Narrogin Wind Farm

Landscape and Visual Impact Assessment

16 September 2024

Document Register

Project:	Narrogin Wind Farm
Project Number:	LS000263
Umwelt Project Number:	22847-5
Report Title:	Narrogin Wind Farm Landscape and Visual Impact Assessment
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Revision	Revision Detail / Status	Date	Approved
V1	Draft Report	17/04/2024	Wendy Davies (Director)
V2	Revised Report	23/08/2024	Wendy Davies (Director)
V3	Final Report	16/09/2024	Wendy Davies (Director) 

LatStudios acknowledge the Traditional Custodians of the lands and waters where we work, including the Wilman and Noongar peoples who are the Traditional Custodians of Country in the Gnaala Karla Boodja region.

Table of Contents

Table of Tables

Glossary

Acronyms

AADT	Annual Average Daily Traffic
ABS	Australian Bureau of Statistics
AHD	Australian Height Datum
AILA	Australian Institute of Landscape Architects
AS/NZS 4282:2023	Australian Standard / New Zealand Standard 4282:2023 Control of the Obtrusive Effects of Outdoor Lighting
BESS	Battery Energy Storage System
CALM	Department of Conservation and Land Management
Client	Umwelt Australia Pty Ltd
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
EAS	Early Assessment Services
EIS	Environmental Impact Statement
EP Act	Environmental Protection Act 1986 (WA)
ha	Hectares
IBRA	Interim Biogeographic Regionalisation for Australia
km	Kilometres
LCA	Landscape Character Area (a geographically discrete area of a nominated LCT)
LCT	Landscape Character Type
LGA	Local Government Area
LVIA	Landscape and Visual Impact Assessment
LVIA Study Area	LVIA Study Area; comprising land within the potential viewshed of and forming the wider landscape context of the Project area as shown on Figure 3
m	Metres
Project	Narrogin Wind Farm as shown on **Figure 2**
Proponent	Neoen Australia Pty Ltd (Neoen)
SPP 2050	State Planning Policy 2050
SPP 2.0	State Planning Policy No. 2: Environment and Natural Resource Policy
VAM	Visual Analysis Map
WA	Western Australia
WAPC	Western Australian Planning Commission
ZTV	Zone of Theoretical Visibility (see explanation for VAM)

Glossary of assessment terms

Alluvium	Material transported and deposited by flowing water such as rivers (DPIRD, 2010)
Amenity	The pleasantness of a place as conveyed by desirable attributes including visual, noise, odour etc.
Breakaway	A landform found on the edge of a plateau or plateau remnant, where a relatively flat lateritic upland ends abruptly in a low scarp above a debris slope (DPIRD, 2010)
Character	A distinct, recognisable, and consistent pattern of elements in the landscape that makes one landscape different from another, and often conveys a distinctive sense of place. This term does not imply a level of value or importance.
Effect	The landscape or visual outcome of a proposed change. It may be the combined result of sensitivity together with the magnitude of the change.
Impact	The categorisation of effects. Legislative context should be considered in defining impacts and their significance.
Landscape	Landscape is an all-encompassing term that refers to areas of the earth's surface at various scales. It includes those landscapes that are: urban, rural, and natural; combining bio-physical elements with the cultural overlay of human use and values.
Magnitude of change	The extent of change that will be experienced by receptors. This change can be adverse or beneficial. Factors that could be considered in assessing magnitude are: the proportion of the view / landscape affected; extent of the area over which the change occurs; the size and scale of the change; the rate and duration of the change; the level of contrast and compatibility.
Mesa	Isolated table-top hill with steep sides (DPIRD, 2010)
Mitigation	Measures to avoid, reduce and manage identified potential adverse impacts.
Offset	Measures to compensate for potential adverse impacts that cannot be otherwise mitigated.
Receptor	A place, route, viewer audience or interest group which may require assessment.
Regolith	All material including the soil from bedrock to the surface (DPIRD, 2010)
Sensitivity	Susceptibility of a landscape or receptor to change without losing valued attributes.
Sensitive land use	Comprise land uses that are residential or institutional in nature, where people live or regularly spend extended periods of time. These include dwellings, short-stay accommodation, schools, hospitals and child care centres and generally exclude commercial or industrial premises.
State Forest	Land reserved by the Department of Natural Resources and Mines for State Forest purposes

