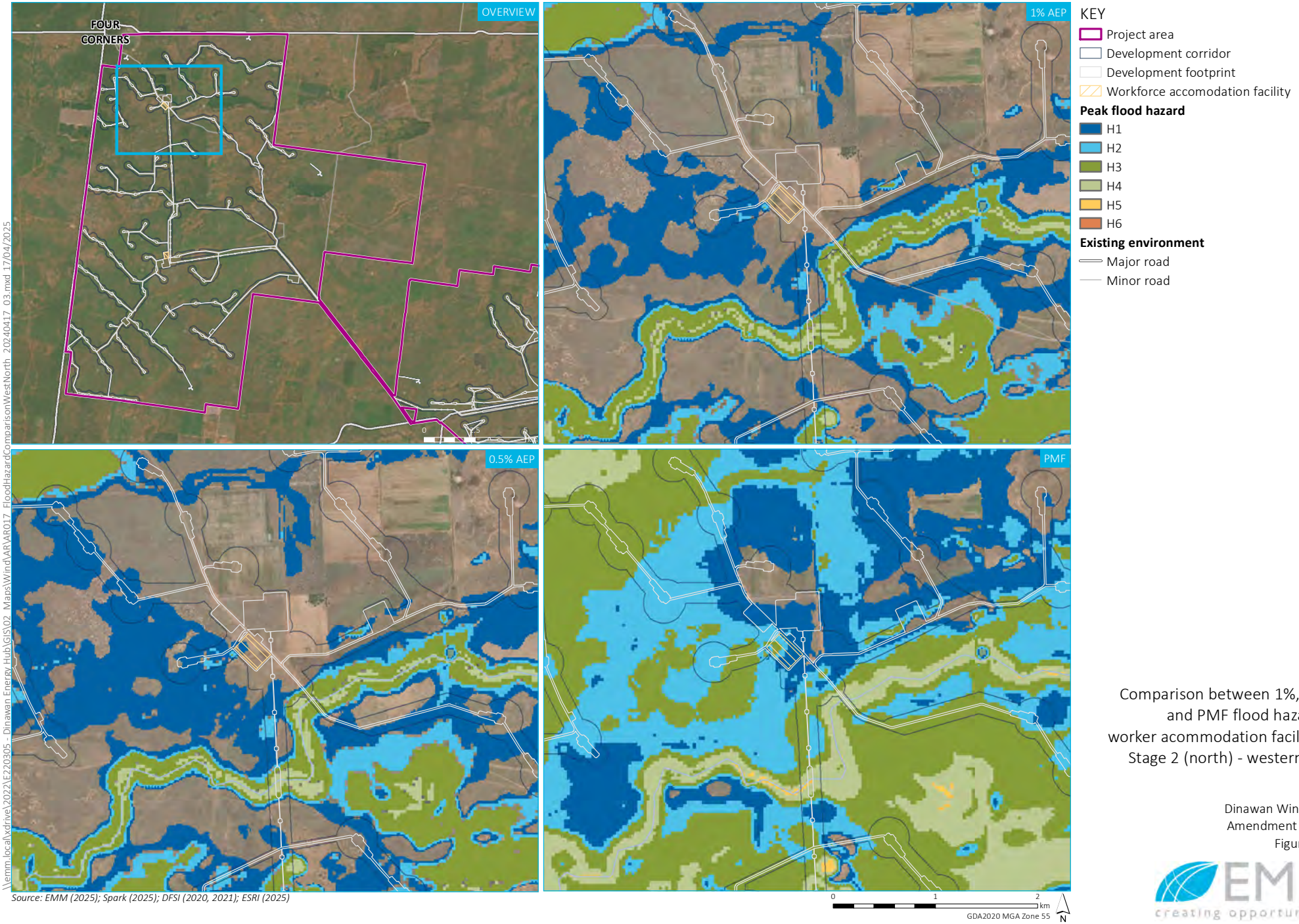

\\emm.local\xdrive\2022\E220305 - Dinawan Energy Hub\GIS\02 Maps\Wind\AR\AR017 FloodHazardComparisonWestNorth 20240417 03.mxd 17/04/2025

Source: EMM (2025); Spark (2025); DFSI (2020, 2021); ESRI (2025)

Comparison between 1%, 0.5% and PMF flood hazard at worker accommodation facilities - Stage 2 (north) - western area

Dinawan Wind Farm
Amendment Report
Figure D.2b

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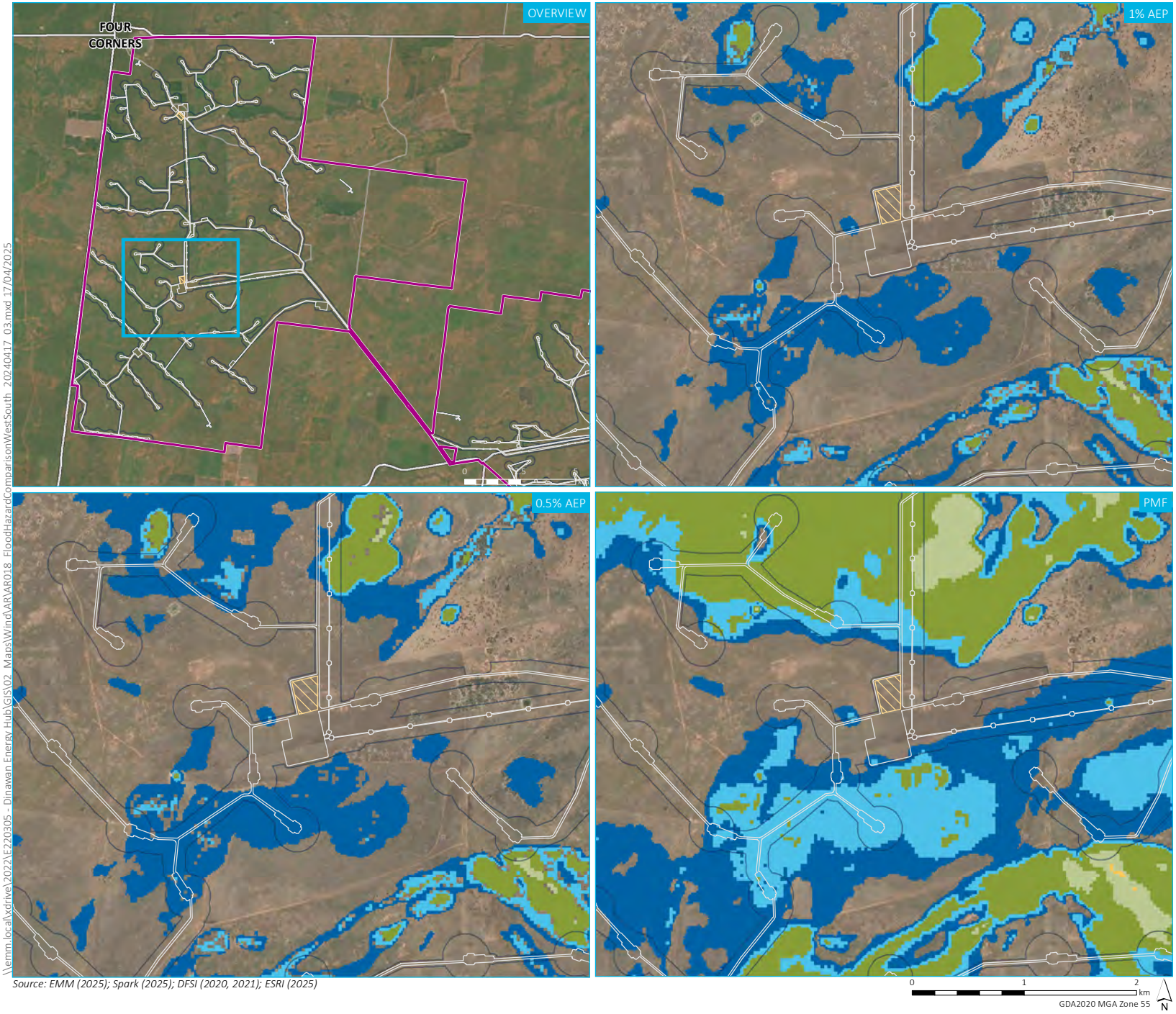

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Source: EMM (2025); Spark (2025); DFSI (2020, 2021); ESRI (2025)

Comparison between 1%, 0.5% and PMF flood hazard at worker accommodation facilities - Stage 2 (south) - western area

Dinawan Wind Farm
Amendment Report
Figure D.2c

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D.13 Indicative aviation obstacle lighting plan

AVIATION PROJECTS

June 2025

David Richards
Associate Environmental Scientist – Environmental Planning & Approvals
EMM Consulting

By email: drichards@emmconsulting.com.au

Our ref: 105404-02

Dear David

Re: Dinawan Wind Farm – Wind Turbine Obstacle Lighting

This correspondence responds to a request for an Aviation Obstacle Lighting Plan for Dinawan Wind Farm.

EMM Counslting engaged Aviation Projects to prepare a lighting plan in accordance with the New South Wales Department of Planning, Housing and Infrastructure – Wind Energy Guideline.

1.1. References

- Advisory Circular (AC)139.E-05 v1.1 *Obstacles (including wind farms) outside the vicinity of a CASA-certified aerodrome* (October 2022)
- Civil Aviation Safety Regulation (CASR) 1998 Part 139: *Aerodromes*, Manual of Standards (14 December 2024)
- New South Wales Department of Planning, Housing and Infrastructure – Wind Energy Guideline (November 2024)
- National Airports Safeguarding Framework (NASF) Guideline D: *Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation* (15 July 2012)

1.2. Aviation Impact Assessment V1.3 (AIA V1.3)

Aviation Projects prepared an AIA (105404-02_Dinawan EP_Update AIA V0.2_250303) for the Dinawan Wind Farm and concluded that:

> *11. Based on NSW Wind Energy Guideline,*
>
> a. *If turbines are 150 m or more above ground, lighting is required for the most critical turbines (e.g. turbines at highest elevations and/or around the project perimeter).*
>
> b. *Lighting of turbines and ancillary infrastructure should be designed to minimise potential amenity impacts by using the lowest intensity lighting suitable for the site.*

1.3. CASR Part 139 (Aerodromes) Manual of Standards 2019 (13 March 2024)

CASR Part 139 (Aerodromes) Manual of Standards 2019 (13 March 2024) Section 9.31, (8) and (9) specifies as follows in relation to obstacle lights for wind farms:

> *(8) Subject to subsection (9), for wind turbines in a wind farm, medium-intensity obstacle lights must:*
>
> *(a) mark the highest point reached by the rotating blades; and*

(b) be provided on a sufficient number of individual wind turbines to indicate the general definition and extent of the wind farm, but such that intervals between lit turbines do not exceed 900 m; and

(c) all be synchronised to flash simultaneously; and

(d) be seen from every angle in azimuth.

Note This is to prevent obstacle light shielding by the rotating blades of a wind turbine and may require more than 1 obstacle light to be fitted.

(9) If it is physically impossible to light the rotating blades of a wind turbine:

(a) the obstacle lights must be placed on top of the generator housing; and

(b) a note must be published in the AIP-ERSA indicating that the obstacle lights are not at the highest position on the wind turbines.

Section 9.33 specifies the characteristics of medium-intensity obstacle lights

9.33 Characteristics of medium-intensity obstacle lights

(1) Medium-intensity obstacle lights must:

(a) be visible in all directions in azimuth; and

(b) if flashing — have a flash frequency of between 20 and 60 flashes per minute.

(2) The peak effective intensity of medium-intensity obstacle lights must be 2 000 ±25% cd with a vertical distribution as follows:

(a) for vertical beam spread — a minimum of 3 degrees;

(b) at -1 degree elevation — a minimum of 50% of the lower tolerance value of the peak intensity;

(c) at 0 degrees elevation — a minimum of 100% of the lower tolerance value of the peak intensity.

(3) For subsection (2), vertical beam spread means the angle between 2 directions in a plane for which the intensity is equal to 50% of the lower tolerance value of the peak intensity.

(4) If, instead of obstacle marking, a flashing white light is used during the day to indicate temporary obstacles in the vicinity of an aerodrome, the peak effective intensity of the light must be increased to 20 000 ±25% cd when the background luminance is 50 cd/m² or greater.

CASR Part 139 MOS allows for obstacle lights to be provided on a sufficient number of individual wind turbines to indicate the general definition and extent of the wind farm, with intervals between lit turbines not exceeding 900 m.

1.4. AC139.E-05 Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome

In Australia, CASA has accepted the use of 200 candela lighting in some circumstances due to a lack of back lighting in rural and remote areas, meaning that a lower intensity light is still visible to pilots at an acceptable distance to permit a pilot to see and avoid the obstacle. AC 139.E-05 Section 2.6 describes the reasoning behind CASA's preference to recommend aviation hazard lighting for tall structures and aircraft detection systems for wind farms.

2.6.2 Hazard lighting for wind farms and other tall structures is intended to alert pilots, flying at low altitude, to the presence of an obstacle allowing them sufficient awareness to safely navigate around or avoid it. The pilot is responsible for avoiding other traffic and obstacles based on the "alerted" see-and-avoid principle.

2.6.3 Unless the wind farm or tall structure is located near an airport, it is not expected to pose a risk to regular public transport operations. The kind of air traffic that is usually encountered at low altitude in the vicinity of a wind farm or tall structure includes light aircraft (e.g., private operators, flight schools, sport aviation, agricultural, survey, and fire spotting and control) and helicopters (military, police, emergency services, survey, and fire spotting and control). Hazard lights are therefore designed to provide pilots with sufficient awareness about the presence of the structure(s), so they can avoid it. This means that the intensity of the hazard lights should be such that the acquisition distance is sufficient for the pilot to recognise the danger, take evasive action and avoid the obstacle by a safe margin in all visibility conditions. This outcome considers the potential speed of an aircraft to determine the distance by which the pilot must become aware of the obstacle to have enough time and manoeuvrability to avoid it.

1.5. National Airports Safeguarding Framework (NASF) Guideline D

NASF Guideline D provides guidance to State/Territory and local government decision makers, airport operators and developers of wind farms to jointly address the risk to civil aviation arising from the development, presence and use of wind farms and wind monitoring towers.

Paragraphs 35 to 37 provide guidance in relation to obstacle lighting for wind turbines:

35. When lighting has been recommended by CASA to reduce risk to aviation safety, medium-intensity obstacle lights should be used. Where used, lighting on wind farms should be installed:

(a) to identify the perimeter of the wind farm;

(b) respecting a maximum spacing of 900m between lights along the perimeter, unless an aeronautical study shows that a greater spacing can be used;

(c) where flashing lights are used, they flash simultaneously; and

(d) within a wind farm, any wind turbines of significantly higher elevation are identified wherever located.

36. To minimise the visual impact on the environment, obstacle lights may be partially shielded, provided it does not compromise their operational effectiveness. Where obstacle lighting is provided, lights should operate at night, and at times of reduced visibility. All obstacle lights on a wind farm should be turned on simultaneously and off simultaneously.

37. Where obstacle lighting is provided, proponents should establish a monitoring, reporting and maintenance procedure to ensure outages, including loss of synchronisation, are detected, reported and rectified. This would include making an arrangement for a recognised responsible person from the wind farm to notify the relevant CASA office, so that CASA can advise pilots of light outages.

1.6. New South Wales Department of Planning, Housing and Infrastructure – Wind Energy Guideline (November 2024)

This Wind Energy Guideline will help the community, industry, applicants and regulators navigate the planning framework under which we assess wind energy. This guideline identifies key planning considerations relevant to wind energy development and provides policy and technical guidance on key issues of the technology.

Whilst the Renewable Energy Planning Framework, inclusive of the Wind Energy Guideline does not immediately apply to the Project (as the EIS was lodged before 12 November 2024) aspects relating to aviation safety are relevant to consider and to avoid ambiguity in regard to the need for obstacle lighting. Those key principles are outlined below.

5.3.1 Key principles

Aviation safety and lighting principles

- *Wind energy projects should be designed to reduce aviation safety risk.*
- *If turbines are 150 m or more above ground, lighting is required for the most critical turbines (e.g. turbines at highest elevations and/or around the project perimeter).*
- *Lighting of turbines and ancillary infrastructure should be designed to minimise potential amenity impacts by using the lowest intensity lighting suitable for the site.*
- *An aviation impact assessment must include a full assessment of the risks to aviation safety in the context of existing flight patterns and airport approach routes.*

Lighting

While important from a safety perspective, aviation obstacle lighting has the potential to impact regional and rural areas where other light sources are minimal. Applicants should seek to minimise the effects of lighting on visual amenity while still having regard to the aviation safety risk assessment. The visibility and impact of any lighting depends on the nature and intensity of the lighting required and the potential cumulative effects with other developments.

NSW adopts a risk-based approach assessing the potential risk of wind energy projects to aviation safety. We acknowledge CASA's expectation to recommend some level of aviation obstacle lighting for tall structures, including wind turbines.

For tall structures (including turbines) that are greater than 150 metres above ground level, the most critical structures (turbines at the highest elevations and/or around the project's perimeter) will require lighting.

Lighting turbines and tall structures is intended to improve safety outcomes and alert pilots to the presence of potential obstacles in low-altitude flight paths. Aircraft detection systems can be used to trigger lights only when an approaching aircraft is identified. CASA has also advised that using management systems to regulate obstacle lights and their intensity (such as visibility meters or radar detection systems) is an acceptable option in Australia.

Australia aviation authorities have generally adopted international standards[21] for lighting intensity, which recommend 2,000 candela medium intensity obstacle lights for structures greater than 150 metres above ground level. However, CASA has accepted the use of 200 candela lighting in circumstances where a lack of back lighting, such as in rural and remote areas, means the lower intensity light is still visible to pilots at an acceptable distance to avoid the obstacle[22]

To mitigate negative impacts on visual amenity, consider:

- *minimising the number of turbines that need to be lit to clearly indicate the general height and extent of the development – high-risk turbines at high elevations must be lit*
- *using the lowest intensity turbine light suitable for the site*

• where fixed lighting is proposed (instead of being controlled through detection systems), turning on all turbine lighting simultaneously, using a steady medium-intensity red light, and to not have flashing lights

• directing ancillary lighting below the horizontal to avoid unnecessary impact on residences.

[21] ICAO (International Civil Aviation Organization) Annex 14, Volume 1, Chapter 6.2

[22] CASA Advisory Circular AC 139.E-05v1.1 Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome, October 2022

1.7. Obstacle lighting arrangements

In applying the requirements of CASR Part 139 MOS or NASF Guideline D in relation to obstacle lighting on wind turbines, and in particular the 900 m interval, it is suggested that the following wind turbines (red dots illustrated in Figure 1 and Table 1) and all WMTs are lit. Dinawan Wind Farm should have 200 cd low intensity steady red obstacle lighting that is fitted and operational.

Light and Shielding Specification:

- *Lights:*
    - 2 low intensity steady red lights (per lit wind turbine):
        - Fixed lights showing red
        - A horizontal beam spread that results in 360° coverage around the obstacle
        - A minimum intensity of 200 candela (cd)
        - A vertical beam spread (to 50% of peak intensity) of 10°
        - Low-intensity obstacle lights must have a peak intensity of at least 10 cd.
        - A vertical distribution with 50 cd minimum at +6° and +10° above the horizontal
        - Not less than 10 cd at all elevation angles between –3° and +90° above the horizontal.
        - Obstacle lights should operate at night, and at times of reduced visibility.
- *Shielding:*
    - Shielding of the downward component of obstacle lighting is permitted, and if used, must be such that:
        - No more than 5% of the nominal light intensity is emitted at or below 5° below the horizontal
        - No light is emitted at or below 10° below horizontal
    - Two lights must be provided on top of the generator housing in a way that allows at least one of the lights to be seen from every angle in azimuth.

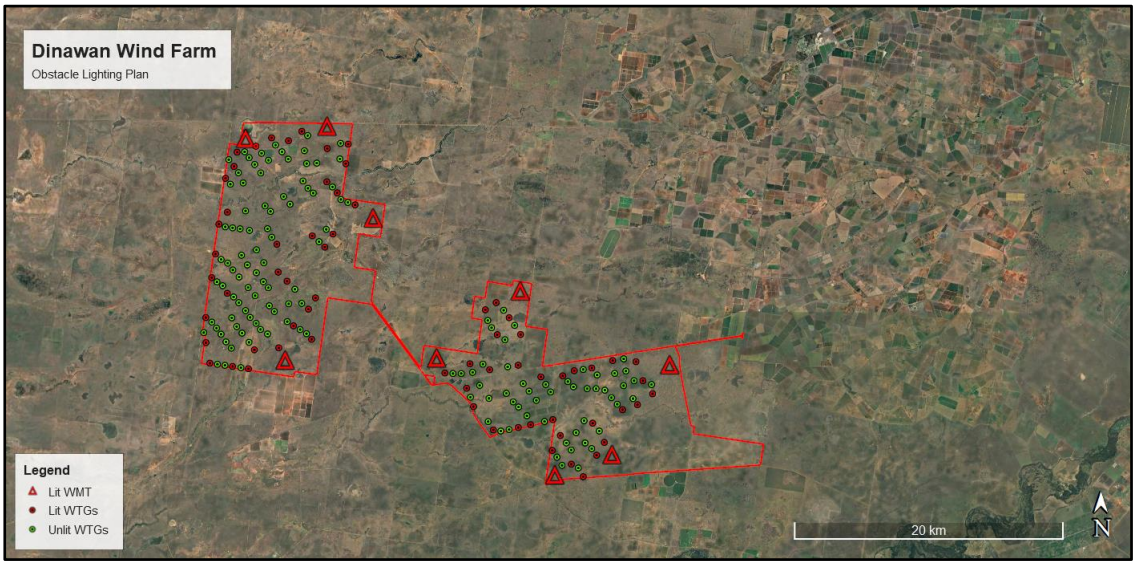


Figure 1 Proposed obstacle lighting layout

Table 1 Wind turbine ID proposed for obstacle lighting

WTG ID	X coordinates	Y Coordinates
Stage 1		
T3	371344.2379	6123711.282
T10	372970.6795	6122609.867
T11	373191.0613	6124411.135
T15	373503.1003	6121264.894
T17	374271.241	6128401.662
T24	374655.3961	6124000.059
T30	374991.1764	6119572.215
T31	375065.248	6128943.062
T33	375180.282	6126585.434
T43	376047.246	6127846.133
T49	376760.0539	6124362.129
T51	376837.8708	6119777.538
T52	376909.4463	6126626.163
T61	377748.5041	6119994.067
T69	378456.4578	6123527.301
T73	379378.9876	6118125.288

WTG ID	X coordinates	Y Coordinates
T74	379389.4079	6120394.81
T78	379958.7703	6119232.61
T79	380071.3325	6123626.4
T86	380803.1695	6117131.229
T89	380922.5041	6124013.902
T92	381695.6918	6116223.715
T98	382342.6555	6120175.911
T100	382218.3312	6124231.896
T103	382665.03	6117820.058
T107	383223.7064	6118773.358
T108	383753.2958	6124803.387
T113	384535.0872	6121198.319
T117	385476.6617	6124748.228
T119	385635.7216	6121581.741
T120	386013.0286	6123353.493
T125	386743.3661	6122403.242

WTG ID	X coordinates	Y Coordinates
Stage 2		
T3	353562.7557	6127533.171
T4	353606.0441	6125688.339
T6	353911.6399	6124178.449
T7	353957.2871	6130482.018
T10	354221.4468	6132224.171
T13	354431.0978	6134426.249
T19	354874.4193	6137809.832
T20	355049.2953	6135314.53
T25	355129.505	6129340.385
T28	355491.7369	6138694.813
T34	355597.4701	6123960.897
T36	355700.4322	6139749.24
T54	356778.0873	6123808.541
T58	357090.6254	6140208.774
T64	357200.0278	6125211.292
T82	358250.4916	6140841.252
T89	358754.5225	6133007.033

WTG ID	X coordinates	Y Coordinates
T90	358886.1874	6130955.747
T92	359009.3692	6125382.033
T101	359503.1651	6140642.765
T103	359552.0789	6130295.657
T111	360077.7413	6127017.518
T119	360479.4141	6141348.57
T131	361163.8272	6128260.46
T133	361368.5538	6133664.379
T137	361434.0856	6126047.474
T141	361677.2916	6129096.901
T145	362315.0224	6132846.101
T147	362385.4991	6140110.343
T148	362389.5073	6137655.96
T152	362906.0611	6133817.188
T153	363171.1237	6136856.281
T160	363777.0872	6139009.682
T162	363936.4043	6140456.442
T164	364514.6609	6135990.864

If you wish to clarify or discuss the contents of this correspondence, please get in touch with me on 0433 747 835.

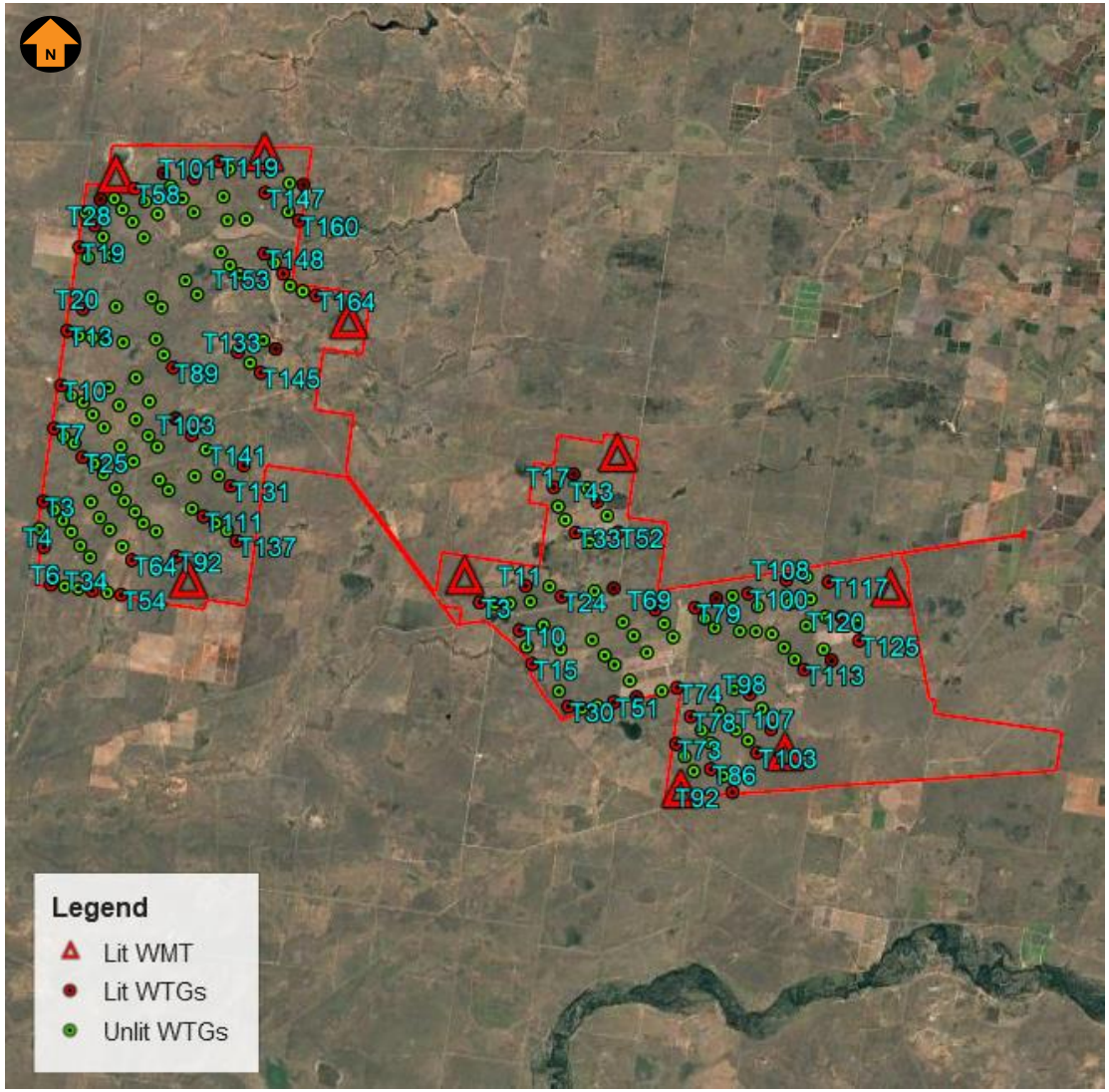
Kind regards

Lyn Wang

Aviation Specialist Consultant

11 June 2025

Enclosure: Obstacle Lighting Plan



1. Light and Shielding Specification:

Lights:

- **2 low intensity** steady red lights:
  - fixed lights showing red
  - a horizontal beam spread that results in 360° coverage around the obstacle
  - a minimum intensity of 200 candela (cd)
  - a vertical beam spread (to 50% of peak intensity) of 10°
  - a vertical distribution with 50 cd minimum at +6° and +10° above the horizontal
  - not less than 10 cd at all elevation angles between –3° and +90° above the horizontal.

Shielding:

- shielding of the downward component of obstacle lighting is permitted, and if used must be such that:
  - no more than 5% of the nominal light intensity is emitted at or below 5° below horizontal
  - no light is emitted at or below 10° below horizontal
- two lights must be provided on top of the generator housing in a way that allows at least one of the lights to be seen from every angle in azimuth.

2. References

- Civil Aviation Safety Authority, *Part 139 (Aerodromes) Manual of Standards 2019*, dated 14 December 2024; Chapter 9 Division 4 Obstacle lighting (Sections 9.31, 9.32 and 9.33)
- Australian Government Department of Infrastructure, Transport, Regional Development, Communications and the Arts, National Airport Safeguarding Framework, *Guideline D Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation*, v4.1.3, 15 July 2012, paragraphs 35, 36 and 37
- New South Wales Department of Planning, Housing and Infrastructure, *Wind Energy Guideline*

DINAWAN WIND FARM – OBSTACLE LIGHTING PLAN	Project: 105404-02.1	Prepared by: L Wang	Version: 0.1_250611	AVIATION PROJECTS
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Appendix E
Cadastral lots within project area

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Table E.1 Cadastral lots within project area

Lot	DP	Lot	DP	Lot	DP	Lot	DP	Lot	DP
A	DP100260	5	DP594041	2	DP756265	44	DP756265	14	DP756291
B	DP100260	6	DP594041	3	DP756265	45	DP756265	15	DP756291
1	DP113903	7	DP594041	15	DP756265	46	DP756265	16	DP756291
6	DP113903	111	DP739677	16	DP756265	47	DP756265	17	DP756291
8	DP113903	112	DP739677	17	DP756265	48	DP756265	18	DP756291
9	DP113903	113	DP739677	18	DP756265	49	DP756265	22	DP756291
10	DP113903	1	DP756257	19	DP756265	50	DP756265	23	DP756291
1	DP1244278	2	DP756257	20	DP756265	51	DP756265	30	DP756291
2	DP1244278	3	DP756257	21	DP756265	52	DP756265	31	DP756291
3	DP1244278	4	DP756257	22	DP756265	53	DP756265	32	DP756291
1	DP1245394	5	DP756257	23	DP756265	54	DP756265	33	DP756291
2	DP1245394	6	DP756257	24	DP756265	55	DP756265	34	DP756291
3	DP1245394	7	DP756257	25	DP756265	56	DP756265	35	DP756291
4	DP1245394	8	DP756257	26	DP756265	57	DP756265	36	DP756291
1	DP1252143	9	DP756257	27	DP756265	58	DP756265	37	DP756291
2	DP1252143	10	DP756257	28	DP756265	59	DP756265	38	DP756291
3	DP1274586	11	DP756257	29	DP756265	60	DP756265	39	DP756291
4	DP1282091	12	DP756257	30	DP756265	61	DP756265	40	DP756291
5	DP1282091	13	DP756257	31	DP756265	62	DP756265	41	DP756291
6	DP1282091	14	DP756257	32	DP756265	77	DP756265	42	DP756291
1	DP532988	15	DP756257	33	DP756265	1	DP756291	43	DP756291
2	DP532988	16	DP756257	34	DP756265	2	DP756291	44	DP756291
3	DP532988	17	DP756257	35	DP756265	3	DP756291	45	DP756291
4	DP532988	18	DP756257	36	DP756265	4	DP756291	46	DP756291
5	DP532988	19	DP756257	37	DP756265	5	DP756291	47	DP756291
6	DP532988	20	DP756257	38	DP756265	6	DP756291	48	DP756291
7	DP532988	21	DP756257	39	DP756265	7	DP756291	49	DP756291
8	DP532988	22	DP756257	40	DP756265	8	DP756291	50	DP756291
107	DP568083	23	DP756257	41	DP756265	9	DP756291	51	DP756291
3	DP593483	24	DP756257	42	DP756265	10	DP756291	52	DP756291
1	DP593484	1	DP756265	43	DP756265	11	DP756291	53	DP756291

Lot	DP	Lot	DP	Lot	DP	Lot	DP	Lot	DP
54	DP756291	26	DP756334	30	DP756418	13	DP756444	46	DP756444
55	DP756291	38	DP756334	31	DP756418	14	DP756444	47	DP756444
56	DP756291	66	DP756334	32	DP756418	15	DP756444	48	DP756444
57	DP756291	67	DP756334	34	DP756418	16	DP756444	49	DP756444
58	DP756291	39	DP756396	35	DP756418	17	DP756444	100	DP756444
59	DP756291	40	DP756396	36	DP756418	18	DP756444	101	DP756444
60	DP756291	41	DP756396	123	DP756418	19	DP756444	102	DP756444
61	DP756291	42	DP756396	124	DP756418	20A	DP756444	103	DP756444
62	DP756291	43	DP756396	125	DP756418	21A	DP756444	104	DP756444
63	DP756291	44	DP756396	126	DP756418	22A	DP756444	105	DP756444
64	DP756291	45	DP756396	127	DP756418	23	DP756444	106	DP756444
65	DP756291	46	DP756396	128	DP756418	24	DP756444	107	DP756444
66	DP756291	47	DP756396	129	DP756418	26	DP756444	108	DP756444
67	DP756291	48	DP756396	130	DP756418	27	DP756444	109	DP756444
68	DP756291	133	DP756396	131	DP756418	28	DP756444	110	DP756444
69	DP756291	134	DP756396	132	DP756418	29	DP756444	111	DP756444
70	DP756291	4	DP756418	133	DP756418	30	DP756444	112	DP756444
71	DP756291	5	DP756418	134	DP756418	31	DP756444	113	DP756444
27	DP756299	6	DP756418	135	DP756418	32	DP756444	114	DP756444
28	DP756299	7	DP756418	136	DP756418	33	DP756444	125	DP756444
29	DP756299	12	DP756418	137	DP756418	34	DP756444	52	DP756459
30	DP756299	16	DP756418	139	DP756418	35	DP756444	53	DP756459
31	DP756299	17	DP756418	140	DP756418	36	DP756444	56	DP756459
32	DP756299	18	DP756418	141	DP756418	37	DP756444	57	DP756459
33	DP756299	19	DP756418	142	DP756418	38	DP756444	58	DP756459
42	DP756299	22	DP756418	143	DP756418	39	DP756444	59	DP756459
43	DP756299	23	DP756418	144	DP756418	40	DP756444	60	DP756459
76	DP756299	25	DP756418	146	DP756418	41	DP756444	61	DP756459
1	DP756334	26	DP756418	147	DP756418	42	DP756444	62	DP756459
2	DP756334	27	DP756418	148	DP756418	43	DP756444	63	DP756459
3	DP756334	28	DP756418	11	DP756444	44	DP756444	64	DP756459
25	DP756334	29	DP756418	12	DP756444	45	DP756444	-	-

Appendix F

Wind turbine generator locations

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F.1 Wind turbine generator locations – Eastern area (Stage 1)

Table F.1 Wind turbine generator coordinates and elevation – Eastern area (Stage 1) (GDA2020 MGAz55)

WTG ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
T3	371344.2	6123711	107.88	R088	5,260
T5	371942.7	6123676	108.21	R088	5,705
T8	372552.7	6123686	108.66	R088	6,157
T10	372970.7	6122610	108.85	R088	7,185
T11	373191.1	6124411	108.87	R088	6,265
T12	373264.8	6121957	108.55	R036	7,044
T14	373394.5	6123787	109.04	R088	6,771
T15	373503.1	6121265	108.68	R036	6,321
T17	374271.2	6128402	110.80	R143	4,803
T18	373931.4	6122830	109.02	R036	7,577
T20	374152.5	6124400	109.47	R088	7,115
T22	374463.2	6127622	110.00	R143	5,303
T24	374655.4	6124000	109.60	R088	7,745
T25	374634	6121886	108.86	R036	6,459
T27	374600	6120181	108.59	R036	4,866
T28	374753.3	6127090	110.25	R143	5,606
T30	374991.2	6119572	108.52	R036	4,155
T31	375065.2	6128943	111.49	R143	3,880
T33	375180.3	6126585	110.12	R143	5,875
T36	375545.2	6119498	108.78	R036	3,914
T37	375629.6	6128388	111.32	R143	4,049
T38	375757.5	6126219	110.33	R143	6,028
T41	375986.9	6124237	109.99	R143	7,905
T42	375918.3	6122274	109.24	R036	6,594
T43	376047.2	6127846	110.90	R143	4,389
T44	376158.7	6119616	108.99	R036	3,926
T45	376435.2	6121658	108.63	R036	5,952
T48	376457.6	6127288	110.57	R143	4,821

WTG ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
T49	376760.1	6124362	110.11	R143	7,675
T50	376837.7	6121284	108.92	R036	5,587
T51	376837.9	6119778	109.03	R036	4,084
T52	376909.4	6126626	110.64	R143	5,407
T54	377152.2	6123011	109.48	R036	7,333
T56	377464.7	6120651	109.18	R036	5,035
T58	377597.5	6122467	109.56	R036	6,847
T61	377748.5	6119994	109.11	R036	4,462
T64	378146.6	6121797	109.68	R036	6,306
T69	378456.5	6123527	109.79	R036	8,058
T70	378772.1	6120250	109.28	R036	5,074
T71	378825.5	6122974	109.71	R036	7,626
T72	379197.1	6122428	109.70	R036	7,237
T73	379379	6118125	109.18	R036	3,750
T74	379389.4	6120395	109.25	R036	5,500
T77	379734.8	6117632	109.17	R036	3,753
T78	379958.8	6119233	109.36	R036	4,930
T79	380071.3	6123626	110.04	R019	6,933
T81	380114.9	6117037	109.43	R036	3,839
T82	380409.3	6118690	110.09	R036	4,907
T83	380457.4	6123209	109.91	R019	6,787
T85	380777.4	6118178	110.02	R036	4,928
T86	380803.2	6117131	109.55	R036	4,520
T87	380873.6	6122830	109.74	R019	6,638
T88	381123.2	6119464	110.03	R036	5,947
T89	380922.5	6124014	110.40	R019	5,998
T91	381320.8	6116858	109.71	R036	4,943
T92	381695.7	6116224	110.50	R036	5,208
T93	381702.3	6120349	110.13	R049	6,831
T94	381802.4	6118709	110.61	R049	5,880
T95	381581	6124117	110.58	R019	5,364
T97	381895.6	6122710	110.32	R019	5,907

WTG ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
T98	382342.7	6120176	110.82	R049	6,223
T99	382297.8	6118303	110.74	R049	5,261
T100	382218.3	6124232	111.08	R019	4,750
T101	382557.2	6122713	110.68	R019	5,426
T103	382665	6117820	110.86	R049	4,738
T104	382620.9	6123726	110.85	R019	4,700
T105	382835.3	6119603	111.07	R049	5,479
T106	383204.7	6122616	110.89	R019	5,074
T107	383223.7	6118773	111.04	R049	4,674
T108	383753.3	6124803	111.73	R019	3,148
T109	383702.4	6122072	111.21	R019	5,247
T110	383912.7	6123864	111.42	R019	3,660
T111	384139.7	6121600	111.48	R019	5,471
T112	384588.2	6122970	111.88	R019	4,039
T113	384535.1	6121198	111.62	R049	5,645
T114	384567.9	6124943	111.75	R019	2,427
T115	384742.9	6124048	111.82	R019	3,016
T116	385299.1	6122028	112.08	R019	4,701
T117	385476.7	6124748	112.33	R019	2,051
T118	385358	6123346	111.89	R019	3,410
T119	385635.7	6121582	112.01	R019	5,080
T120	386013	6123353	112.37	R019	3,277
T123	386654.7	6123083	112.45	R019	3,547
T125	386743.4	6122403	112.50	R019	4,232

F.2 Wind turbine generator locations – Western area (Stage 2)

Table F.2 Wind turbine generator coordinates and elevation – Western area (Stage 2) (GDA2020 MGAz55)

WTG ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
T1	353428.7	6126420	103.60	R090	6,407
T3	353562.8	6127533	103.86	R090	7,517
T4	353606	6125688	103.63	R090	5,672
T6	353911.6	6124178	103.48	R090	4,169
T7	353957.3	6130482	104.47	R090	10,469
T9	354015.9	6127202	104.22	R090	7,194
T10	354221.4	6132224	104.99	R125	11,284
T11	354349.7	6130172	104.62	R090	10,178
T12	354367.5	6126765	104.14	R090	6,785
T13	354431.1	6134426	104.84	R100	11,966
T14	354476.5	6124106	103.57	R090	4,168
T15	354637.8	6131830	106.11	R125	11,645
T17	354778.6	6129896	104.44	R090	9,941
T18	354713	6126323	104.27	R090	6,392
T19	354874.4	6137810	104.35	R100	11,434
T20	355049.3	6135315	104.70	R100	12,204
T21	354912.2	6134235	105.01	R125	12,411
T22	355032.9	6124034	103.31	R090	4,243
T23	355095.8	6139192	104.53	R100	11,545
T24	355086.1	6125765	104.07	R090	5,920
T25	355129.5	6129340	104.69	R090	9,437
T26	355128.4	6131564	105.98	R090	11,639
T27	355239.1	6137383	104.58	R100	11,861
T28	355491.7	6138695	104.42	R100	11,960
T29	355456.6	6134171	105.18	R125	12,913
T31	355490	6125309	104.05	R090	5,597
T32	355490	6127541	104.61	R090	7,742
T33	355518.5	6131066	105.10	R090	11,203
T34	355597.5	6123961	103.97	R090	4,391

WTG ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
T35	355604.3	6129081	105.01	R090	9,269
T36	355700.4	6139749	104.71	R100	12,152
T37	355822.2	6138236	104.92	R100	12,325
T38	355862.2	6126906	104.97	R090	7,230
T39	355985.9	6130556	105.84	R090	10,791
T40	355991.2	6128667	105.21	R090	8,956
T41	356010.1	6134107	105.42	R091	12,585
T42	356148.6	6132162	105.93	R090	12,396
T43	356186.8	6137491	105.14	R091	12,234
T44	356265.1	6139786	104.74	R091	12,563
T45	356221.7	6123880	103.36	R090	4,631
T46	356267.8	6126425	104.72	R090	6,915
T47	356397.8	6135430	105.33	R091	12,021
T48	356504.7	6128090	105.82	R090	8,557
T49	356601.2	6139354	104.84	R091	12,129
T51	356587.4	6131449	106.79	R090	11,799
T52	356669.3	6129790	105.90	R090	10,224
T53	356713.4	6133999	105.23	R091	11,917
T54	356778.1	6123809	104.18	R090	4,904
T55	356792.6	6125756	104.83	R090	6,534
T56	356854.9	6127591	104.93	R090	8,218
T57	357017.9	6138864	105.21	R091	11,613
T58	357090.6	6140209	104.74	R091	11,896
T60	357197.9	6129197	105.77	R090	9,836
T61	357249.1	6132574	105.68	R088	11,662
T62	357265.4	6130889	106.25	R088	11,033
T63	357295.9	6127162	105.20	R090	8,014
T64	357200	6125211	104.81	R090	6,282
T67	357485.1	6138244	105.56	R091	11,038
T68	357522.7	6139692	105.35	R091	11,328
T69	357634.5	6126715	104.79	R090	7,784
T71	357793	6130236	105.96	R088	10,345

WTG ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
T72	357807.4	6131633	106.09	R088	10,773
T73	357837.4	6135819	105.80	R091	10,557
T75	358040.7	6139187	105.96	R091	10,693
T76	358044.5	6134144	105.81	R091	10,585
T78	358170.3	6129796	105.88	R088	9,873
T79	358161.5	6126390	104.59	R090	7,798
T80	358244.9	6135420	106.41	R091	10,183
T81	358261.4	6128468	105.17	R088	9,573
T82	358250.5	6140841	105.42	R091	11,039
T83	358365.9	6133522	105.94	R091	10,429
T87	358642.5	6128052	105.64	R088	9,163
T88	358547.3	6140314	105.73	R091	10,563
T89	358754.5	6133007	106.01	R091	10,218
T90	358886.2	6130956	107.30	R088	9,522
T92	359009.4	6125382	104.94	R090	7,571
T94	359033.3	6139825	105.95	R091	9,935
T97	359201.7	6136529	106.48	R091	9,175
T101	359503.2	6140643	106.41	R091	9,816
T102	359502.9	6139288	106.60	R091	9,317
T103	359552.1	6130296	106.28	R088	8,674
T104	359607.5	6127324	105.79	R088	8,191
T105	359698.4	6128633	106.49	R088	8,163
T106	359690.4	6135970	106.19	R091	8,699
T111	360077.7	6127018	105.80	R088	7,738
T113	360142.2	6129713	106.61	R088	7,940
T119	360479.4	6141349	106.75	R091	9,295
T120	360570.9	6126750	105.79	R088	7,273
T121	360624.7	6137696	106.99	R091	7,852
T122	360690.7	6139927	107.76	R091	8,437
T123	360664.7	6128680	106.08	R088	7,212
T127	360873.8	6138982	107.28	R091	7,920
T128	360917	6141050	107.17	R091	8,766

WTG ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
T129	361000.3	6137164	106.68	R091	7,411
T130	361047.3	6126454	105.77	R088	6,843
T131	361163.8	6128260	106.63	R088	6,664
T133	361368.6	6133664	107.45	R091	7,539
T134	361391.8	6136813	106.34	R091	6,994
T137	361434.1	6126047	105.78	R088	6,546
T139	361625.6	6139026	107.55	R091	7,227
T141	361677.3	6129097	107.17	R088	6,299
T142	361877.9	6133241	107.52	R091	7,246
T145	362315	6132846	108.14	R091	7,049
T147	362385.5	6140110	108.38	R091	7,023
T148	362389.5	6137656	107.68	R091	6,108
T149	362403.2	6134160	108.10	R091	6,395
T150	362813.2	6137288	107.94	R091	5,626
T152	362906.1	6133817	107.75	R091	6,069
T153	363171.1	6136856	108.60	R091	5,221
T155	363336.3	6139357	108.22	R091	5,820
T156	363364.9	6140507	108.64	R091	6,450
T158	363454.5	6136372	107.76	R091	4,922
T160	363777.1	6139010	108.29	R091	5,266
T161	363973.8	6136160	107.85	R091	4,412
T162	363936.4	6140456	108.66	R091	5,983
T164	364514.7	6135991	108.07	R091	3,888

F.3 Meteorological monitoring masts

Table F.3 Meteorological monitoring masts coordinates and elevation (GDA2020 MGAz55)

ID	Easting	Northing	Elevation (m)	Closest non-associated residence	Distance to non-associated residence (m)
DINW01E	376819.6	6129791	112.28	R143	2,302
DINW02E	370696.2	6124759	108.06	R088	4,056
DINW03E	387961	6124514	113.90	R019	2,661
DINW04E	379578.2	6116280	109.70	R036	3,118
DINW05E	383791.1	6117840	111.27	R049	3,712
DINW01W	356302.9	6140730	104.45	R091	12,811
DINW02W	362328.1	6141709	107.73	R091	8,017
DINW03W	365844	6134995	109.14	R091	2,918
DINW05W	359482.6	6124443	104.99	R090	7,308

Appendix G

Request for information from DPHI

EMM
creating opportunities

G.1 Request for information – March 2025

Spark Renewables received a request from DPHI for information to be included in this amendment report. Responses and references to relevant sections of the amendment report are provided in Table G.1.