Values	Any aspect of landscape or views people consider to be important. Landscape and visual values may be reflected in local, state or federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed.
View	Any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.
Viewpoint	The specific location of a view, typically used for assessment purposes.
Viewshed	Areas visible from a particular location (may be modelled or field-validated). Visual catchment | Areas visible from a combination of locations within a defined setting (may be modelled or field-validated).
Visual audience	Groups of visual receptors with common attributes and sensitivities to changes in views (e.g., residents, golfers, road travellers, walkers, shoppers, beach goers, farmers, recreational users).
Visual absorption capacity	is there potential for a landscape or scene to absorb a particular change without a noticeable loss of valued attributes.
Visual amenity	The attractiveness of a scene or view.
Visual representation	Graphic representation of a proposal in context showing its likely appearance and scale.
Zone of Theoretical Visibility (ZTV) Map	A map illustrating areas of land with views to a particular feature. This may be modelled or field-validated, and assumptions must be stated. A digitally modelled analysis is usually based on a digital terrain model and may also incorporate the screening effect of vegetation and built form. Other approximately equivalent terms include Zone of Visual Influence, Visual Analysis Map (VAM), Potential Visibility Zone and Visual Envelope.
Photomontages	A visual representation of a proposal from a particular receptor viewpoint, on a photographic base. The methodology for the preparation of any photomontage and its accuracy should be defined.
Scenic amenity	A measure of the relative contribution of each place in the landscape to the collective appreciation of open space as viewed from places that are important to the public (Department of Natural Resources, 2001).

Executive Summary

Neoen Australia Pty Ltd (Neoen) is proposing a new wind farm within the Shire of Narrogin Local Government Area (LGA) and part of the Shire of Williams LGA in Western Australia, referred to as the Narrogin Wind Farm (the Project). LatStudios Pty Ltd (LatStudios) has been engaged by Umwelt (Australia) Pty Ltd (Umwelt) on behalf of Neoen to undertake a Landscape and Visual Impact Assessment (LVIA) for this Project.

The nearest wind turbine associated with the Project is located approximately 11.3 kilometres (km) west of the town of Narrogin and 8.3 km east of the small town of Williams. Rural residential areas to the east of Williams are located 5.3 km from the nearest wind turbine while those on the outskirts of Narrogin are 9.7 km east of the nearest wind turbine.

The Project is proposed over 177 land parcels and occupies approximately 6,344 hectares (ha) of land (the Site). The Project comprises a wind farm with up to 25 wind turbines of up to 291 metres (m) to blade tip, a battery energy storage system (BESS), associated hardstand areas and ancillary infrastructure including:

- wind turbine foundations
- hardstands
- electrical connections, substations and overhead grid connection
- operational and maintenance facility
- construction compound and laydown areas
- wind monitoring towers
- external site access
- internal access roads
- utilities.
- temporary workers accommodation camp (contingency)

The Project has been through an iterative design process which was influenced by a combination of wind resource, economic, constructability, environmental, ecological, heritage, landowner, social and network capacity considerations.

The potential for the Project to result in impacts to Matters of National Environmental Significance (MNES), has been considered. While MNES occur within the Site, no matters assessed under the *Environmental Protection and Biodiversity Act 1999* (Cth) (EPBC Act) have been identified by this assessment as being protected on account of their aesthetic value.

The *Environmental Protection Act 1986 (WA)* (EP Act) includes requirements for the consideration of potential impacts on landscape and visual values in accordance with the relevant Environmental Factor Guideline, the most relevant of which is the Environmental Factor Guideline: Landforms (Environmental Protection Authority (EPA), 2018). No 'significant landforms' considered to meet the EPA's criteria for 'significant landforms' are anticipated to occur within the Site or be directly impacted by wind turbine locations. Therefore, impacts on 'significant landforms' have not been considered further in this assessment.

The State Planning Strategy 2050 (SPP 2050) is supportive of renewable energy initiatives, recognises the contribution of 'character and amenity' and 'landscape and

scenic quality' to community identify, health and wellbeing, and seeks to protect significant landscapes and manage the State's natural resources in a sustainable manner. Key criteria relevant to this assessment include to *"ensure that significant landscapes are identified and protected"* and *"that development proposals incorporate measures to retain or enhance landscape elements and vegetation"*. These objectives are supported by:

- State planning policies, particularly State Planning Policy No. 2: Environment and Natural Resource Policy (SPP 2.0), which elaborates on the importance of protecting and enhancing landscapes by stating that planning strategies, schemes and decision making should:
    - identify and protect landscapes with high natural resource values (such as ecological, aesthetic or geological) and encourage the restoration of degraded landscapes
    - consider the capacity of landscapes to absorb development and the need for careful planning, siting and design of new development in a way which is sensitive to the character of the landscape.
    - consider the need for a landscape or visual impact assessment for development proposals that may impact upon sensitive landscapes.
- The *Position Statement: Renewable energy facilities* (Western Australian Planning Commission (WAPC), 2020) which identifies that an LVIA may be required for proposed renewable energy facilities.
- The *Wheatbelt Regional Planning and Infrastructure Framework* (WAPC, 2015) which requires that "*environmental and landscape values that support the social, cultural and economic development of the region are managed for current and future generations.*"

This LVIA has been prepared with reference to detailed guidance contained in *Visual Landscape Planning in WA: A Manual for Evaluation, Assessment, Siting and Design,* (WAPC, 2007) and the superseded *Planning Bulletin No. 67 - Guidelines for Wind Farm Development* (WAPC, 2004) and best practice techniques, as required by *Visual Landscape Planning in WA: a manual for evaluation, assessment, siting and design* (WAPC, 2007).

The LVIA has also included consideration of the impacts of the wind farm on landscape values identified in relevant local planning strategies and schemes, particularly for the Shire of Narrogin and Shire of Williams within which the Site is located.

Areas within the Site are within the Rural zone as identified by the Shire of Narrogin and Shire of Williams planning schemes. The *Shire of Narrogin Local Planning Scheme No. 3* (DPLH, 2023) identifies that renewable energy facilities are an accepted use within the Rural zone (subject to planning approval) and notes that the objectives of the Rural zone subject to planning approval, include to "*provide for the maintenance or enhancement of specific local rural character*" and *"to maintain and enhance the environmental qualities of the landscape, vegetation, soils and water bodies, to protect sensitive areas especially the natural valley and watercourse systems from damage*".

The *Shire of Narrogin Local Planning Strategy* (WAPC, 2020) includes a number of provisions relevant to the protection of visual landscape values within the Shire, including the attractive landscape setting of Narrogin, states that the "*local landscape has limited capacity to absorb new activities that are inconsistent with its current visual character and qualities"* and notes that areas of highest scenic quality within the area include major rock outcrops, vegetation with a diversity of species, height, colour and density, strong form,

colour and texture contrasts with surrounding landscape (e.g. clumped remnant vegetation) and distinctive stands of vegetation with strongly defined growth habits, texture and colour. These values generally accord with the visual quality values of landscape features identified in *Reading the Remote: Landscape Characters of Western Australia* (Department of Conservation and Land Management (CALM), 1994) and also acknowledged in the *Wheatbelt Region parks and reserves management plan 95 2021*, which also states that *"the modified agricultural landscapes also provide visually pleasing views seen from high vantage points across the region, especially during the winter to spring cropping season".*

The Shire of Narrogin *D11 - Local Planning – Wind Farm/Wind turbines* was adopted on 27th March 2023 and provides guidelines for the establishment and operation of wind farms and wind turbines within the Shire of Narrogin. This policy seeks to ensure that any proposed wind energy projects are developed in a manner that minimises negative impacts and maximises the benefits to the community and the environment. The policy includes several provisions directly relevant to this LVIA, and a key objective of this policy is 'to address potential impacts, including environmental, visual and landscape, noise, and other relevant factors.

The *Shire of Williams Town Planning Scheme No. 2* (Department of Planning, Lands and Heritage (DPLH), 2010) does not include any specific requirements for the protection of scenic amenity and landscape character values or landscaping within this zone and no local planning strategy or scenic amenity mapping has been prepared for the Shire of Williams. However, *Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities)* (Shire of Williams, 2023) was adopted on 20 December 2023 and requires a LVIA to be prepared to demonstrate impacts on landscape values. This policy includes several directly relevant objectives to reduce the amenity and visual impacts of wind farms, including relating to the siting, design, operation of wind farms and visual mitigation.