Table G.1 Request for information – March 2025

Request	Response
Biodiversity	
Noting the potential impacts to Plains Wanderer and other SAII entities, please provide a commitment to additional avoidance and/or minimisation measures that could be considered by the Department in its assessment of biodiversity impacts. The Department expects a nature positive outcome in line with other recent assessments with impacts to SAII entities.	Two SAII entities have been identified for the project: Claypan Daisy and Plains Wanderer. Design refinements have included avoidance of potential habitat for Claypan Daisy and mapped important habitat for Plains Wanderer to the extent practicable. Surveys for Claypan Daisy were undertaken in 2022, 2023 and 2024 and this species has not been recorded to date. Recent design refinements have resulted in limited gaps in the survey effort, and further survey is planned for Spring 2025 to address the survey gaps. Overall, the survey undertaken to date is considered representative of the potential habitat for Claypan Daisy within the subject land. Given the extent of survey effort to date, it is considered highly unlikely that this species will be recorded within the development corridor. An SAII assessment for Claypan Daisy has been updated in Appendix 5 of the amended BDAR (see Appendix D.3 of this amendment report). It is considered unlikely that this species is present, and will therefore not be impacted. The BMP will include unexpected finds procedures that includes strategies to minimise, mitigate and potentially offset unexpected impacts to threatened species not recorded during the preparation of the BDAR. Targeted surveys did not detect Plains Wanderer within the subject land. At the time of the targeted surveys (April 2023), limited areas of the grasslands within the development corridor were considered to be optimal Plains Wanderer habitat, including areas mapped as important habitat by NSW DCCEEW. Based on the extent of occurrence, the area of occupancy and carrying capacity, the subject land could potentially support four pairs of birds. During other ecological surveys in November 2024, one individual Plains Wanderer was incidentally observed and recorded within the western area (Figure 6.2). To mitigate and avoid impacts, a 300 m exclusion zone around this location has been incorporated into the amended development footprint. In total, there are 645 ha of important mapped area in the subject land, and 11.8 ha within the development corridor. Of the total important mapped habitat in the subject land, the development footprint equates to 0.36% and the development corridor equates to 1.8% of the total area of mapped important habitat. Direct impacts to mapped important habitat for Plains Wanderer have been further reduced by the amended project from 4.02 ha in the EIS, to 2.38 ha. These residual impacts result from areas difficult to avoid, where the mapped important habitat polygons overlap an existing public road (Goolgumbla Road), and existing formed farm tracks (within the development corridor) that are proposed to be used as part of the project. The use of existing roads and farm tracks has been prioritised, as these areas are already disturbed and used for access.

Request	Response
	An SAII assessment for Plains Wanderer has been updated in Appendix 5 of the amended BDAR (see Appendix D.3 of the amendment report). Due to the dynamic nature of the grassland habitat critical to this species, areas within the subject land may be suitable for this species in the future; however, the most optimal areas have been avoided by the development footprint as far as practicable. Indirect impacts, such as those associated with increased fragmentation and isolation of suitable habitat, are considered unlikely to be substantial as a result of the project. Potential indirect impacts will be managed through the implementation of the BMP.
Use the template in Attachment 1 to provide a summary of the biodiversity impacts and offsets.	This is provided in Table 6.8, Table 6.9 and Table 6.10 in Section 6.3.4 of the amendment report.
Traffic and access	
Provide a clear and consolidated figure showing access routes for light, heavy and OSOM vehicles as well as site access points.	This is provided in Figure 6.6 in Section 6.6 of the amendment report.
Provide details of all locations where road and/or intersection upgrade works are proposed on the public road network. This information should be supported by figures showing the location and extent of such works and an assessment of the impacts of those works, as well as evidence of agreement from the relevant road authority.	This is provided in: • Figure 1.3 in Section 1.3 • Table 6.20 in Section 6.6.3 • Table A.4 in Appendix A. With the exception of Newcastle City Council where only minor adjustments to street furniture are required at one intersection, landowner's consent has been received from relevant local councils at these intersections.
Use the template in Attachment 2 to provide a summary of the proposed road and intersection upgrades.	This is provided in Table 6.20 in Section 6.6.3 and Table A.4 in Appendix A of the amendment report.
Visual	
Use Attachment 3 to provide a consolidated spreadsheet of all receivers and their status (associated, non associated and host) and the distance between each turbine for receivers within the black line, between the black and blue line and within 8km.	This is provided in Section G.1.2 of Appendix G of the amendment report.
Workforce accommodation	
Include confirmation of a suitable workforce accommodation solution developed in consultation with Council(s). Please provide detail (including figures and GIS data) regarding:	

Request	Response
• the location of the proposed facility/facilities and their capacity.	Approval for the accommodation facility to be constructed as part of the project is sought as part of the SSD development application for the Dinawan Wind Farm. The location of the proposed workforce accommodation facilities is provided on Figure 1.3 of the amendment report. Each facility will accommodate up to 450 workers. Spark Renewables received guidance from Murrumbidgee Council in February 2025 regarding secondary approvals (separate to development consent) necessary for the operation of the accommodation facility, which are (including permits for on-site wastewater management and commercial kitchen operations). Spark Renewables will develop and implement an accommodation facility management plan in consultation with Edward River Council and Murrumbidgee Council prior to commencement of construction to ensure the accommodation facilities comply with relevant standards and requirements.
• assessment of the impacts associated with the construction and operation of the facility.	The accommodation facilities proposed as part of the project have been assessed as part of the overall project. This has been completed within Chapter 6 of the amendment report. In particular, impacts to: • visual (Section 6.1.1) • noise (Section 6.2.1) • traffic (Section 6.6.2) • flooding (Section 6.7.1iii).
• the services and infrastructure that will be provided and how they will be managed.	This is described in Section A.3.5ia and Section A.3.7 of Appendix A of the amendment report.
• peak and average workforce volumes and duration of peak and overall construction period.	This amendment report has been prepared based on a peak construction workforce over a 5-year construction period, with up to 450 people residing in each accommodation facility during construction (noting that only one accommodation facility will operate at a time). This has been informed by the indicative construction workforce overview provided in Figure 4.1 of the traffic impact assessment (Appendix E.6 of the EIS).
Voluntary Planning Agreement	
Provide the terms of a VPA with Edward River and Murrumbidgee Shire Council including proposed model for community benefit-sharing including an indication of the types and scale of benefit-sharing (including neighbourhood and local community benefits) and the estimated total value (financial amount or equivalent) of community benefits (both neighbourhood and local community benefits) that will be provided.	This is provided in Section 5.3 of the amendment report.
Heritage	
Use Attachment 4 to provide a consolidated summary of all Aboriginal and Historic heritage items to avoid, minimise impacts or salvage.	This is provided in Section G.1.1 of Appendix G of the amendment report.
Aviation	
Noting CASA's advice, prepare an obstacle lighting plan and assess the visual impact on nearby receivers.	An indicative aviation obstacle lighting plan has been prepared in accordance with CASA requirements and is provided in Appendix D.13.

Request	Response
Water	
Quantify the water requirements for construction and for firefighting purposes and detail the proposed arrangements for obtaining water supply.	Construction water requirements are provided in Section A.4.5 of Appendix A of the amendment report. The project is to be provided with a static water supply. Water requirements will be calculated prior to construction. The bushfire assessment identifies that a 20,000 L static water supply will be provided at each switchyard/substation, construction compound and O&M building, and a 100,000 L static water supply will be provided at each accommodation facility. In addition to the static water supply requirements, provide for two mobile water supplies with a minimum capacity of 500 L each (e.g. tanks on utes or standalone tankers) which will be made available on-site during construction and operation.
Noise	
Provide an updated list of non-associated receivers predicted to exceed the construction noise affected management level, and the predicted noise levels at each of these receivers.	This is provided in Table 6.3 of the amendment report.
Amendment related details	
Provide clear figures which show the detail of the amended project compared with the original application.	This is provided in Figure 1.4 of the amendment report.
Provide a separate updated project layout Figure for the amended project.	This is provided in Figure 1.3 of the amendment report.
Provide all relevant updated GIS layers.	This has been provided separately to the amendment report and submissions report.
Provide an updated consolidated schedule of land for all lots located within the amended project area.	This is provided in Appendix E of the amendment report.
Mitigation measures	
Provide a revised summary of project mitigation measures. The revised summary must include measures that are specific and framed in such a way as to provide a clear commitment to the mitigation measures that will be implemented for the project.	This is provided in Appendix C of the amendment report.
South West REZ access rights and project capacity	
DPHI requests comment on how the maximum connection capacity of 1,007 MW granted to the Dinawan Energy Hub (DEH) announced on 23 April 2025 relates to the current development applications for 2,000 MW across the wind and solar/BESS projects comprising the DEH, noting there is no additional capacity on the South West REZ transmission network.	Spark Renewables has successfully secured access rights for 1,007 MW for the Dinawan Energy Hub through the South West REZ access tendering process, being one of four projects to be awarded connection to the South West REZ transmission network. The Dinawan Energy Hub comprises the Dinawan Wind Farm (this application) and Dinawan Solar Farm (SSD-50725959), which have a proposed generation capacity of up to 1,200 MW and 800 MW, respectively. While the amended project has a total generation capacity of up to 1,200 MW, the installed capacity will be scaled down to meet the capacity awarded to the Dinawan Energy Hub through the South West REZ access tendering process. This will need to be scaled with consideration to the Dinawan Solar Farm (SSD-50725959). The total export capacity of the two projects will not exceed the access right capacity awarded.

Request	Response
	The two projects comprising Dinawan Energy Hub represent a 'worst-case' assessment of potential impacts, given the full capacity (2,000 MW) is not likely to be realized. However, as the projects are scalable, there is redundancy to address shortfalls in generation capacity in the South West REZ, if required by EnergyCo in the future. During detailed design, the final number and location of wind turbine generators and supporting infrastructure will be identified to demonstrate consistency with the total awarded capacity of the Dinawan Energy Hub.

G.1.1 Heritage information

Table G.2 Aboriginal heritage items – avoid impacts

Site	AHIMS #	Incorporated sites
DEHW-2023-HAS1	54-3-0071	-
DEHW-2023-HAS4	54-3-0070	-
DEHW-2023-HAS13	55-1-0162	#55-1-0052, #55-1-0053
DEHW-2023-HIF5	48-6-0283	-
DEHW-2023-ST1	48-6-0273	-
DEHW-2023-ST8	48-6-0253	-
DEHW-2023-ST12	55-1-0144	-
DEHW-2023-STAS2	48-6-0250	-
DEHW-2024A-RT1	55-1-0181	-
DEHW-2024A-ST5	55-1-0190	-
DEHW-2024A-ST6	55-1-0191	-
DEHW-2024A-ST7	55-1-0185	-
DEHW-2024A-ST8	55-1-0186	-
DEHW-2024A-ST10	55-1-0188	-
DEHW-2024A-ST11	55-1-0189	-
DEHW-2024A-ST12	55-1-0192	-
DEHW-2024A-ST13	55-1-0193	-
DEHW-OA6	54-3-0076	#54-3-0068, #54-3-0067
PEC-E-47	55-1-0057	-
PEC-E-48	55-1-0058	-
PEC-E-49	55-1-0059	-
PEC-E-50	55-1-0060	-

Table G.3 Aboriginal heritage items – avoid, minimise impacts and/or salvage

Site	AHIMS #	Incorporated sites
Commitment to avoid – no impact		
DEHW-2023-HH2	55-1-0196	-
DEHW-CS1	48-6-0310	#48-6-0260, #48-6-0249, #48-6-0248, #48-6-0247, #48-6-0271, #48-6-0270, #48-6-0268
DEHW-OA3	48-6-0308	#48-6-0266, #48-6-0252
Direct impact – no loss of value		
DEHW-2023-STAS1	55-1-0143	-
DEHW-OA9	55-1-0170	#55-1-0156, #55-1-0155, #55-1-0154, #55-1-0160, #55-1-0140, #55-1-0139, #55-1-0138, #55-1-0151, #55-1-0150, #55-1-0149, #55-1-0168, DEHW-2024A-ST1, DEHW-2024A-ST2, DEHW-2024A-ST3, DEHW-2024A-ST4
Direct impact - partial loss of value[1]		
DEHW-2024-HAS1	48-6-0291	-
DEHW-2023-HAS12	55-1-0163	-
DEHW-2023-HASST1	48-6-0264	-
DEHW-OA1	55-1-0172	#55-1-0161, #55-1-0148, #55-1-0147, #55-1-0146, #55-1-0145, #55-1-0142.
DEHW-OA2	49-4-0243	#49-4-0237, #49-4-0234
DEHW-OA4	49-4-0244	#49-4-0236, #49-4-0245, #48-6-0273
DEHW-OA5	48-6-0309	#48-6-0269, #48-6-0258, #48-6-0256, #48-6-0284
DEHW-OA7	55-1-0171	#55-1-0152, #55-1-0141, #55-1-0158
DEHW-OA8	55-1-0169	#55-1-0153, #55-1-0164, #55-1-0054, #55-1-0055, #55-1-0056, #55-1-0132, DEHW-2024A-AS3

Site	AHIMS #	Incorporated sites
DEHW-BS1	N/A	DEHW-2023-AS1 (#49-4-0233), DEHW-2023-AS2 (#48-6-0240), DEHW-2023-AS9 (#55-1-0137), DEHW-2023-AS13 (#48-6-0246), DEHW-2023-AS15 (#48-6-0245), DEHW-2023-AS16 (#48-6-0244), DEHW-2023-AS17 (#54-3-0066), DEHW-2023-AS18 (#48-6-0243), DEHW-2023-AS19 (#48-6-0242), DEHW-2023-AS20 (#48-6-0241), DEHW-2023-AS21 (#55-1-0136), DEHW-2023-AS22 (#55-1-0135), DEHW-2023-AS23 (#55-1-0159), DEHW-2023-AS25 (#48-6-0263), DEHW-2023-AS26 (#48-6-0262), DEHW-2024-AS1 (#48-6-0286), DEHW-2024-AS2 (#48-6-0287), DEHW-2024-AS3 (#48-6-0288), #55-1-0131, DEHW-2024A-AS1, DEHW-2024A-AS2, DEHS-2023-AS7 (#55-1-0094), DEHW-2023-ASPAD1 (#55-1-0157), DEHW-2023-ASPAD6 (#48-6-0261), DEHW-2023-ASPAD7 (#54-3-0069) DEHW-2023-IF1 (#48-6-0282), DEHW-2023-IF2 (#48-6-0281), DEHW-2023-IF3 (#48-6-0280), DEHW-2023-IF4 (#48-6-0279), DEHW-2023-IF5 (#49-4-0241), DEHW-2023-IF6 (#48-6-0278), DEHW-2023-IF7 (#55-1-0166), DEHW-2023-IF8 (#49-4-0240), DEHW-2023-IF9 (#49-4-0239), DEHW-2023-IF10 (#48-6-0277), DEHW-2023-IF11 (#48-6-0276), DEHW-2023-IF12 (#48-6-0275), DEHW-2023-IF13 (#49-4-0238), DEHW-2024-IF1 (#48-6-0307), DEHW-2023-IFPAD1 (#48-6-0274), DEHW-2023-IFPAD2 (#54-3-0072), DEHW-2023-H1 (#48-6-0259), DEHW-2023-H5 (#48-6-0255), DEHW-2023-H6 (#48-6-0254), DEHW-2023-H7 (#48-6-0272), DEHW-2024-H2 (#48-6-0290), DEHW-2024A-H1, DEHW-2023-HAS11 (#48-6-0265), DEHW-2024-HAS3 (#48-6-0293), DEHW-2023-HIF1 (#49-4-0235), DEHW-2024-HIF2 (#48-6-0285), DEHW-2023-HIF3 (#55-1-0167)
Complete loss of value[1]		
DEHW-2023-H3	48-6-0257	-
DEHW-2023-HAS7	55-1-0165	-
DEHW-2023-HAS8	48-6-0267	-
DEHW-2023-ST10	48-6-0251	-
DEHW-2024-H1	48-6-0289	-
DEHW-2024-HAS2	48-6-0292	-
DEHW-2024A-ST9	55-1-0187	-

Notes: 1. Sites that intersect with the development footprint and/or development corridor may be subject to partial or complete loss of value. The extent of disturbance to each site will be confirmed during detailed design; however, it's assumed that sites with a higher percentage of overlap with the development footprint and/or development corridor will be subject to complete loss of value.

Table G.4 Historic heritage items – avoid, partially avoid, relocate or archival recording

Site
Commitment to avoid – no impact
DEHW001
DEHW002
DEHW003
DEHW004
DEHW005
DEHW006
DEHW007
DEHW008

Notes: Management measures have been provided for DEHW001 and DEHW003 if impacts to these sites cannot be avoided following detailed design.

G.1.2 Visual information

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T113	Eastern area	1152.32	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T105	Eastern area	1212.58	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T111	Eastern area	1356.70	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T98	Eastern area	1504.81	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T107	Eastern area	1625.81	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T109	Eastern area	1801.15	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T93	Eastern area	2143.12	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T119	Eastern area	2216.85	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T116	Eastern area	2277.10	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T106	Eastern area	2425.71	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T99	Eastern area	2506.66	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T94	Eastern area	2573.61	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T103	Eastern area	2724.44	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T101	Eastern area	2755.86	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T112	Eastern area	2794.27	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T88	Eastern area	2839.38	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T97	Eastern area	3117.45	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T118	Eastern area	3422.69	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T110	Eastern area	3588.78	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T125	Eastern area	3595.85	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T104	Eastern area	3660.11	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T85	Eastern area	3715.94	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T120	Eastern area	3764.87	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T82	Eastern area	3783.56	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T115	Eastern area	3877.67	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T87	Eastern area	3917.70	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T123	Eastern area	3972.05	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T78	Eastern area	4023.05	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T91	Eastern area	4248.43	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T100	Eastern area	4276.82	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T86	Eastern area	4374.69	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T74	Eastern area	4456.30	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T95	Eastern area	4457.64	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T83	Eastern area	4480.31	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T108	Eastern area	4528.16	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T92	Eastern area	4586.71	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T114	Eastern area	4722.48	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T89	Eastern area	4744.13	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T117	Eastern area	4760.75	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T77	Eastern area	4886.62	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T81	Eastern area	4939.20	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T73	Eastern area	4956.17	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T79	Eastern area	5045.61	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T70	Eastern area	5072.09	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T72	Eastern area	5120.96	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T71	Eastern area	5697.66	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T64	Eastern area	5897.08	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T61	Eastern area	6102.15	T113	Eastern area	1152.32	Black line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T69	Eastern area	6292.62	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T56	Eastern area	6390.39	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T58	Eastern area	6619.65	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T51	Eastern area	7023.98	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T50	Eastern area	7078.60	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T54	Eastern area	7229.40	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T45	Eastern area	7536.66	T113	Eastern area	1152.32	Black line
R156	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T44	Eastern area	7713.70	T113	Eastern area	1152.32	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T113	Eastern area	1165.19	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T105	Eastern area	1167.44	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T111	Eastern area	1301.96	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T98	Eastern area	1387.51	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T107	Eastern area	1669.99	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T109	Eastern area	1702.83	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T93	Eastern area	2014.51	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T119	Eastern area	2270.16	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T116	Eastern area	2292.57	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T106	Eastern area	2304.71	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T99	Eastern area	2506.03	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T94	Eastern area	2533.51	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T101	Eastern area	2615.21	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T112	Eastern area	2742.74	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T88	Eastern area	2746.64	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T103	Eastern area	2757.30	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T97	Eastern area	2965.65	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T118	Eastern area	3399.39	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T110	Eastern area	3500.83	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T104	Eastern area	3531.18	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T125	Eastern area	3646.82	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T85	Eastern area	3666.16	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T82	Eastern area	3709.32	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T87	Eastern area	3760.59	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T120	Eastern area	3765.75	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T115	Eastern area	3819.72	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T78	Eastern area	3925.95	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T123	Eastern area	3999.70	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T100	Eastern area	4143.37	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T91	Eastern area	4250.31	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T95	Eastern area	4313.45	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T83	Eastern area	4323.24	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T74	Eastern area	4327.35	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T86	Eastern area	4355.60	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T108	Eastern area	4434.61	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T89	Eastern area	4592.74	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T92	Eastern area	4611.64	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T114	Eastern area	4652.43	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T117	Eastern area	4719.72	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T77	Eastern area	4831.90	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T73	Eastern area	4883.59	T113	Eastern area	1165.19	Black line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T79	Eastern area	4888.73	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T81	Eastern area	4906.22	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T70	Eastern area	4946.00	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T72	Eastern area	4966.41	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T71	Eastern area	5541.50	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T64	Eastern area	5750.29	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T61	Eastern area	5979.93	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T69	Eastern area	6135.57	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T56	Eastern area	6258.29	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T58	Eastern area	6468.84	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T51	Eastern area	6904.18	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T50	Eastern area	6939.63	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T54	Eastern area	7076.41	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T45	Eastern area	7394.67	T113	Eastern area	1165.19	Black line
R042	Associated	33	DP756444	137 Cadell Road Jerilderie 2716	T44	Eastern area	7595.36	T113	Eastern area	1165.19	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T117	Eastern area	2051.48	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T114	Eastern area	2427.40	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T115	Eastern area	3016.49	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T108	Eastern area	3147.79	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T120	Eastern area	3276.55	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T118	Eastern area	3409.83	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T123	Eastern area	3547.12	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T110	Eastern area	3660.30	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T112	Eastern area	4039.11	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T125	Eastern area	4232.14	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T104	Eastern area	4699.65	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T116	Eastern area	4701.03	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T100	Eastern area	4750.24	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T106	Eastern area	5073.75	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T119	Eastern area	5080.50	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T109	Eastern area	5247.15	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T95	Eastern area	5363.92	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T101	Eastern area	5425.93	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T111	Eastern area	5471.17	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T113	Eastern area	5705.48	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T97	Eastern area	5907.07	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T89	Eastern area	5998.35	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T87	Eastern area	6638.34	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T83	Eastern area	6786.62	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T79	Eastern area	6933.39	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T98	Eastern area	7572.34	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T93	Eastern area	7787.84	T117	Eastern area	2051.48	Black line
R019	Non-associated	159	DP756459	Mclennons Bore Road Gala Vale 2716	T105	Eastern area	7833.13	T117	Eastern area	2051.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T145	Western area	2188.48	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T152	Western area	2366.09	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T142	Western area	2758.54	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T149	Western area	2945.45	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T133	Western area	3412.06	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T141	Western area	3825.88	T145	Western area	2188.48	Black line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T164	Western area	4101.93	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T161	Western area	4275.98	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T158	Western area	4553.39	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T113	Western area	4683.58	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T131	Western area	4791.78	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T123	Western area	4842.61	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T103	Western area	4997.05	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T153	Western area	5084.75	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T90	Western area	5481.12	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T150	Western area	5590.52	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T105	Western area	5629.47	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T89	Western area	5642.26	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T134	Western area	5706.38	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T148	Western area	6064.86	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T83	Western area	6139.62	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T106	Western area	6141.79	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T129	Western area	6209.51	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T130	Western area	6332.48	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T120	Western area	6346.48	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T111	Western area	6442.34	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T78	Western area	6466.18	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T72	Western area	6484.06	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T137	Western area	6506.27	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T104	Western area	6541.46	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T76	Western area	6634.35	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T71	Western area	6701.91	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T87	Western area	6828.11	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T121	Western area	6859.23	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T97	Western area	6879.34	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T81	Western area	6931.30	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T80	Western area	6994.20	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T61	Western area	7069.75	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T62	Western area	7092.58	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T160	Western area	7132.57	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T155	Western area	7521.67	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T73	Western area	7548.62	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T60	Western area	7584.44	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T139	Western area	7610.52	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T51	Western area	7711.66	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T53	Western area	7859.56	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T127	Western area	7865.72	T145	Western area	2188.48	Black line
R093	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T52	Western area	7902.53	T145	Western area	2188.48	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T152	Western area	2260.98	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T145	Western area	2266.62	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T142	Western area	2809.34	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T149	Western area	2860.43	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T133	Western area	3445.40	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T164	Western area	3788.98	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T161	Western area	3991.17	T152	Western area	2260.98	Black line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T141	Western area	4188.40	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T158	Western area	4296.33	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T153	Western area	4837.07	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T113	Western area	5008.36	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T131	Western area	5156.26	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T123	Western area	5198.15	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T103	Western area	5291.44	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T150	Western area	5355.01	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T134	Western area	5554.34	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T90	Western area	5738.95	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T89	Western area	5789.92	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T148	Western area	5843.84	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T105	Western area	5973.31	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T129	Western area	6065.38	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T106	Western area	6100.36	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T83	Western area	6262.93	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T130	Western area	6699.35	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T72	Western area	6704.96	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T120	Western area	6713.39	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T121	Western area	6716.07	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T76	Western area	6729.95	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T78	Western area	6760.55	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T111	Western area	6806.67	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T97	Western area	6831.71	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T160	Western area	6844.74	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T137	Western area	6870.63	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T104	Western area	6900.73	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T71	Western area	6977.95	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T80	Western area	7023.74	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T87	Western area	7169.07	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T155	Western area	7246.90	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T61	Western area	7248.67	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T81	Western area	7260.44	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T62	Western area	7341.22	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T139	Western area	7399.77	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T73	Western area	7570.70	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T127	Western area	7683.51	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T60	Western area	7885.27	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T51	Western area	7936.56	T152	Western area	2260.98	Black line
R084	Associated	27	DP756299	1158 Goolgumbla Road Mabins Well 2716	T53	Western area	7979.77	T152	Western area	2260.98	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T73	Eastern area	3749.69	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T77	Eastern area	3752.63	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T81	Eastern area	3839.35	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T36	Eastern area	3913.51	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T44	Eastern area	3925.64	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T51	Eastern area	4083.79	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T30	Eastern area	4154.58	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T61	Eastern area	4461.72	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T86	Eastern area	4519.92	T73	Eastern area	3749.69	Black line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T27	Eastern area	4866.36	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T82	Eastern area	4906.53	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T85	Eastern area	4928.08	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T78	Eastern area	4929.66	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T91	Eastern area	4943.20	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T56	Eastern area	5035.07	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T70	Eastern area	5073.81	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T92	Eastern area	5207.80	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T74	Eastern area	5499.92	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T50	Eastern area	5587.18	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T88	Eastern area	5947.23	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T45	Eastern area	5951.69	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T94	Eastern area	6081.73	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T64	Eastern area	6305.57	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T15	Eastern area	6321.19	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T99	Eastern area	6340.27	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T25	Eastern area	6458.70	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T103	Eastern area	6504.33	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T42	Eastern area	6593.98	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T58	Eastern area	6846.58	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T93	Eastern area	6962.55	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T12	Eastern area	7044.31	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T72	Eastern area	7237.09	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T54	Eastern area	7332.62	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T98	Eastern area	7345.20	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T107	Eastern area	7377.67	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T105	Eastern area	7426.18	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T18	Eastern area	7576.85	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T71	Eastern area	7625.89	T73	Eastern area	3749.69	Black line
R036	Non-associated	84	DP756418	Wilson Road Jerilderie 2716	T10	Eastern area	7759.32	T73	Eastern area	3749.69	Black line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T31	Eastern area	3879.62	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T37	Eastern area	4048.79	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T43	Eastern area	4389.01	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T17	Eastern area	4803.39	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T48	Eastern area	4821.18	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T22	Eastern area	5302.52	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T52	Eastern area	5406.81	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T28	Eastern area	5605.84	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T33	Eastern area	5875.30	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T38	Eastern area	6028.16	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T49	Eastern area	7674.87	T31	Eastern area	3879.62	Blue line
R143	Non-associated	3	DP706781	773 Four Cors Rd, Coleambally NSW 2707	T41	Eastern area	7905.06	T31	Eastern area	3879.62	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T164	Western area	3888.17	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T161	Western area	4411.64	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T158	Western area	4922.23	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T153	Western area	5221.19	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T160	Western area	5265.51	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T150	Western area	5626.37	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T155	Western area	5820.16	T164	Western area	3888.17	Blue line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T162	Western area	5983.13	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T152	Western area	6068.82	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T148	Western area	6107.76	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T149	Western area	6395.23	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T156	Western area	6450.11	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T134	Western area	6994.01	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T147	Western area	7022.67	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T145	Western area	7049.39	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T139	Western area	7226.74	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T142	Western area	7245.72	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T129	Western area	7410.76	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T133	Western area	7539.35	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T121	Western area	7851.53	T164	Western area	3888.17	Blue line
R091	Non-associated	7	DP756299	730 Pooginook Road Mabins Well 2716	T127	Western area	7919.56	T164	Western area	3888.17	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T14	Western area	4167.93	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T6	Western area	4168.75	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T22	Western area	4242.51	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T34	Western area	4390.81	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T45	Western area	4631.31	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T54	Western area	4904.16	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T31	Western area	5597.01	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T4	Western area	5671.84	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T24	Western area	5920.47	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T64	Western area	6281.63	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T18	Western area	6392.49	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T1	Western area	6407.47	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T55	Western area	6534.46	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T12	Western area	6784.61	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T46	Western area	6915.35	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T9	Western area	7194.03	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T38	Western area	7229.82	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T3	Western area	7517.07	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T92	Western area	7570.84	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T32	Western area	7741.57	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T69	Western area	7784.50	T14	Western area	4167.93	Blue line
R090	Non-associated	28	DP756311	Carrathool Road Steam Plains 2710	T79	Western area	7798.48	T14	Western area	4167.93	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T164	Western area	4438.27	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T161	Western area	4946.36	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T158	Western area	5440.90	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T160	Western area	5559.21	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T153	Western area	5707.62	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T150	Western area	6084.83	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T155	Western area	6103.28	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T162	Western area	6147.38	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T148	Western area	6545.12	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T156	Western area	6643.41	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T152	Western area	6676.04	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T149	Western area	6992.82	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T147	Western area	7287.94	T164	Western area	4438.27	Blue line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T134	Western area	7486.68	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T139	Western area	7586.51	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T145	Western area	7662.62	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T142	Western area	7853.76	T164	Western area	4438.27	Blue line
R144	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T129	Western area	7886.56	T164	Western area	4438.27	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T164	Western area	4550.12	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T161	Western area	5063.64	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T158	Western area	5563.09	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T160	Western area	5712.00	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T153	Western area	5837.72	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T150	Western area	6220.50	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T155	Western area	6256.68	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T162	Western area	6302.70	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T148	Western area	6684.40	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T152	Western area	6753.45	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T156	Western area	6798.85	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T149	Western area	7080.14	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T147	Western area	7442.20	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T134	Western area	7615.95	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T145	Western area	7729.02	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T139	Western area	7735.21	T164	Western area	4550.12	Blue line
R108	Non-associated	8	DP756299	730 Pooginook Road Mabins Well 2716	T142	Western area	7930.00	T164	Western area	4550.12	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T107	Eastern area	4673.88	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T103	Eastern area	4738.29	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T99	Eastern area	5260.59	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T92	Eastern area	5412.89	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T105	Eastern area	5478.74	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T119	Eastern area	5604.30	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T113	Eastern area	5644.61	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T91	Eastern area	5827.81	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T94	Eastern area	5880.40	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T116	Eastern area	6126.60	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T111	Eastern area	6184.92	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T98	Eastern area	6222.87	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T125	Eastern area	6239.54	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T86	Eastern area	6377.38	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T85	Eastern area	6640.41	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T109	Eastern area	6810.23	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T88	Eastern area	6829.78	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T93	Eastern area	6830.56	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T123	Eastern area	6923.40	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T81	Eastern area	7046.49	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T82	Eastern area	7155.65	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T112	Eastern area	7247.45	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T120	Eastern area	7262.19	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T118	Eastern area	7381.99	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T77	Eastern area	7516.22	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T106	Eastern area	7532.16	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T78	Eastern area	7776.21	T107	Eastern area	4673.88	Blue line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T101	Eastern area	7966.64	T107	Eastern area	4673.88	Blue line
R049	Non-associated	127	DP756396	211 Liddles Lane Jerilderie 2716	T73	Eastern area	7971.78	T107	Eastern area	4673.88	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T3	Eastern area	5260.40	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T5	Eastern area	5705.28	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T8	Eastern area	6156.95	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T11	Eastern area	6264.96	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T141	Western area	6299.30	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T17	Eastern area	6526.91	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T137	Western area	6545.67	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T131	Western area	6664.19	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T22	Eastern area	6668.69	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T14	Eastern area	6771.16	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T130	Western area	6842.85	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T28	Eastern area	6976.97	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T20	Eastern area	7114.89	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T10	Eastern area	7185.32	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T123	Western area	7212.20	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T120	Western area	7272.79	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T31	Eastern area	7394.88	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T33	Eastern area	7454.20	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T145	Western area	7590.46	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T111	Western area	7738.28	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T24	Eastern area	7744.93	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T18	Eastern area	7768.72	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T12	Eastern area	7854.50	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T37	Eastern area	7875.18	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T152	Western area	7914.02	T3	Eastern area	5260.40	Blue line
R088	Non-associated	11	DP756334	560 Goolgumbla Road Mabins Well 2716	T113	Western area	7940.42	T3	Eastern area	5260.40	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T117	Eastern area	5281.02	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T114	Eastern area	5355.39	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T108	Eastern area	5828.48	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T115	Eastern area	6142.09	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T120	Eastern area	6588.18	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T110	Eastern area	6602.99	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T118	Eastern area	6680.54	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T123	Eastern area	6838.22	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T100	Eastern area	7146.34	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T112	Eastern area	7220.68	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T104	Eastern area	7332.36	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T125	Eastern area	7519.62	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T95	Eastern area	7636.47	T117	Eastern area	5281.02	Blue line
R157	Non-associated	67	DP756459	231 Gala Vale Road Gala Vale 2716	T116	Eastern area	7990.08	T117	Eastern area	5281.02	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T30	Eastern area	5401.41	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T36	Eastern area	5497.14	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T44	Eastern area	5845.17	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T27	Eastern area	5916.42	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T51	Eastern area	6307.30	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T73	Eastern area	6876.68	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T15	Eastern area	6922.44	T30	Eastern area	5401.41	Blue line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T77	Eastern area	6929.19	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T61	Eastern area	6988.83	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T81	Eastern area	7017.15	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T56	Eastern area	7378.77	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T25	Eastern area	7607.87	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T12	Eastern area	7622.31	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T50	Eastern area	7643.80	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T86	Eastern area	7690.68	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T70	Eastern area	7827.54	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T45	Eastern area	7831.64	T30	Eastern area	5401.41	Blue line
R038	Non-associated	75	DP756418	Wilson Road Jerilderie 2716	T78	Eastern area	7992.86	T30	Eastern area	5401.41	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T92	Eastern area	5417.66	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T81	Eastern area	5861.96	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T91	Eastern area	5897.23	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T86	Eastern area	6043.65	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T77	Eastern area	6441.01	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T73	Eastern area	6941.31	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T85	Eastern area	7070.91	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T103	Eastern area	7266.03	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T82	Eastern area	7532.99	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T99	Eastern area	7575.29	T92	Eastern area	5417.66	Blue line
R111	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T94	Eastern area	7809.48	T92	Eastern area	5417.66	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T92	Eastern area	5502.48	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T81	Eastern area	5930.72	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T91	Eastern area	5977.65	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T86	Eastern area	6119.14	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T77	Eastern area	6505.41	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T73	Eastern area	7002.08	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T85	Eastern area	7144.60	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T103	Eastern area	7352.45	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T82	Eastern area	7603.13	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T99	Eastern area	7658.92	T92	Eastern area	5502.48	Blue line
R008	Non-associated	57	DP756444	600 Woodside Road Jerilderie 2716	T94	Eastern area	7889.54	T92	Eastern area	5502.48	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T117	Eastern area	5583.69	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T123	Eastern area	5951.32	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T120	Eastern area	6129.59	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T114	Eastern area	6248.56	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T125	Eastern area	6477.58	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T118	Eastern area	6582.30	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T115	Eastern area	6589.10	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T108	Eastern area	7033.21	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T110	Eastern area	7372.74	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T112	Eastern area	7398.57	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T116	Eastern area	7606.31	T117	Eastern area	5583.69	Blue line
R078	Non-associated	2	DP619912	884 Cadell Road Gala Vale 2716	T119	Eastern area	7765.63	T117	Eastern area	5583.69	Blue line
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T92	Eastern area	5989.22	T92	Eastern area	5989.22	Blue line
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T81	Eastern area	6444.33	T92	Eastern area	5989.22	Blue line
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T91	Eastern area	6477.65	T92	Eastern area	5989.22	Blue line
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T86	Eastern area	6627.81	T92	Eastern area	5989.22	Blue line

Residence ID	Associated/Non-Associated	Lot	DP	Address	Each residence to each WTG within 8 km			Nearest WTG	Nearest WTG Stage	Distance to nearest WTG (m)	Visual Zone (black line / blue line)*
					WTG No.	WTG Stage	Distance to WTG (m)				
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T77	Eastern area	7019.19	T92	Eastern area	5989.22	Blue line
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T73	Eastern area	7514.51	T92	Eastern area	5989.22	Blue line
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T85	Eastern area	7655.24	T92	Eastern area	5989.22	Blue line
R082	Non-associated	66	DP756444	600 Woodside Road Jerilderie 2716	T103	Eastern area	7831.73	T92	Eastern area	5989.22	Blue line
R141	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T6	Western area	6414.54	T6	Western area	6414.54	Blue line
R141	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T14	Western area	6594.56	T6	Western area	6414.54	Blue line
R141	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T22	Western area	6813.90	T6	Western area	6414.54	Blue line
R141	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T34	Western area	7075.13	T6	Western area	6414.54	Blue line
R141	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T45	Western area	7404.26	T6	Western area	6414.54	Blue line
R141	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T54	Western area	7729.08	T6	Western area	6414.54	Blue line
R141	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T4	Western area	7729.37	T6	Western area	6414.54	Blue line
R092	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T6	Western area	6443.10	T6	Western area	6443.10	Blue line
R092	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T14	Western area	6625.71	T6	Western area	6443.10	Blue line
R092	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T22	Western area	6847.24	T6	Western area	6443.10	Blue line
R092	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T34	Western area	7110.38	T6	Western area	6443.10	Blue line
R092	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T45	Western area	7441.26	T6	Western area	6443.10	Blue line
R092	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T4	Western area	7754.05	T6	Western area	6443.10	Blue line
R092	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T54	Western area	7767.35	T6	Western area	6443.10	Blue line
R140	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T6	Western area	6467.90	T6	Western area	6467.90	Blue line
R140	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T14	Western area	6657.25	T6	Western area	6467.90	Blue line
R140	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T22	Western area	6884.85	T6	Western area	6467.90	Blue line
R140	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T34	Western area	7153.51	T6	Western area	6467.90	Blue line
R140	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T45	Western area	7489.78	T6	Western area	6467.90	Blue line
R140	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T4	Western area	7769.10	T6	Western area	6467.90	Blue line
R140	Non-associated	1	DP756279	3543 Carrathool Road Steam Plains 2710	T54	Western area	7820.07	T6	Western area	6467.90	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T114	Eastern area	6858.06	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T108	Eastern area	6876.29	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T117	Eastern area	7285.53	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T100	Eastern area	7480.28	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T95	Eastern area	7699.23	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T115	Eastern area	7769.52	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T110	Eastern area	7826.11	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T104	Eastern area	7945.57	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T89	Eastern area	7958.71	T114	Eastern area	6858.06	Blue line
R107	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T48	Eastern area	7993.64	T114	Eastern area	6858.06	Blue line
R050	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T114	Eastern area	7238.70	T114	Eastern area	7238.70	Blue line
R050	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T108	Eastern area	7297.41	T114	Eastern area	7238.70	Blue line
R050	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T117	Eastern area	7621.06	T114	Eastern area	7238.70	Blue line
R050	Non-associated	66	DP756458	773 Four Corners Road Argoon 2707	T100	Eastern area	7958.16	T114	Eastern area	7238.70	Blue line
R056	Non-associated	66	DP756459	773 Four Corners Road Argoon 2707	T117	Eastern area	7459.38	T117	Eastern area	7459.38	Blue line
R056	Non-associated	66	DP756459	773 Four Corners Road Argoon 2707	T114	Eastern area	7645.03	T117	Eastern area	7459.38	Blue line
R079	Non-associated	3	DP47231	11 Graham Road Coleambally 2707	T123	Eastern area	7915.07	T123	Eastern area	7915.07	Blue line
R087	Non-associated	3	DP756281	676 Mabins Well Road Moonbria 2710	T54	Western area	7952.08	T54	Western area	7952.08	Blue line

*Note: black line = 0 to 3.75 km of a WTG location, blue line = 3.75–5.5 km of a WTG location

G.2 Request for information – June 2025

Spark Renewables received a request from DPHI for information to be included in this amendment report. Responses and references to relevant sections of the amendment report are provided in Table G.5.