Consideration of the scenic qualities of landscapes within the Study Area in accordance with those identified in the *Wheatbelt Region parks and reserves management plan 95 2021* (DBCA, 2021) 'frame of reference' tables for the Dryandra Uplands and Darling Uplands Sub Types contained within *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) and the *Shire of Narrogin Local Planning Strategy* (WAPC, 2020) has been made, to establish the existing character of the landscape and provide a framework for measuring the impact of the Project on identified landscape values within the Study Area. The landscape character assessment also includes consideration of whether identified Landscape Character Types (LCTs) and associated Landscape Character Areas (LCAs) contain features identified as having high scenic quality.

The landscape character assessment has defined six LCTs within the Study Area. Only one LCT identified within the Study Area is anticipated to be directly impacted by the Project, *LCT A: Rural and forested uplands* (*LCA A1: Dryandra – Narrogin Rural and Forested Uplands*). The sensitivity of LCT A is up to high, associated with areas supporting landscape features acknowledged as having high scenic value and medium for areas considered to be more representative of typical rural character of the Dryandra Uplands region (which includes areas directly impacted by the Project). Other LCTs present in the wider Study Area not directly impacted by the Project, therefore any impacts on these areas would be indirect.

The landscape impact assessment has concluded that there would be:

- Direct **moderate, not significant** impact on LCT A (*LCA A1: Dryandra – Narrogin Rural and Forested Uplands*) due to the significant influence of wind turbines on localised parts of these rural areas.
- Direct, **minor to moderate, not significant** impact on LCT B (LCA B4: Williams River major watercourse and tributaries) due to the potential for localised impacts associated with watercourse crossings within the Site.
- No direct or significant impacts have been identified on LCT C, LCT D, LCT E or LCT F.

The Visual Analysis Map (VAM) produced for the Project demonstrates the influence of topography on visibility and identifies areas from which the wind farm wind turbines would be visible. The potential for views within 30 km of the Site was considered and sixteen viewpoints were selected to represent the views of identified receptors including:

- Residents living in the rural towns of Williams and Narrogin
- Residents living on rural properties in the farmland on and surrounding the Site
- Farmers and other people working in the rural landscape around the Site
- Visitors and workers at Narrogin Aerodrome, including recreational 'gliders', and to a lesser extent visitors and staff at Downderry Wines
- Recreational users of the landscape, including those visiting Dryandra Woodland National Park, Foxes Lair, Contine Hill Lookout and Picnic Area, Lions Lookout and Yilliminning Rock.
- Motorists (including tourists) using roads within the Study Area including the Albany Highway, Williams-Kondinin Road, Clayton Road, Cowcher Road and Curnows Road.

It is noted that no representative viewpoints were included from Cuballing, Highbury, Popanyinning, Piesseville, Yornaning or the historic Dryandra Woodland Settlement, as it is not considered that views toward the Project are likely from these locations due to the distance of these locations from the Project and the presence of intervening topography and vegetation.

For the purposes of this assessment, the potential visibility of ancillary infrastructure elements was not modelled within the VAM, as the location of these elements was not known. In addition, it is considered that compared to the scale of the wind turbines, the visibility of these Project components would be less (due to their smaller scale) and typically limited to more localised views in the vicinity of the Site.

With regards to visual impacts, it is considered that 291 m high wind turbines will be visible, due to their scale and the undulating character of the Site where the wind farm is proposed. The visual assessment has identified that views towards the Project will be experienced by a variety of receptors, including residents, rural workers and motorists and visitors who may be undertaking tourist drives, visiting key tourism destinations or travelling along roads that traverse the Site.

Areas in very close proximity to the Site support isolated rural receptors, therefore, most representative viewpoints around the Site are of low sensitivity, due to the low number of rural residents with prolonged viewing opportunities towards the Project (albeit noting that individual residents will be highly interested in changes to the view). Whilst motorists along Williams-Kondinin Road, the Albany Highway and other key roads in the Study Area

account for much higher numbers of receptors, these receptors typically have a passing interest in the view. Notwithstanding this, it is acknowledged that there are some tourist drives and, therefore, these receptors were also typically considered to have a medium sensitivity. Several viewpoints were identified as having high sensitivity, associated with views from the Williams Sports Pavilion, Lions Lookout, Yilliminning Rock, Contine Hill Lookout and Picnic Area (and surrounding trail network) and Dryandra Woodland National Park. These locations are key community facilities or tourism and recreation destinations valued on account of their scenic landscape setting. However, due to the distance of these viewpoints from the Site, it is anticipated that the Project would be, at most, noticeable from these locations.

The visual impact assessment has concluded that there would be:

- **Moderate to Major, Significant**, impacts on passing motorists on Williams-Kondinin Road (Viewpoint 5) where close views toward wind turbines are possible (noting that existing roadside shelterbelts contribute significantly to reducing the availability of these close open views toward the Project).

All other visual impacts are considered to be **not significant**, including:

- **Moderate, Not Significant,** impacts on visitors to the Williams Sports Pavilion (Viewpoint 1), rural residents located in close proximity to the Project (Viewpoint 6), other more distant glimpsed views from Williams-Kondinin Road (Viewpoint 8), Lions Lookout (Viewpoint 9), Dryandra National Park (Viewpoint 13), and passing motorists along local roads situated in close proximity to the Site where close views to wind turbines will be possible, such as Clayton Road (Viewpoint 14).
- **Minor to moderate, Not Significant,** impacts on views from the Albany Highway (Viewpoint 4) and local roads situated at a moderately close distance from the Project (Viewpoint 16), general areas within the town of Williams (Viewpoint 2 and Viewpoint 3), the western outskirts of Narrogin (Viewpoint 10), Downderry Wines (Viewpoint 7), Yilliminning Rock (Viewpoint 11) and potential glimpsed views from the picnic area and walking trails within the Contine Hill section of Lol Gray State Forest (Viewpoint 12B)and the Narrogin Aerodrome (Viewpoint 17) and passing motorists on local roads situated at some distant from the nearest wind turbine such as Cowcher Road (Viewpoint 15).
- **No impact** on the primary view from Contine Hill Lookout (Viewpoint 12A) and the towns of Highbury, Popanyinning, Piesseville and Yornaning.

Should distant filtered views toward the Project be evident from Cuballing and the historic Dryandra Woodland Settlement above existing vegetation, noting no clear or open views toward the Project were identified during fieldwork investigations, it is anticipated that these would represent a barely perceptible magnitude of change and the visual impacts on these areas would be **not significant**.

It is important to note that while there will be a moderate change to the character of the Site and as significant change to only one of the seventeen representative viewpoints identified above, because of the introduction of wind turbines and ancillary infrastructure into the rural landscape, viewers will respond in different ways to the change. Landscape appreciation is relative, and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences. Some viewers may view

the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact.

The potential for significant cumulative impacts is considered to be limited. The greatest potential impacts relate to localised combined impacts on a small section of Williams-Kondinin Road where there is potential for close views toward both the Project and proposed Bellwether Wind Farm. Due to the distance between the other proposed wind farms and solar farms in the area and the Project, significant combined and sequential impacts are not anticipated. However, there is potential for the landscape to appear more intensively developed, particularly as experienced in sequential views when driving around the wider Project Area, which may affect the perception of the rural character of the region.

The Project has been designed to minimise and mitigate impacts on landscape character, scenic amenity and landscape values to the greatest extent possible through careful siting of wind farm infrastructure. However, it is acknowledged that the siting of wind farms in elevated locations responds to the operational requirement to maximise capturing the wind resource and, therefore, visually prominent locations are largely unavoidable.

Mitigation of identified impacts has been considered. It is acknowledged that completely screening views of 291 m high wind turbines is not generally possible, even if this were to be a desirable outcome. However, opportunities to enhance the integration of the wind farm into the landscape including through the retention and provision of vegetation have been described (particularly of roadside shelterbelts along road corridors which restrict the availability of views toward the Project).

In conclusion, the assessment considers that the Project will not result in any significant impacts on the landscape character of the Site. However, wind turbines will be visible against the backdrop of rolling hills and introduce new, dominant visual elements into what is currently a relatively undeveloped and typical rural landscape. Significant visual impacts have been identified for only one of the identified representative viewpoints associated with close views toward the Project from Williams-Kondinin Road where open glimpsed views toward the Project are possible from breaks in the roadside shelterbelts. Other close-range views of the Site will also be possible from local roads that traverse or bound the Site; however, it is anticipated that these views will be experienced by fewer receptors. All other visual receptors are considered to have no to moderate impacts.

1. Introduction

The impacts of wind farm developments on landscape and visual amenity are often among the greatest concerns for nearby residents and the wider community and, consequently, for authorities assessing development applications.