Table G.5 Request for information – June 2025

Item	Comment	Response
Figure updates	Revise Figures 6.7 and 6.8 to include labelling of roads comprising the transport route	Road labels have been added to Figure 6.7 and Figure 6.8. Roads used on the proposed haulage route options are also listed in Section 6.6.2iic. Further detail regarding roads on the transport route is provided in Annexure B of the Addendum TIA (Appendix D.5 of this amendment report).
Figure updates	Revise Figure 1.4 (Comparison between EIS and amended project layouts) to include: • labels for turbines and non-associated residences • the project area at EIS stage (consider a dotted line) • site access points (as per the EIS) and as per the amended project • ancillary infrastructure such as transmission lines, O&M facilities, substation, switchyard, workforce accommodation facilities, met masts, etc. as per the EIS and as per the amended project.	Figure 1.4 has been updated to include the requested features.
Project amendments	Identify the land parcels removed as part of the amended project area. Clarify whether those landowners are still associated with the project and the nature of their association.	There are two landowners associated with the project. A total of 37 land parcels were removed as part of the amended project area, which are listed in Section G.2.1 below. The two project landowners are still associated with the project and removal of these land parcels has not resulted in removal of an associated landowner. A total of 2 land parcels were added as part of the amended project area (Lot 3 of DP1274586; Lot 4 of DP1282091), which are both owned by one of the two associated landowners that have provided landowner's consent for the project.
Transmission connection	EnergyCo announced the South West REZ access rights on 23 April 2025 and that Dinawan Wind Farm was granted access for a maximum connection capacity of 707 MW, comprising: • 357 MW at Dinawan Energy Hub Point of Connection 1; and • 350 MW at Dinawan Energy Hub Point of Connection 2. EnergyCo has also stated that, at this stage, there is no additional capacity available on the South West REZ transmission network (Project EnergyConnect (PEC) or Victoria NSW Interconnector West (VNI West)). Provide comment on how this relates to the current development application for 1,200 MW.	Spark Renewables has successfully secured access rights for the Dinawan Energy Hub through the South West REZ access tendering process, including a maximum connection capacity of 707 MW for the Dinawan Wind Farm. While the amended project has a total capacity of up to 1,200 MW, capacity will initially be scaled to meet the capacity that has been awarded to the Dinawan Wind Farm through the South West REZ access tendering process. Accordingly, it is acknowledged that there is additional capacity (493 MW) being sought as part of this application. The project is considered to be readily scalable. Therefore, there is redundancy in the project capacity, which could be advantageous in circumstances such as: • where another project that has secured access rights is unable to deliver it's generation capacity

Item	Comment	Response
		• potential future network augmentation allows for increased capacity • where flexibility is required to optimize siting of turbines. On the latter point, the proposed project layout allows for greater flexibility during detailed design to optimise energy generation. For example, by constructing slightly more capacity than the grid allocation, the project can offset any electrical losses and ensure the energy generation obligations can still be met. Alternatively, the generation capacity could be achieved by installation of smaller, lower-capacity WTGs to better align with connection capacity limits, which could require up to 200 WTG locations.
Biodiversity	Clarify whether the development corridor aligns with the 'subject land'. If not, does the subject land entirely cover the development corridor.	The subject land does not align with the development corridor; however, the subject land covers the development corridor in its entirety. The subject land is defined as an area of 31,445 hectares in total, and is the area to which the BAM has been applied, derived based on a minimum 500 m buffer from the development corridor.
Biodiversity	Provide the area of native vegetation, threatened ecological communities and other species within the development corridor and disturbance footprint. Ensure that the figures for these areas are consistent throughout the amendment report, noting that Section 6.3.1 identifies that the subject land is approximately 31,445 ha, however Section 6.3.2 identifies 50,856 ha of native vegetation within the subject land.	The area of native vegetation and TECs within the development corridor and development footprint is provided in Table 6.5 and Table 6.6, respectively. The subject land for the amended project is approximately 31,445 ha, of which approximately 28,724 ha is mapped as native vegetation. The assessment area as defined within the BDAR (1,500 m buffer around the subject land) is 56,849 hectares, of which approximately 50,856 ha is mapped as native vegetation.
Visual	Update the Addendum LVIA to provide an assessment of visual impacts of the revised location of the transmission line, collector substation and switchyard options, and the workforce accommodation facilities.	Further detail regarding the revised locations of the transmission line, collector substation and switchyard options, and the workforce accommodation facilities has been added in Section 6.1.1.
Accommodation camps	Provide further details for the onsite temporary workers accommodation (TWA) facilities, including the following information: • conceptual layout; • timeframes for construction, operation, and decommissioning of each site; • social impacts (incl. security, complaints handling); • further detail in the acoustic assessment on noise levels experienced at receivers during operation of the camps; • water, waste, sewage, and electricity services (incl. supply source, supply and demand); • consideration of visual impacts; and • details on safe access/egress from the camps in the case of an emergency (including flooding).	Further detail on the temporary workers accommodation facilities is provided in Section G.2.3.
Aviation lighting	Provide an aviation night lighting plan in accordance with Civil Aviation Safety Authority (CASA) requirements	An indicative aviation obstacle lighting plan has been prepared in accordance with CASA requirements and is provided in Appendix D.13.

Item	Comment	Response
Traffic and transport	Provide evidence confirming EnergyCo would undertake the road upgrades identified in Table 5.3 of the Addendum Traffic Impact Assessment (TIA).	Location references have been added to Table 5.3 of the Addendum TIA to show where road upgrades are to be undertaken by EnergyCo.
Traffic and transport	Ensure the Amendment Report references relevant sections of the supporting technical assessments, including the Addendum TIA. For example, Table 6.20 could include a column referencing the relevant concept designs in the TIA.	A column describing the relevant concept designs has been included in Table 6.20 and Table A.4.
Traffic and transport	Provide further detail in the Amendment Report and technical appendices of the bridge assessments undertaken for all proposed OSOM routes.	The OSOM route assessment (Annexure B of Appendix D.5) has identified locations where bridge assessments would need to be undertaken along the proposed routes prior to construction, noting that most bridges typically have been used for similar loads previously. The selection of the final WTG model for construction, confirmation of weights and dimensions for OSOM deliveries and selection of the OSOM transport contractor will influence vehicle configurations and axle loadings. Load limits for bridges along the proposed OSOM routes will be reviewed in consultation with TfNSW and the relevant road authority (if not TfNSW) post-approval, as part of the preparation of the CTMP and prior to the commencement of the NHVR permit process for OSOM vehicles. It is anticipated that axle loads will be within design specifications for bridges on major state roads and highways. Where OSOM vehicles deviate off state roads, further engagement with local councils (where they are the relevant road authority) will be required to confirm load limits for bridge structures.
Traffic and transport	Update Table 6.20 to provide greater detail on the road upgrades to be undertaken by the Applicant, or reference where this information has been provided in the Addendum TIA.	A description of the treatment and a reference to the relevant concept design has been included in Table 6.20 and Table A.4 of this Amendment Report and Table 6.1 of the Addendum TIA.
Social and economic	Provide further detail on the terms of the benefit-sharing program, including the breakdown of contributions allocated to Murrumbidgee Council and Edward River Council.	Engagement with Murrumbidgee Council and Edward River Council is ongoing and will continue throughout assessment process. Prior to the announcement of the South West REZ access rights, Edward River Council had paused engagement with project proponents. Now that the access rights have been announced, engagement has recommenced with Edward River Council. Further details regarding the benefit sharing program will be provided following the agreement of terms with Edward River Council. Further details regarding the voluntary planning agreement are provided in Section 5.3.
Social and economic	Provide evidence of agreement from Murrumbidgee Council and Edward River Council on the terms of the proposed benefit-sharing program.	Engagement with Murrumbidgee Council and Edward River Council is ongoing and will continue throughout the assessment process.
Subdivisions	Identify the existing lots that may require subdivision.	The lots that may require subdivision are listed in Table G.7 in Section G.2.2 below.

Item	Comment	Response
Subdivisions	Specify the number and area (in ha) of proposed new lots for the subdivision.	The number and area (in ha) of the proposed new lots is provided in Table G.7 in Section G.2.2 below.
Subdivisions	Provide subdivision plans for the amended project.	Subdivision plans have been provided in Figure G.1 in Section G.2.2 below.
Noise	Identify noise levels from the operation of the workforce accommodation camp to verify statements indicating noise experienced by the closest at residence (R049) would be less than the noise generated by the construction of the accommodation camp (35 dB(A)).	Further detail regarding noise generated at the accommodation facilities is provided in Section 6.2.1 and Section G.2.2 below.
Contamination	Provide confirmation that the preliminary investigation for contamination was prepared in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021, Chapter 4.	A preliminary site investigation has been prepared in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021, Chapter 4 and is provided in Appendix D.6. This replaces the contamination assessment previously provided to DPHI.
Spatial files	Provide spatial files for the amended project, including: • the proposed amendments to the project, including site boundary, wind turbines, access tracks and site access points, and ancillary • infrastructure (such as transmission lines, substations, compound areas, workforce accommodation facilities etc.); • the development corridor and disturbance footprint (as amended); and • dwellings (associated/non-associated) and other relevant files (i.e. biodiversity and heritage layers)	The requested spatial files were provided to DPHI on 29 May 2025.

G.2.1 Amended project area

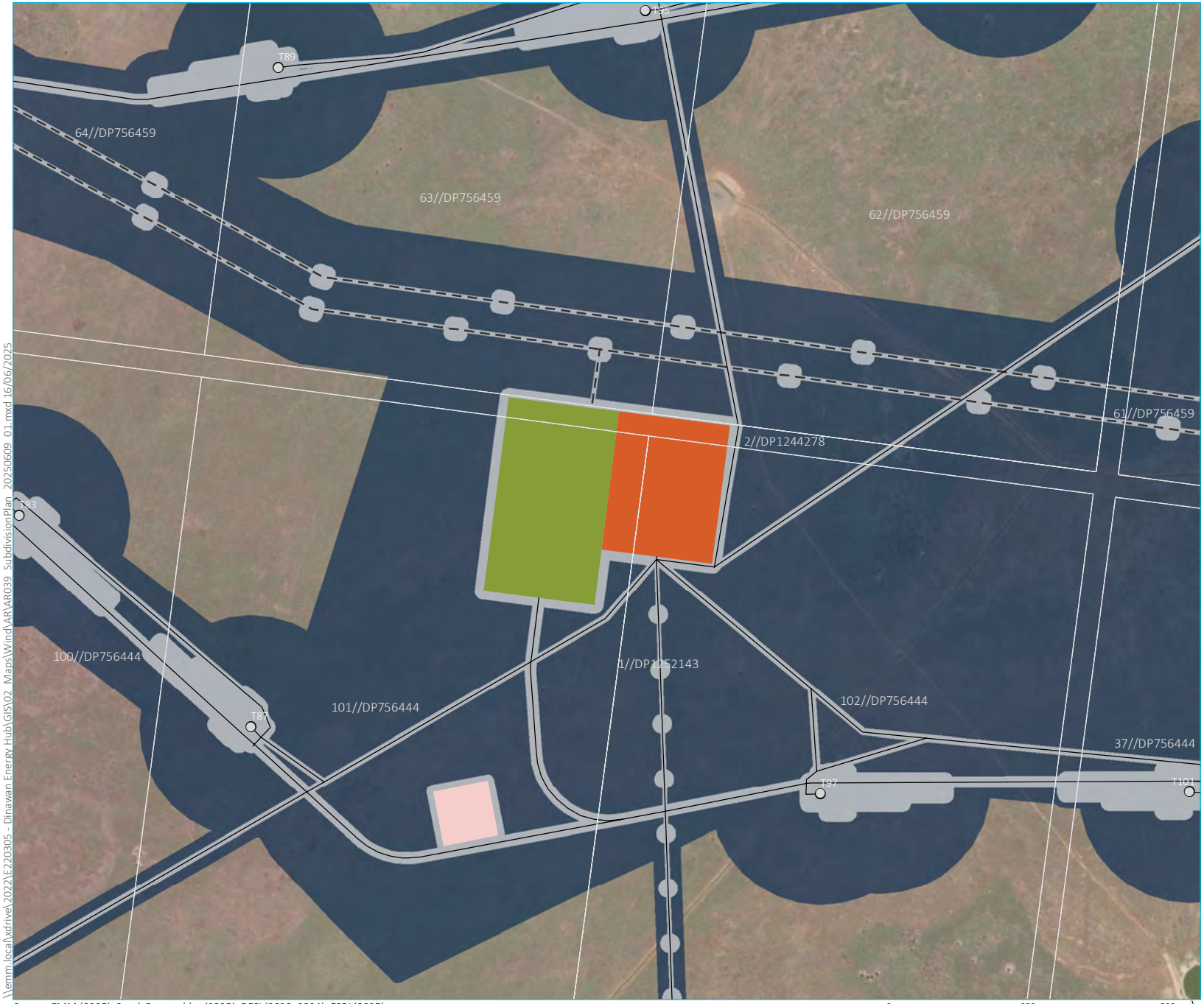
Table G.6 Cadastral lots removed from the project area

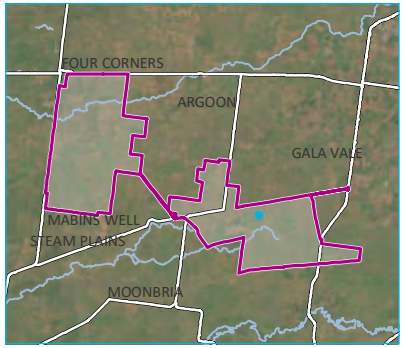
Lot	DP	Lot	DP	Lot	DP
11	DP756299	37	DP756299	11	DP756418
12	DP756299	39	DP756299	13	DP756418
13	DP756299	40	DP756299	14	DP756418
14	DP756299	41	DP756299	15	DP756418
19	DP756299	66	DP756299	20	DP756418
20	DP756299	67	DP756299	21	DP756418
21	DP756299	1	DP756418	33	DP756418
22	DP756299	2	DP756418	152	DP756418
23	DP756299	3	DP756418	153	DP756418
24	DP756299	8	DP756418	154	DP756418
34	DP756299	9	DP756418	41	DP756450
35	DP756299	10	DP756418	84	DP756450
36	DP756299				

G.2.2 Subdivision

Table G.7 Lots that may require subdivision

Location of substation/switchyard	Lots that may require subdivision	Number of proposed new lots	Area of new lot
Eastern area – A Shown on Figure G.1a	Lot 101 of DP756444 Lot 102 of DP756444 Lot 2 of DP1244278	1	12 ha
Eastern area – B Shown on Figure G.1b	Lot 135 of DP756418	1	12 ha
Western area – C Shown on Figure G.1c	Lot 1 of DP1252143 Lot 52 of DP756291 Lot 55 of DP756291 Lot 56 of DP756291 Lot 69 of DP756291	1	12 ha
Western area – D Shown on Figure G.1d	Lot 2 of DP1252143 Lot 6 of DP756257 Lot 7 of DP756257 Lot 13 of DP756257	1	12 ha





KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Site access and electrical cabling
- Transmission line
- Substation
- Switchyard
- Borrow pit

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)
- Cadastral boundary

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 250 500 m

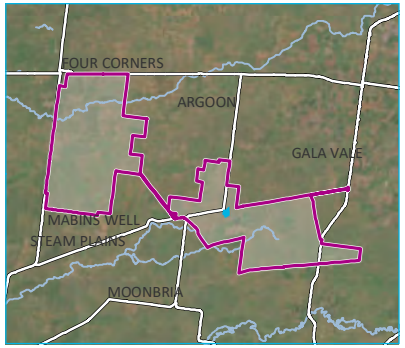
GDA2020 MGA Zone 55

N

Subdivision plan
Map 1 of 4

Dinawan Wind Farm
Amendment Report
Figure G.1a

EMM
creating opportunities



KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Site access point
- Site access and electrical cabling
- Transmission line
- Proposed access route (heavy and OSOM vehicles)
- Substation
- Switchyard

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)
- Cadastral boundary

Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 250 500 m

GDA2020 MGA Zone 55

N

Subdivision plan
Map 2 of 4

Dinawan Wind Farm
Amendment Report
Figure G.1b

EMM creating opportunities

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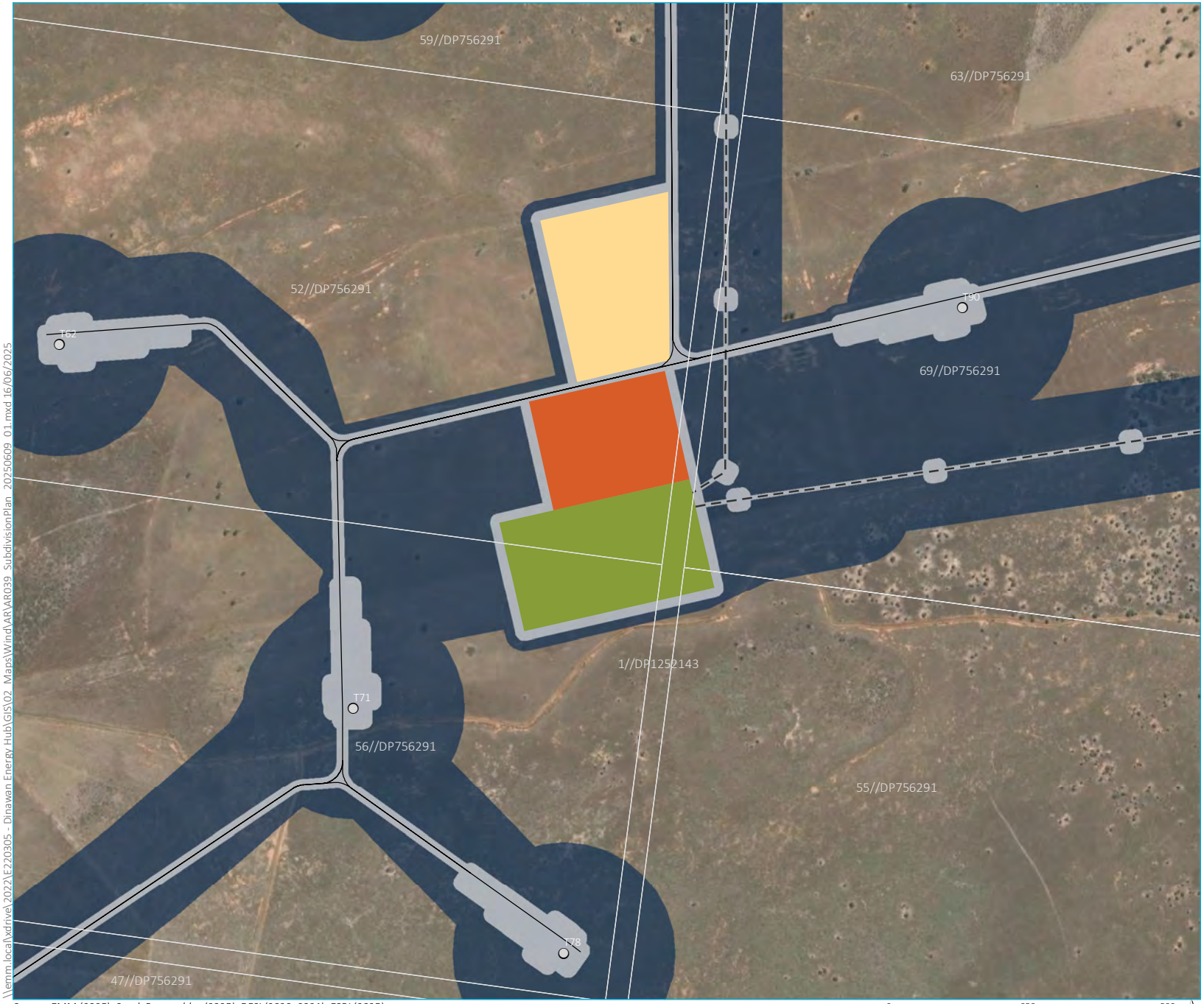

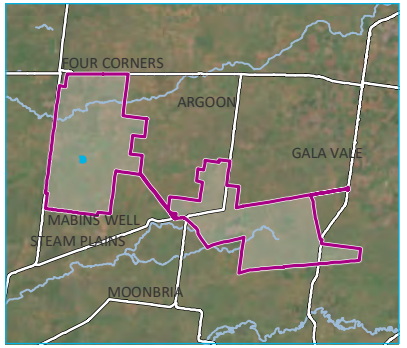

KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Site access and electrical cabling
- Transmission line
- Substation
- Switchyard
- Workforce accomodation facility

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)
- Cadastral boundary

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 250 500 m

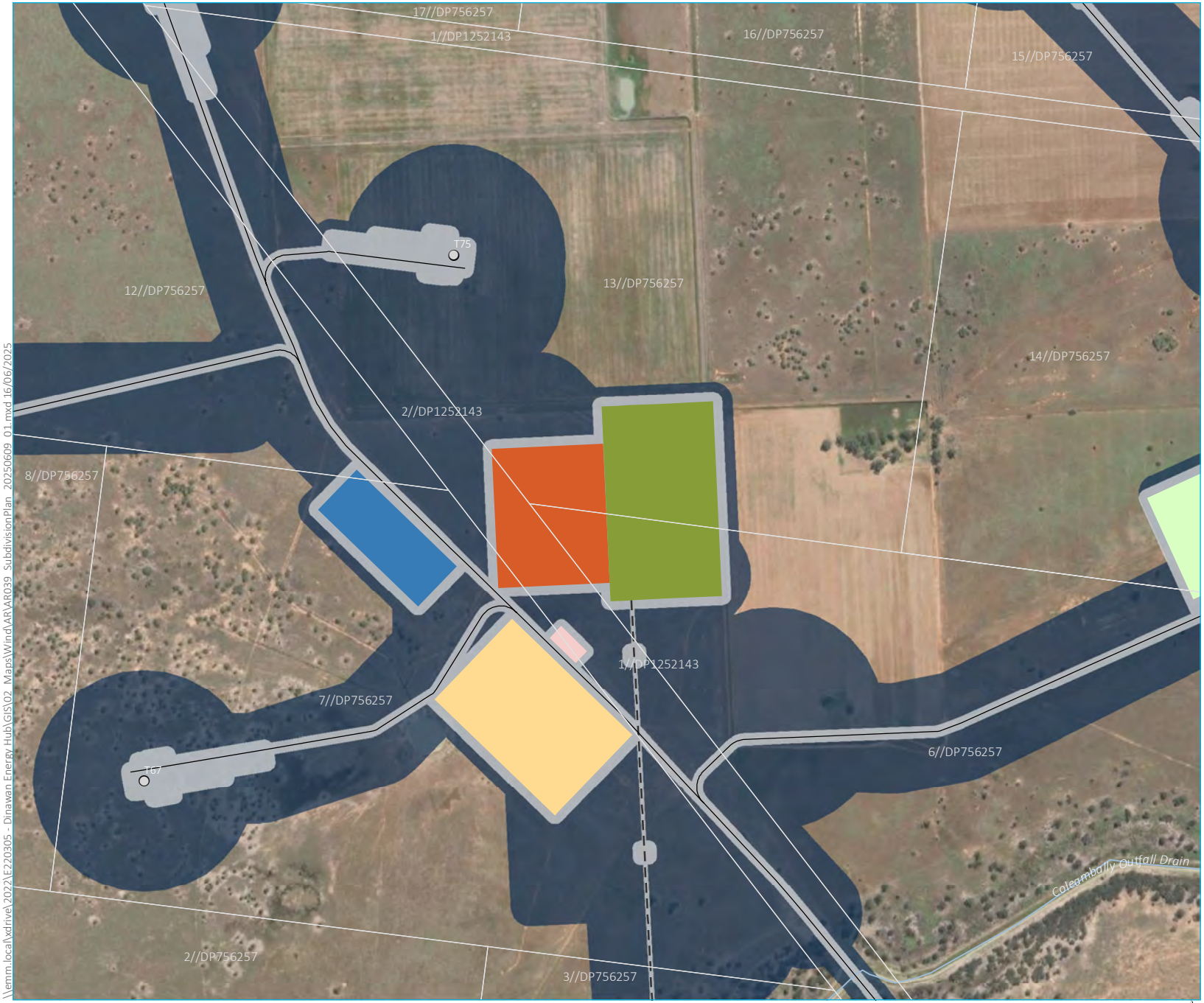
GDA2020 MGA Zone 55

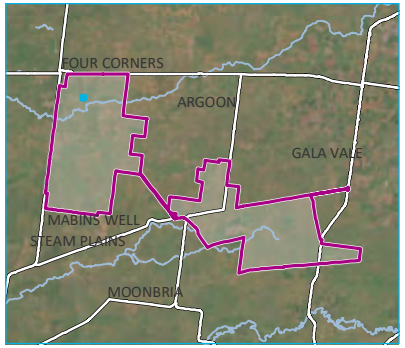
N

Subdivision plan
Map 3 of 4

Dinawan Wind Farm
Amendment Report
Figure G.1c

EMM
creating opportunities





KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Site access and electrical cabling
- Transmission line
- Construction compound
- Substation
- Switchyard
- Laydown
- Workforce accomodation facility
- Borrow pit

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)
- Cadastral boundary

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Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)

0 250 500 m

GDA2020 MGA Zone 55

N

Subdivision plan
Map 4 of 4

Dinawan Wind Farm
Amendment Report
Figure G.1d

EMM
creating opportunities

G.2.3 Temporary worker accommodation facilities

i Conceptual layout

An indicative layout of the temporary worker accommodation facilities is provided in Section A.3. While the layout is based on the eastern accommodation facility footprint, it will be adapted to suit the western area options, which are a similar size (approximately 6 ha).

ii Timing

Construction of each accommodation facility is estimated to be approximately nine months and will include site preparation and civil works, and installation of modular buildings on site. Commissioning and compliance checks for the accommodation facilities will completed prior to the operational phase.

The accommodation facility will be operational throughout construction of the project. Demobilisation and rehabilitation of the accommodation facility is estimated to be approximately six months.

iii Services

During construction, the accommodation facilities will require water, telecommunications, sewage treatment, electricity, diesel, grease and waste management. Further details are provided in Section A.3.7 of Appendix A.

iv Emergency procedures

Emergency procedures for the accommodation facility will align with NSW Rural Fire Service guidelines and the *Work Health and Safety Act 2011*, covering:

- evacuation procedures – clear muster points, escape routes, and coordination with local emergency services
- fire safety – firefighting equipment, alarms, and fire drills conducted regularly
- first aid – trained first aid personnel onsite and accessible first aid facilities
- extreme weather events – procedures for heat, storm, and flood risks
- remote location management – satellite communications and emergency contact protocols for rapid response.

These will be addressed as part of a fire management plan and bushfire emergency management and evacuation plan prepared in consultation with RFS (BF2), flood management protocols (W7) and medical centres/first aid rooms proposed as part of the accommodation facility (refer to Section A.3.5ia in Appendix A).

v Assessment of impacts

Potential impacts from the accommodation facility have been assessed within the EIS and amendment report and are summarised below:

- Social – The social impact assessment (Appendix E.14 of the EIS) predicts changes to the local population dynamics due to the influx of workforce, including likely changes to the sense of safety in the local area. A Community Engagement Plan and Worker Code of Conduct (as part of the Social Impact Management Plan (SIMP)) will be developed and implemented to address perceived public safety risks. The plan will include engaging with community services, such as police and emergency services, so that they are familiar with the project in case of an incident. The SIMP will likely include procedures for complaints handling.

- Noise – Construction noise levels from the worker accommodation facilities at the closest non-associated residence (R049, 3.4 km away) are predicted to be 35 dB(A), which conservatively assumes all works occurring concurrently. A noise model has been used to predict noise levels from the operation of the accommodation facilities and included consideration of noise generated by air conditioning and ventilation systems, power generation equipment, vehicle movements and day-to-day use of the facilities by the construction workforce. Operational noise levels are predicted to be less than 20 dB(A) at all assessment locations, including the closest non-associated residence (R049). Therefore, noise generated during the construction and operation of the worker accommodation facilities is predicted to comply with all relevant noise criteria, including the *Noise Policy for Industry* (EPA 2017) and the *Interim Construction Noise Guidelines* (DECC 2009) during the day, evening, and night periods.

- Visual – The accommodation facilities have the potential to be visible from Kidman Way and Goolgumbla Road, however, viewer sensitivity is expected to be low. There are no non-associated residences within 10 km of the accommodation facility options in the western area. The closest non-associated residence to the accommodation facility in the eastern area is R049 (3.4 km away). The accommodation facilities are not likely be visible from non-associated residences, due to these setback distances and screening by existing vegetation.

G.3 Request for information – July 2025

Spark Renewables received a request from DPHI for information to be included in this amendment report. Responses and references to relevant sections of the amendment report are provided in Table G.8.

Table G.8 Request for information – July 2025

Item	Comment	Response
Voluntary planning agreement	Provide evidence of agreement of the terms of the Voluntary Planning Agreement with Edward River Council.	Spark Renewables continue to liaise with Edward River Council on the terms of the VPA. Evidence of Edward River Council's agreement to the terms of the VPA will be provided to DPHI prior to determination.
Generation capacity	Re-confirm whether Spark Renewables is seeking a generation capacity of 1,200 MW for the project, noting the project was awarded an access right capacity of 707 MW. Ensure the BDAR also reflects the proposed staging of construction.	Spark Renewables are seeking a generation capacity of 1,200 MW for the project. The additional capacity will provide flexibility to optimise the layout within the development footprint during detailed design, absorb project losses (i.e. by building more than the awarded capacity) and could also allow the project to connect additional capacity to transmission lines that may be constructed in the future as part of a potential expansion or augmentation to the network in the South-West REZ. Additional capacity within the South West REZ could also become available due to reasons outside of Spark Renewables' control (e.g. failure of other South West REZ access rights holders to meet their awarded capacity or additional capacity becoming available on Project EnergyConnect and/or VNI West). Impacts associated with the construction and operation of the project in its entirety (i.e. the full 1,200 MW capacity) have been assessed. The proposed offset staging plan in Section 11.4 of the Amended BDAR (Appendix D.3) considers the staging of construction, including early works, Stage 1 and Stage 2. The development footprint has been broken up into these three stages to facilitate the staged retirement of the project's biodiversity credit liability, should it be required (Figure 23 of Appendix D.3).
Traffic and transport	Provide strategic designs for all upgrades and provide link to these in the table of road upgrades.	Strategic designs have been provided for intersection upgrades where additional hardstand areas are required (Appendix H). Table A.4 of the Amendment Report has been updated to include: • links to the relevant design drawings in Appendix H • intersection upgrades that require amendments to existing road infrastructure within existing road pavement and/or minor adjustments to street furniture - strategic designs for these intersections will be prepared in consultation with the relevant road authority prior to construction. Where a strategic design has not been provided for an intersection upgrade that forms part of the project, this is because either: • the OSOM route assessment has identified what upgrades are required and that these can be completed within the existing road pavement or disturbed road shoulder, or • the project area and development footprint encompasses the area where local road upgrades will be required.

Item	Comment	Response
Traffic and transport	Provide bridge and culvert assessments for OSOM routes, contact SPU from TfNSW.	Spark Renewables has contacted SPU regarding bridge and culvert assessment requirements for the proposed OSOM routes; however, the necessary assessments will be completed post approval as part of the preparation of the traffic management plan. Laden load dimensions, weights and vehicle configurations to facilitate bridge and culvert assessments will not be confirmed until completion of detailed design and once final WTG, transformer and OSOM vehicle dimensions are known. The vehicle dimensions assumed for the OSOM route assessments are conservative and are not considered suitable for completion of bridge and culvert assessments. The completion of bridge and culvert assessments as part of the traffic management plan will still ensure that these structures can accommodate project-related OSOM vehicles prior to commencement of construction.
Accommodation camps	Provide a detailed figure of TWA camp shared between the Solar and Wind farms.	The indicative layout of the accommodation facility in Figure A.5 has been updated to show the potential extent of the accommodation facility proposed for Dinawan Solar Farm. As demonstrated in Figure A.5, should it be required, there is sufficient space within the development footprint for Dinawan Wind Farm and Dinawan Solar Farm to both operate accommodation facilities east of Kidman Way. The development applications for Dinawan Solar Farm and Dinawan Wind Farm have conservatively assessed concurrent construction scenarios whereby the two projects are constructed concurrently. This scenario would have the greatest construction workforce demands and vehicle movements and included consideration of the construction and operation of two accommodation facilities with a combined capacity of up to 750 workers within the areas identified in Figure A.5. Spark Renewables has successfully secured access rights for the Dinawan Energy Hub through the South West REZ access tendering process. As consultation with EnergyCo on the roll out of the South West REZ continues, Spark Renewables has identified that it is increasingly unlikely that there will be any significant overlap in construction between Dinawan Wind Farm Stage 1 and Dinawan Solar Farm. Whilst flexibility to concurrently construct both projects remains important, it is likely that Stage 1 of Dinawan Wind Farm will be constructed prior to the commencement of construction of Dinawan Solar Farm.
Accommodation camps	Confirm peak workforce including stage one and two and solar farm workforces and provide detail on their accommodation options.	The peak workforce for Stage 1 and Stage 2 of Dinawan Wind Farm is anticipated to be approximately 600 personnel and it is assumed that up to 450 personnel will be housed within one of the identified accommodation facilities. The peak workforce for Dinawan Solar Farm is anticipated to be approximately 400 personnel and it is assumed that up to 300 personnel will be housed within the identified accommodation facility. The construction workforce will be sourced from the local area as far as practicable. Non-local construction staff will use the temporary construction accommodation facilities for the project. Spark Renewables will continue to consult with Transgrid regarding the availability of the accommodation facility used for Project EnergyConnect's Dinawan Substation. Spark Renewables are also in consultation with Murrumbidgee Council to identify opportunities to support short and longer-term housing solutions for the project's operational workforce requirements particularly within the townships of Coleambally and Jerilderie.
Aboriginal heritage	Update the AHIMS register and heritage impact study to reflect correct location and assessment of site 55-1-0085.	A request to update the AHIMS register with the correct coordinates for 55-1-0085 (DEHS-2023-AS3) has been submitted and Figure 6.4A of the Amendment Report and Figure 6.1 of the ACHA have also been updated to show the correct location of this site. The site is outside the development corridor and will not be impacted.
Aviation lighting	Confirm commitment to the supplied obstacle lighting plan provided in amendment report.	Spark Renewables will continue to consult with CASA regarding nighttime obstacle lighting requirements and, if required, ensure obstacle lights are energised during hours of darkness and in bushfire events in accordance with CASA's recommendations. Subject to the outcomes of further engagement with CASA, Spark Renewables are committed to the implementation of obstacle lighting in accordance with the plan provided in Appendix D.13.

Item	Comment	Response
Noise	Provide mitigation strategies and more information on extent of works generating noise affected or highly affected noise impacts to non-associated receivers.	The extent of works generating 'noise affected' or 'highly noise affected' noise impacts are limited to: • noise affected: – three non-associated residences within proximity of the development footprint (refer to Figure 6.1 and Table 6.3 of the amendment report for more information on the extent and type of works generating noise affected impacts) – non-associated residences on Veale Street, Cullen Road and Edward Street in Wagga Wagga (during temporary roadworks at the intersection of Olympic Highway (Moorong Street) and Sturt Highway) • highly noise affected: – two non-associated residences and a motel on Eunony Bridge Road in Wagga Wagga (during temporary roadworks at the intersection of Eunony Bridge Road and Sturt Highway). The number of residences on Veale Street, Cullen Road and Edward Street that may be noise affected has not been quantified; however, the closest residence is setback approximately 400 m from the intersection where the roadworks will occur. These residences are already exposed to road traffic noise from existing traffic on the Olympic Highway. There are also extensive retail and productivity support services within proximity of the intersection, which likely contribute to further existing background noise at this location. Roadworks in Wagga Wagga are anticipated to be short-term and are unlikely to affect an individual residence for more than three weeks in total. Once further information is available on the duration and timing of roadworks in Wagga Wagga, Spark Renewables will engage with non-associated residences to discuss the proposed roadworks in more detail (including total construction time, what is being done to minimise noise, when respite periods will occur and ongoing communication and complaint methods). A draft construction noise management plan framework has been prepared and is provided in Appendix E.2 of the EIS. The framework includes construction noise mitigation and management measures that are relevant to the project based on the recommendations of the ICNG (including consideration of work scheduling, work practices and plant and equipment). The management measures will be updated by the construction team and included in the construction noise management plan that will be implemented as part of the project.
Amended project area	Identify the land parcels removed as part of the amended project area. Clarify whether those landowners are still associated with the project and the nature of their association	All land removed from the project area as part of the amendments is owned by landowners that remain associated with the project. There are only two private landowners within the amended project area and this has not changed as a result of the amendments. Cadastral lots removed from the project area are listed in Table G.6.
Mitigation measures	Remove non-committal language like ‘would/ consider’ and provide clear commitment to mitigation measures in Table C.1 'Summary of mitigation measures' in Appendix C of amendment report.	Language within the mitigation measures in the body of the amendment report, and consolidated in Table C.1, has been updated. There was one use of the word ‘would’ which has been replaced, with all other commitments already worded as ‘will’. Several instances of the word ‘consider’ have been removed/amended to make those commitments more definitive.

Appendix H
Strategic designs

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H.1 Intersection of Kidman Way and McLennons Bore Road

DINAWAN WIND FARM

STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

OVERALL SITE PLAN
NTS.

SHEET INDEX

SHEET No	DESCRIPTION	REV
EMM - C00	COVER SHEET AND SHEET INDEX	-
EMM - C01	NOTES	-
EMM - C02	SURVEY AND SERVICES PLAN	-
EMM - C03	SURVEY AND SERVICES PLAN - SOUTH	-
EMM - C04	SURVEY AND SERVICES PLAN - NORTH	-
EMM - C05	SIGNS AND LINEMARKING PLAN 1.	-
EMM - C06	SIGNS AND LINEMARKING PLAN 2.	-
EMM - C07	OVERALL CONSTRUCTION PLAN	-
EMM - C08	CONSTRUCTION PLAN - SOUTH	-
EMM - C09	CONSTRUCTION PLAN - NORTH	-
EMM - C10	SAFE INTERSECTION SITE DISTANCE	-
EMM - C11	SWEPT PATH PLAN - A-DOUBLE	-
EMM - C12	SWEPT PATH PLAN - OSOM VEHICLE	-
EMM - C13	ROAD UPGRADE AREA	-

EMM creating opportunities

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
COVER SHEET AND SHEET INDEX

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C00
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

A1

GENERAL

1. THE DRAWINGS ARE A DIAGRAMMATIC REPRESENTATION ONLY OF THE WORK TO BE CARRIED OUT AND DIMENSIONS SHALL NOT BE OBTAINED BY SCALING.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT MURRUMBIDGEE COUNCIL (MC) GUIDELINES AND SPECIFICATIONS. TFNSW THEN AUSTRALIAN STANDARDS TO BE USED IN OTHER INSTANCES.
3. PROVISION FOR TRAFFIC DURING CONSTRUCTION TO BE IN ACCORDANCE WITH MC CONSTRUCTION SPECIFICATION C201 – CONTROL OF TRAFFIC.
4. ALL LOCATION, ORIENTATION AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK. ANY DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE REFERRED TO THE PRINCIPAL FOR CLARIFICATION BEFORE PROCEEDING. NATURAL SURFACE LEVELS ARE INDICATIVE ONLY.
5. ALL INVESTIGATION & WORK TO BE UNDERTAKEN IN ACCORDANCE WITH MC CONSTRUCTION SPECIFICATION – DEVELOPMENT CONSTRUCTION – GENERAL
6. PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR SHALL SATISFY HIMSELF OF THE CORRECT LOCATION OF EXISTING SERVICES WHETHER INDICATED OR NOT ON THE DRAWINGS.
7. ADJUST ALL UTILITY SERVICE COVERS TO SUIT NEW GRADES & LEVELS, FLUSH WITH SURROUNDING AREA.
8. EXISTING STATE SURVEY MARKS AFFECTED BY THE WORKS ARE TO BE RECOVERED IN ACCORDANCE WITH SURVEYOR GENERAL'S DIRECTION No. 11 – "PRESERVATION OF SURVEY INFRASTRUCTURE".

SITE MANAGEMENT:

1. PROVIDE BARRIERS AROUND ALL CONSTRUCTION WORKS WITHIN THE FOOTPATH AREA TO PROVIDE SAFE ACCESS FOR PEDESTRIANS.
2. CONCRETE PUMPS AND CRANES ARE TO OPERATE FROM WITHIN THE DESIGNATED WORK AREA AND ARE NOT TO OPERATE FROM THE PUBLIC ROADWAY UNLESS SPECIFIC COUNCIL PERMISSION IS OBTAINED.
3. DELIVERY VEHICLES MUST NOT STAND WITHIN THE PUBLIC ROADWAY FOR MORE THAN 20 MINUTES AT A TIME.
4. TOILET FACILITIES MUST BE EITHER FLUSHING TYPE OR APPROVED PORTABLE CHEMICAL CLOSET. CHEMICAL CLOSETS ARE TO BE MAINTAINED AND SERVICES ON A REGULAR BASIS SO THAT OFFENSIVE ODOUR IS NOT EMITTED.
5. TRAFFIC MANAGEMENT MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE RMS TRAFFIC CONTROL AT WORKSITES MANUAL AND AS1742, MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
6. PEDESTRIAN CONTROL MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH AS1742, MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
7. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL WORK CARRIED OUT AT THE SITE IS IN ACCORDANCE WITH COUNCIL'S WORK HEALTH & SAFETY POLICY.
8. DO NOT STORE OR PLACE MATERIALS INSIDE THE DRIP LINE OF ANY TREE. CONSTRUCTION ACTIVITIES, VEHICLE PARKING OR MAINTENANCE, MATERIALS STORAGE OR LOCATING OF CONTAINERS AND SITE SHEDS MUST NOT OCCUR WITHIN THE DRIP LINE OF ANY TREES OR WITHIN 5M OF TREES WHERE THE DRIP LINE RADIUS IS LESS THAN 5M.
9. THE CONTRACTOR SHALL EFFECT TEMPORARY DRAINAGE MEASURES TO AVOID LOCALISED PONDING.