Neoen Australia Pty Ltd (Neoen) (the Proponent) is considering the development of a wind farm (the Project) within the Shire of Narrogin Local Government Area (LGA) and partly within the Shire of Williams LGA. The location of the Site in its regional context is shown on **Figure 1**. LatStudios has been engaged by Umwelt (Australia) Pty Ltd (Umwelt) to undertake a Landscape and Visual Impact Assessment (LVIA) for this Project.

The purpose of the LVIA is to provide an assessment of the anticipated landscape and visual effects of the Project during construction, operation and decommissioning / rehabilitation phases on the Site and its wider landscape context (**the Study Area***). The LVIA:

- identifies and describes any relevant designations, policy and supplementary planning guidance.
- describes the general character of the Site and its wider landscape context.
- includes a Landscape Character Assessment that describes the character of the Site and its wider landscape context.
- determines the relevant visual catchments of the proposed wind farm and the potential for effects from representative views/visual receptors, including local houses, roads, public areas and more distant catchment areas.
- provides a baseline against which it is possible to assess the key risks associated with the development inducing the appropriateness of the Site and wind turbine height.
- suggests potential opportunities to reduce or mitigate any potential adverse effects relating to the wind turbine height and siting.

1.1 Project description

The Site is located between the towns of Narrogin and Williams within both the Shire of Narrogin and Shire of Williams Local Government Areas (LGAs) in the Wheatbelt South subregion of Western Australia (Government of Western Australia, 2023) as shown in **Figure 1**. The nearest wind turbines associated with the Project are located approximately 11.3 kilometres (km) west of the town of Narrogin and 8.3 km east of the small town of Williams. Rural residential areas to the east of Williams are located 5.3 km from the nearest wind turbine while those on the outskirts of Narrogin are 9.7 km east of the nearest wind turbine.

The existing land use in the Study Area is dominated by rural uses, while some areas of productive and plantation forests, nature conservation, urban uses (associated with State forests and the towns of Narrogin and Williams) and other minimal uses also occur (Department of Agriculture, Fisheries and Forestry (DAFF), 2022).

The Site (land which the Project infrastructure will be located) is shown on **Figure 2** and comprises approximately 6,344 ha. The existing land use in the Site is dominated by dryland cropping, grazing on modified pastures and other minimal use (DAFF, 2022).

An indicative wind turbine layout has been prepared, and for the purposes of this assessment it is assumed that the Site would comprise up to 25 wind turbines with a blade tip height of up to a maximum of 291 m.

The anticipated wind turbine specifications used for this assessment are as set out in Table 1.

Table 1: Wind turbine Specifications

Feature	Statistic
Number of wind turbines	Up to 25
Tip height**	Maximum height of 291 m
Rotor diameter**	Maximum of 182 m (91 m wind turbine blades)

***Dimensions are approximate to allow for innovation in wind turbine design prior to construction. Final dimensions will be confirmed during the detailed design phase of the Project.*

The final selection of wind turbine to be installed on the Project site will be based on an assessment of the most suitable WTG available at the time of procurement. This process will take into consideration a number of factors including the maximum power output based on the wind resource at the Project site and any supply chain issues that might result in schedule delays. One of the key selection criteria for final wind turbine choice will be the ability to satisfy the environmental constraints and approval conditions.

The Project would also include a battery energy storage system (BESS) and ancillary infrastructure including:

- Overhead and underground cabling
- Wind turbine hardstand areas
- New and upgraded access tracks
- Substation and switching yard
- Operational and maintenance facility
- Construction compound and laydown areas
- Temporary workers accommodation camp (contingency).

However, as the details of these components are not yet resolved, landscape and visual effects associated with some of these ancillary Project components (such as access tracks and the accommodation camp) have not been considered in detail in this LVIA. It is noted that while these components may have a localised effect on landscape and visual values, views toward access tracks and construction facilities are likely to be limited to close views from local roads that traverse or bound the Site. Further, once the Project is constructed temporary facilities will be decommissioned and the affected areas rehabilitated to pre-construction condition (i.e. farmland).

2. Scope of assessment

2.1 Definition of study area

For the purposes of this assessment, the Project encompasses all land within the Site illustrated on **Figure 2**. However, visual effects can extend well beyond the boundary of the Site as views may be available from distant vantage points. Therefore, an LVIA study area (Study Area) has been established for the LVIA as shown on **Figure 3**.

The Study Area aims to identify the area within which the Project may potentially influence landscape and/or visual receptors. This extends approximately 30 km beyond the Site boundary. It is considered unlikely that any visual receptors located beyond the boundary of the 30 km Study Area will be able to obtain clear views of the Project with potential for significant adverse impacts.

2.2 Approach to the LVIA

Landscape impacts include physical changes to the fabric of the landscape, as well as perceptual changes in the character of the landscape. They also include impacts on areas designated for their scenic or landscape qualities, at a national, regional, or local level, for example national parks or important recreation areas. Visual impacts relate to changes in views and the appearance of a wind farm in those views. The approach to this LVIA is set out in **Table 2**.

Table 2: LVIA approach

Baseline Assessment	
Stage 1	Review of landscape and visual legislative context: • A review of any landscape or scenic amenity designations applying to the Site and/or wider Study Area at national, state, regional or local level; including local planning designations. Designations are considered in relation to the requirements of relevant guidelines.
Stage 2	Desktop landscape assessment: • A review of available information describing the landscape characteristics of the Study Area.
Stage 3	Desktop visual assessment: • Identification of potential key visual receptor audiences (viewers) such as private residences, roads (including any nominated scenic routes), public parks and recreation areas (including any nominated scenic lookouts and recreation trails) and other properties including farmland, institutions etc. Visual Analysis Mapping (VAM) analyses form the basis of an estimate of the maximum likely extent of visibility based on the wind turbine layout. The assessment is also informed by Google Earth, National Map, Landgate, PlanWA and other desk–based mapping tools.
Stage 4	Field survey: • Field survey (during October 2023) to confirm baseline findings and obtain photographs of representative viewpoints in the field, including images to use as a base for the preparation of photomontages.

Preparation of the LVIA	
Stage 5	Definition, description and illustration of the landscape and visual baseline: • Including Landscape Character Assessment and landscape and visual sensitivity.
Stage 6	Mapping and supporting illustrations: • Preparation of mapping to support the LVIA and compilation of illustrative photomontages/visualisations from selected viewpoints.
Stage 7	Assessment of magnitude of change: • Identification of the magnitude of change of the landscape resource during the construction, operation, and decommissioning phase.
Stage 8	Significance assessment: • Evaluation of the significance of the proposed change on the landscape and visual resource.
Stage 9	Cumulative assessment: • Evaluation of the potential impact of the Project in combination with other infrastructure projects located or proposed close to the Project.
Stage 10	Mitigation potential: • This stage comprises a consideration of the opportunity to minimise and mitigate project impacts.
Stage 11	Residual assessment: • Consideration of impacts of the project assuming all recommended mitigation is implemented.

3. Methodology

3.1 Relevant guideline and standards

The LVIA method has been developed with reference to accepted guidelines from Australia and elsewhere, particularly including:

- *Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design* (Western Australian Planning Commission (WAPC), 2007)
- *Guidance Note for Landscape and Visual Assessment*[1] (Australian Institute of Landscape Architects (AILA) Queensland, 2018)
- The *Guidelines for Landscape and Visual Impact Assessment, Third Edition* (The Landscape Institute and the Institute of Environmental Management and Assessment, UK, 2013) and previous Second Edition (2002)

Relevant guidance notes and documentation, specific to wind farms, from Western Australia, nationwide and overseas, which have been considered to inform this LVIA include:

- *Planning Position Statement: Renewable energy facilities* (WAPC, 2020)
- *Planning Bulletin No. 67 - Guidelines for Wind Farm Development* (rescinded in 2020) (WAPC, 2004)
- *D11 - Local Planning – Wind Farm/Wind turbines* (Shire of Narrogin, 2023)
- *Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities)* (Shire of Williams, 2023)
- *Best Practice Guidelines for Implementation of Energy Projects in Australia* (Clean Energy Council, 2018)
- Wind Energy Guideline for State significant energy development (NSW Planning and Environment, 2016)
- *Draft National Wind Farm Development Guidelines* (Environment Protection and Heritage Council, 2010)
- *Landscape Institute Technical Guidance Note 06/19: Visual Representation of Development Proposals* (The Landscape Institute, 2019)
- *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity* (Scottish Natural Heritage and The Countryside Agency, UK, 2006)
- *An approach to landscape sensitivity assessment – to inform spatial planning and land management* (Natural England, 2019)
- *Siting and Designing of Windfarms in the Landscape Guidance Version 3a* (Scottish Natural Heritage, 2017)
- *Visual Representation of Windfarms: Good Practice Guidance* (Scottish Natural Heritage, 2006).