EARTHWORKS:

1. EARTHWORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS AND GEOTECHNICAL ENGINEERS RECOMMENDATIONS. THE DESIGN AS DETAILED ON THESE DRAWINGS ASSUMES A PROPERLY PREPARED UNIFORM AND STABLE SUBGRADE.
2. THE DRAWINGS SHOULD BE READ IN CONJUNCTION WITH ANY GEOTECHNICAL REPORT PREPARED FOR THE WORKS.
3. STRIP OFF ALL VEGETATION, RUBBISH AND TOPSOIL CONTAINING ORGANIC OR ROOT MATTER FROM THE AREA OF THE WORKS AND REMOVE FROM SITE/STOCKPILE FOR RE-USE.
4. PRIOR TO ANY FILLING, THE EXPOSED SUBGRADE SHALL BE PROOF ROLLED WITH A MINIMUM OF 10 PASSES OF A 5 TONNE (MIN) DEAD WEIGHT VIBRATING ROLLER IN THE PRESENCE OF THE SUPERINTENDENT OR GEOTECHNICAL ENGINEER AND ANY SOFT OR YIELDING MATERIALS REMOVED AND REPLACED WITH APPROVED FILLING COMPACTED AS HEREAFTER SPECIFIED.
5. FILL SHALL BE SOUND WELL GRADED MATERIAL WITH A HIGH GRANULAR CONTENT AND SHALL BE THE BEST OF EXCAVATED MATERIALS FROM THE SITE, OR APPROVED SOUND IMPORTED MATERIAL FREE OF RUBBISH, PLASTIC CLAY OR LARGE PIECES THAT WOULD PRECLUDE COMPACTION.
6. FILL SHALL BE SPREAD IN LAYERS NOT EXCEEDING 200MM AND COMPACTED USING SUITABLE MECHANICAL EQUIPMENT AT OPTIMUM MOISTURE CONTENT ±2 % TO NOT LESS THAN 98% MAXIMUM STANDARD DRY DENSITY (MSDD) IN ACCORDANCE WITH AS1289 – E11 UNLESS OTHERWISE NOTED.
7. FINISH FILLING LEVELS TO SUIT CONSTRUCTION OVER, ALLOWING FOR MIN 75MM OF BASE COURSE (DGB20) COMPACTED TO 98% MAXIMUM MODIFIED DRY DENSITY (MMDD) WHERE NOTED ON DRAWINGS.
8. DENSITY TESTING OF FILLING (AND BASE COURSE WHERE APPLICABLE) SHALL BE CARRIED OUT AT THE RATE OF 1 TEST PER 200 SQUARE METRES EACH LAYER (MINIMUM 2 TESTS). TESTING SHALL BE BY A NATA REGISTERED LABORATORY AND SHALL BE ALLOWED FOR BY THE CONTRACTOR.
9. THE CONTRACTOR SHALL PROGRAM AND UNDERTAKE THE EARTHWORKS OPERATIONS SUCH THAT WORKING AREAS ARE ADEQUATELY DRAINED DURING CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM FAILURE TO COMPLY WITH THESE REQUIREMENTS SHALL BE RECTIFIED AT THE CONTRACTORS EXPENSE.

DEMOLITION:

1. CARRY OUT ALL DEMOLITION WORK IN ACCORDANCE WITH AS 2601.
2. UNTIL PERMANENT SUPPORT IS PROVIDED, PROVIDE TEMPORARY SUPPORT FOR SECTIONS OF EXISTING STRUCTURES WHICH ARE TO BE ALTERED AND WHICH NORMALLY RELY FOR SUPPORT ON WORK TO BE DEMOLISHED.
3. SUPPORT EXCAVATIONS FOR DEMOLITION OF UNDERGROUND SERVICES.
4. PROVIDE SUPPORT TO ADJACENT STRUCTURES WHERE NECESSARY, SUFFICIENT TO PREVENT DAMAGE RESULTING FROM THE WORKS.
   - LATERAL SUPPORTS: PROVIDE LATERAL SUPPORT AT LEAST EQUAL TO THAT GIVEN BY THE STRUCTURE TO BE DEMOLISHED, USING SHORING.
   - VERTICAL SUPPORTS: PROVIDE SUPPORT WHERE NECESSARY USING PILING OR UNDERPINNING, OR BOTH.
5. PROVIDE DUST PROOF SCREENS, BULKHEADS AND COVERS TO PROTECT EXISTING FINISHES AND THE IMMEDIATE ENVIRONMENT FROM DUST AND DEBRIS.
6. DO NOT USE EXPLOSIVES.
7. HAZARDOUS MATERIALS. GIVE NOTICE IMMEDIATELY IF HAZARDOUS MATERIALS OR CONDITIONS ARE FOUND, INCLUDING THE FOLLOWING:
   - ASBESTOS OR MATERIAL CONTAINING ASBESTOS.
   - FLAMMABLE OR EXPLOSIVE LIQUIDS OR GASES.
   - TOXIC, INFECTIVE AND CONTAMINATED MATERIALS.
   - RADIATION OR RADIOACTIVE MATERIALS.
   - NOXIOUS OR EXPLOSIVE CHEMICALS.
   - TANK OR OTHER CONTAINERS WHICH HAVE BEEN USED FOR STORAGE OF EXPLOSIVE, TOXIC, INFECTIVE OR CONTAMINATED SUBSTANCES.

ROAD WORKS

GENERAL

1. EXISTING VEGETATION TO BE REMOVED WITHIN EXTENTS OF WORKS UNLESS NOTED OTHERWISE
2. ALL PIT GRATES TO SUIT KMC STANDARDS KERB INLET ARRANGEMENTS SHOWING KMC STANDARDS DRAWINGS
3. KERB TYPES AND KERB RAMPS REFER TO KMC STANDARDS.

SET OUT PLANS AND COORDINATES TABLES

4. DESIGN HAS BEEN BASED ON LAND SURVEY COMPLETED BY EMM.
5. SURVEY DATUM IS AHD.
6. SURVEY AZIMUTH IS BASED ON MGA ZONE 56.
7. SURVEY MARKS ARE NOT TO BE DISTURBED BEFORE ASSESSMENT BY SURVEYOR
8. ALL LOCATIONS, ORIENTATION AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK. ANY DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE REFERRED TO THE PRINCIPAL FOR CLARIFICATION BEFORE PROCEEDING. NATURAL SURFACE LEVELS ARE INDICATIVE ONLY.
9. ANY SURVEY PMS OR SSMS THAT ARE DESTROYED ARE TO BE REPLACED WITH ANOTHER PM OR SSM TO LANDS DEPARTMENT STANDARDS. IT ALSO SHOULD BE DOCUMENTED AND COORDINATED TO EQUIVALENT LANDS DEPARTMENT STANDARDS.

PAVEMENT

1. PAVEMENT INTERFACES TO BE EITHER MID LANE OR AT LANE LINE UNLESS NOTED OTHERWISE ON THESE DRAWINGS OR INSTRUCTED BY THE PRINCIPAL.
2. LOCATION AND AREA OF MILL AND RE-SHEET PAVEMENT ARE INDICATIVE ONLY. FINAL LOCATIONS AND VOLUMES ARE TO BE DETERMINED ON SITE DURING CONSTRUCTION BY THE CONTRACTOR WITH AGREEMENT FROM THE PRINCIPAL.

STORMWATER DRAINAGE

1. STORMWATER DRAINAGE SHALL BE GENERALLY IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARDS AND COUNCIL'S SPECIFICATION.
2. PIPES OF 225mm DIA. AND UNDER SHALL BE UPVC. PIPES OF 300mm DIA. AND LARGER SHALL BE FRC OR CONCRETE CLASS 2 RUBBER RING JOINTED UNO.
3. ALL FRC OR RCP STORMWATER PIPES WITHIN ROAD RESERVE AREAS TO BE CLASS 3 U.N.O.
4. PIPES SHALL GENERALLY BE LAID AT THE GRADES INDICATED ON THE DRAWINGS.
5. MINIMUM COVER TO PIPES 300mm DIA. AND OVER GENERALLY SHALL BE 600mm IN CARPARK & ROADWAY AREAS UNO.
6. PIPES UP TO 150mm DIA SHALL BE LAID AT 1.0% MIN. GRADE U.N.O. PIPES 225mm DIA AND OVER SHALL BE LAID AT 0.5% MIN. GRADE U.N.O.
7. BACKFILL TRENCHES WITH APPROVED FILL COMPACTED IN 200MM LAYERS TO 98% OF STANDARD DENSITY
8. ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULKHEADS AT ALL JOINTS
9. PITS SHALL BE AS DETAILED WITH METAL GRATES AT LEVELS INDICATED. ALL PITS DEEPER THAN 1000mm TO HAVE CLIMB IRONS.
10. INSTALL TEMPORARY SEDIMENT BARRIERS TO INLET PITS, TO COUNCIL'S STANDARDS UNTIL SURROUNDING AREAS ARE PAVED OR GRASSED.
11. PIT LOCATIONS AND LEVELS MAY BE VARIED TO SUIT SITE CONDITIONS AFTER CONSULTING COUNCIL'S REPRESENTATIVE.
12. HAND-EXCAVATE STORMWATER PIPES IN VICINITY OF TREE ROOTS.
13. TRENCHING AND BEDDING DETAILS TO BE IN ACCORDANCE WITH AS3500 TO HS2 DETAIL UNLESS OTHERWISE NOTED.

SUBSURFACE DRAINAGE

1. LOCATION OF SUBSURFACE DRAINAGE SHOWN ON PLANS IS INDICATIVE ONLY. DRAWINGS TO BE READ IN CONJUNCTION WITH PAVEMENT DETAILS SECTIONS AND PLANS AND KMC CONSTRUCTION SPECIFICATION.
2. CONSTRUCTION OF TRENCH DRAINS TO BE IN ACCORDANCE WITH KMC CONSTRUCTION SPECIFICATION
3. DEPTH OF TRENCH AND PAVEMENT INTERFACE DRAINS TO BE CONFIRMED ONSITE BY THE CONTRACTOR WITH AGREEMENT FROM THE PRINCIPAL AND TO BE MEASURED FROM LOWEST POINT OF THE EXISTING OF NEW PAVEMENT SMZ.
4. GEOTEXTILE FOR TRENCH AND PAVEMENT INTERFACE DRAINS TO BE LAPPED ON THE TOP FACE.
5. MINIMUM GRADE OF SUBSURFACE DRAINAGE TO BE 0.5%.

REINFORCEMENT:

1. REINFORCEMENT SYMBOLS:
   - R DENOTES GRADE 250 R HOT ROLLED PLAIN BARS TO AS1302
   - F DENOTES GRADE 450 F HARD-DRAWN WIRE REINFORCING FABRIC TO AS1304
   - W DENOTES GRADE 450 W HARD-DRAWN PLAIN WIRE TO AS1303
   - N DENOTES DEFORMED BAR NORMAL DUCTILITY TO AS/NZS 4671 GRADE D500N
   - L DENOTES DEFORMED BAR LOW DUCTILITY TO AS/NZS 4671 GRADE D500L
   - RN DENOTES RECTANGULAR WIRE MESH NORMAL DUCTILITY TO AS/NZS 4671
   - RL DENOTES RECTANGULAR WIRE MESH LOW DUCTILITY
   - SN DENOTES SQUARE WIRE MESH NORMAL DUCTILITY
   - SL DENOTED SQUARE WIRE MESH LOW DUCTILITY TO AS/NZS 4671
2. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
3. THE SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN OR OTHERWISE APPROVED IN WRITING BY THE ENGINEER.
4. R4 LAPS SHALL BE IN ACCORDANCE WITH AS 3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR.
5. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE SUPERINTENDENT.
6. MINIMUM FABRIC LAP SHALL BE TWO TRANSVERSE WIRES PLUS 50MM. WHERE FABRIC LAPS, SHEETS TO HAVE MAXIMUM 2 LAYERS AT ANY POINT, CUT BACK FABRIC AT CORNERS AS REQUIRED.
7. WHERE TRANSVERSE TIE BARS ARE NOT SHOWN PROVIDE N12-400 SPLICED WHERE NECESSARY AND LAP WITH MAIN BARS 400MM UNLESS NOTED.
8. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC CHAIRS OR CONCRETE CHAIRS, AT NOT GREATER THAN 1 METRE CENTRES BOTH WAYS, AND 800 EACH WAY FOR FABRIC. WHEN POURED ON GROUND AS FORMWORK PROVIDE PLATES UNDER ALL BAR CHAIRS. PLASTIC TIPPED STEEL CHAIRS SHALL NOT BE USED ON EXPOSED FACES IN EXPOSURE CLASSIFICATION B2 AND C.

CONCRETE:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 AND AS 3610 CURRENT EDITIONS WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. ALL CEMENT TO BE TYPE GP, GENERAL PURPOSE CEMENT IN ACCORDANCE WITH AS3972
3. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 3600
4. DETAILS OF THE PROPOSED MIX ARE TO BE SUBMITTED & APPROVAL OBTAINED PRIOR TO POURING ANY CONCRETE.
5. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
6. MINIMUM CLEAR COVER TO ALL REINFORCEMENT SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE:

ELEMENT	STRENGTH GRADE (MPa)	SLUP (mm)	MAX. AGGREG. SIZE (mm)	CAST AGAINST GROUND (mm)	CAST IN FORMS AND NOT EXPOSED (mm)	CAST IN FORMS AND EXPOSED (mm)
PATH	25	80	20	40	40	40

7. CONCRETE SIZES/DIMENSIONS SHOWN DO NOT INCLUDE THE THICKNESS OF ANY APPLIED FINISHES. NO FINISH THAT DECREASES COVER IS PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE SUPERINTENDENT/ENGINEER.
8. MAINTAIN COVER TO REINFORCEMENT AT CHAMFERS, DRIP GROOVED, REGLETS ETC
9. NO HOLES, CHASES, BLOCKOUT, DUCTS OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE SUPERINTENDENT/ENGINEER.
10. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE SUPERINTENDENT/ENGINEER.
11. ALL CONCRETE MEMBERS SHALL BE MECHANICALLY VIBRATED TO ACHIEVE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK AND THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS.
12. CURING OF ALL CONCRETE IS TO BE ACHIEVED BE KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF THREE DAYS, AND THE PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT.
13. CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING.
14. ALL CONCRETE SHALL BE PLACED IN SUCH A MANNER SO AS TO AVOID SEGREGATION OR LOSS OF MATERIALS.
15. UNDER NO CIRCUMSTANCES SHALL EXCESS CONCRETE BE DISPOSED OF ON-SITE. ALL EXCESS CONCRETE MUST BE CARTED FROM SITE AND DISPOSED OF IN AN APPROPRIATE MANNER.
16. WATER USED FOR FLUSHING CHUTES AND FOR CLEANING OF CONCRETE TRUCKS AND EQUIPMENT MUST BE DISCHARGED IN AN AREA DESIGNATED FOR THAT PURPOSE AND WHICH HAS EROSION AND SEDIMENT CONTROL MEASURES IN PLACE.

FORMWORK:

1. RESPONSIBILITY FOR DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF FORMWORK AND FALSEWORK LIES WITH CONTRACTOR.
2. DO NOT SUPPORT OR RESTRAIN FORMWORK ON PERMANENT WORKS WITHOUT SUPERINTENDENTS WRITTEN APPROVAL.
3. CONSTRUCT FORMWORK TO COMPLY WITH AS3610 AND CLAUSE 19.6.2 OF AS3600 WHERE THIS IS MORE STRINGENT SO CONCRETE WILL HAVE DIMENSIONS, SHAPE, LOCATION AND FINISH SPECIFIED. PROVIDE OPENINGS OR REMOVABLE PANELS FOR INSPECTION AND CLEANING. APPLY RELEASE AGENT COMPATIBLE WITH CONTACT SURFACES TO INTERIOR OR FORMWORK (EXCEPT WHERE CONCRETE IS TO RECEIVE AND APPLIED FINISH FOR WHICH THERE IS NO COMPATIBLE RELEASE AGENT). WHERE NECESSARY CLEAN REINFORCEMENT TO REMOVE TRACES OF RELEASE AGENT. SEAL JOINT BETWEEN FORMWORK PANELS, AND TO HARDENED CONCRETE WITH FLEXIBLE RUBBER STRIP. SET OUT FORMWORK TO GIVE A REGULAR ARRANGEMENT OF PANELS, JOINT, BOLT HOLES ETC.
4. DO NOT USE FORMWORK HARDWARE THAT FORMS A COMPLETE HOLE THROUGH CONCRETE ELEMENTS. DO NOT USE REINFORCEMENT TO SUPPORT FORMWORK.
5. PROVIDE HOLES IN REBATE FORMERS ETC AS REQUIRED TO PREVENT AIR ENTRAPMENT.
6. CONSTRUCTION TOLERANCES TO BE TO AS3610.
7. STRIP FORMWORK TO AS3600 CLAUSE 19.6. REMOVE FROM TIE BOLTS WITHOUT DAMAGING CONCRETE. PARTS OF BOLTS LEFT IN CONCRETE MUST NOT INTRUDE INTO COVER CONCRETE. FLUSH FILL HOLES USING PRE-MIXED NON-SHRINK CEMENTITIOUS REPAIR MORTAR MATCHING CONCRETE SURFACE COLOUR, STRENGTH AND DURABILITY AND ADEQUATE BOND.

WORK NEAR EXISTING TREES AND TREE PROTECTION

GENERAL:

- TREES MUST NOT BE REMOVED OR LOPPED OR OTHERWISE DAMAGED, UNLESS SPECIFIED AND APPROVAL TO DO SO IS GIVEN BY THE SUPERINTENDENT. ALL CARE MUST BE TAKEN NOT TO DAMAGE OR INJURE ANY EXISTING TREES THAT ARE TO BE RETAINED. A QUALIFIED ARBORIST OR TREE PRESERVATION OFFICER IS TO BE CONSULTED PRIOR TO ANY EARTHWORKS BEING CONDUCTED NEAR EXISTING TREES WITHIN THE CONSTRUCTION ZONE. ANY DAMAGE INCURRED TO TREES THAT ARE TO BE RETAINED IS TO BE MADE GOOD AS SOON AS POSSIBLE FOLLOWING ADVICE BY AN APPROVED ARBORIST.

PROTECTION:

- IT IS THE SITE SUPERVISOR'S RESPONSIBILITY TO PROTECT ALL TREES IDENTIFIED FOR RETENTION.
- TREES TO BE RETAINED ARE TO BE PROTECTED WITH FENCING AND/OR TREE ARMOUR AS INDICATED ON THE DRAWINGS.
- COMPACTION OF SOIL IS TO BE AVOIDED WITHIN THE TREE PROTECTION ZONES SHOWN ON THE DRAWINGS.
- WHERE WORK IS REQUIRED TO BE UNDERTAKEN WITHIN THE TREE PROTECTION ZONES, TREE ARMOUR IS TO BE ERECTED AROUND THE TRUNK OF THE TREES AS INDICATED ON PLAN.

TREE PROTECTION FENCING:

- TREES ARE TO BE PROTECTED BY TEMPORARY CHAIN-WIRE CONSTRUCTION FENCING INSTALLED AT THE DRIPLINE IF POSSIBLE. TEMPORARY SIGNAGE LABELLED "TREE PROTECTION AREA. NO STORAGE OF MATERIALS OR MACHINERY" IS TO BE INSTALLED ON ALL TREE PROTECTION FENCING.

TREE ARMOUR:

- PROVIDE TREE ARMOUR AROUND TRUNKS OF TREES AS INDICATED ON PLAN BEFORE COMMENCEMENT OF ANY WORKS. ARMOUR IS TO CONSIST OF JUTE MATTING AND TIMBER BATTENS WRAPPED AROUND TREE TRUNKS AS INDICATED IN DRAWINGS.
- INSTALL A PROTECTIVE LAYER OF JUTE MAT AROUND TREE TRUNKS PRIOR TO INSTALLING TIMBER BATTENS AROUND TREE TRUNKS.
- TIMBER BATTENS ARE TO BE 1800 X 90 X 20mm. SECURE BATTENS INTO POSITION WITH THREE STRANDS OF WIRE OR NYLON WEBBING STAPLED OR NAILED TO CREATE A CONTINUOUS STRING, LONG ENOUGH TO SURROUND EACH TREE.
- ENSURE ARMOUR IS ATTACHED SECURELY AROUND THE TREE. AMOUR SHOULD BE ATTACHED TO ITSELF. NAILS OR FASTENERS ARE NOT TO BE ATTACHED DIRECTLY TO THE TREE TRUNK. ARMOUR IS TO REMAIN IN PLACE AS LONG AS MACHINERY IS REQUIRED ON SITE.

STORAGE OF MATERIALS:

- DO NOT STORE OR OTHERWISE PLACE BULK MATERIALS AND HARMFUL MATERIALS UNDER OR NEAR TREES WITHIN THE TREE PROTECTION ZONE. STORAGE OF MATERIALS, MIXING OF MATERIALS, VEHICLE PARKING, DISPOSAL OF LIQUIDS, MACHINERY REPAIRS AND REFUELLING, SITE OFFICE AND SHEDS MUST NOT OCCUR WITHIN THE DRIP LINE OF ANY EXISTING TREES, OR WITHIN 5M OF ANY EXISTING TREES WHERE THE DRIP LINE RADIUS IS LESS THAN 5m.
- DO NOT PLACE SPOIL FROM EXCAVATIONS AGAINST TREE TRUNKS, EVEN FOR SHORT PERIODS. PREVENT WIND-BLOWN MATERIALS SUCH AS CEMENT FROM HARMING TREES AND PLANTS.

WORK UNDER TREES:

- MINIMISE EXCAVATION OR FILLING AROUND TREES. IF CONSTRUCTION WORKS ARE NECESSARY AROUND TREES THEN MINIMISE THE USE OF MACHINERY. LEAVE TRENCHES OR EXCAVATED AREAS EXPOSED FOR AS SHORT A PERIOD AS POSSIBLE.

ROOTS:

- TREE ROOTS EXCEEDING 100mm DIAMETER ARE NOT TO BE CUT UNLESS ADVICE IS FIRST SOUGHT FROM AN ARBORIST.
- USE HAND TOOLS OR A CHAINSAW TO MAKE CLEAN CUTS TO ROOTS THAT REQUIRE CUTTING.

BACKFILLING:

- MINIMISE CHANGES TO SOIL SURFACE LEVELS AROUND TREES.
- RETURN NATURAL SOILS TO EXCAVATED AREAS OR USE OTHER VIRGIN EXCAVATED NATURAL MATERIAL (VENM) TO BACKFILL.
- ROAD MILLINGS, WASTE CONCRETE, ASPHALT OR OTHER FOREIGN MATERIALS ARE NOT TO BE USED FOR BACKFILLING WITHIN TREE ROOT ZONES.
- DO NOT BACKFILL AROUND TREE TRUNKS TO A HEIGHT GREATER THAN 300MM ABOVE THE ORIGINAL GROUND SURFACE UNLESS AUTHORISED.
- THOROUGHLY WATER THE SOIL FOLLOWING EXCAVATION WITHIN TREE ROOT ZONES.

REMOVAL OF TREES:

- WHEN REMOVING TREES, TAKE CARE NOT TO DAMAGE ANY ADJACENT EXISTING STRUCTURES, SERVICES OR TREES TO BE RETAINED.
- WHERE TREES BEING REMOVED ARE LOCATED IN FUTURE PLANTING AREAS AS SHOWN ON THE PLANTING PLAN, FULLY REMOVE THE TREES AND ALL THEIR PARTS INCLUDING THE ROOT SYSTEM.
- WHERE THIS IS NOT PRACTICAL CUT TRUNKS CLOSE TO THE EXISTING SOIL SURFACE LEVEL AND IMMEDIATELY APPLY UNDILUTED GLYPHOSATE HERBICIDE TO THE CUT SURFACES.

UTILITIES

1. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE INDICATIVE ONLY. THE CONTRACTOR IS TO REFER TO UTILITY RELOCATION PLANS APPROVED BY APPROPRIATE AUTHORITY FOR DETAILS ON PROPOSED UTILITY WORKS.
2. THE CONTRACTOR IS TO CONFIRM THE PRESENCE OF ALL UTILITIES ON SITE PRIOR TO THE COMMENCEMENT OF ROAD WORKS, REFERENCE MUST BE MADE TO THESE DRAWINGS PRIOR TO THE COMMENCEMENT OF ROAD WORKS, AND THE RELEVANT UTILITY PLANS OBTAINED BY CONTACTING DIAL BEFORE YOU DIG. CAUTION SHALL BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.
3. LOCATION AND LEVEL OF ALL SERVICES CROSSING THE PROPOSED WORKS MUST BE OBTAINED PRIOR TO CONSTRUCTION. ALL LEVELS MUST BE CHECKED FOR CONFLICT WITH ANY SERVICES, AND ANY CONFLICTS TO BE RAISED WITH PRINCIPAL.
4. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
5. UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM RECORDS SUPPLIED BY THE PUBLIC AUTHORITIES TO SHIRE CIVIL DESIGN IN DECEMBER 2019 LOCATIONS HAVE BEEN INTERPRETED FROM THESE RECORDS AND ARE APPROXIMATE ONLY. EXTREME CAUTION SHOULD BE TAKEN BY PERSONS EXCAVATING.

EROSION AND SEDIMENT CONTROL

1. GENERAL MEASURES
   - SOIL EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION SHALL CONFORM WITH GUIDELINES IN ACCORDANCE WITH "MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION – VOLUME 1, LANDCOM 2004" AND COUNCIL'S POLICY
   - PERIMETER CONTROL MEASURES SHALL BE PLACED PRIOR TO OR IN CONJUNCTION WITH THE FIRST PHASE OF THE EARTHWORKS. THESE MEASURES SHALL BE APPLIED TO PROTECT ADJOINING PROPERTIES FROM EROSION AND SILT DAMAGE.
   - EARTH STOCKPILES SHALL BE CONFINED TO ONE CENTRAL AREA WHERE POSSIBLE. ALL STOCKPILES OF EXCAVATED OR CONSTRUCTION SOILS MUST HAVE A SILT FENCE ERECTED IMMEDIATELY DOWNHILL FOR THE FULL EXTENT OF THE STOCKPILE. WHERE SITE REGRADING OR FILLING IS BEING UNDERTAKEN PROVISION SHALL BE MADE TO ENSURE THAT NO WATER IS PONDED IN ANY LOT.
   - ALL AREAS NOT SUBJECT TO CONSTRUCTION WORKS SHALL BE RETAINED FREE FROM DISTURBANCE OR DAMAGE DURING THE CURRENCY OF THE WORK. SHOULD THESE AREAS BECOME DISTURBED OR DAMAGED THEY SHALL BE REINSTATED AS DIRECTED BY THE SUPERINTENDENT.
2. SEDIMENT CONTROL DEVICES (S.C.D.)
   - THESE DEVICES SHALL BE CONSTRUCTED AT INLETS TO STORMWATER SYSTEMS TO TRAP THE SEDIMENT IN RUN-OFF.
3. STABILISATION OF DISTURBED AREAS
   - STABILISATION OF DISTURBED AREAS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS INDICATED IN GENERAL NOTES ABOVE.
   - THE FOLLOWING SHALL BE APPLIED FOR THE CONTROL OF EROSION AND SEDIMENTATION:-
     a. STABILISATION OF DENUDED AREAS SHALL COMMENCE AS SOON AS POSSIBLE AFTER THE AREAS HAVE BEEN DISTURBED.
     b. STABILISATION OF ALL CUT AND FILL SLOPES SHALL BE COMMENCED AS SOON AS PRACTICABLE AFTER COMPLETION OF FORMATION.
     c. ALL STABILISATION MEASURES SHALL BE TAKEN PRIOR TO THE END OF THE MAINTENANCE PERIOD.
4. MAINTENANCE
   - ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE MAINTAINED IN A SATISFACTORY WORKING ORDER THROUGHOUT THE CONTRACT. MAINTENANCE AND DEFECTS LIABILITY PERIODS OR UNTIL SUCH EARLIER TIME AS THE AREA HAS BEEN STABILISED AND COUNCIL'S ENGINEER DIRECTS THAT THE DEVICE BE REMOVED.
   - ALL DEVICES SHALL BE INSPECTED AFTER EACH STORM FOR STRUCTURAL DAMAGE OR CLOGGING BY SILT AND OTHER DEBRIS AND MAKE PROMPT REPAIRS OR REPLACEMENT.

SIGNAGE AND LINEMARKING

1. INSTALLATION OF PAVEMENT MARKING RRPM'S AND SIGNAGE TO BE IN ACCORDANCE WITH KMC CONSTRUCTION SPECIFICATION, GUIDELINES AND STANDARDS.
2. CONTRACTOR TO OBTAIN WRITTEN APPROVAL FROM KMC PRIOR TO INSTALLATION OF ANY SIGNAGE OR LINEMARKING.
3. LOCATION OF ALL SIGNAGE TO BE CONFIRMED ON SITE IN COORDINATION WITH THE PRINCIPAL PRIOR TO MANUFACTURE.
4. ALL SIGNS TO BE SIZE 'B' UNLESS NOTED OTHERWISE.
5. EXISTING SIGNS DESIGNATED REMOVAL TO BE STORED IN CONTRACTOR'S COMPOUND FOR WCC RECOVERY.
6. SIGNAGE TO BE LOCATED IN ACCORDANCE WITH AS1742 APPENDIX B
7. SIGNS TO BE MOUNTED A MINIMUM 2.5M ABOVE FSL.
8. CONTRACTOR TO CONFIRM LOCATION OF ALL SERVICES, DRAINAGE WORKS AND UNDERGROUND INFRASTRUCTURE PRIOR TO COMMENCING WORK. CONTRACTOR TO ENSURE ADOPTED METHOD OF CONSTRUCTION AND PROPOSED WORK WILL AVOID DAMAGE TO ALL SERVICES AND DRAINAGE WORKS, INCLUDING CLEARANCE TO OVERHEAD POWERLINES.
9. INSTALL PAINTED CHEVRONS IN ACCORDANCE WITH RMS DELINEATION GUIDELINES.
10. ALL PERMANENT ROAD LINEMARKING AND PAVEMENT MESSAGES INCLUDING ARROWS TO BE NON-PROFILE REFLECTIVE THERMO-PLASTIC MATERIAL IN ACCORDANCE WITH WCC CONSTRUCTION SPECIFICATIONS.
11. ALL TEMPORARY LINEMARKING TO BE WATERBORNE PAINT.

A1

THIS PLAN IS PREPARED FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS.

THE POSITION OF STRUCTURES , SERVICES TREES ETC. ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL.

PRIOR TO ANY CONSTRUCTION ON OR NEAR A PROPERTY BOUNDARY, THE LOCATION OF THE PROPERTY BOUNDARY SHOULD BE DETERMINED BY A REGISTERED SURVEYOR.

VISIBLE SERVICES ONLY HAVE BEEN LOCATED AS PART OF THIS SURVEY. ALL CARE HAS BEEN TAKEN IN THE FIELD SURVEY TO IDENTIFY VISIBLE SERVICES AND STRUCTURES. IN SOME CASES THE VISIBLE SERVICES HAVE NOT BEEN IDENTIFIED. IT IS RECOMMENDED THAT A FIELD INSPECTION WITH THE RELEVANT SERVICE AUTHORITY REPRESENTATIVE BE UNDERTAKEN TO CONFIRM THE IDENTITY OF SERVICES SHOWN ON THIS PLAN.

PRIOR TO EXCAVATION THE CONTRACTOR MUST:
CONTACT "BEFORE YOU DIG AUSTRALIA"
PH: 1100
WEB: https://smarterwx.1100.com.au

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.

WARNING
UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM RECORDS SUPPLIED BY THE PUBLIC AUTHORITIES TO EMM CONSULTING APRIL 24
LOCATIONS HAVE BEEN INTERPRETED FROM THESE RECORDS AND ARE APPROXIMATE ONLY.
EXTREME CAUTION SHOULD BE TAKEN BY PERSONS EXCAVATING.

BEFORE YOU DIG www.byda.com.au

WARNING U/G TELSTRA
Telstra
CABLES
PLEASE CONTACT THE N.I.A.C. GROUP AT TELSTRA ON 9204-0880 OR 9204-0923. BEFORE STARTING ANY CONSTRUCTION WORK IN THE AREA.

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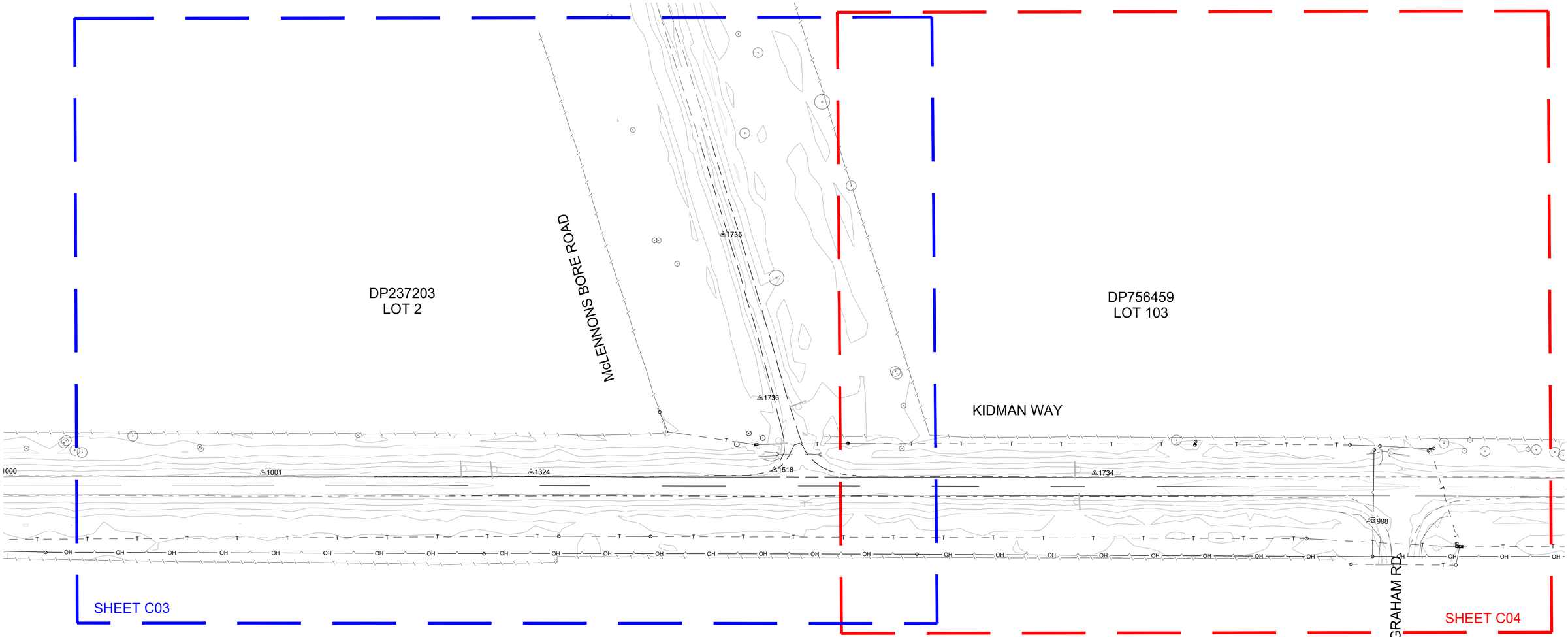
BEWARE OPTIC FIBRE

UTILITIES		TELSTRA PILLAR	
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	

SURVEY STATION MARKS

STATION No.	EASTING	NORTHING	R.L.	DESCRIPTION
1000	393252.234	6126407.905	115.556	STN
1001	393267.760	6126512.798	115.728	STN
1324	393282.851	6126618.952	115.765	STN
1518	393295.650	6126715.458	115.753	STN
1734	393314.963	6126842.123	115.800	STN
1735	393199.501	6126708.397	115.420	STN
1736	393266.304	6126713.843	115.265	STN
1908	393349.558	6126948.078	115.539	STN
2161	393343.257	6127036.713	115.733	STN



PLAN
SCALE 1:800
0.2m CONTOUR INTERVAL

NOTES:
EXISTING STATE SURVEY MARKS AFFECTED BY THE WORKS ARE TO BE RECOVERED IN ACCORDANCE WITH SURVEYOR GENERAL'S DIRECTION No. 11 - "PRESERVATION OF SURVEY INFRASTRUCTURE".
INVESTIGATIONS WERE UNDERTAKEN AND ALL SURVEY MARKS WERE INVESTIGATED AND IDENTIFIED ON SITE.
AT THIS STAGE THE LOCATION OF THE MARKS ARE WELL CLEAR OF THE WORKS AND SURVEY AREA AND SHOULD NOT BE IMPACTED BY THE WORKS.

EMM creating opportunities
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St Leonards NSW 2065
Phone # 02 9493 9500
www.emmconsulting.com.au

REV	DATE	COMMENT	DRAWN	REVIEWED
-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
OVERALL SURVEY AND SERVICES PLAN

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C02
PROJECT #: E240775
SCALE: AS SHOWN
REV: -

A1

THIS PLAN IS PREPARED FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS.

THE POSITION OF STRUCTURES , SERVICES TREES ETC. ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL.

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PRIOR TO EXCAVATION THE CONTRACTOR MUST:
CONTACT "BEFORE YOU DIG AUSTRALIA"
PH: 1100
WEB: https://smarterwx.1100.com.au

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.

WARNING
UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM RECORDS SUPPLIED BY THE PUBLIC AUTHORITIES TO EMM CONSULTING APRIL 24
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EXTREME CAUTION SHOULD BE TAKEN BY PERSONS EXCAVATING.

BEFORE YOU DIG www.byda.com.au

WARNING U/G TELSTRA
Telstra
CABLES
PLEASE CONTACT THE N.I.A.C. GROUP AT TELSTRA ON 9204-0880 OR 9204-0923. BEFORE STARTING ANY CONSTRUCTION WORK IN THE AREA.

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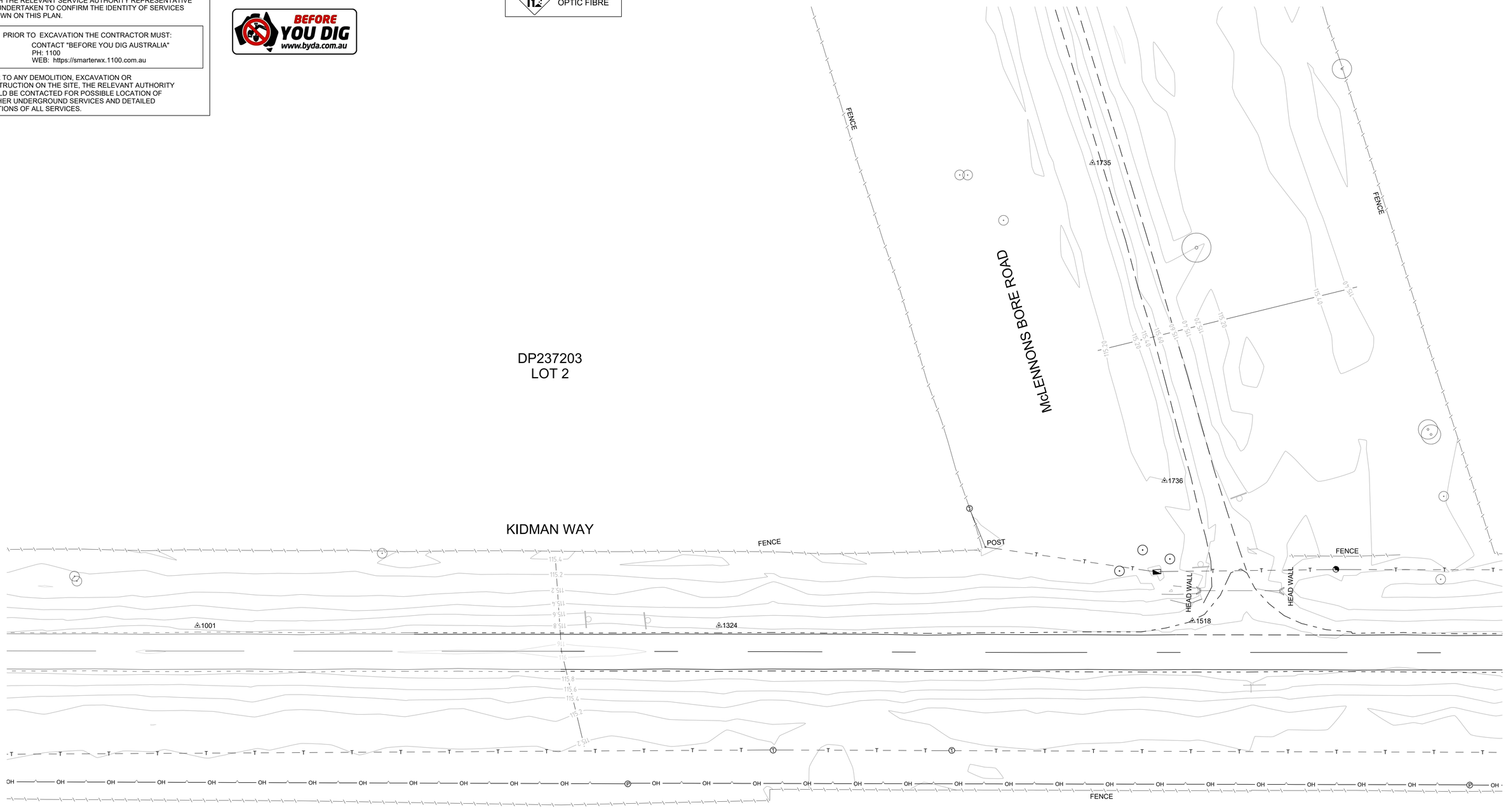
BEWARE OPTIC FIBRE

UTILITIES		TELSTRA PILLAR	
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	

DP237203
LOT 2



PLAN
SCALE 1:400
0.2m CONTOUR INTERVAL

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-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SURVEY AND SERVICES PLAN - SOUTH

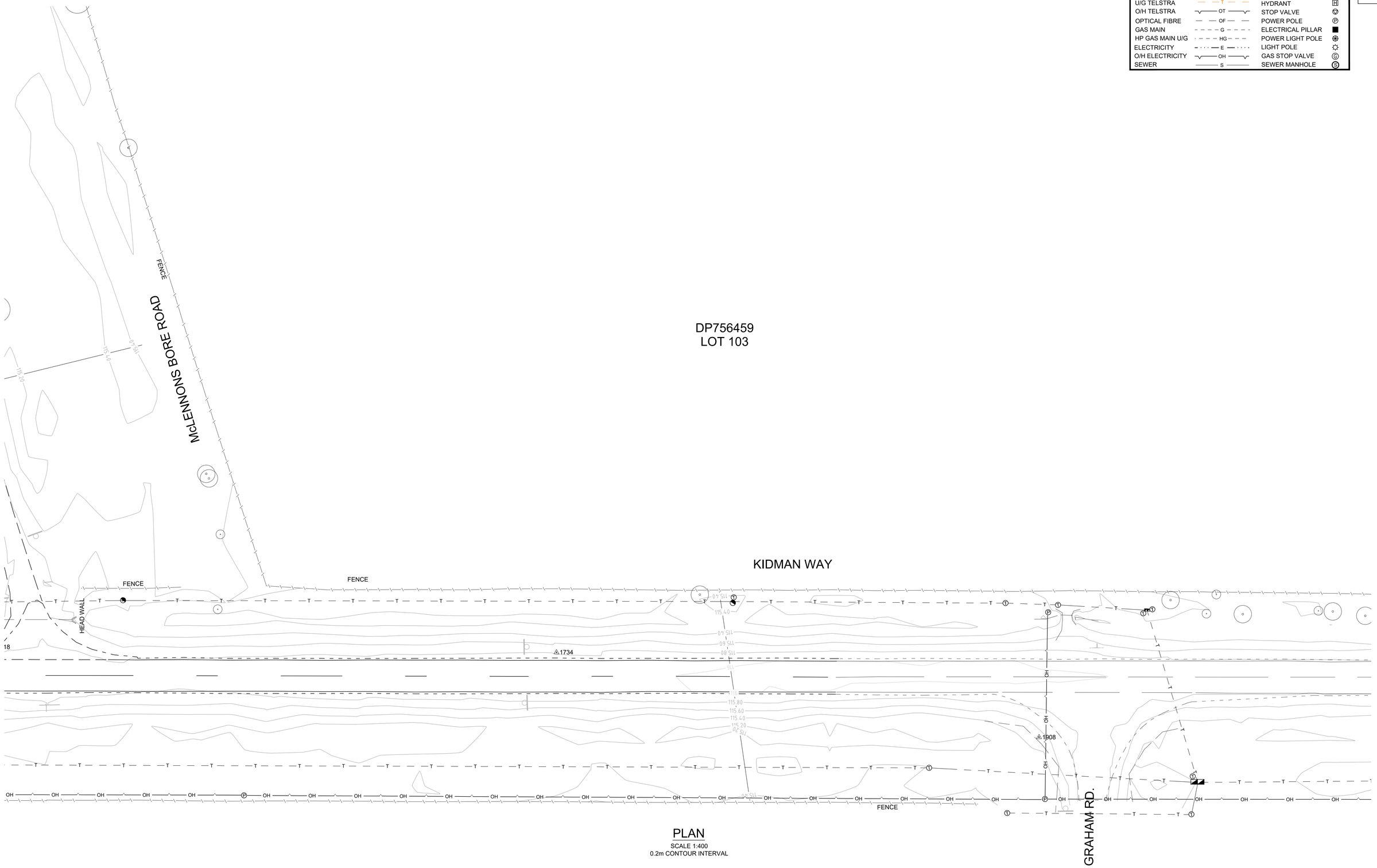
CLIENT: SPARK RENEWABLES
DRG. #: EMM - C03
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

A1

UTILITIES			
WATER MAIN	W	TELSTRA PILLAR	Ⓣ
U/G TELSTRA	T	TELSTRA PIT	◪
O/H TELSTRA	OT	HYDRANT	Ⓗ
OPTICAL FIBRE	OF	STOP VALVE	Ⓥ
GAS MAIN	G	POWER POLE	Ⓟ
HP GAS MAIN U/G	HG	ELECTRICAL PILLAR	■
ELECTRICITY	E	POWER LIGHT POLE	❋
O/H ELECTRICITY	OH	LIGHT POLE	☼
SEWER	S	GAS STOP VALVE	Ⓖ
		SEWER MANHOLE	Ⓢ

DP756459
LOT 103



PLAN

SCALE 1:400
0.2m CONTOUR INTERVAL

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PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SURVEY AND SERVICES PLAN - NORTH

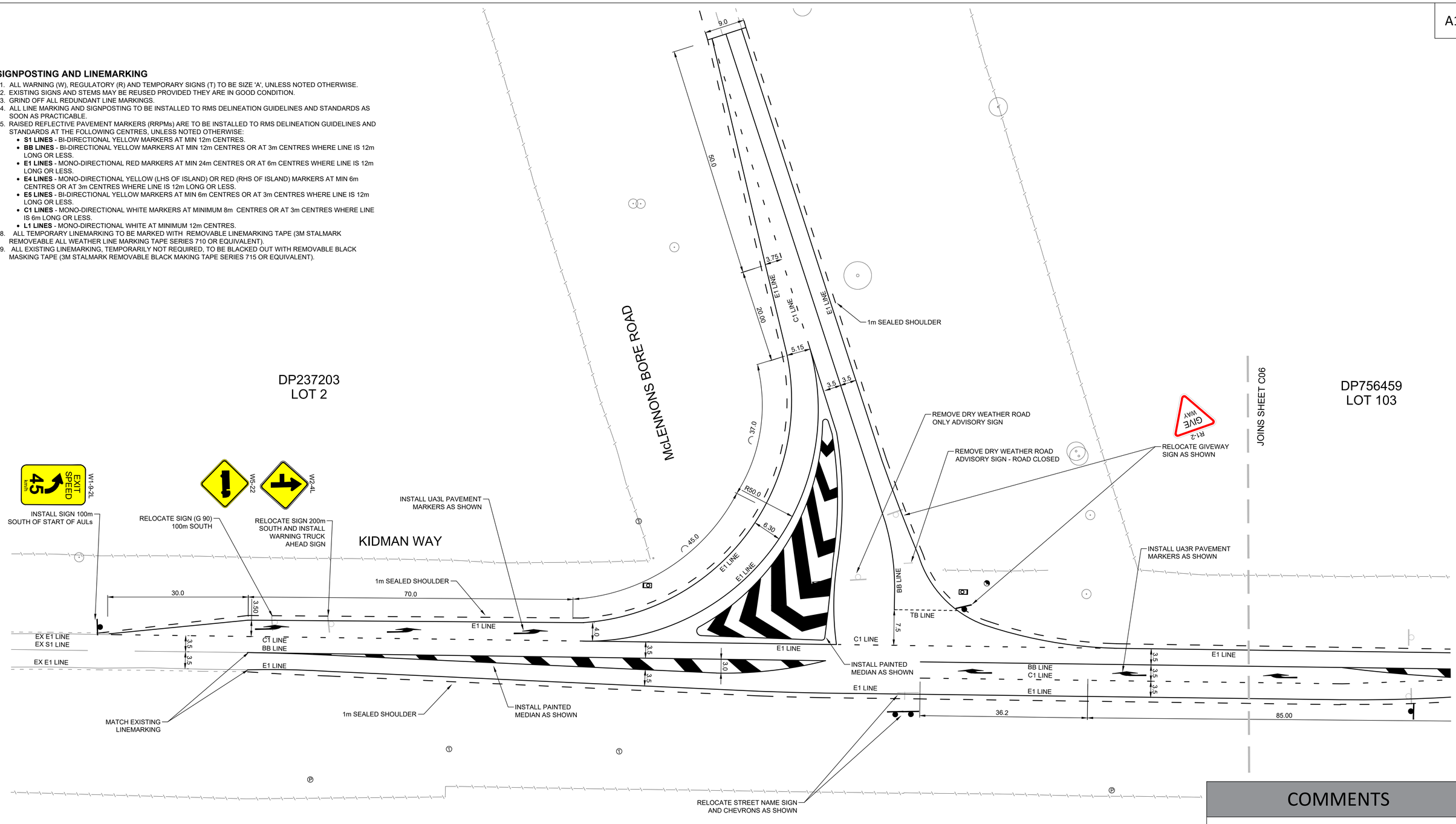
CLIENT: SPARK RENEWABLES
DRG. #: EMM - C04
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

A1

SIGNPOSTING AND LINEMARKING

1. ALL WARNING (W), REGULATORY (R) AND TEMPORARY SIGNS (T) TO BE SIZE 'A', UNLESS NOTED OTHERWISE.
2. EXISTING SIGNS AND STEMS MAY BE REUSED PROVIDED THEY ARE IN GOOD CONDITION.
3. GRIND OFF ALL REDUNDANT LINE MARKINGS.
4. ALL LINE MARKING AND SIGNPOSTING TO BE INSTALLED TO RMS DELINEATION GUIDELINES AND STANDARDS AS SOON AS PRACTICABLE.
5. RAISED REFLECTIVE PAVEMENT MARKERS (RRPMs) ARE TO BE INSTALLED TO RMS DELINEATION GUIDELINES AND STANDARDS AT THE FOLLOWING CENTRES, UNLESS NOTED OTHERWISE:
   - **S1 LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 12m CENTRES.
   - **BB LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 12m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E1 LINES** - MONO-DIRECTIONAL RED MARKERS AT MIN 24m CENTRES OR AT 6m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E4 LINES** - MONO-DIRECTIONAL YELLOW (LHS OF ISLAND) OR RED (RHS OF ISLAND) MARKERS AT MIN 6m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E5 LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 6m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **C1 LINES** - MONO-DIRECTIONAL WHITE MARKERS AT MINIMUM 8m CENTRES OR AT 3m CENTRES WHERE LINE IS 6m LONG OR LESS.
   - **L1 LINES** - MONO-DIRECTIONAL WHITE AT MINIMUM 12m CENTRES.
8. ALL TEMPORARY LINEMARKING TO BE MARKED WITH REMOVABLE LINEMARKING TAPE (3M STALMARK REMOVEABLE ALL WEATHER LINE MARKING TAPE SERIES 710 OR EQUIVALENT).
9. ALL EXISTING LINEMARKING, TEMPORARILY NOT REQUIRED, TO BE BLACKED OUT WITH REMOVABLE BLACK MASKING TAPE (3M STALMARK REMOVABLE BLACK MAKING TAPE SERIES 715 OR EQUIVALENT).



LEGEND

- PROPOSED SIGN
- EXISTING SIGN

PLAN

SCALE 1:400

NOT FOR CONSTRUCTION

COMMENTS

NOTES:
1. The CHR(s) and AUL(s) Treatments have been designed based on and in accordance with Austroads guides to traffic engineering practice.
2. Posted speed 100km/h, design speed is 110km/h and through lanes typically 3.5m wide.
3. The turn bays provides for storage of a 36.2m long vehicle.
4. Radius of travel lanes are 500m or greater.

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DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SIGNS AND LINEMARKING PLAN 1.

CLIENT: SPARK RENEWABLES

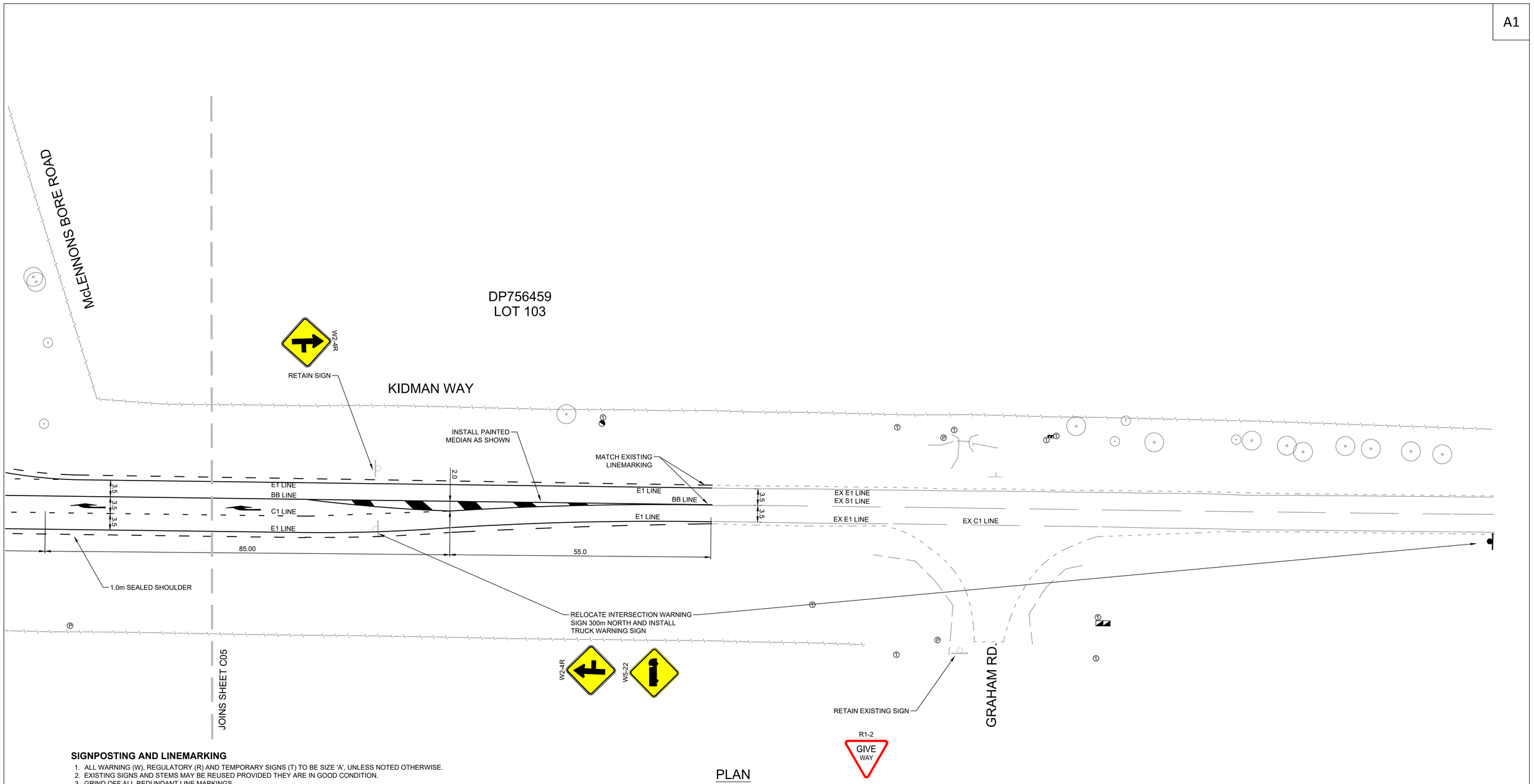
DRG. #: EMM - C05

PROJECT #: E240775

SCALE: AS SHOWN

REV: -

A1



PLAN
SCALE 1:400

SIGNPOSTING AND LINEMARKING

1. ALL WARNING (W), REGULATORY (R) AND TEMPORARY SIGNS (T) TO BE SIZE 'A', UNLESS NOTED OTHERWISE.
2. EXISTING SIGNS AND STEMS MAY BE REUSED PROVIDED THEY ARE IN GOOD CONDITION.
3. GRIND OFF ALL REDUNDANT LINE MARKINGS.
4. ALL LINE MARKING AND SIGNPOSTING TO BE INSTALLED TO RMS DELINEATION GUIDELINES AND STANDARDS AS SOON AS PRACTICABLE.
5. RAISED REFLECTIVE PAVEMENT MARKERS (RRPMs) ARE TO BE INSTALLED TO RMS DELINEATION GUIDELINES AND STANDARDS AT THE FOLLOWING CENTRES, UNLESS NOTED OTHERWISE:
   - **S1 LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 12m CENTRES.
   - **B5 LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 12m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E1 LINES** - MONO-DIRECTIONAL RED MARKERS AT MIN 24m CENTRES OR AT 6m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E4 LINES** - MONO-DIRECTIONAL YELLOW (LHS OF ISLAND) OR RED (RHS OF ISLAND) MARKERS AT MIN 6m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E5 LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 6m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **C1 LINES** - MONO-DIRECTIONAL WHITE MARKERS AT MINIMUM 8m CENTRES OR AT 3m CENTRES WHERE LINE IS 6m LONG OR LESS.
   - **L1 LINES** - MONO-DIRECTIONAL WHITE AT MINIMUM 12m CENTRES.
8. ALL TEMPORARY LINEMARKING TO BE MARKED WITH REMOVABLE LINEMARKING TAPE (3M STALMARK REMOVEABLE ALL WEATHER LINE MARKING TAPE SERIES 710 OR EQUIVALENT).
9. ALL EXISTING LINEMARKING, TEMPORARILY NOT REQUIRED, TO BE BLACKED OUT WITH REMOVABLE BLACK MASKING TAPE (3M STALMARK REMOVABLE BLACK MAKING TAPE SERIES 715 OR EQUIVALENT).

LEGEND

- PROPOSED SIGN
- EXISTING SIGN

NOT FOR CONSTRUCTION

COMMENTS

NOTES:
1. The CHR(s) and AUL(s) Treatments have been designed based on and in accordance with Austroads guides to traffic engineering practice.
2. Posted speed 100km/h, design speed is 110km/h and through lanes typically 3.5m wide.
3. The turn bays provides for storage of a 36.2m long vehicle.
4. Radius of travel lanes are 500m or greater.

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Ground Floor
20 Chandos Street,
St Leonards NSW 2065
Phone # 02 9493 9500
www.emmconsulting.com.au

REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SIGNS AND LINEMARKING PLAN 2.

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C06
PROJECT #: E240775
SCALE: AS SHOWN
REV: -

A1

WARNING
UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM RECORDS SUPPLIED BY THE PUBLIC AUTHORITIES TO EMM CONSULTING APRIL 2024.

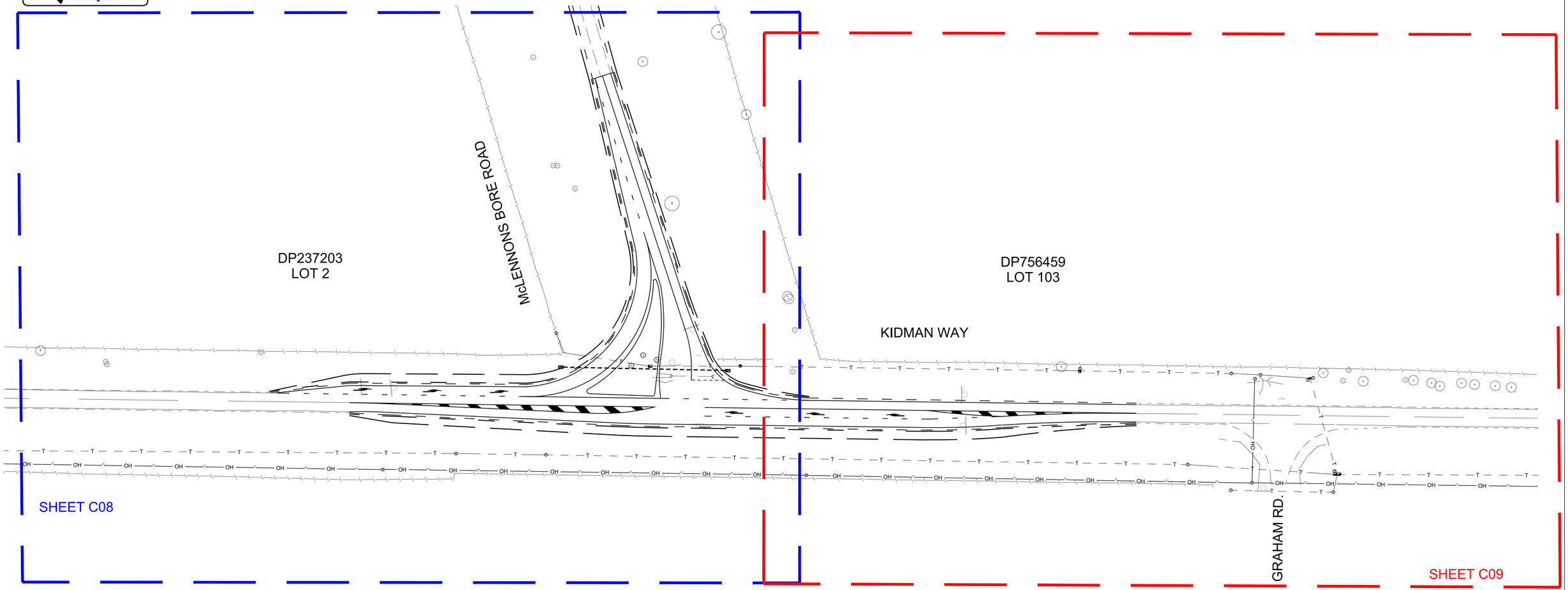
LOCATIONS HAVE BEEN INTERPRETED FROM THESE RECORDS AND ARE APPROXIMATE ONLY.
EXTREME CAUTION SHOULD BE TAKEN BY PERSONS EXCAVATING.

WARNING U/G TELSTRA
Telstra
CABLES
PLEASE CONTACT THE N.I.A.C. GROUP AT TELSTRA ON 9204-0880 OR 9204-0923. BEFORE STARTING ANY CONSTRUCTION WORK IN THE AREA.

WARNING U/G TELSTRA
Telstra
CABLES
PLEASE CONTACT THE N.I.A.C. GROUP AT TELSTRA ON 9204-0880 OR 9204-0923. BEFORE STARTING ANY CONSTRUCTION WORK IN THE AREA.
BEWARE OPTIC FIBRE

BEFORE YOU DIG www.byda.com.au

UTILITIES		TELSTRA PILLAR	
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	



PLAN
SCALE 1:800

NOT FOR CONSTRUCTION

COMMENTS

NOTES:
1. The CHR(s) and AUL(s) Treatments have been designed based on and in accordance with Austroads guides to traffic engineering practice.
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4. Radius of travel lanes are 500m or greater.

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
OVERALL CONSTRUCTION PLAN

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C07
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

A1

WARNING
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WARNING U/G TELSTRA
telstra
CABLES
— — T — — T — —
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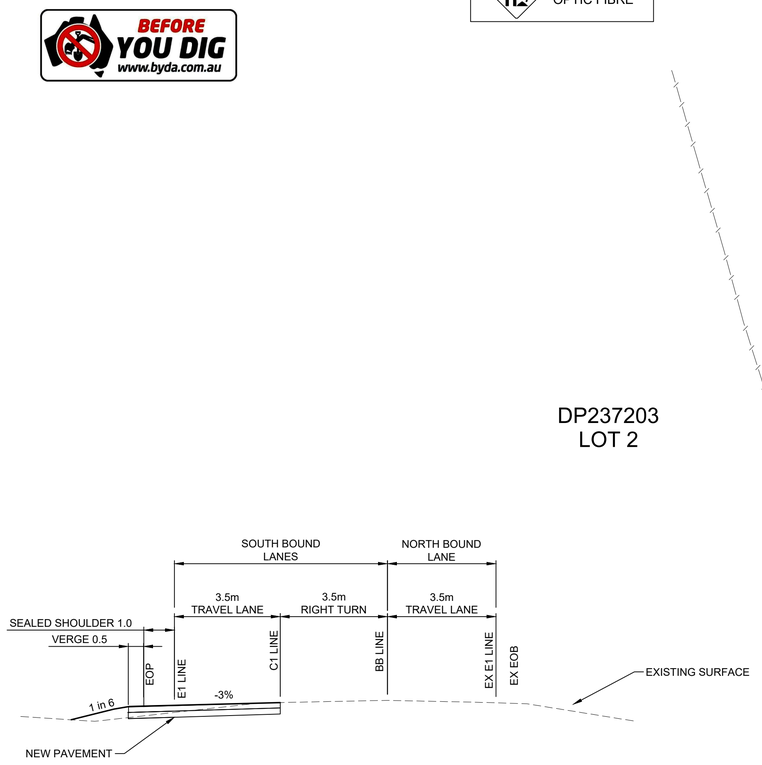
WARNING U/G TELSTRA
telstra
CABLES
— — — OF — — — OF —
PLEASE CONTACT THE N.I.A.C. GROUP AT TELSTRA ON 9204-0880 OR 9204-0923. BEFORE STARTING ANY CONSTRUCTION WORK IN THE AREA.
BEWARE OPTIC FIBRE

UTILITIES		TELSTRA PILLAR	Ⓣ
WATER MAIN	W	TELSTRA PIT	◪
U/G TELSTRA	T	HYDRANT	Ⓗ
O/H TELSTRA	OT	STOP VALVE	Ⓥ
OPTICAL FIBRE	OF	POWER POLE	Ⓟ
GAS MAIN	G	ELECTRICAL PILLAR	■
HP GAS MAIN U/G	HG	POWER LIGHT POLE	❋
ELECTRICITY	E	LIGHT POLE	☼
O/H ELECTRICITY	OH	GAS STOP VALVE	Ⓖ
SEWER	S	SEWER MANHOLE	Ⓢ



SECTION A - TYPICAL SECTION
SCALE 1:100 Nat.

DP237203
LOT 2

DP756459
LOT 103

McLENNONS BORE ROAD

9.0
7.0
EXTENT OF BATTER
EXTENT OF BATTER

CONTINUE SEALED ROAD APROX 130M FROM INTERSECTION

RAISE TELSTRA PIT TO SUIT DESIGN LEVELS

REMOVE EXISTING DRAINAGE LINE AND CONSTRUCT Ø375mm CLASS 4 CONCRETE PIPE, WITH TRAVERSABLE HEAD WALLS

Ø375mm

JOINS SHEET C09

KIDMAN WAY

CLEARANCE ZONE
EXTENT OF BATTER
NEW EDGE OF PAVEMENT
3.5
3.5
MATCH EXISTING PAVEMENT
CLEARANCE ZONE
EXISTING EDGE OF PAVEMENT
NEW EDGE OF PAVEMENT
EXTENT OF BATTER
1.0m SEALED SHOULDER
0.5m VERGE

PLAN
SCALE 1:400

LEGEND
- PROFILE EXISTING SEAL AND GRADE TO DESIGN LEVELS.
- PROPOSED PAVEMENT
- CLEARANCE ZONE (8m FROM EDGE OF THROUGH TRAVELING LANE) AGRD06-2010 TABLE 4.1
- EXISTING TREE TO BE ASSESSED FOR REMOVAL
- TRAVERSABLE HEADWALL

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN CONSTRUCTION PLAN - SOUTH

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C08
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

A1

WARNING
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WARNING U/G TELSTRA

telstra

CABLES

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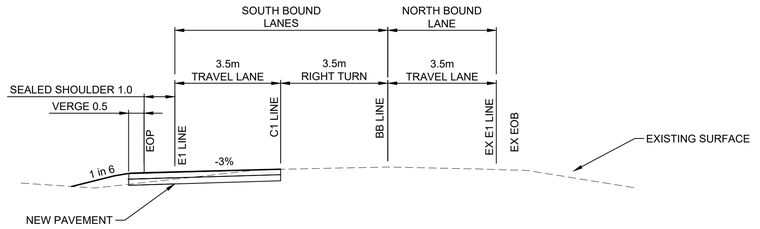
BEWARE OPTIC FIBRE

UTILITIES		TELSTRA PILLAR	Ⓣ
WATER MAIN	W	TELSTRA PIT	◪
U/G TELSTRA	T	HYDRANT	Ⓗ
O/H TELSTRA	OT	STOP VALVE	Ⓥ
OPTICAL FIBRE	OF	POWER POLE	Ⓟ
GAS MAIN	G	ELECTRICAL PILLAR	■
HP GAS MAIN U/G	HG	POWER LIGHT POLE	❋
ELECTRICITY	E	LIGHT POLE	☼
O/H ELECTRICITY	OH	GAS STOP VALVE	Ⓖ
SEWER	S	SEWER MANHOLE	Ⓢ

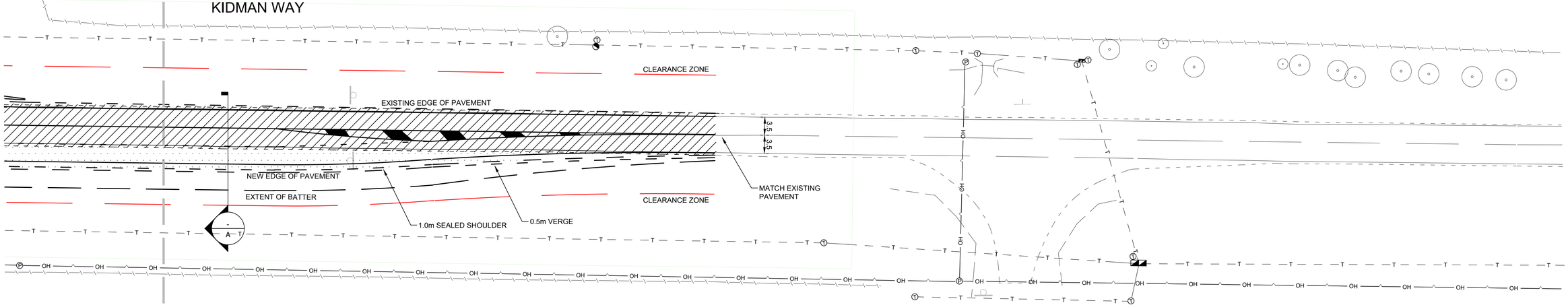


SECTION A - TYPICAL SECTION

SCALE 1:100 Nat.

DP756459
LOT 103

KIDMAN WAY



JOINS SHEET C08

GRAHAM RD.

PLAN

SCALE 1:400

LEGEND

PROFILE EXISTING SEAL AND GRADE TO DESIGN LEVELS.

PROPOSED PAVEMENT

CLEARANCE ZONE (8m FROM EDGE OF THROUGH TRAVELING LANE) AGRD06-2010 TABLE 4.1

NOT FOR CONSTRUCTION

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REV	DATE	COMMENT	DRAWN	REVIEWED
-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

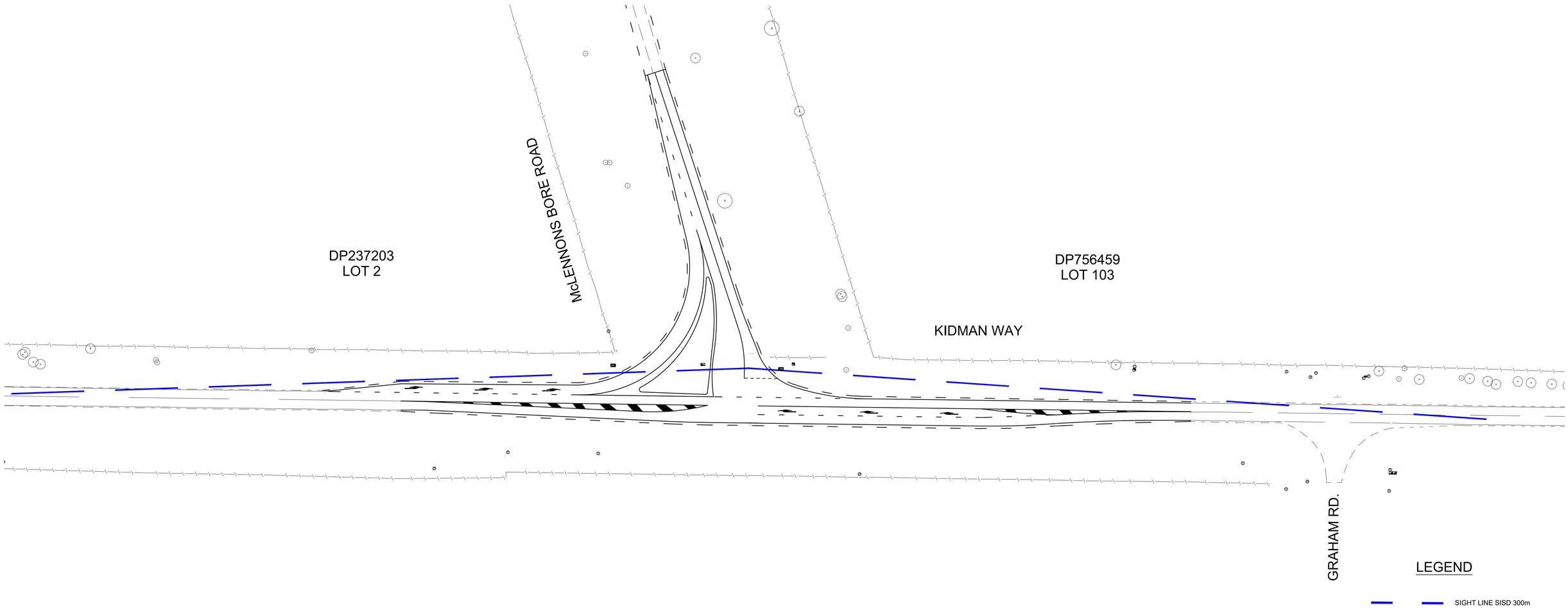
DRAWING TITLE:
STRATEGIC CONCEPT DESIGN CONSTRUCTION PLAN - NORTH

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C09
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

A1

UTILITIES		TELSTRA PILLAR	
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	



PLAN
SCALE 1:800

NOT FOR CONSTRUCTION

COMMENTS

NOTES:
1. SISD calculated in accordance Austroads guides to traffic engineering practice
2. Posted speed 100km/h, design speed is 110km/h and through lanes typically 3.5m wide.
3. Driver reaction time of 2.5sec.

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-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

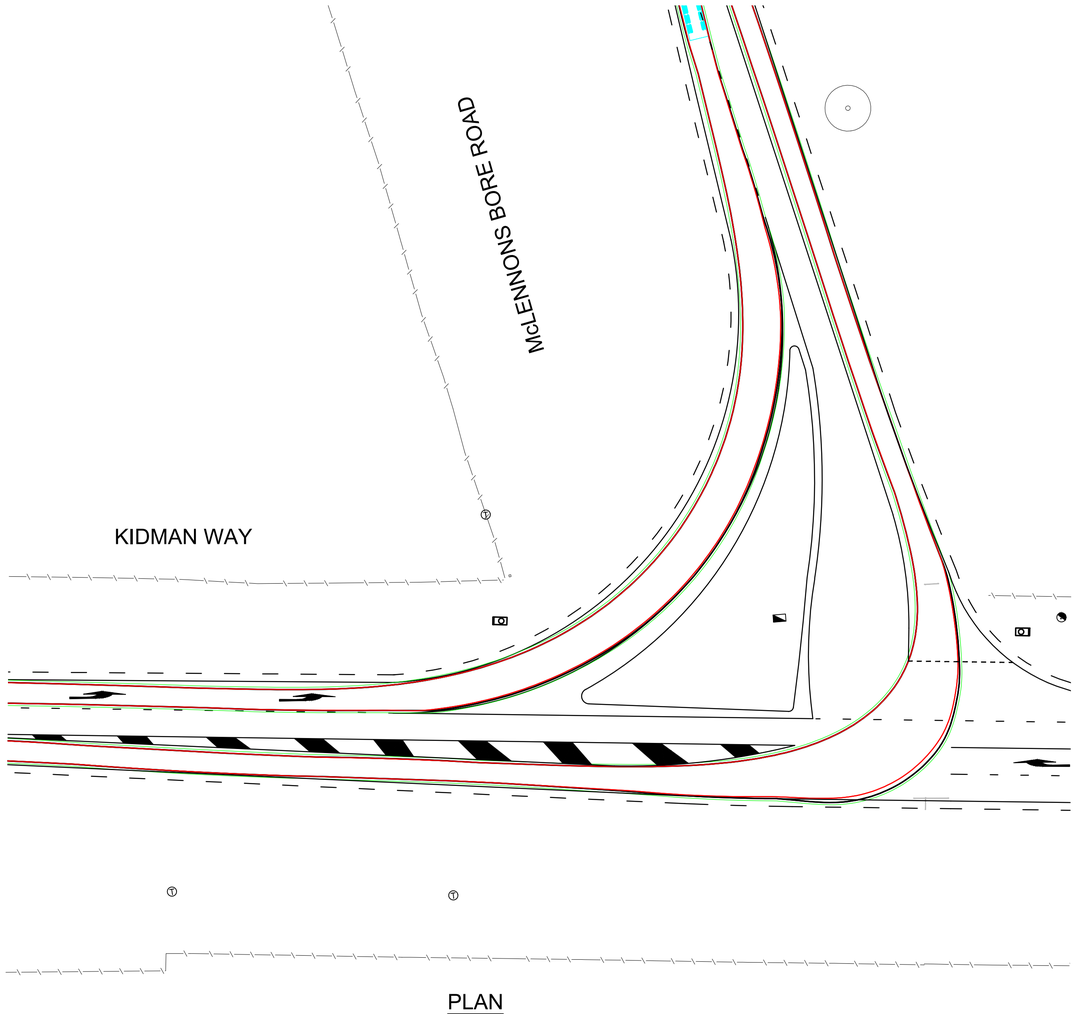
PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SAFE INTERSECTION SITE DISTANCE PLAN

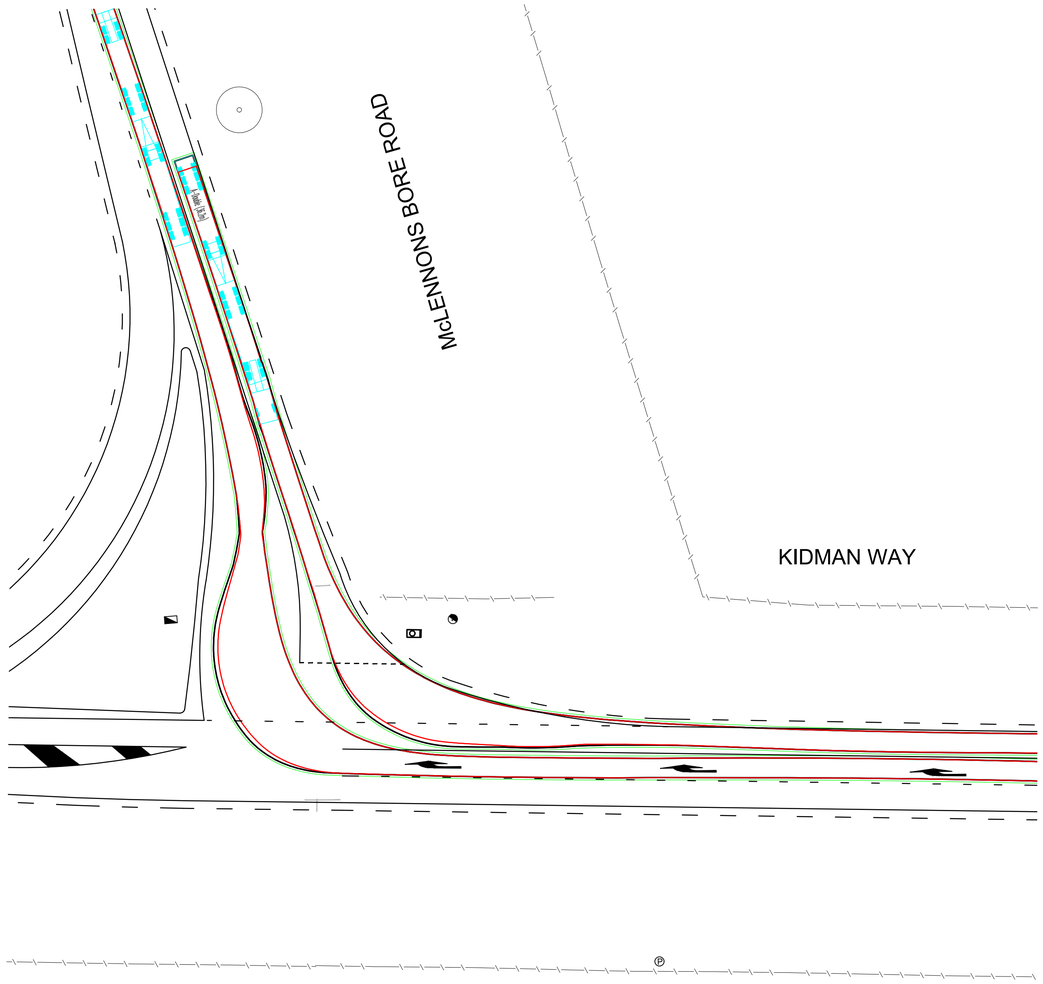
CLIENT: SPARK RENEWABLES
DRG. #: EMM - C10
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

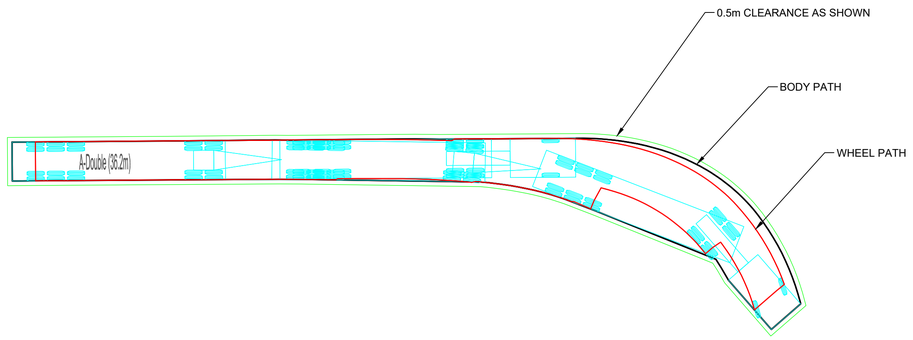
A1

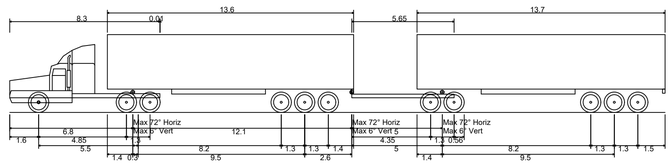


PLAN
SCALE 1:400



PLAN
SCALE 1:400





A-Double (36.2m)	
Overall Length	36.200m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	15.000m

- The design speed used for the swept paths is **15kmh** and no initial lock, lock to lock or turn on spot has been utilised to produce the swept paths shown.
- The turning paths illustrated in this drawing have been prepared using the AutoCAD Vehicle tracking modelling software in conjunction with AutoCAD Civil3D.
- The vehicle model was prepared by Vehicle Tracking based upon vehicle data provided by Austroads.
- While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

NOT FOR CONSTRUCTION

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-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

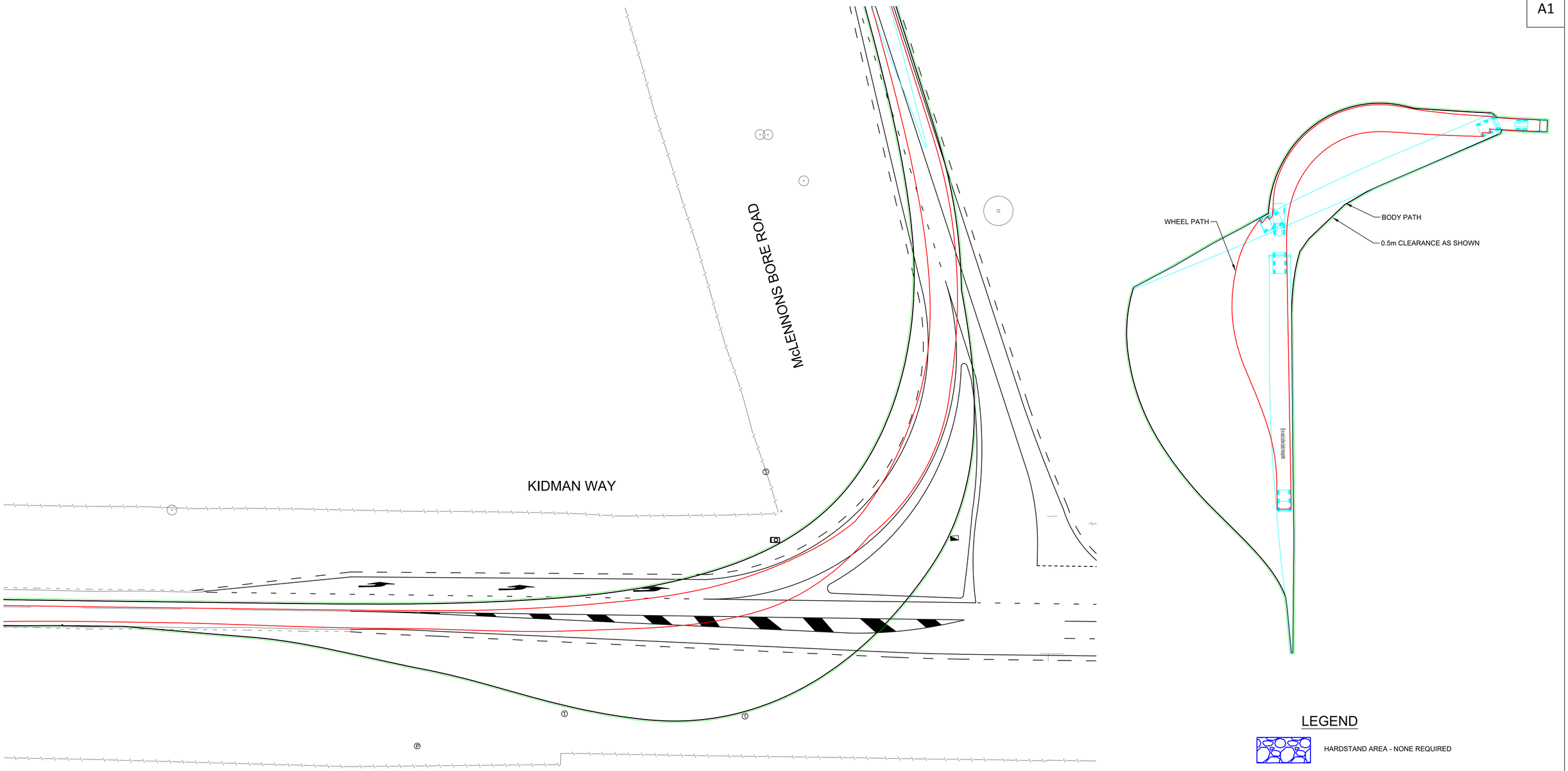
PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SWEPT PATH PLAN
A-DOUBLE

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C11
PROJECT #: E240775
SCALE: AS SHOWN

REV: -

A1

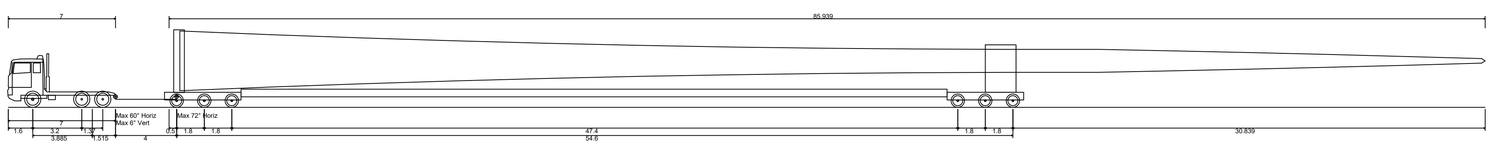


LEGEND

HARDSTAND AREA - NONE REQUIRED

PLAN

SCALE 1:400



85 m wind turbine blade transporter

Overall Length	96.439m
Overall Width	5.089m
Overall Body Height	5.069m
Min Body Ground Clearance	0.424m
Max Track Width	3.000m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

- The design speed used for the swept paths is **15kmh** and no initial lock, lock to lock or turn on spot has been utilised to produce the swept paths shown.
- The turning paths illustrated in this drawing have been prepared using the AutoCAD Vehicle tracking modelling software in conjunction with AutoCAD Civil3D.
- The vehicle model was prepared by Vehicle Tracking based upon vehicle data provided by Austroads.
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-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SWEPT PATH PLAN
OSOM VEHICLE

CLIENT: SPARK RENEWABLES

DRG. #: EMM - C12

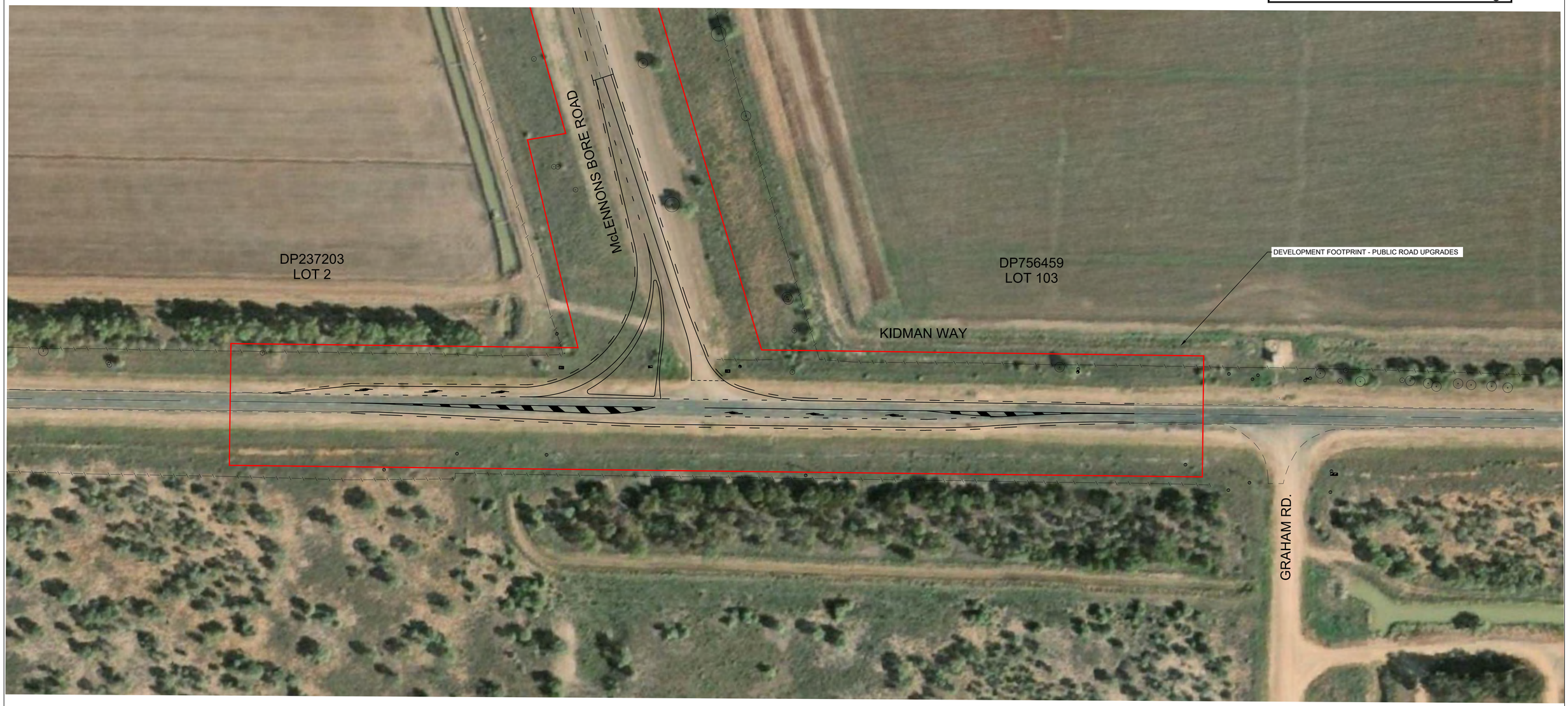
PROJECT #: E240775

SCALE: AS SHOWN

REV: -

A1

UTILITIES		TELSTRA PILLAR	
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	



PLAN
SCALE 1:800

NOT FOR CONSTRUCTION

COMMENTS

NOTES:
1. The CHR(s) and AUL(s) Treatments have been designed based on and in accordance with Austroads guides to traffic engineering practice.
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3. The turn bays provides for storage of a 36.2m long vehicle.
4. Radius of travel lanes are 500m or greater.

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-	10/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - INTERSECTION
KIDMAN WAY & MCLENNONS BORE ROAD ID101

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
ROAD UPGRADE CORRIDOR PLAN

CLIENT: SPARK RENEWABLES

DRG. #: EMM - C13

PROJECT #: E240775

SCALE: AS SHOWN

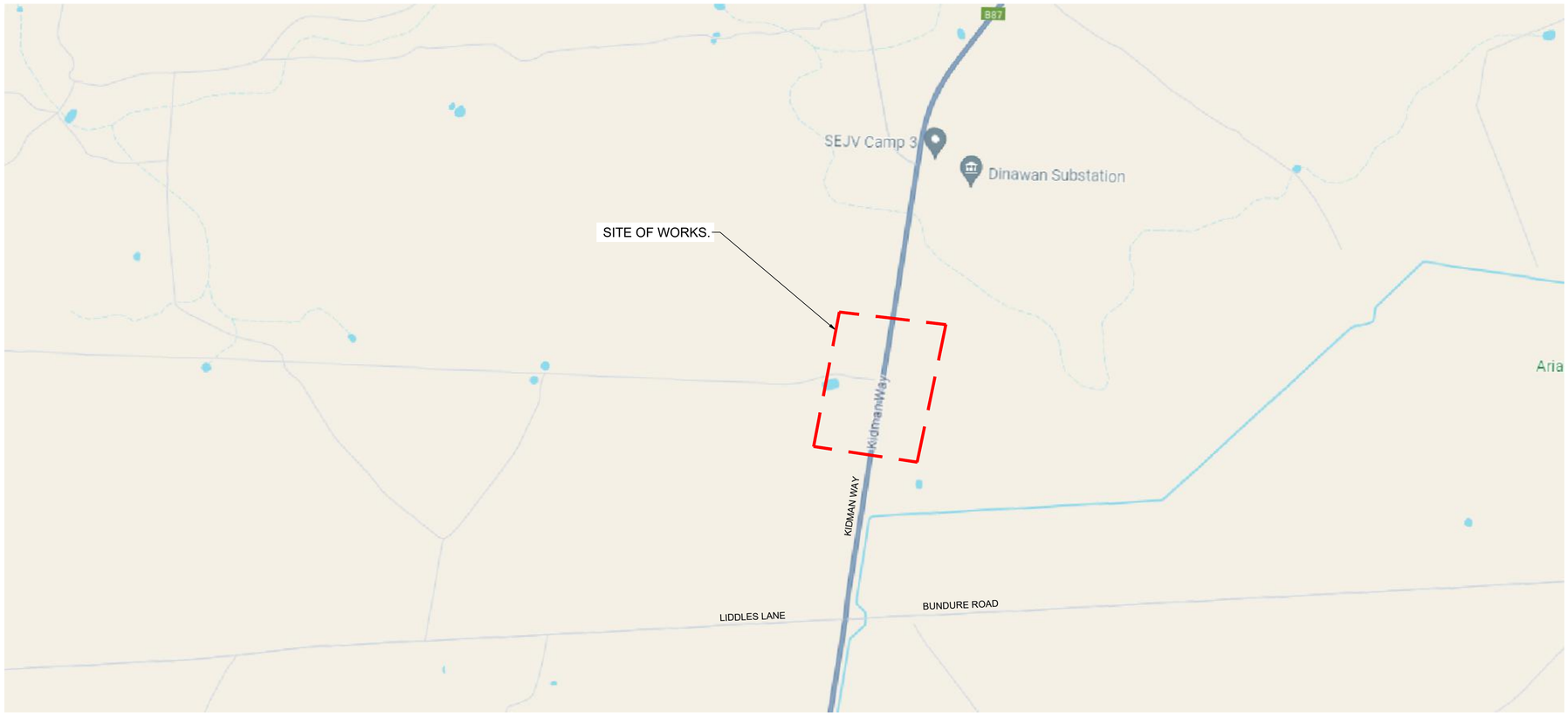
REV: -

H.2 Kidman Way site access intersections

A1

DINAWAN WIND FARM

STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY



OVERALL SITE PLAN

NTS.

SHEET INDEX		
SHEET No	**DESCRIPTION**	**REV**
EMM - C00	COVER SHEET AND SHEET INDEX	B
EMM - C01	NOTES	B
EMM - C02	SURVEY AND SERVICES PLAN	B
EMM - C03	SURVEY AND SERVICES PLAN -SOUTH	B
EMM - C04	SURVEY AND SERVICES PLAN - NORTH	B
EMM - C05	SIGNS AND LINEMARKING PLAN SOUTH	B
EMM - C06	SIGNS AND LINEMARKING PLAN NORTH	B
EMM - C07	OVERALL CONSTRUCTION PLAN	B
EMM - C08	CONSTRUCTION PLAN SOUTH	B
EMM - C09	CONSTRUCTION PLAN NORTH	B
EMM - C10	SISD PLAN	B
EMM - C11	SISD LONGITUDINAL SECTIONS	B
EMM - C12	SISD LONGITUDINAL SECTIONS	B
EMM - C13	SWEPT PATH PLAN - EAST ACCESS B-DOUBLE	B
EMM - C14	SWEPT PATH PLAN - WEST ACCESS B-DOUBLE	B
EMM - C15	ROAD UPGRADE CORRIDOR PLAN	B

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
B	10/4/25	TfNSW COMMENTS	C.J.	A.U.					
A	18/10/24	TfNSW COMMENTS	C.J.	A.U.					
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
COVER SHEET AND SHEET INDEX

CLIENT: SPARK RENEWABLES

DRG. #: EMM - C00

PROJECT #: E220305

SCALE: AS SHOWN

REV: B

A1

GENERAL

1. THE DRAWINGS ARE A DIAGRAMMATIC REPRESENTATION ONLY OF THE WORK TO BE CARRIED OUT AND DIMENSIONS SHALL NOT BE OBTAINED BY SCALING.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT MURRUMBIDGEE COUNCIL (MC) GUIDELINES AND SPECIFICATIONS. TfNSW THEN AUSTRALIAN STANDARDS TO BE USED IN OTHER INSTANCES.
3. PROVISION FOR TRAFFIC DURING CONSTRUCTION TO BE IN ACCORDANCE WITH MC CONSTRUCTION SPECIFICATION C201 - CONTROL OF TRAFFIC.
4. ALL LOCATION, ORIENTATION AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK. ANY DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE REFERRED TO THE PRINCIPAL FOR CLARIFICATION BEFORE PROCEEDING. NATURAL SURFACE LEVELS ARE INDICATIVE ONLY.
5. ALL INVESTIGATION & WORK TO BE UNDERTAKEN IN ACCORDANCE WITH MC CONSTRUCTION SPECIFICATION - DEVELOPMENT CONSTRUCTION - GENERAL
6. PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR SHALL SATISFY HIMSELF OF THE CORRECT LOCATION OF EXISTING SERVICES WHETHER INDICATED OR NOT ON THE DRAWINGS.
7. ADJUST ALL UTILITY SERVICE COVERS TO SUIT NEW GRADES & LEVELS, FLUSH WITH SURROUNDING AREA.
8. EXISTING STATE SURVEY MARKS AFFECTED BY THE WORKS ARE TO BE RECOVERED IN ACCORDANCE WITH SURVEYOR GENERAL'S DIRECTION No. 11 - "PRESERVATION OF SURVEY INFRASTRUCTURE".

SITE MANAGEMENT:

1. PROVIDE BARRIERS AROUND ALL CONSTRUCTION WORKS WITHIN THE FOOTPATH AREA TO PROVIDE SAFE ACCESS FOR PEDESTRIANS.
2. CONCRETE PUMPS AND CRANES ARE TO OPERATE FROM WITHIN THE DESIGNATED WORK AREA AND ARE NOT TO OPERATE FROM THE PUBLIC ROADWAY UNLESS SPECIFIC COUNCIL PERMISSION IS OBTAINED.
3. DELIVERY VEHICLES MUST NOT STAND WITHIN THE PUBLIC ROADWAY FOR MORE THAN 20 MINUTES AT A TIME.
4. TOILET FACILITIES MUST BE EITHER FLUSHING TYPE OR APPROVED PORTABLE CHEMICAL CLOSET. CHEMICAL CLOSETS ARE TO BE MAINTAINED AND SERVICES ON A REGULAR BASIS SO THAT OFFENSIVE ODOUR IS NOT EMITTED.
5. TRAFFIC MANAGEMENT MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE RMS TRAFFIC CONTROL AT WORKSITES MANUAL AND AS1742, MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
6. PEDESTRIAN CONTROL MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH AS1742, MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
7. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL WORK CARRIED OUT AT THE SITE IS IN ACCORDANCE WITH COUNCIL'S WORK HEALTH & SAFETY POLICY.
8. DO NOT STORE OR PLACE MATERIALS INSIDE THE DRIP LINE OF ANY TREE. CONSTRUCTION ACTIVITIES, VEHICLE PARKING OR MAINTENANCE, MATERIALS STORAGE OR LOCATING OF CONTAINERS AND SITE SHEDS MUST NOT OCCUR WITHIN THE DRIP LINE OF ANY TREES OR WITHIN 5M OF TREES WHERE THE DRIP LINE RADIUS IS LESS THAN 5M.
9. THE CONTRACTOR SHALL EFFECT TEMPORARY DRAINAGE MEASURES TO AVOID LOCALISED PONDING.

EARTHWORKS:

1. EARTHWORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS AND GEOTECHNICAL ENGINEERS RECOMMENDATIONS. THE DESIGN AS DETAILED ON THESE DRAWINGS ASSUMES A PROPERLY PREPARED UNIFORM AND STABLE SUBGRADE.
2. THE DRAWINGS SHOULD BE READ IN CONJUNCTION WITH ANY GEOTECHNICAL REPORT PREPARED FOR THE WORKS.
3. STRIP OFF ALL VEGETATION, RUBBISH AND TOPSOIL CONTAINING ORGANIC OR ROOT MATTER FROM THE AREA OF THE WORKS AND REMOVE FROM SITE/STOCKPILE FOR RE-USE.
4. PRIOR TO ANY FILLING, THE EXPOSED SUBGRADE SHALL BE PROOF ROLLED WITH A MINIMUM OF 10 PASSES OF A 5 TONNE (MIN) DEAD WEIGHT VIBRATING ROLLER IN THE PRESENCE OF THE SUPERINTENDENT OR GEOTECHNICAL ENGINEER AND ANY SOFT OR YIELDING MATERIALS REMOVED AND REPLACED WITH APPROVED FILLING COMPACTED AS HEREAFTER SPECIFIED.
5. FILL SHALL BE SOUND WELL GRADED MATERIAL WITH A HIGH GRANULAR CONTENT AND SHALL BE THE BEST OF EXCAVATED MATERIALS FROM THE SITE, OR APPROVED SOUND IMPORTED MATERIAL FREE OF RUBBISH, PLASTIC CLAY OR LARGE PIECES THAT WOULD PRECLUDE COMPACTION.
6. FILL SHALL BE SPREAD IN LAYERS NOT EXCEEDING 200MM AND COMPACTED USING SUITABLE MECHANICAL EQUIPMENT AT OPTIMUM MOISTURE CONTENT ±2 % TO NOT LESS THAN 98% MAXIMUM STANDARD DRY DENSITY (MSDD) IN ACCORDANCE WITH AS1289 - E11 UNLESS OTHERWISE NOTED.
7. FINISH FILLING LEVELS TO SUIT CONSTRUCTION OVER, ALLOWING FOR MIN 75MM OF BASE COURSE (DGB20) COMPACTED TO 98% MAXIMUM MODIFIED DRY DENSITY (MMDD) WHERE NOTED ON DRAWINGS.
8. DENSITY TESTING OF FILLING (AND BASE COURSE WHERE APPLICABLE) SHALL BE CARRIED OUT AT THE RATE OF 1 TEST PER 200 SQUARE METRES EACH LAYER (MINIMUM 2 TESTS). TESTING SHALL BE BY A NATA REGISTERED LABORATORY AND SHALL BE ALLOWED FOR BY THE CONTRACTOR.
9. THE CONTRACTOR SHALL PROGRAM AND UNDERTAKE THE EARTHWORKS OPERATIONS SUCH THAT WORKING AREAS ARE ADEQUATELY DRAINED DURING CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM FAILURE TO COMPLY WITH THESE REQUIREMENTS SHALL BE RECTIFIED AT THE CONTRACTORS EXPENSE.

DEMOLITION:

1. CARRY OUT ALL DEMOLITION WORK IN ACCORDANCE WITH AS 2601.
2. UNTIL PERMANENT SUPPORT IS PROVIDED, PROVIDE TEMPORARY SUPPORT FOR SECTIONS OF EXISTING STRUCTURES WHICH ARE TO BE ALTERED AND WHICH NORMALLY RELY FOR SUPPORT ON WORK TO BE DEMOLISHED.
3. SUPPORT EXCAVATIONS FOR DEMOLITION OF UNDERGROUND SERVICES.
4. PROVIDE SUPPORT TO ADJACENT STRUCTURES WHERE NECESSARY, SUFFICIENT TO PREVENT DAMAGE RESULTING FROM THE WORKS.
   - LATERAL SUPPORTS: PROVIDE LATERAL SUPPORT AT LEAST EQUAL TO THAT GIVEN BY THE STRUCTURE TO BE DEMOLISHED, USING SHORING.
   - VERTICAL SUPPORTS: PROVIDE SUPPORT WHERE NECESSARY USING PILING OR UNDERPINNING, OR BOTH.
5. PROVIDE DUST PROOF SCREENS, BULKHEADS AND COVERS TO PROTECT EXISTING FINISHES AND THE IMMEDIATE ENVIRONMENT FROM DUST AND DEBRIS.
6. DO NOT USE EXPLOSIVES.
7. HAZARDOUS MATERIALS. GIVE NOTICE IMMEDIATELY IF HAZARDOUS MATERIALS OR CONDITIONS ARE FOUND, INCLUDING THE FOLLOWING:
   - ASBESTOS OR MATERIAL CONTAINING ASBESTOS.
   - FLAMMABLE OR EXPLOSIVE LIQUIDS OR GASES.
   - TOXIC, INFECTIVE AND CONTAMINATED MATERIALS.
   - RADIATION OR RADIOACTIVE MATERIALS.
   - NOXIOUS OR EXPLOSIVE CHEMICALS.
   - TANK OR OTHER CONTAINERS WHICH HAVE BEEN USED FOR STORAGE OF EXPLOSIVE, TOXIC, INFECTIVE OR CONTAMINATED SUBSTANCES.

ROAD WORKS

GENERAL

1. EXISTING VEGETATION TO BE REMOVED WITHIN EXTENTS OF WORKS UNLESS NOTED OTHERWISE
2. ALL PIT GRATES TO SUIT KMC STANDARDS KERB INLET ARRANGEMENTS SHOWING KMC STANDARDS DRAWINGS
3. KERB TYPES AND KERB RAMPS REFER TO KMC STANDARDS.

SET OUT PLANS AND COORDINATES TABLES

4. DESIGN HAS BEEN BASED ON LAND SURVEY COMPLETED BY EMM.
5. SURVEY DATUM IS AHD.
6. SURVEY AZIMUTH IS BASED ON MGA ZONE 56.
7. SURVEY MARKS ARE NOT TO BE DISTURBED BEFORE ASSESSMENT BY SURVEYOR
8. ALL LOCATIONS, ORIENTATION AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK. ANY DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE REFERRED TO THE PRINCIPAL FOR CLARIFICATION BEFORE PROCEEDING. NATURAL SURFACE LEVELS ARE INDICATIVE ONLY.
9. ANY SURVEY PMS OR SSMS THAT ARE DESTROYED ARE TO BE REPLACED WITH ANOTHER PM OR SSM TO LANDS DEPARTMENT STANDARDS. IT ALSO SHOULD BE DOCUMENTED AND COORDINATED TO EQUIVALENT LANDS DEPARTMENT STANDARDS.

PAVEMENT

1. PAVEMENT INTERFACES TO BE EITHER MID LANE OR AT LANE LINE UNLESS NOTED OTHERWISE ON THESE DRAWINGS OR INSTRUCTED BY THE PRINCIPAL.
2. LOCATION AND AREA OF MILL AND RE-SHEET PAVEMENT ARE INDICATIVE ONLY. FINAL LOCATIONS AND VOLUMES ARE TO BE DETERMINED ON SITE DURING CONSTRUCTION BY THE CONTRACTOR WITH AGREEMENT FROM THE PRINCIPAL.

STORMWATER DRAINAGE

1. STORMWATER DRAINAGE SHALL BE GENERALLY IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARDS AND COUNCIL'S SPECIFICATION.
2. PIPES OF 225mm DIA. AND UNDER SHALL BE UPVC. PIPES OF 300mm DIA. AND LARGER SHALL BE FRC OR CONCRETE CLASS 2 RUBBER RING JOINTED UNO.
3. ALL FRC OR RCP STORMWATER PIPES WITHIN ROAD RESERVE AREAS TO BE CLASS 3 U.N.O.
4. PIPES SHALL GENERALLY BE LAID AT THE GRADES INDICATED ON THE DRAWINGS.
5. MINIMUM COVER TO PIPES 300mm DIA. AND OVER GENERALLY SHALL BE 600mm IN CARPARK & ROADWAY AREAS UNO.
6. PIPES UP TO 150mm DIA SHALL BE LAID AT 1.0% MIN. GRADE U.N.O. PIPES 225mm DIA AND OVER SHALL BE LAID AT 0.5% MIN. GRADE U.N.O.
7. BACKFILL TRENCHES WITH APPROVED FILL COMPACTED IN 200MM LAYERS TO 98% OF STANDARD DENSITY
8. ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULKHEADS AT ALL JOINTS
9. PITS SHALL BE AS DETAILED WITH METAL GRATES AT LEVELS INDICATED. ALL PITS DEEPER THAN 1000mm TO HAVE CLIMB IRONS.
10. INSTALL TEMPORARY SEDIMENT BARRIERS TO INLET PITS, TO COUNCIL'S STANDARDS UNTIL SURROUNDING AREAS ARE PAVED OR GRASSED.
11. PIT LOCATIONS AND LEVELS MAY BE VARIED TO SUIT SITE CONDITIONS AFTER CONSULTING COUNCIL'S REPRESENTATIVE.
12. HAND-EXCAVATE STORMWATER PIPES IN VICINITY OF TREE ROOTS.
13. TRENCHING AND BEDDING DETAILS TO BE IN ACCORDANCE WITH AS3500 TO HS2 DETAIL UNLESS OTHERWISE NOTED.

SUBSURFACE DRAINAGE

1. LOCATION OF SUBSURFACE DRAINAGE SHOWN ON PLANS IS INDICATIVE ONLY. DRAWINGS TO BE READ IN CONJUNCTION WITH PAVEMENT DETAILS SECTIONS AND PLANS AND KMC CONSTRUCTION SPECIFICATION.
2. CONSTRUCTION OF TRENCH DRAINS TO BE IN ACCORDANCE WITH KMC CONSTRUCTION SPECIFICATION
3. DEPTH OF TRENCH AND PAVEMENT INTERFACE DRAINS TO BE CONFIRMED ONSITE BY THE CONTRACTOR WITH AGREEMENT FROM THE PRINCIPAL AND TO BE MEASURED FROM LOWEST POINT OF THE EXISTING OF NEW PAVEMENT SMZ.
4. GEOTEXTILE FOR TRENCH AND PAVEMENT INTERFACE DRAINS TO BE LAPPED ON THE TOP FACE.
5. MINIMUM GRADE OF SUBSURFACE DRAINAGE TO BE 0.5%.

REINFORCEMENT:

1. REINFORCEMENT SYMBOLS:
   - R DENOTES GRADE 250 R HOT ROLLED PLAIN BARS TO AS1302
   - F DENOTES GRADE 450 F HARD-DRAWN WIRE REINFORCING FABRIC TO AS1304
   - W DENOTES GRADE 450 W HARD-DRAWN PLAIN WIRE TO AS1303
   - N DENOTES DEFORMED BAR NORMAL DUCTILITY TO AS/NZS 4671 GRADE D500N
   - L DENOTES DEFORMED BAR LOW DUCTILITY TO AS/NZS 4671 GRADE D500L
   - RN DENOTES RECTANGULAR WIRE MESH NORMAL DUCTILITY TO AS/NZS 4671
   - RL DENOTES RECTANGULAR WIRE MESH LOW DUCTILITY
   - SN DENOTES SQUARE WIRE MESH NORMAL DUCTILITY
   - SL DENOTED SQUARE WIRE MESH LOW DUCTILITY TO AS/NZS 4671
2. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
3. THE SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN OR OTHERWISE APPROVED IN WRITING BY THE ENGINEER.
4. R4. LAPS SHALL BE IN ACCORDANCE WITH AS 3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR.
5. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE SUPERINTENDENT.
6. MINIMUM FABRIC LAP SHALL BE TWO TRANSVERSE WIRES PLUS 50MM. WHERE FABRIC LAPS, SHEETS TO HAVE MAXIMUM 2 LAYERS AT ANY POINT, CUT BACK FABRIC AT CORNERS AS REQUIRED.
7. WHERE TRANSVERSE TIE BARS ARE NOT SHOWN PROVIDE N12-400 SPLICED WHERE NECESSARY AND LAP WITH MAIN BARS 400MM UNLESS NOTED.
8. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC CHAIRS OR CONCRETE CHAIRS, AT NOT GREATER THAN 1 METRE CENTRES BOTH WAYS, AND 800 EACH WAY FOR FABRIC. WHEN POURED ON GROUND AS FORMWORK PROVIDE PLATES UNDER ALL BAR CHAIRS. PLASTIC TIPPED STEEL CHAIRS SHALL NOT BE USED ON EXPOSED FACES IN EXPOSURE CLASSIFICATION B2 AND C.

CONCRETE:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 AND AS 3610 CURRENT EDITIONS WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. ALL CEMENT TO BE TYPE GP, GENERAL PURPOSE CEMENT IN ACCORDANCE WITH AS3972
3. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 3600
4. DETAILS OF THE PROPOSED MIX ARE TO BE SUBMITTED & APPROVAL OBTAINED PRIOR TO POURING ANY CONCRETE.
5. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
6. MINIMUM CLEAR COVER TO ALL REINFORCEMENT SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE:

ELEMENT	STRENGTH GRADE (MPa)	SLUP (mm)	MAX. AGGREG. SIZE (mm)	CAST AGAINST GROUND (mm)	CAST IN FORMS AND NOT EXPOSED (mm)	CAST IN FORMS AND EXPOSED (mm)
PATH	25	80	20	40	40	40

7. CONCRETE SIZES/DIMENSIONS SHOWN DO NOT INCLUDE THE THICKNESS OF ANY APPLIED FINISHES. NO FINISH THAT DECREASES COVER IS PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE SUPERINTENDENT/ENGINEER.
8. MAINTAIN COVER TO REINFORCEMENT AT CHAMFERS, DRIP GROOVED, REGLETS ETC
9. NO HOLES, CHASES, BLOCKOUT, DUCTS OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE SUPERINTENDENT/ENGINEER.
10. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE SUPERINTENDENT/ENGINEER.
11. ALL CONCRETE MEMBERS SHALL BE MECHANICALLY VIBRATED TO ACHIEVE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK AND THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS.
12. CURING OF ALL CONCRETE IS TO BE ACHIEVED BE KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF THREE DAYS, AND THE PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT.
13. CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING.
14. ALL CONCRETE SHALL BE PLACED IN SUCH A MANNER SO AS TO AVOID SEGREGATION OR LOSS OF MATERIALS.
15. UNDER NO CIRCUMSTANCES SHALL EXCESS CONCRETE BE DISPOSED OF ON-SITE. ALL EXCESS CONCRETE MUST BE CARTED FROM SITE AND DISPOSED OF IN AN APPROPRIATE MANNER.
16. WATER USED FOR FLUSHING CHUTES AND FOR CLEANING OF CONCRETE TRUCKS AND EQUIPMENT MUST BE DISCHARGED IN AN AREA DESIGNATED FOR THAT PURPOSE AND WHICH HAS EROSION AND SEDIMENT CONTROL MEASURES IN PLACE.

FORMWORK:

1. RESPONSIBILITY FOR DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF FORMWORK AND FALSEWORK LIES WITH CONTRACTOR.
2. DO NOT SUPPORT OR RESTRAIN FORMWORK ON PERMANENT WORKS WITHOUT SUPERINTENDENTS WRITTEN APPROVAL.
3. CONSTRUCT FORMWORK TO COMPLY WITH AS3610 AND CLAUSE 19.6.2 OF AS3600 WHERE THIS IS MORE STRINGENT SO CONCRETE WILL HAVE DIMENSIONS, SHAPE, LOCATION AND FINISH SPECIFIED. PROVIDE OPENINGS OR REMOVABLE PANELS FOR INSPECTION AND CLEANING. APPLY RELEASE AGENT COMPATIBLE WITH CONTACT SURFACES TO INTERIOR OR FORMWORK (EXCEPT WHERE CONCRETE IS TO RECEIVE AND APPLIED FINISH FOR WHICH THERE IS NO COMPATIBLE RELEASE AGENT). WHERE NECESSARY CLEAN REINFORCEMENT TO REMOVE TRACES OF RELEASE AGENT. SEAL JOINT BETWEEN FORMWORK PANELS, AND TO HARDENED CONCRETE WITH FLEXIBLE RUBBER STRIP. SET OUT FORMWORK TO GIVE A REGULAR ARRANGEMENT OF PANELS, JOINT, BOLT HOLES ETC.
4. DO NOT USE FORMWORK HARDWARE THAT FORMS A COMPLETE HOLE THROUGH CONCRETE ELEMENTS. DO NOT USE REINFORCEMENT TO SUPPORT FORMWORK.
5. PROVIDE HOLES IN REBATE FORMERS ETC AS REQUIRED TO PREVENT AIR ENTRAPMENT.
6. CONSTRUCTION TOLERANCES TO BE TO AS3610.
7. STRIP FORMWORK TO AS3600 CLAUSE 19.6. REMOVE FROM TIE BOLTS WITHOUT DAMAGING CONCRETE. PARTS OF BOLTS LEFT IN CONCRETE MUST NOT INTRUDE INTO COVER CONCRETE. FLUSH FILL HOLES USING PRE-MIXED NON-SHRINK CEMENTITIOUS REPAIR MORTAR MATCHING CONCRETE SURFACE COLOUR, STRENGTH AND DURABILITY AND ADEQUATE BOND.

WORK NEAR EXISTING TREES AND TREE PROTECTION

GENERAL:

- TREES MUST NOT BE REMOVED OR LOPPED OR OTHERWISE DAMAGED, UNLESS SPECIFIED AND APPROVAL TO DO SO IS GIVEN BY THE SUPERINTENDENT. ALL CARE MUST BE TAKEN NOT TO DAMAGE OR INJURE ANY EXISTING TREES THAT ARE TO BE RETAINED. A QUALIFIED ARBORIST OR TREE PRESERVATION OFFICER IS TO BE CONSULTED PRIOR TO ANY EARTHWORKS BEING CONDUCTED NEAR EXISTING TREES WITHIN THE CONSTRUCTION ZONE. ANY DAMAGE INCURRED TO TREES THAT ARE TO BE RETAINED IS TO BE MADE GOOD AS SOON AS POSSIBLE FOLLOWING ADVICE BY AN APPROVED ARBORIST.

PROTECTION:

- IT IS THE SITE SUPERVISOR'S RESPONSIBILITY TO PROTECT ALL TREES IDENTIFIED FOR RETENTION.
- TREES TO BE RETAINED ARE TO BE PROTECTED WITH FENCING AND/OR TREE ARMOUR AS INDICATED ON THE DRAWINGS.
- COMPACTION OF SOIL IS TO BE AVOIDED WITHIN THE TREE PROTECTION ZONES SHOWN ON THE DRAWINGS.
- WHERE WORK IS REQUIRED TO BE UNDERTAKEN WITHIN THE TREE PROTECTION ZONES, TREE ARMOUR IS TO BE ERECTED AROUND THE TRUNK OF THE TREES AS INDICATED ON PLAN.

TREE PROTECTION FENCING:

- TREES ARE TO BE PROTECTED BY TEMPORARY CHAIN-WIRE CONSTRUCTION FENCING INSTALLED AT THE DRIPLINE IF POSSIBLE. TEMPORARY SIGNAGE LABELLED "TREE PROTECTION AREA. NO STORAGE OF MATERIALS OR MACHINERY" IS TO BE INSTALLED ON ALL TREE PROTECTION FENCING.

TREE ARMOUR:

- PROVIDE TREE ARMOUR AROUND TRUNKS OF TREES AS INDICATED ON PLAN BEFORE COMMENCEMENT OF ANY WORKS. ARMOUR IS TO CONSIST OF JUTE MATTING AND TIMBER BATTENS WRAPPED AROUND TREE TRUNKS AS INDICATED IN DRAWINGS.
- INSTALL A PROTECTIVE LAYER OF JUTE MAT AROUND TREE TRUNKS PRIOR TO INSTALLING TIMBER BATTENS AROUND TREE TRUNKS.
- TIMBER BATTENS ARE TO BE 1800 X 90 X 20mm. SECURE BATTENS INTO POSITION WITH THREE STRANDS OF WIRE OR NYLON WEBBING STAPLED OR NAILED TO CREATE A CONTINUOUS STRING, LONG ENOUGH TO SURROUND EACH TREE.
- ENSURE ARMOUR IS ATTACHED SECURELY AROUND THE TREE. AMOUR SHOULD BE ATTACHED TO ITSELF. NAILS OR FASTENERS ARE NOT TO BE ATTACHED DIRECTLY TO THE TREE TRUNK. ARMOUR IS TO REMAIN IN PLACE AS LONG AS MACHINERY IS REQUIRED ON SITE.

STORAGE OF MATERIALS:

- DO NOT STORE OR OTHERWISE PLACE BULK MATERIALS AND HARMFUL MATERIALS UNDER OR NEAR TREES WITHIN THE TREE PROTECTION ZONE. STORAGE OF MATERIALS, MIXING OF MATERIALS, VEHICLE PARKING, DISPOSAL OF LIQUIDS, MACHINERY REPAIRS AND REFUELLING, SITE OFFICE AND SHEDS MUST NOT OCCUR WITHIN THE DRIP LINE OF ANY EXISTING TREES, OR WITHIN 5M OF ANY EXISTING TREES WHERE THE DRIP LINE RADIUS IS LESS THAN 5m.
- DO NOT PLACE SPOIL FROM EXCAVATIONS AGAINST TREE TRUNKS, EVEN FOR SHORT PERIODS. PREVENT WIND-BLOWN MATERIALS SUCH AS CEMENT FROM HARMING TREES AND PLANTS.

WORK UNDER TREES:

- MINIMISE EXCAVATION OR FILLING AROUND TREES. IF CONSTRUCTION WORKS ARE NECESSARY AROUND TREES THEN MINIMISE THE USE OF MACHINERY. LEAVE TRENCHES OR EXCAVATED AREAS EXPOSED FOR AS SHORT A PERIOD AS POSSIBLE.

ROOTS:

- TREE ROOTS EXCEEDING 100mm DIAMETER ARE NOT TO BE CUT UNLESS ADVICE IS FIRST SOUGHT FROM AN ARBORIST.
- USE HAND TOOLS OR A CHAINSAW TO MAKE CLEAN CUTS TO ROOTS THAT REQUIRE CUTTING.

BACKFILLING:

- MINIMISE CHANGES TO SOIL SURFACE LEVELS AROUND TREES.
- RETURN NATURAL SOILS TO EXCAVATED AREAS OR USE OTHER VIRGIN EXCAVATED NATURAL MATERIAL (VENM) TO BACKFILL.
- ROAD MILLINGS, WASTE CONCRETE, ASPHALT OR OTHER FOREIGN MATERIALS ARE NOT TO BE USED FOR BACKFILLING WITHIN TREE ROOT ZONES.
- DO NOT BACKFILL AROUND TREE TRUNKS TO A HEIGHT GREATER THAN 300MM ABOVE THE ORIGINAL GROUND SURFACE UNLESS AUTHORISED.
- THOROUGHLY WATER THE SOIL FOLLOWING EXCAVATION WITHIN TREE ROOT ZONES.

REMOVAL OF TREES:

- WHEN REMOVING TREES, TAKE CARE NOT TO DAMAGE ANY ADJACENT EXISTING STRUCTURES, SERVICES OR TREES TO BE RETAINED.
- WHERE TREES BEING REMOVED ARE LOCATED IN FUTURE PLANTING AREAS AS SHOWN ON THE PLANTING PLAN, FULLY REMOVE THE TREES AND ALL THEIR PARTS INCLUDING THE ROOT SYSTEM.
- WHERE THIS IS NOT PRACTICAL CUT TRUNKS CLOSE TO THE EXISTING SOIL SURFACE LEVEL AND IMMEDIATELY APPLY UNDILUTED GLYPHOSATE HERBICIDE TO THE CUT SURFACES.

UTILITIES

1. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE INDICATIVE ONLY. THE CONTRACTOR IS TO REFER TO UTILITY RELOCATION PLANS APPROVED BY APPROPRIATE AUTHORITY FOR DETAILS ON PROPOSED UTILITY WORKS.
2. THE CONTRACTOR IS TO CONFIRM THE PRESENCE OF ALL UTILITIES ON SITE PRIOR TO THE COMMENCEMENT OF ROAD WORKS, REFERENCE MUST BE MADE TO THESE DRAWINGS PRIOR TO THE COMMENCEMENT OF ROAD WORKS, AND THE RELEVANT UTILITY PLANS OBTAINED BY CONTACTING DIAL BEFORE YOU DIG. CAUTION SHALL BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.
3. LOCATION AND LEVEL OF ALL SERVICES CROSSING THE PROPOSED WORKS MUST BE OBTAINED PRIOR TO CONSTRUCTION. ALL LEVELS MUST BE CHECKED FOR CONFLICT WITH ANY SERVICES, AND ANY CONFLICTS TO BE RAISED WITH PRINCIPAL.
4. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
5. UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM RECORDS SUPPLIED BY THE PUBLIC AUTHORITIES TO SHIRE CIVIL DESIGN IN DECEMBER 2019 LOCATIONS HAVE BEEN INTERPRETED FROM THESE RECORDS AND ARE APPROXIMATE ONLY. EXTREME CAUTION SHOULD BE TAKEN BY PERSONS EXCAVATING.

EROSION AND SEDIMENT CONTROL

1. GENERAL MEASURES
   - SOIL EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION SHALL CONFORM WITH GUIDELINES IN ACCORDANCE WITH "MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION - VOLUME 1, LANDCOM 2004" AND COUNCIL'S POLICY
   - PERIMETER CONTROL MEASURES SHALL BE PLACED PRIOR TO OR IN CONJUNCTION WITH THE FIRST PHASE OF THE EARTHWORKS. THESE MEASURES SHALL BE APPLIED TO PROTECT ADJOINING PROPERTIES FROM EROSION AND SILT DAMAGE.
   - EARTH STOCKPILES SHALL BE CONFINED TO ONE CENTRAL AREA WHERE POSSIBLE. ALL STOCKPILES OF EXCAVATED OR CONSTRUCTION SOILS MUST HAVE A SILT FENCE ERECTED IMMEDIATELY DOWNHILL FOR THE FULL EXTENT OF THE STOCKPILE. WHERE SITE REGRADING OR FILLING IS BEING UNDERTAKEN PROVISION SHALL BE MADE TO ENSURE THAT NO WATER IS PONDED IN ANY LOT.
   - ALL AREAS NOT SUBJECT TO CONSTRUCTION WORKS SHALL BE RETAINED FREE FROM DISTURBANCE OR DAMAGE DURING THE CURRENCY OF THE WORK. SHOULD THESE AREAS BECOME DISTURBED OR DAMAGED THEY SHALL BE REINSTATED AS DIRECTED BY THE SUPERINTENDENT.
2. SEDIMENT CONTROL DEVICES (S.C.D.)
   - THESE DEVICES SHALL BE CONSTRUCTED AT INLETS TO STORMWATER SYSTEMS TO TRAP THE SEDIMENT IN RUN-OFF.
3. STABILISATION OF DISTURBED AREAS
   - STABILISATION OF DISTURBED AREAS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS INDICATED IN GENERAL NOTES ABOVE.
   - THE FOLLOWING SHALL BE APPLIED FOR THE CONTROL OF EROSION AND SEDIMENTATION:-
     a. STABILISATION OF DENUDED AREAS SHALL COMMENCE AS SOON AS POSSIBLE AFTER THE AREAS HAVE BEEN DISTURBED.
     b. STABILISATION OF ALL CUT AND FILL SLOPES SHALL BE COMMENCED AS SOON AS PRACTICABLE AFTER COMPLETION OF FORMATION.
     c. ALL STABILISATION MEASURES SHALL BE TAKEN PRIOR TO THE END OF THE MAINTENANCE PERIOD.
4. MAINTENANCE
   - ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE MAINTAINED IN A SATISFACTORY WORKING ORDER THROUGHOUT THE CONTRACT, MAINTENANCE AND DEFECTS LIABILITY PERIODS OR UNTIL SUCH EARLIER TIME AS THE AREA HAS BEEN STABILISED AND COUNCIL'S ENGINEER DIRECTS THAT THE DEVICE BE REMOVED.
   - ALL DEVICES SHALL BE INSPECTED AFTER EACH STORM FOR STRUCTURAL DAMAGE OR CLOGGING BY SILT AND OTHER DEBRIS AND MAKE PROMPT REPAIRS OR REPLACEMENT.

SIGNAGE AND LINEMARKING

1. INSTALLATION OF PAVEMENT MARKING RRPM'S AND SIGNAGE TO BE IN ACCORDANCE WITH KMC CONSTRUCTION SPECIFICATION, GUIDELINES AND STANDARDS.
2. CONTRACTOR TO OBTAIN WRITTEN APPROVAL FROM KMC PRIOR TO INSTALLATION OF ANY SIGNAGE OR LINEMARKING.
3. LOCATION OF ALL SIGNAGE TO BE CONFIRMED ON SITE IN COORDINATION WITH THE PRINCIPAL PRIOR TO MANUFACTURE.
4. ALL SIGNS TO BE SIZE 'B' UNLESS NOTED OTHERWISE.
5. EXISTING SIGNS DESIGNATED REMOVAL TO BE STORED IN CONTRACTOR'S COMPOUND FOR WCC RECOVERY.
6. SIGNAGE TO BE LOCATED IN ACCORDANCE WITH AS1742 APPENDIX B
7. SIGNS TO BE MOUNTED A MINIMUM 2.5M ABOVE FSL.
8. CONTRACTOR TO CONFIRM LOCATION OF ALL SERVICES, DRAINAGE WORKS AND UNDERGROUND INFRASTRUCTURE PRIOR TO COMMENCING WORK. CONTRACTOR TO ENSURE ADOPTED METHOD OF CONSTRUCTION AND PROPOSED WORK WILL AVOID DAMAGE TO ALL SERVICES AND DRAINAGE WORKS, INCLUDING CLEARANCE TO OVERHEAD POWERLINES.
9. INSTALL PAINTED CHEVRONS IN ACCORDANCE WITH RMS DELINEATION GUIDELINES.
10. ALL PERMANENT ROAD LINEMARKING AND PAVEMENT MESSAGES INCLUDING ARROWS TO BE NON-PROFILE REFLECTIVE THERMO-PLASTIC MATERIAL IN ACCORDANCE WITH WCC CONSTRUCTION SPECIFICATIONS.
11. ALL TEMPORARY LINEMARKING TO BE WATERBORNE PAINT.

A1

THIS PLAN IS PREPARED FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS.

THE POSITION OF STRUCTURES , SERVICES TREES ETC. ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL.

PRIOR TO ANY CONSTRUCTION ON OR NEAR A PROPERTY BOUNDARY, THE LOCATION OF THE PROPERTY BOUNDARY SHOULD BE DETERMINED BY A REGISTERED SURVEYOR.

VISIBLE SERVICES ONLY HAVE BEEN LOCATED AS PART OF THIS SURVEY. ALL CARE HAS BEEN TAKEN IN THE FIELD SURVEY TO IDENTIFY VISIBLE SERVICES AND STRUCTURES. IN SOME CASES THE VISIBLE SERVICES HAVE NOT BEEN IDENTIFIED. IT IS RECOMMENDED THAT A FIELD INSPECTION WITH THE RELEVANT SERVICE AUTHORITY REPRESENTATIVE BE UNDERTAKEN TO CONFIRM THE IDENTITY OF SERVICES SHOWN ON THIS PLAN.

PRIOR TO EXCAVATION THE CONTRACTOR MUST:
CONTACT "BEFORE YOU DIG AUSTRALIA"
PH: 1100
WEB: https://smarterwx.1100.com.au

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.

WARNING
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EXTREME CAUTION SHOULD BE TAKEN BY PERSONS EXCAVATING.

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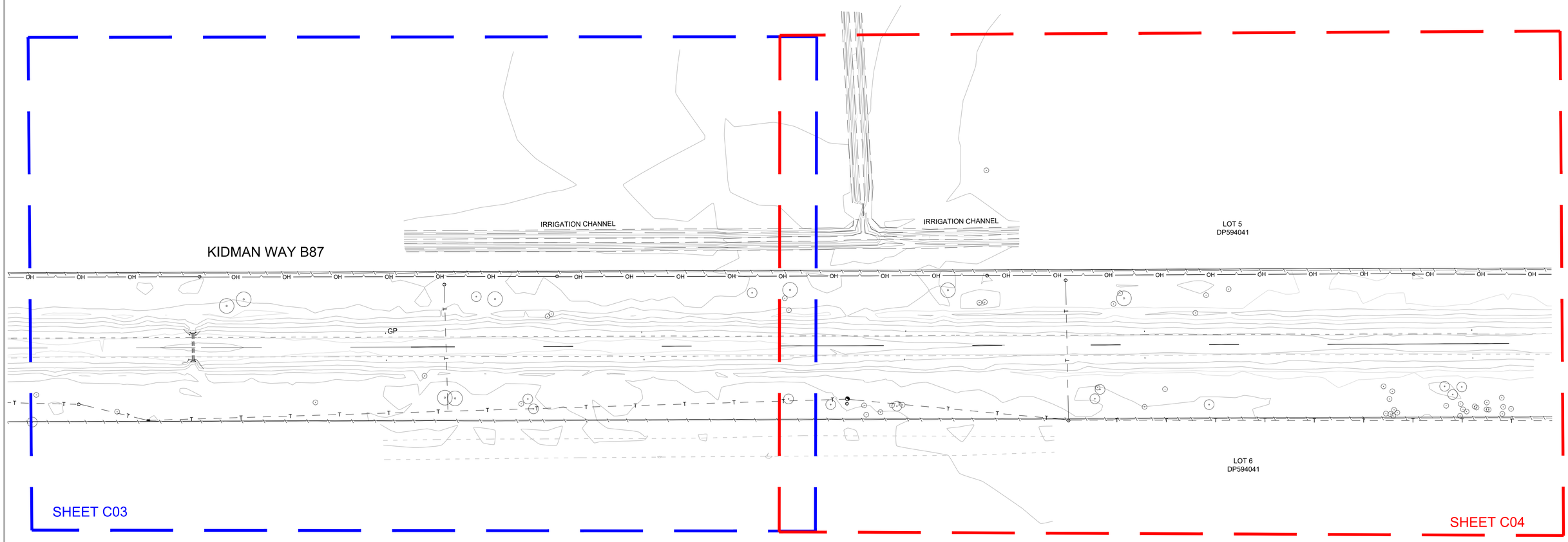
BEWARE OPTIC FIBRE

SURVEY STATION MARKS

STATION No.	EASTING	NORTHING	R.L.	DESCRIPTION
2690	389648.311	6118704.532	113.407	STN
2691	389639.260	6118634.126	113.400	STN
3039	389626.752	6118536.958	113.433	STN
3248	389640.191	6118463.904	113.445	STN
3255	389614.232	6118444.170	113.600	STN
3481	389603.559	6118358.534	113.729	STN
3671	389592.264	6118273.121	113.767	STN
3672	389628.954	6118383.518	113.643	STN
3673	389572.586	6118394.774	113.577	STN
4102	389580.176	6118181.128	113.769	STN

UTILITIES
WATER MAIN — W —
U/G TELSTRA — T —
O/H TELSTRA — OT —
OPTICAL FIBRE — OF —
GAS MAIN — G —
HP GAS MAIN U/G — HG —
ELECTRICITY — E —
O/H ELECTRICITY — OH —
SEWER — S —

TELSTRA PILLAR
TELSTRA PIT
HYDRANT
STOP VALVE
POWER POLE
ELECTRICAL PILLAR
POWER LIGHT POLE
LIGHT POLE
GAS STOP VALVE
SEWER MANHOLE



PLAN
SCALE 1:800
0.2m CONTOUR INTERVAL

NOTES:
EXISTING STATE SURVEY MARKS AFFECTED BY THE WORKS ARE TO BE RECOVERED IN ACCORDANCE WITH SURVEYOR GENERAL'S DIRECTION No. 11 - "PRESERVATION OF SURVEY INFRASTRUCTURE".
INVESTIGATIONS WERE UNDERTAKEN AND ALL SURVEY MARKS WERE INVESTIGATED AND IDENTIFIED ON SITE.
AT THIS STAGE THE LOCATION OF THE MARKS ARE WELL CLEAR OF THE WORKS AND SURVEY AREA AND SHOULD NOT BE IMPACTED BY THE WORKS.

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Ground Floor
20 Chandos Street,
St Leonards NSW 2065
Phone # 02 9493 9500
www.emmconsulting.com.au

REV	DATE	COMMENT	DRAWN	REVIEWED
B	10/4/25	TfNSW COMMENTS	C.J.	A.U.
A	18/10/24	TfNSW COMMENTS	C.J.	A.U.
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
OVERALL SURVEY AND SERVICES PLAN

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C02
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

WARNING
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BEWARE OPTIC FIBRE

LOT 5
DP594041

IRRIGATION CHANNEL

KIDMAN WAY B87

LOT 6
DP594041

JOINS SHEET C04

UTILITIES		TELSTRA PILLAR	
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	

PLAN

SCALE 1:400
0.2m CONTOUR INTERVAL

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-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SURVEY AND SERVICES PLAN - SOUTH

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C03
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

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BEWARE OPTIC FIBRE

UTILITIES			
WATER MAIN	W	TELSTRA PILLAR	Ⓣ
U/G TELSTRA	T	TELSTRA PIT	
O/H TELSTRA	OT	HYDRANT	H
OPTICAL FIBRE	OF	STOP VALVE	Ⓥ
GAS MAIN	G	POWER POLE	Ⓟ
HP GAS MAIN U/G	HG	ELECTRICAL PILLAR	■
ELECTRICITY	E	POWER LIGHT POLE	✱
O/H ELECTRICITY	OH	LIGHT POLE	☼
SEWER	S	GAS STOP VALVE	Ⓖ
		SEWER MANHOLE	Ⓢ

IRRIGATION CHANNEL

LOT 5
DP594041

KIDMAN WAY B87

LOT 6
DP594041

JOINS SHEET C03

PLAN

SCALE 1:400
0.2m CONTOUR INTERVAL

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-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SURVEY AND SERVICES PLAN - NORTH

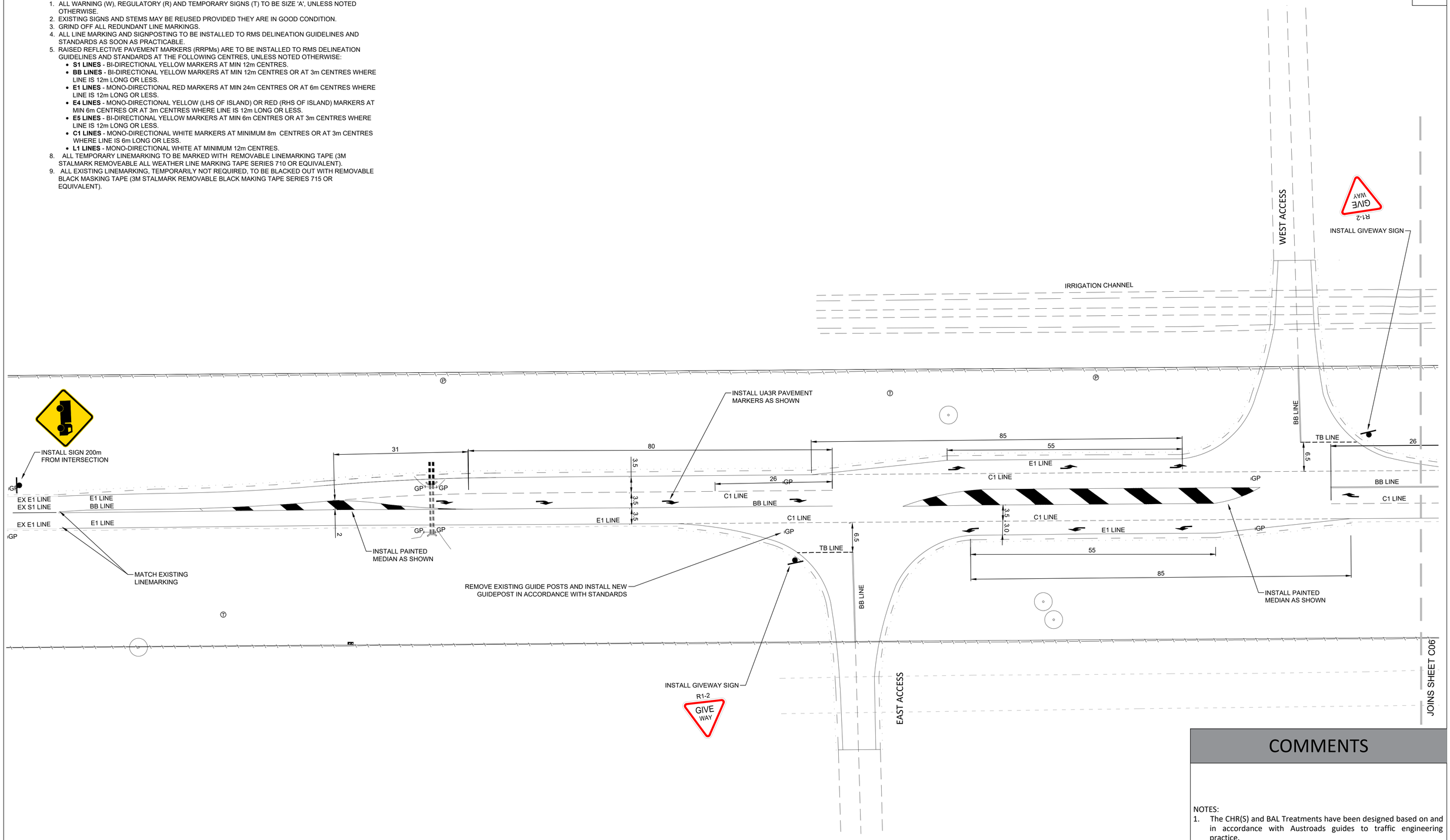
CLIENT: SPARK RENEWABLES
DRG. #: EMM - C04
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

SIGNPOSTING AND LINEMARKING

1. ALL WARNING (W), REGULATORY (R) AND TEMPORARY SIGNS (T) TO BE SIZE 'A', UNLESS NOTED OTHERWISE.
2. EXISTING SIGNS AND STEMS MAY BE REUSED PROVIDED THEY ARE IN GOOD CONDITION.
3. GRIND OFF ALL REDUNDANT LINE MARKINGS.
4. ALL LINE MARKING AND SIGNPOSTING TO BE INSTALLED TO RMS DELINEATION GUIDELINES AND STANDARDS AS SOON AS PRACTICABLE.
5. RAISED REFLECTIVE PAVEMENT MARKERS (RRPMs) ARE TO BE INSTALLED TO RMS DELINEATION GUIDELINES AND STANDARDS AT THE FOLLOWING CENTRES, UNLESS NOTED OTHERWISE:
   - **S1 LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 12m CENTRES.
   - **BB LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 12m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E1 LINES** - MONO-DIRECTIONAL RED MARKERS AT MIN 24m CENTRES OR AT 6m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E4 LINES** - MONO-DIRECTIONAL YELLOW (LHS OF ISLAND) OR RED (RHS OF ISLAND) MARKERS AT MIN 6m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **E5 LINES** - BI-DIRECTIONAL YELLOW MARKERS AT MIN 6m CENTRES OR AT 3m CENTRES WHERE LINE IS 12m LONG OR LESS.
   - **C1 LINES** - MONO-DIRECTIONAL WHITE MARKERS AT MINIMUM 8m CENTRES OR AT 3m CENTRES WHERE LINE IS 6m LONG OR LESS.
   - **L1 LINES** - MONO-DIRECTIONAL WHITE AT MINIMUM 12m CENTRES.
8. ALL TEMPORARY LINEMARKING TO BE MARKED WITH REMOVABLE LINEMARKING TAPE (3M STALMARK REMOVEABLE ALL WEATHER LINE MARKING TAPE SERIES 710 OR EQUIVALENT).
9. ALL EXISTING LINEMARKING, TEMPORARILY NOT REQUIRED, TO BE BLACKED OUT WITH REMOVABLE BLACK MASKING TAPE (3M STALMARK REMOVABLE BLACK MAKING TAPE SERIES 715 OR EQUIVALENT).



PLAN
SCALE 1:400

NOT FOR CONSTRUCTION

COMMENTS

NOTES:
1. The CHR(S) and BAL Treatments have been designed based on and in accordance with Austroads guides to traffic engineering practice.
2. Posted speed 100km/h, design speed is 110km/h and through lanes typically 3.5m wide.
3. The right turn bay provides for storage of a 26m long vehicle.
4. Radius of travel lanes are 500m or greater.

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-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SIGNS AND LINEMARKING PLAN SOUTH

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C05
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

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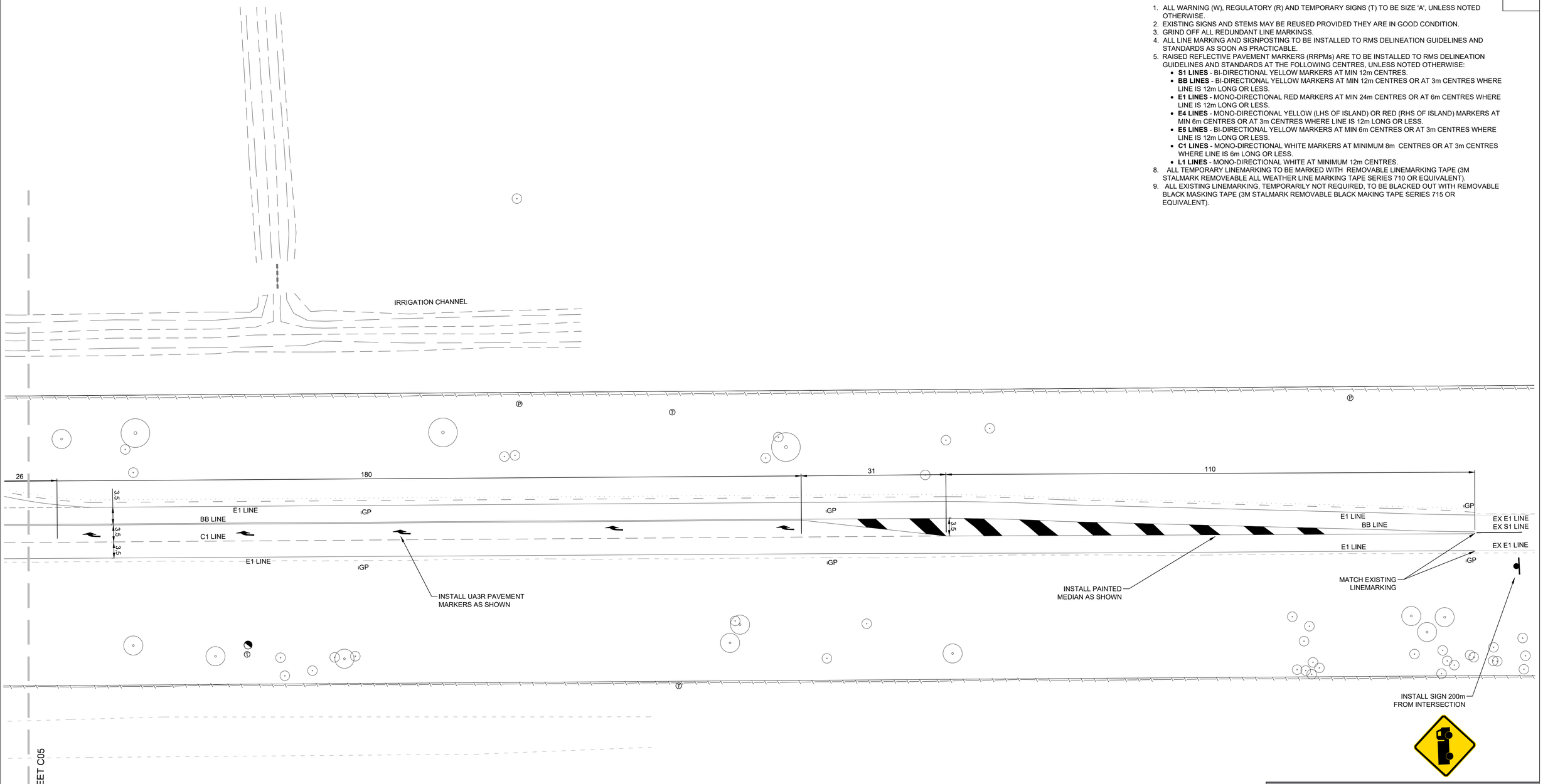

PLAN
SCALE 1:400

NOT FOR CONSTRUCTION

COMMENTS

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3. The right turn bay provides for storage of a 26m long vehicle.
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-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SIGNS AND LINEMARKING PLAN NORTH

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C06
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

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WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	

KIDMAN WAY B87

IRRIGATION CHANNEL

IRRIGATION CHANNEL

LOT 5
DP594041

LOT 6
DP594041

SHEET C08

SHEET C09

PLAN
SCALE 1:800

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A	18/10/24	TfNSW COMMENTS	C.J.	A.U.
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

REV	DATE	COMMENT	DRAWN	REVIEWED

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
OVERALL CONSTRUCTION PLAN

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C07
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

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CABLES
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BEWARE OPTIC FIBRE

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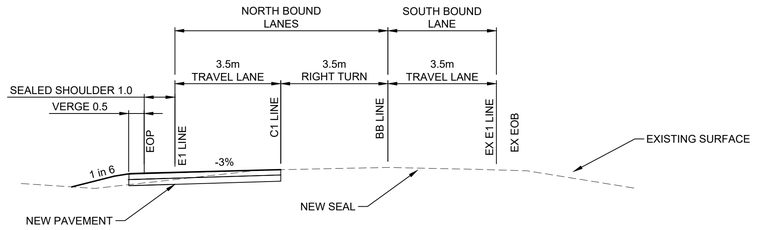
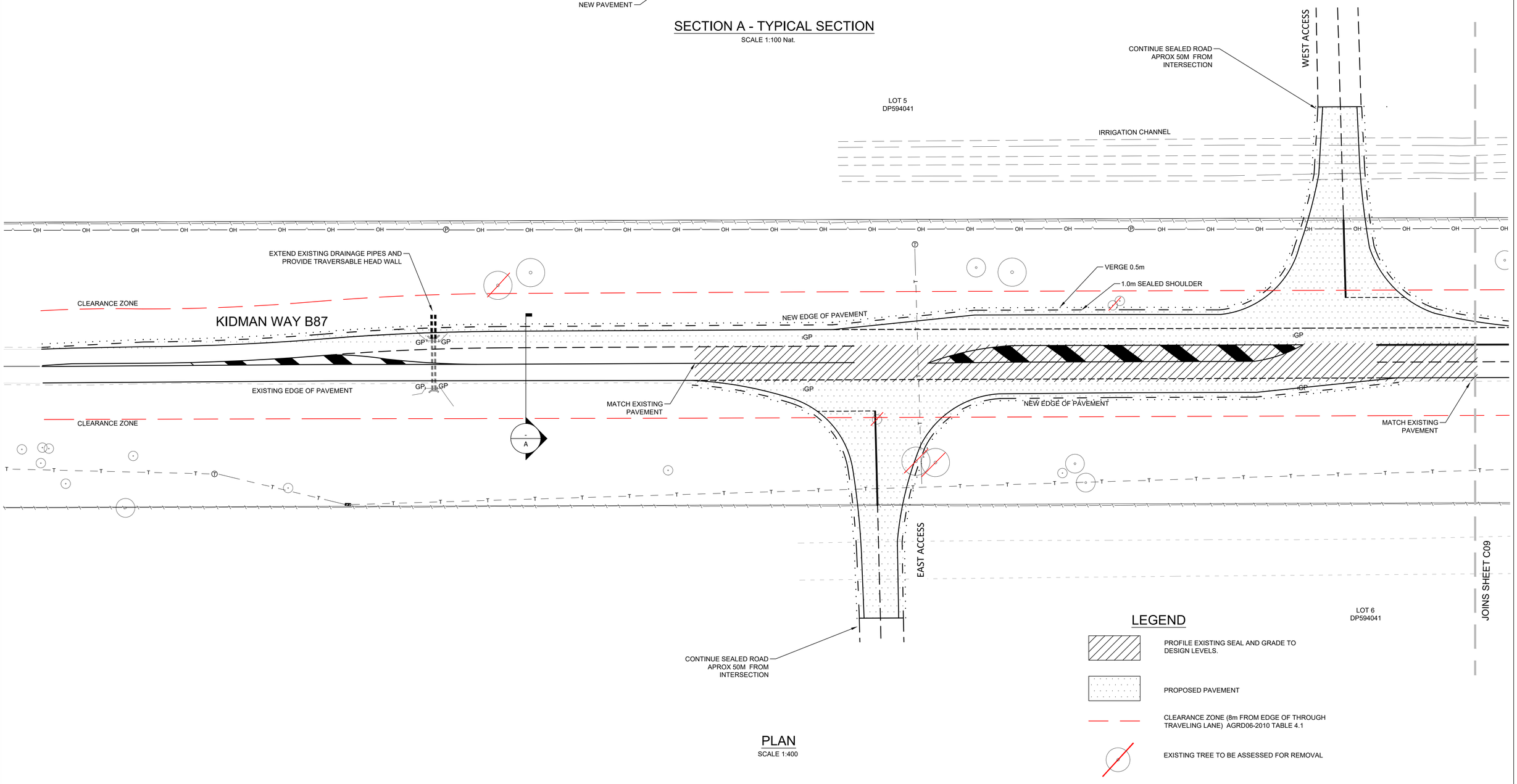
WATER MAIN	W	TELSTRA PIT
U/G TELSTRA	T	HYDRANT
O/H TELSTRA	OT	STOP VALVE
OPTICAL FIBRE	OF	POWER POLE
GAS MAIN	G	ELECTRICAL PILLAR
HP GAS MAIN U/G	HG	POWER LIGHT POLE
ELECTRICITY	E	LIGHT POLE
O/H ELECTRICITY	OH	GAS STOP VALVE
SEWER	S	SEWER MANHOLE



SECTION A - TYPICAL SECTION
SCALE 1:100 Nat.



PLAN
SCALE 1:400

LEGEND

PROFILE EXISTING SEAL AND GRADE TO DESIGN LEVELS.

PROPOSED PAVEMENT

CLEARANCE ZONE (8m FROM EDGE OF THROUGH TRAVELING LANE) AGRD06-2010 TABLE 4.1

EXISTING TREE TO BE ASSESSED FOR REMOVAL

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PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN CONSTRUCTION PLAN 1.

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C08
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

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BEWARE OPTIC FIBRE

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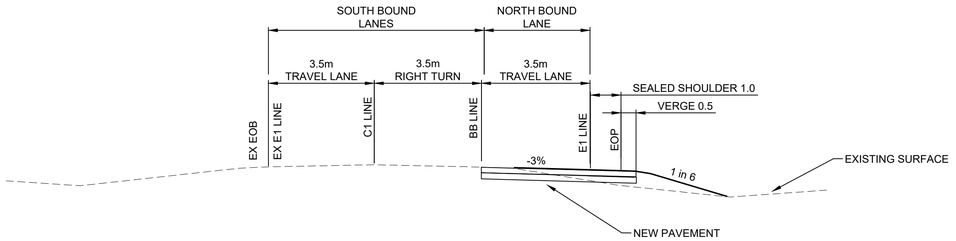
UTILITIES		TELSTRA PILLAR	
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	



SECTION A - TYPICAL SECTION
SCALE 1:100 Nat.

LOT 5
DP594041

IRRIGATION CHANNEL

KIDMAN WAY B87

VERGE 0.5m
SEALED SHOULDER 1.0m
NEW EDGE OF PAVEMENT
CLEARANCE ZONE
EXISTING EDGE OF PAVEMENT
MATCH EXISTING PAVEMENT
A

JOINS SHEET C08

LOT 6
DP594041

LEGEND
- PROFILE EXISTING SEAL AND GRADE TO DESIGN LEVELS.
- PROPOSED PAVEMENT
- CLEARANCE ZONE (8m FROM EDGE OF THROUGH TRAVELING LANE) AGRD06-2010 TABLE 4.1
- EXISTING TREE TO BE ASSESSED FOR REMOVAL

PLAN
SCALE 1:400

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REV	DATE	COMMENT	DRAWN	REVIEWED
B	10/4/25	TfNSW COMMENTS	C.J.	A.U.
A	18/10/24	TfNSW COMMENTS	C.J.	A.U.
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN CONSTRUCTION PLAN 2.

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C09
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

WARNING
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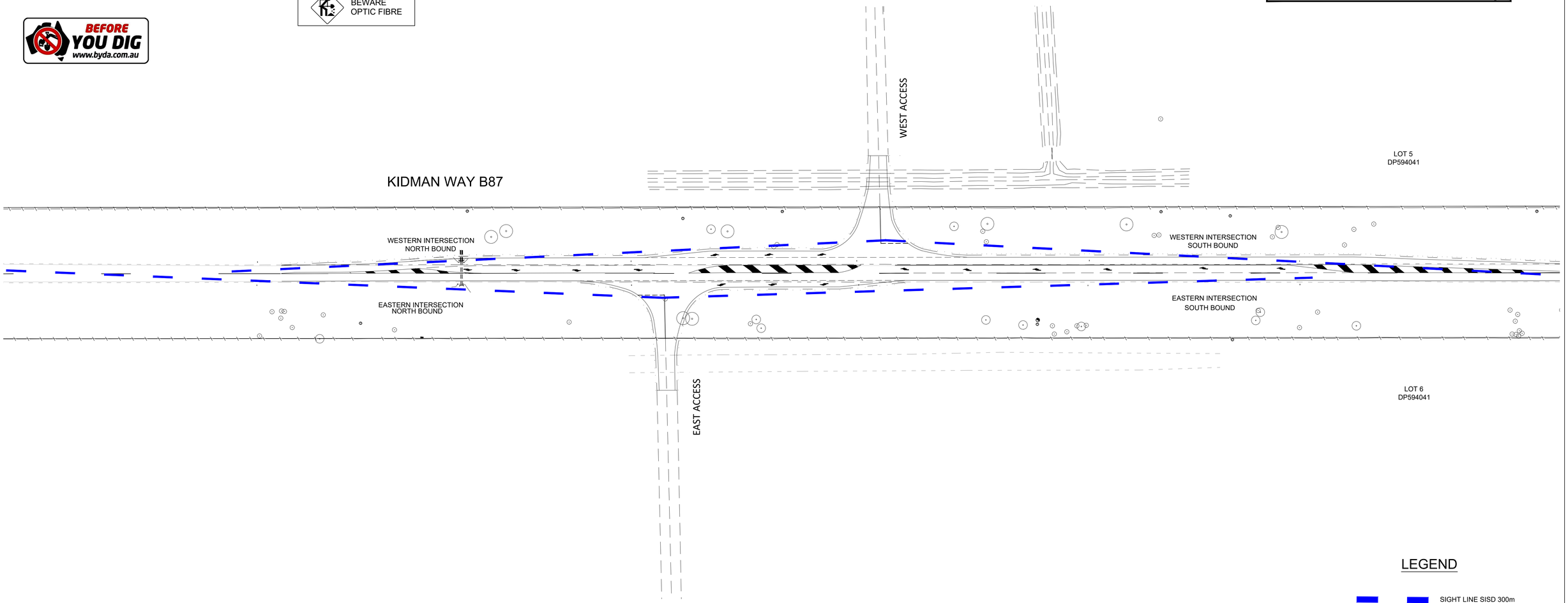
UTILITIES		TELSTRA PILLAR	Ⓣ
WATER MAIN	W	TELSTRA PIT	◪
U/G TELSTRA	T	HYDRANT	Ⓗ
O/H TELSTRA	OT	STOP VALVE	Ⓥ
OPTICAL FIBRE	OF	POWER POLE	Ⓟ
GAS MAIN	G	ELECTRICAL PILLAR	■
HP GAS MAIN U/G	HG	POWER LIGHT POLE	❋
ELECTRICITY	E	LIGHT POLE	☼
O/H ELECTRICITY	OH	GAS STOP VALVE	Ⓖ
SEWER	S	SEWER MANHOLE	Ⓢ



LEGEND

SIGHT LINE SISD 300m

PLAN
SCALE 1:900

REFER TO SHEET C11 & C12 FOR LONGITUDINAL SECTIONS

NOT FOR CONSTRUCTION

COMMENTS

NOTES:
1. SISD calculated in accordance Austroads guides to traffic engineering practice
2. Posted speed 100km/h, design speed is 110km/h and through lanes typically 3.5m wide.
3. Driver reaction time of 2.5sec.

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A	18/10/24	TfNSW COMMENTS	C.J.	A.U.					
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SISD PLAN

CLIENT: SPARK RENEWABLES

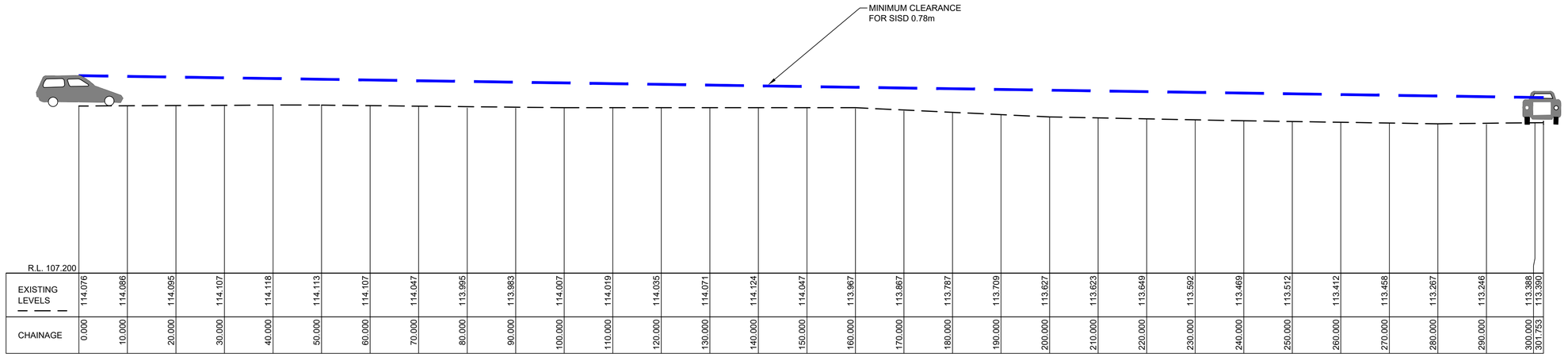
DRG. #: EMM - C10

PROJECT #: E220305

SCALE: AS SHOWN

REV: B

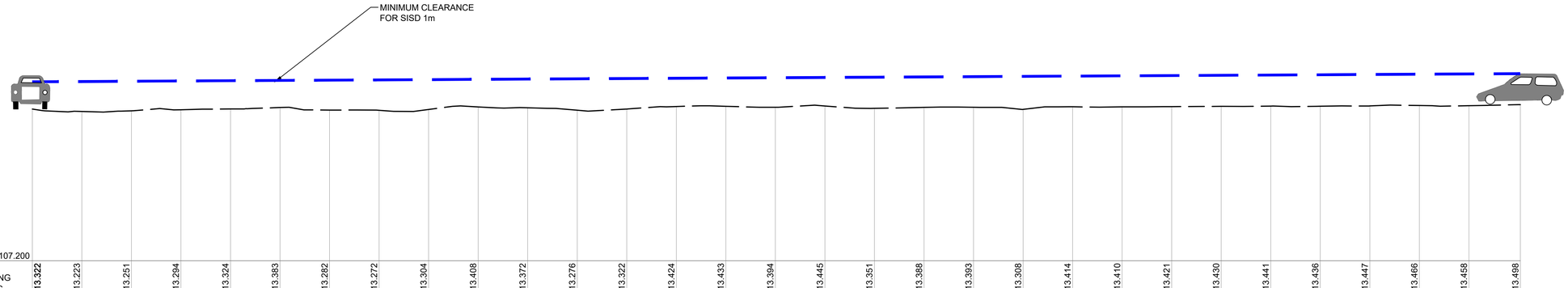
A1



	R.L. 107.200																														
EXISTING LEVELS	114.076	114.086	114.095	114.107	114.118	114.113	114.107	114.047	113.995	113.983	114.007	114.019	114.035	114.071	114.124	114.047	113.967	113.867	113.767	113.709	113.627	113.623	113.649	113.592	113.469	113.512	113.412	113.458	113.267	113.246	113.388	113.390
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000	307.753

SISD LONGITUDINAL SECTION - EASTERN INTERSECTION - NORTH BOUND APPROACH

SCALES: HORIZONTAL 1:500 VERTICAL 1:100



	R.L. 107.200																														
EXISTING LEVELS	113.322	113.223	113.251	113.294	113.324	113.383	113.282	113.272	113.304	113.408	113.372	113.276	113.322	113.424	113.433	113.394	113.445	113.351	113.388	113.393	113.308	113.414	113.410	113.421	113.430	113.441	113.436	113.447	113.466	113.458	113.498
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000

SISD LONGITUDINAL SECTION - EASTERN INTERSECTION - SOUTH BOUND APPROACH

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

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B	10/4/25	TfNSW COMMENTS	C.J.	A.U.					
A	18/10/24	TfNSW COMMENTS	C.J.	A.U.					
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:

DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN -
NEW SITE ACCESS INTERSECTIONS,
KIDMAN WAY

DRAWING TITLE:

STRATEGIC CONCEPT DESIGN
SISD LONGITUDINAL SECTIONS
EAST ACCESS

CLIENT: SPARK RENEWABLES

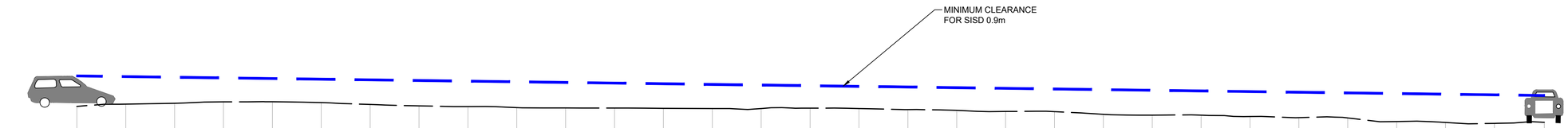
DRG. #: EMM - C11

PROJECT #: E220305

SCALE: AS SHOWN

REV: B

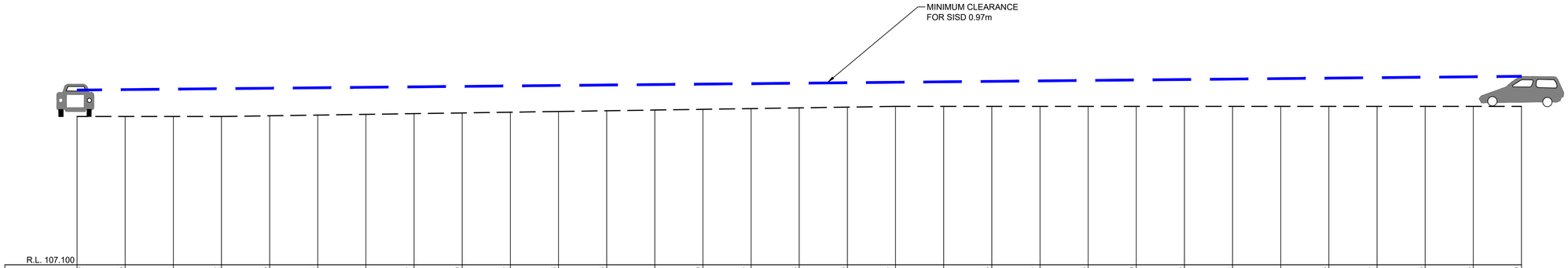
A1



R.L. 107.200																														
EXISTING LEVELS	113.995	114.088	114.123	114.180	114.183	114.150	114.074	114.017	113.987	113.944	113.929	113.927	113.916	113.905	113.908	113.922	113.907	113.864	113.835	113.785	113.780	113.670	113.636	113.633	113.579	113.534	113.521	113.374	113.335	113.297	113.343
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000

SISD LONGITUDINAL SECTION - WESTERN INTERSECTION - NORTH BOUND APPROACH

SCALES: HORIZONTAL 1:500 VERTICAL 1:100



R.L. 107.100																														
EXISTING LEVELS	113.257	113.145	113.171	113.152	113.285	113.274	113.311	113.347	113.410	113.452	113.466	113.506	113.481	113.530	113.537	113.568	113.648	113.637	113.611	113.606	113.587	113.618	113.640	113.673	113.684	113.681	113.688	113.677	113.648	113.663	113.679
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	300.000

SISD LONGITUDINAL SECTION - WESTERN INTERSECTION - SOUTH BOUND APPROACH

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

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-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:

DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN -
NEW SITE ACCESS INTERSECTIONS,
KIDMAN WAY

DRAWING TITLE:

STRATEGIC CONCEPT DESIGN
SISD LONGITUDINAL SECTIONS
WEST ACCESS

CLIENT: SPARK RENEWABLES

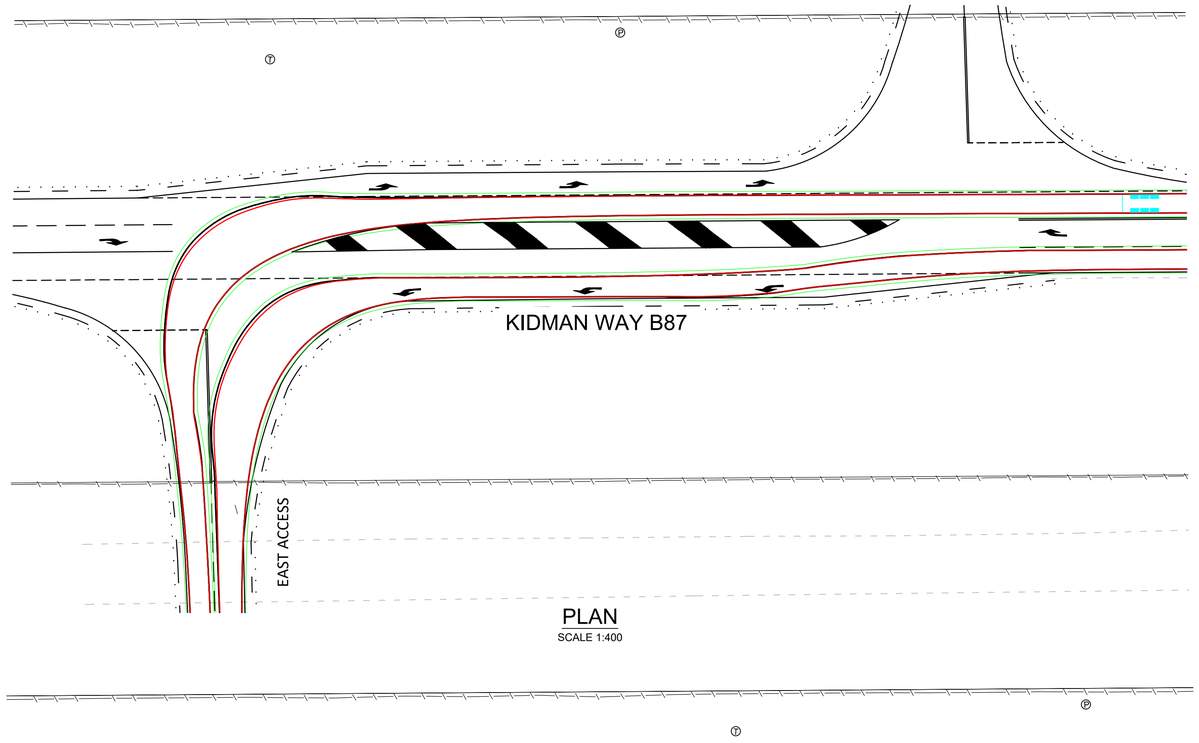
DRG. #: EMM - C12

PROJECT #: E220305

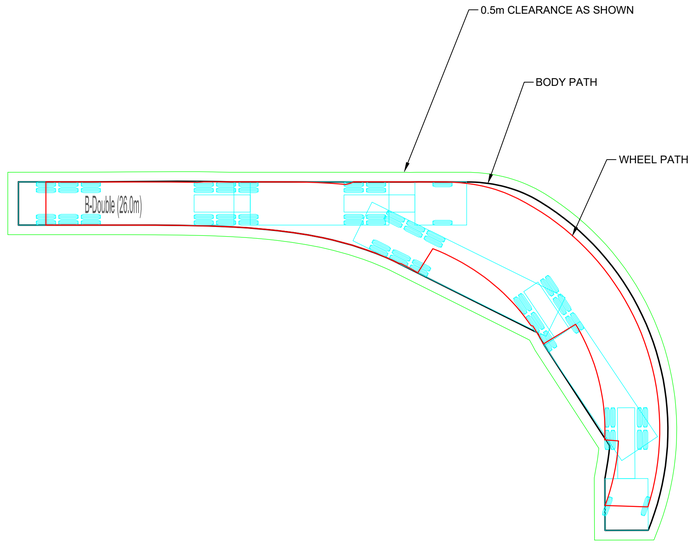
SCALE: AS SHOWN

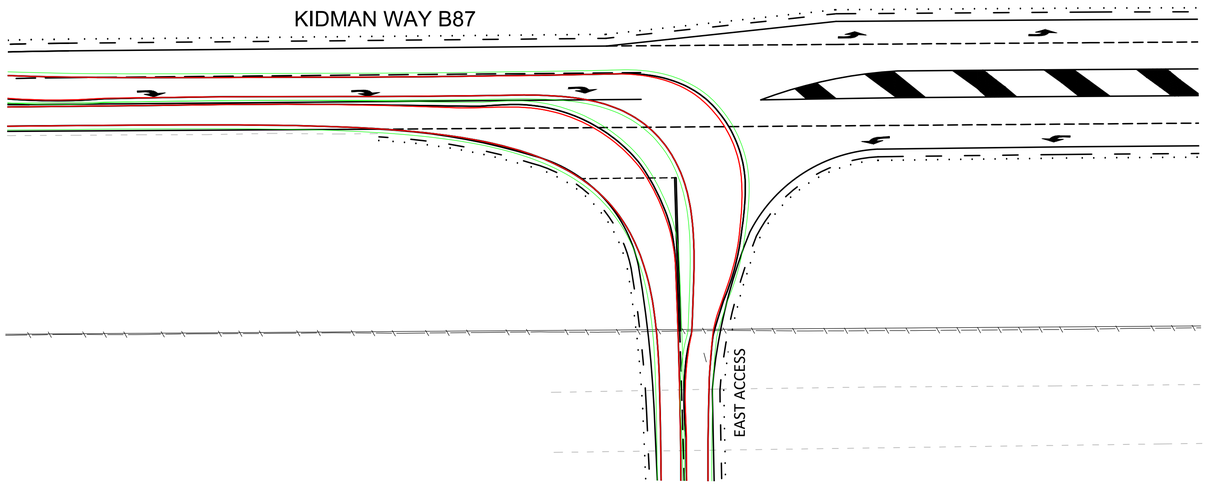
REV: B

A1

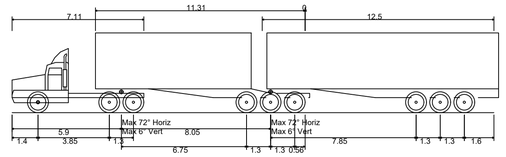


PLAN
SCALE 1:400





PLAN
SCALE 1:400



B-Double (26.0m)	
Overall Length	26.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s

NOTES:

- The design speed used for the swept paths is **15kmh** and no initial lock, lock to lock or turn on spot has been utilised to produce the swept paths shown.
- The turning paths illustrated in this drawing have been prepared using the AutoCAD Vehicle tracking modelling software in conjunction with AutoCAD Civil3D.
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B	10/4/25	TfNSW COMMENTS	C.J.	A.U.					
A	18/10/24	TfNSW COMMENTS	C.J.	A.U.					
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

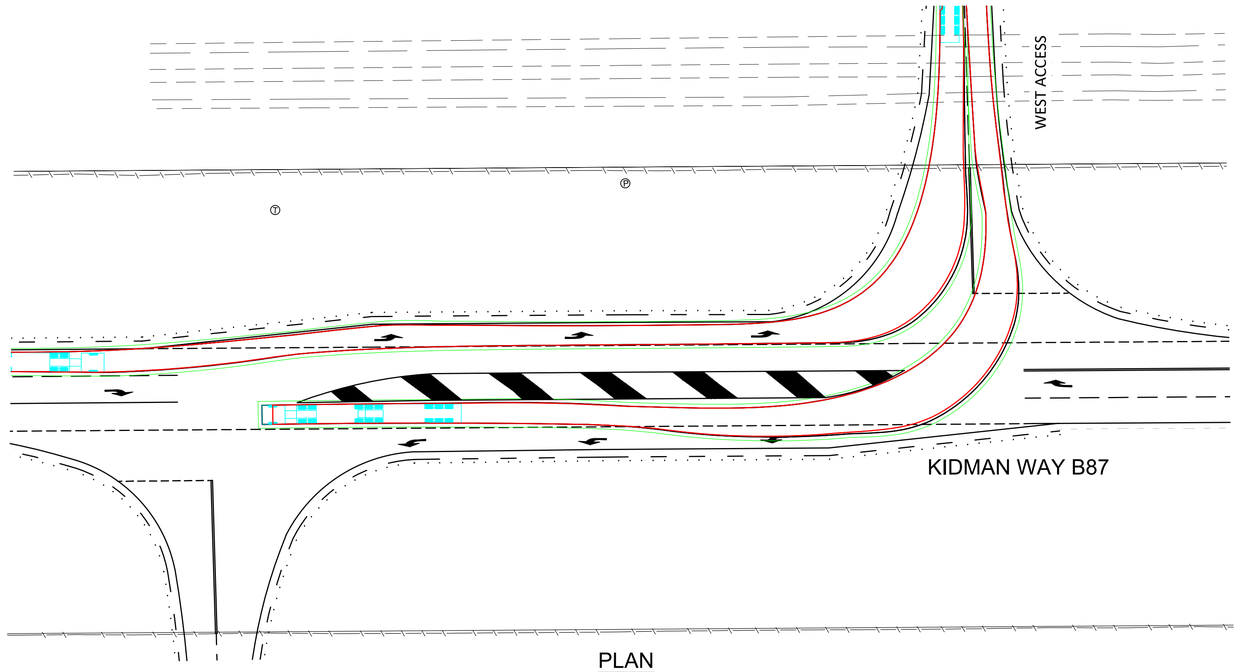
PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SWEPT PATH PLAN - EAST ACCESS
B-DOUBLE

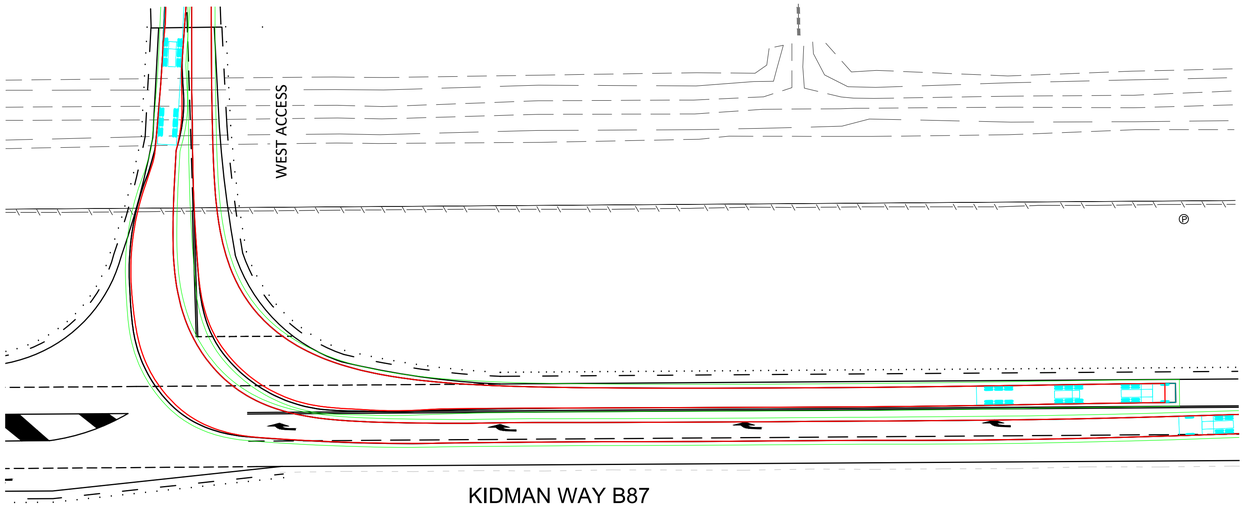
CLIENT: SPARK RENEWABLES
DRG. #: EMM - C13
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

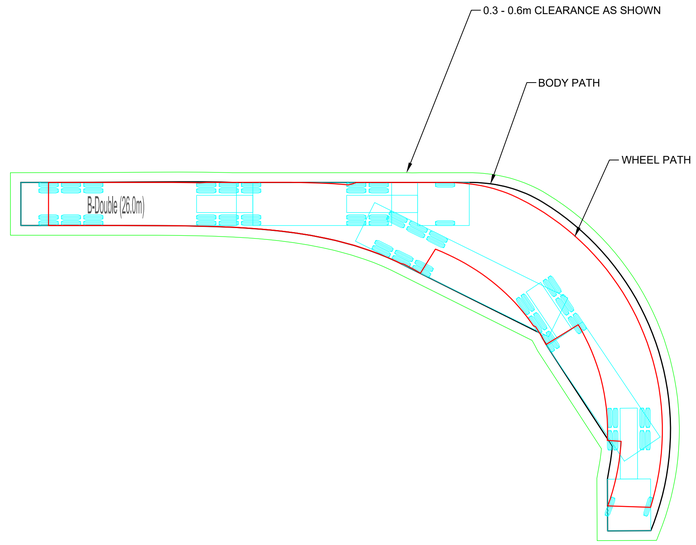
A1

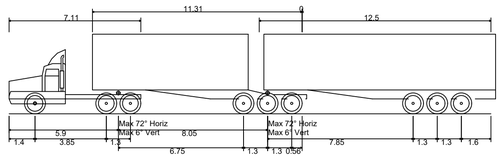


PLAN
SCALE 1:400



PLAN
SCALE 1:400





B-Double (26.0m)	
Overall Length	26.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s

NOTES:

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A	18/10/24	TfNSW COMMENTS	C.J.	A.U.
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
SWEPT PATH PLAN - WEST ACCESS
B-DOUBLE

CLIENT: SPARK RENEWABLES
DRG. #: EMM - C14
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

A1

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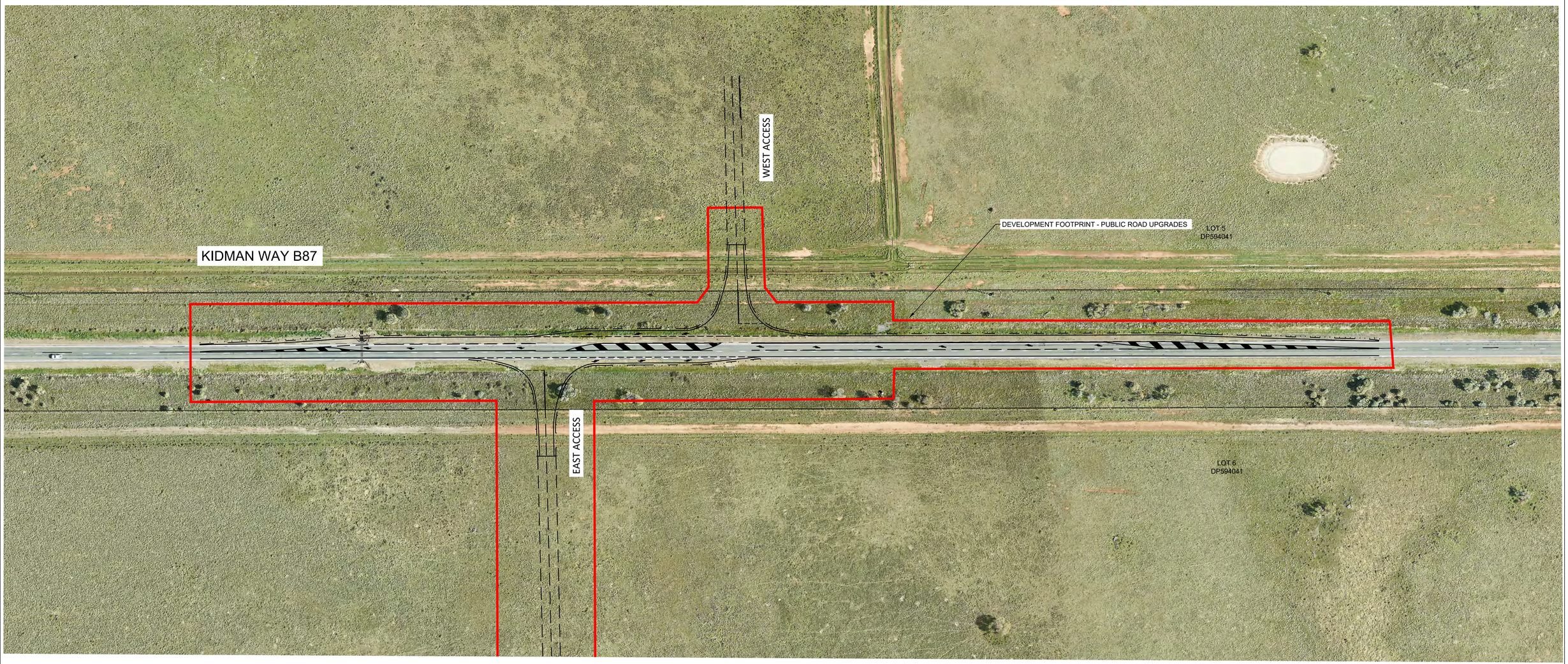
WATER MAIN	W	TELSTRA PIT	
U/G TELSTRA	T	HYDRANT	
O/H TELSTRA	OT	STOP VALVE	
OPTICAL FIBRE	OF	POWER POLE	
GAS MAIN	G	ELECTRICAL PILLAR	
HP GAS MAIN U/G	HG	POWER LIGHT POLE	
ELECTRICITY	E	LIGHT POLE	
O/H ELECTRICITY	OH	GAS STOP VALVE	
SEWER	S	SEWER MANHOLE	



PLAN
SCALE 1:1000

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A	18/10/24	TfNSW COMMENTS	C.J.	A.U.					
-	8/7/24	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
STRATEGIC CONCEPT DESIGN - NEW SITE ACCESS INTERSECTIONS, KIDMAN WAY

DRAWING TITLE:
STRATEGIC CONCEPT DESIGN
ROAD UPGRADE CORRIDOR PLAN

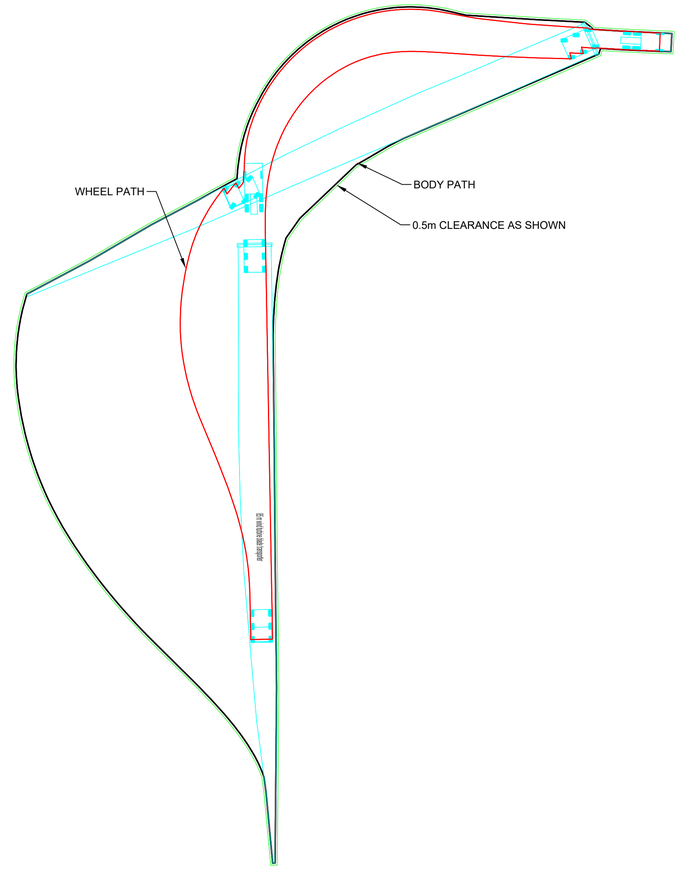
CLIENT: SPARK RENEWABLES
DRG. #: EMM - C15
PROJECT #: E220305
SCALE: AS SHOWN

REV: B

H.3 Intersection of Kidman Way and Newell Highway

A1

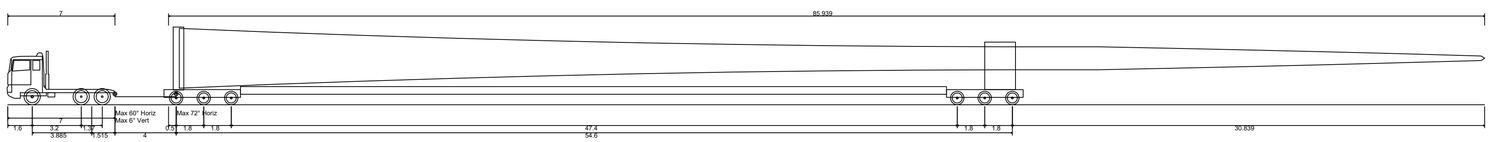
PLAN
SCALE 1:500



LEGEND

HARDSTAND AREA

EXISTING SIGN



85 m wind turbine blade transporter

Overall Length	96.439m
Overall Width	5.089m
Overall Body Height	5.069m
Min Body Ground Clearance	0.424m
Max Track Width	3.000m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

- The design speed used for the swept paths is **15kmh** and no initial lock, lock to lock or turn on spot has been utilised to produce the swept paths shown.
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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	15/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
HIGH LEVEL DESIGN - OSOM
HARDSTAND AREA
KIDMAN WAY & NEWELL HIGHWAY

DRAWING TITLE:
HIGH LEVEL DESIGN
HARDSTAND AREA PLAN

CLIENT: SPARK RENEWABLES

DRG. #: EMM - C00

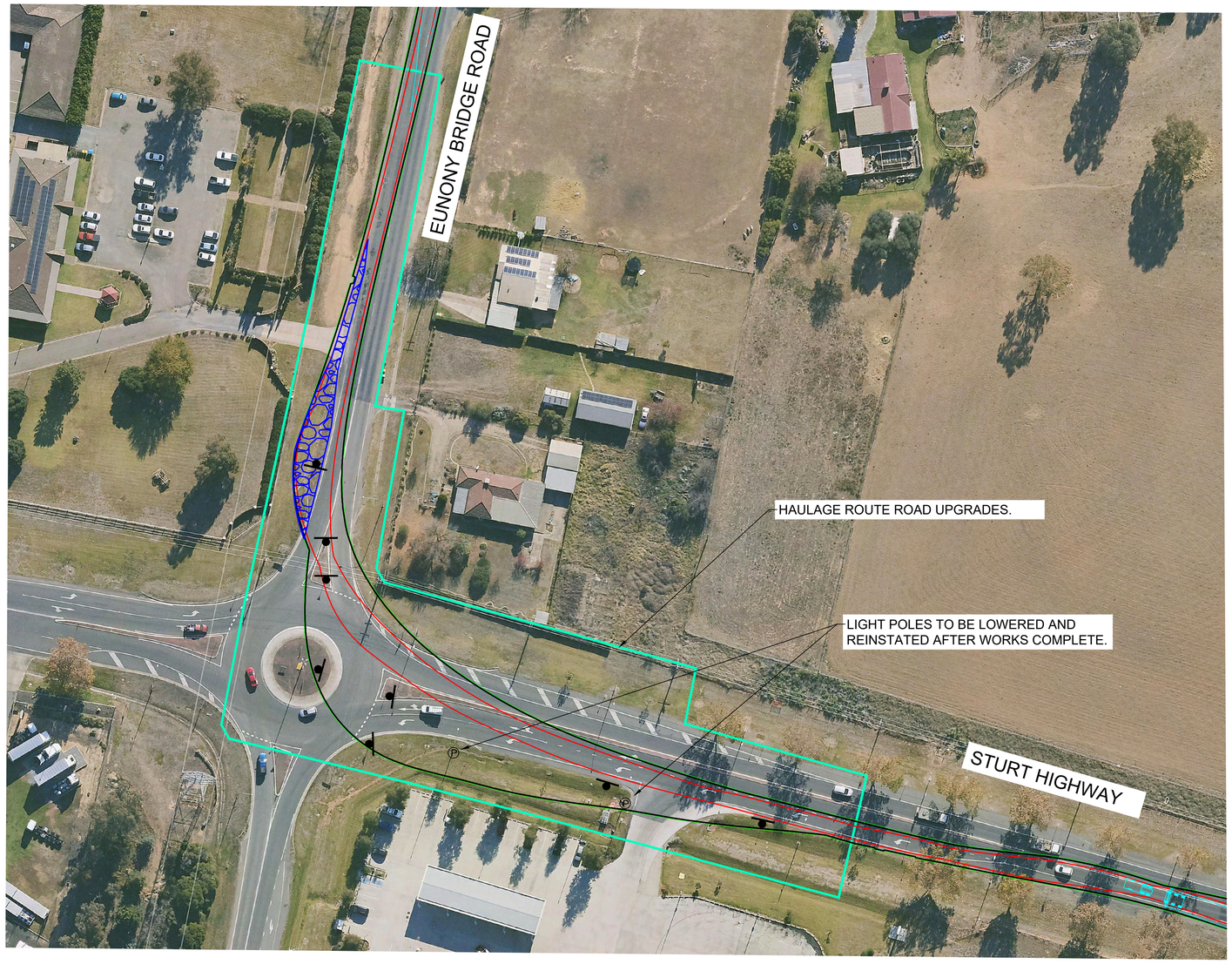
PROJECT #: E240775

SCALE: AS SHOWN

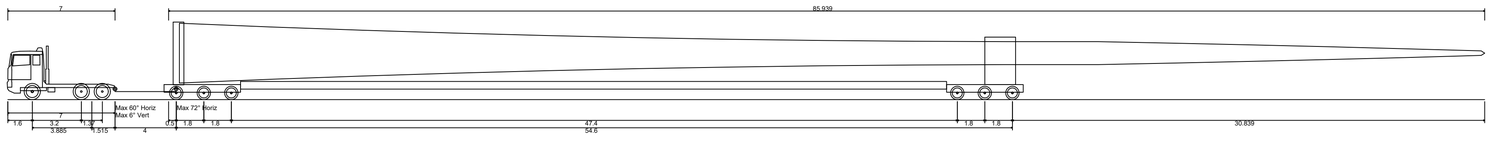
REV: -

H.4 Intersection of Eunony Bridge Road and Sturt Highway

A1

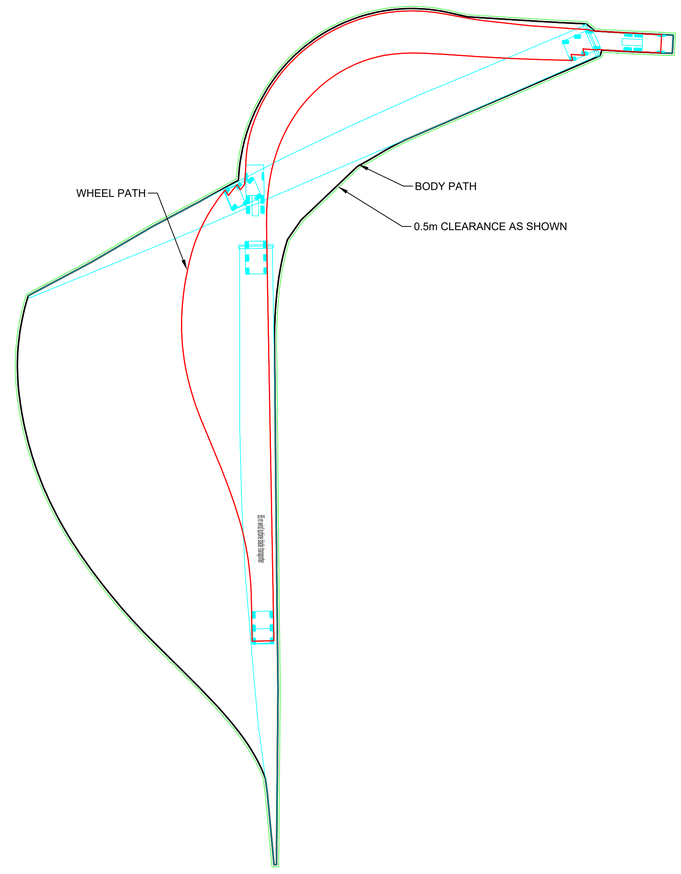


PLAN
SCALE 1:400



85 m wind turbine blade transporter

Overall Length	96.439m
Overall Width	5.089m
Overall Body Height	5.069m
Min Body Ground Clearance	0.424m
Max Track Width	3.000m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



LEGEND

HARDSTAND AREA

EXISTING SIGN

LIGHT POLE

- The design speed used for the swept paths is **15kmh** and no initial lock, lock to lock or turn on spot has been utilised to produce the swept paths shown.
- The turning paths illustrated in this drawing have been prepared using the AutoCAD Vehicle tracking modelling software in conjunction with AutoCAD Civil3D.
- The vehicle model was prepared by Vehicle Tracking based upon vehicle data provided by Austroads.
- While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

NOT FOR CONSTRUCTION

EMM creating opportunities

SYDNEY | Suite 01
Ground Floor
20 Chandos Street,
St Leonards NSW 2065

Phone # 02 9493 9500

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	7/4/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
HIGH LEVEL DESIGN - OSOM
HARDSTAND AREA
EUNONY BRIDGE RD, STURT HIGHWAY

DRAWING TITLE:
HIGH LEVEL DESIGN
HARDSTAND AREA PLAN

CLIENT: SPARK RENEWABLES

DRG. #: EMM - C01

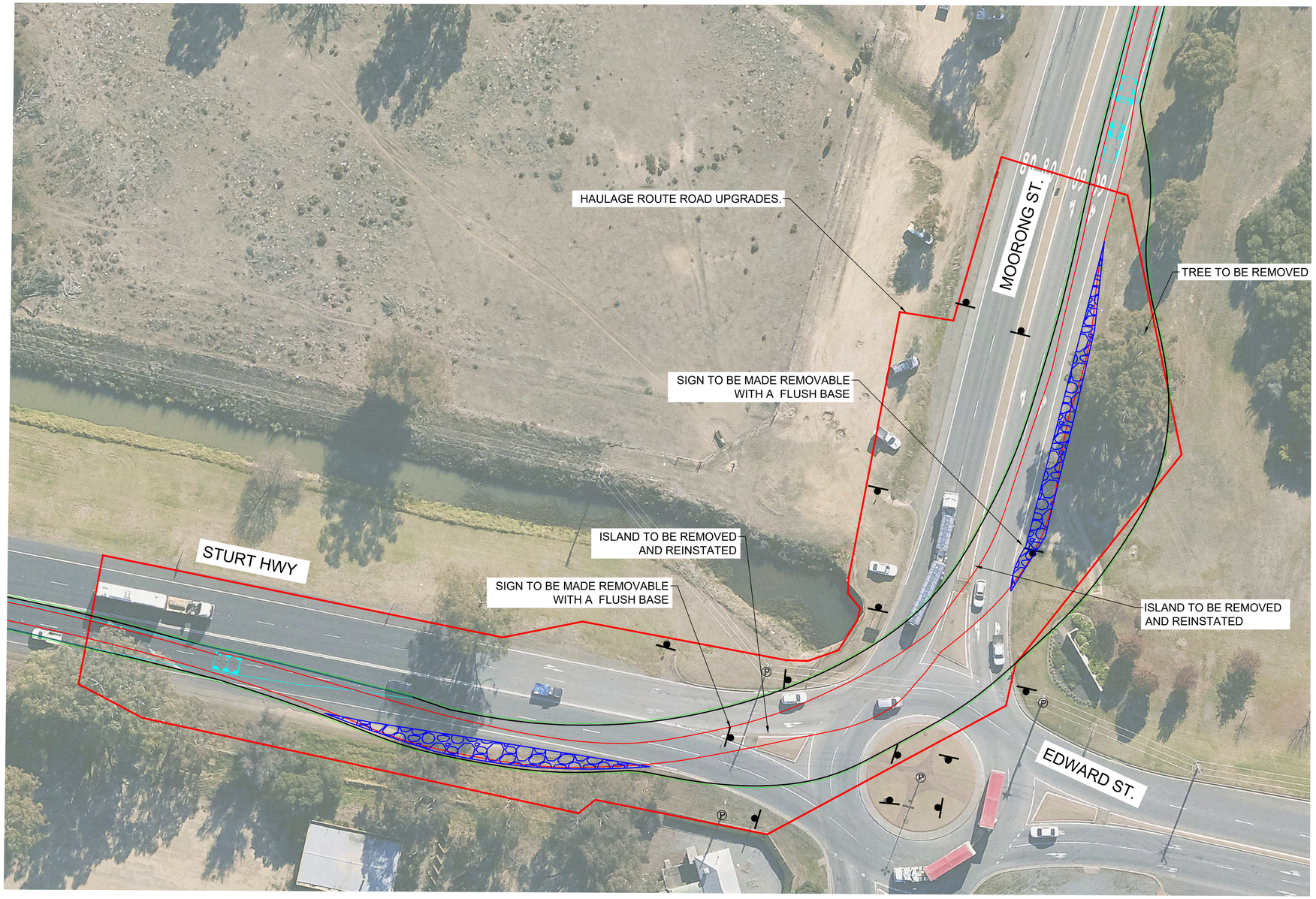
PROJECT #: E220305

SCALE: AS SHOWN

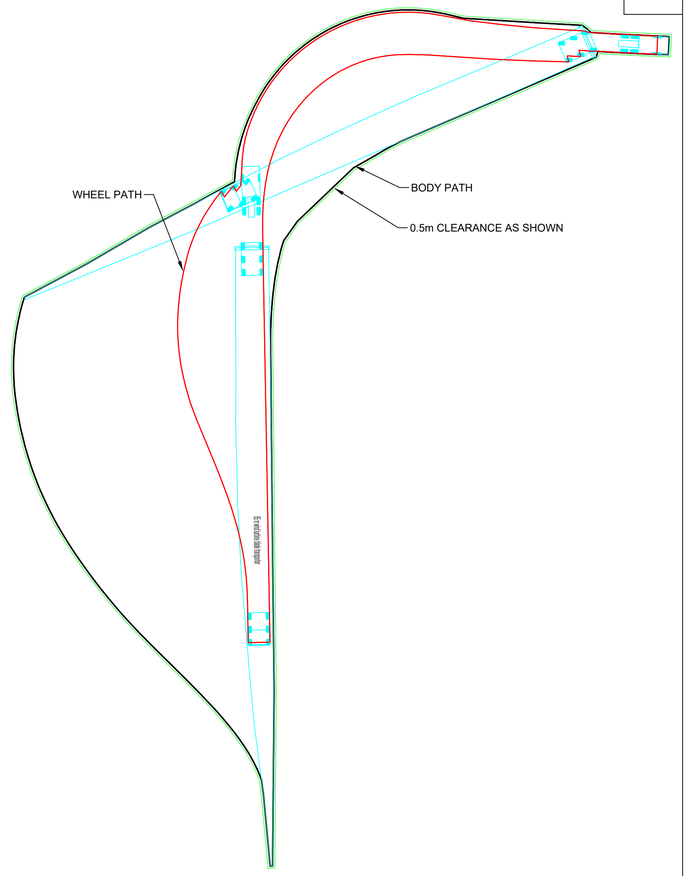
REV: -

H.5 Intersection of Olympic Highway and Sturt Highway

A1



PLAN
SCALE 1:400



LEGEND

HARDSTAND AREA

EXISTING SIGN

LIGHT POLE

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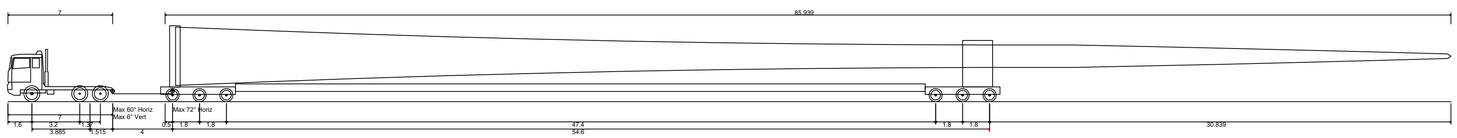

85 m wind turbine blade transporter	
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REV	DATE	COMMENT	DRAWN	REVIEWED
-	1/5/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.

PROJECT:
DINAWAN WIND FARM
HIGH LEVEL DESIGN - OSOM
HARDSTAND AREA
STURT HWY. AND MOORONG ST.

DRAWING TITLE:
HIGH LEVEL DESIGN
HARDSTAND AREA PLAN

CLIENT: SPARK RENEWABLES

DRG. #: EMM - C01

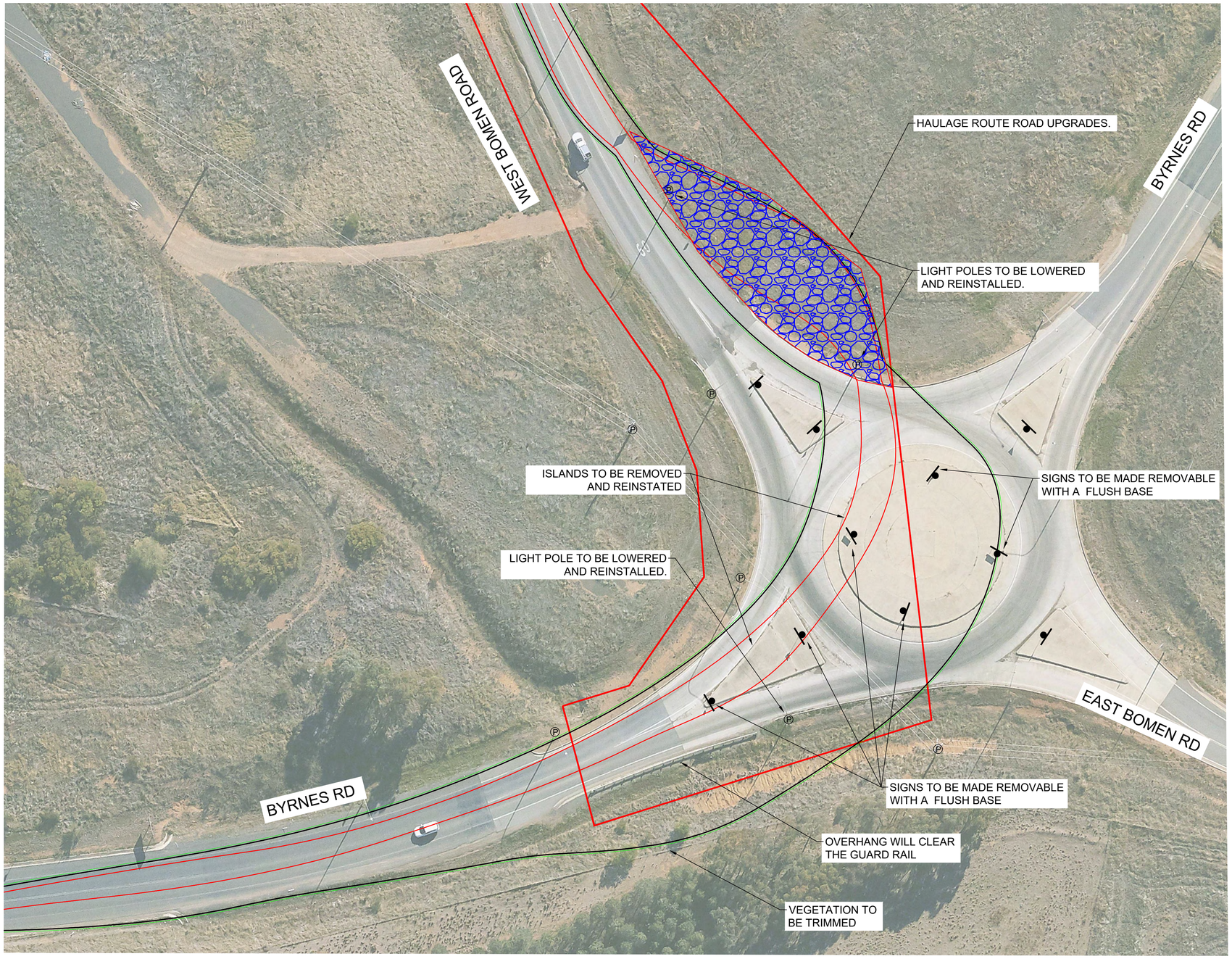
PROJECT #: E220305

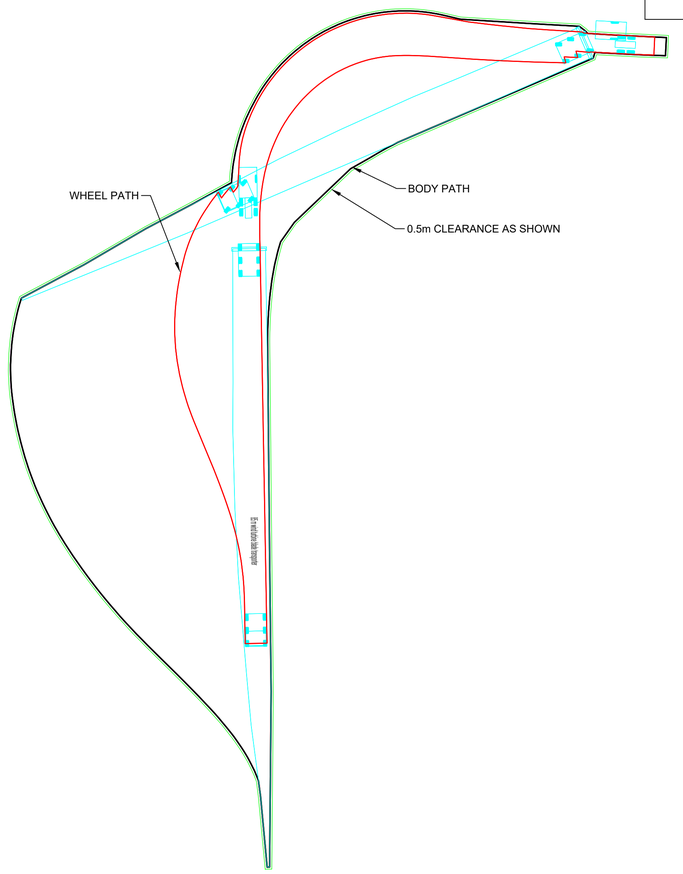
SCALE: AS SHOWN

REV: -

H.6 Intersection of Byrnes Road and West Bomen Road

A1





LEGEND

- HARDSTAND AREA
- EXISTING SIGN
- LIGHT POLE

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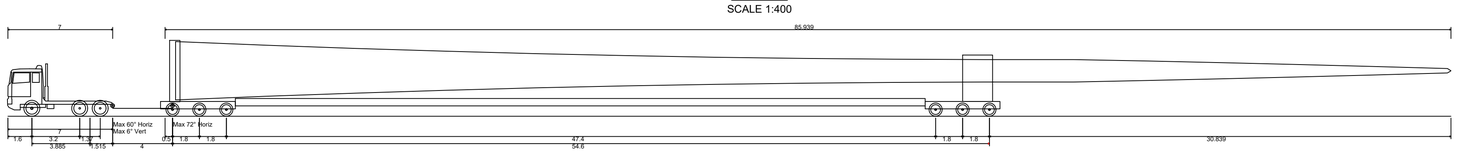
PLAN

SCALE 1:400



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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	1/5/25	STRATEGIC CONCEPT DESIGN	C.J.	A.U.					

PROJECT:
DINAWAN WIND FARM
HIGH LEVEL DESIGN - OSOM
HARDSTAND AREA
BYRNES RD, WEST BOMEN RD.

DRAWING TITLE:
HIGH LEVEL DESIGN
HARDSTAND AREA PLAN
OPTION 3.

CLIENT: SPARK RENEWABLES

DRG. #: EMM - C03

PROJECT #: E220305

SCALE: AS SHOWN

REV: -

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SPARK
RENEWABLES