[1] Note: while this is currently a Queensland document it is currently under revision for application by Landscape Architects at the national level.

3.2 Influence of community perception on LVIA methodology

Community perception of wind farms is an important consideration in assessing the landscape and visual impact of a project, as noted in the *Draft National Wind Farm Guidelines* (EPHC, 2010). Consultation with local government authorities, local communities, and stakeholders with regards to wind farm development is also supported in the *Position Statement: Renewable Energy Facilities* (WAPC, 2020).

While community perception of wind farms is an important consideration in assessing the landscape and visual impact of the Project, the research indicates that wind farms evoke a subjective response. Relevant to this Project, a randomised telephone survey of community members living within the Shires of Narrogin and Williams was undertaken to gain an insight into community perceptions of developing renewable energy projects within the Shires. 184 residents were successfully contacted and provided feedback. As part of the telephone survey, respondents were asked to rate how concerned they were about various potential negative impacts of renewable energy developments on a scale from 1-7, where 7 is 'extremely concerned'. One of the listed impacts was "*Impacts on scenery/increased industrialisation of landscape*". 57% of respondents rated their concern about this as a 5 or higher. In the open-ended question asking about negative impacts of renewable energy projects, 12.2% gave comments around reduced visual amenity.

Visual impacts were also raised by some stakeholders during targeted interviews and as part of the Local Planning Policy submissions. Concerns were raised about the aesthetic impacts of wind turbines, as well as shadow flicker and a 'flashing light' effect caused by the rotating wind turbine blades.

Considerable academic research has been undertaken both in Australia and overseas regarding the perception of visual impacts of renewable energy facilities. This includes recently published results of a survey conducted in 2023 by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australian attitudes to the renewable energy transition and different types of renewable energy infrastructure, including wind farm developments The survey found that respondents' attitudes were strongly correlated to the location and demography of respondents, with people living on rural properties having more negative attitudes to living near renewable energy infrastructure, particularly transmission lines, than urban residents. Australia-wide, the survey identified that 18% of respondents would reject living near a wind farm, 54% would tolerate or be okay with living near a windfarm and 28% of respondents would approve of or embrace the idea. Overall, survey respondents were somewhat concerned about the risk of onshore wind farm developments reducing the visual attractiveness of the local landscape, with Australians aged over 60 more concerned about reduced visual aesthetics than younger Australians.

The findings of this survey are further supported by a paper by Lothian (2020) titled *A survey of the visual impact and community acceptance of wind farms in Australia.* This paper examines responses from an online survey where 556 participants rated the scenic quality of landscapes with and without wind farms. Upon review of survey responses, Lothian concludes that "*While the respondents rated the scenic quality of landscapes with wind farms lower than scenes without them, they rated wind farms acceptable in virtually all cases…The finding suggests that the community is very tolerant of the visual impact of wind farms*". Acceptability included areas judged by participants to be of high scenic quality. It is worth noting that the author understands that there are other influences that may factor into participant preferences such as previous exposure to wind farms or

appreciation of wind farms as a means of taking action against climate change. Some interesting observations made by Lothian include that the following factors tended to increase acceptability of wind farm developments from a scenic amenity perspective:

- presence of dense vegetation
- more elevated and undulating land
- fewer wind turbines
- larger wind turbines
- orderly placement of wind turbines/ placement of wind turbines along ridges (compared to more random layouts)
- increasing distance of viewer from the wind turbines
- landscapes of higher scenic quality (noting that Lothian acknowledges that this appears counterintuitive).

He notes that "*…both height and generating capacity had little influence on scenic quality ratings. Both height and number are highly visible attributes, whereas only specialists would discern the difference in the size of the generators.*"

In addition, Lothian also acknowledges that positive community opinions regarding wind farms could be attributed to "*to the care with which governments have regulated the industry"* and that therefore the "*challenge for spatial planners is to ensure that wind farms are located in areas without significant visual or other impacts*".

Similarly, Hall, Ashworth and Devine-Wright (2013) in their paper *Societal acceptance of wind farms: Analysis of four common themes across Australian case studies* examined seven case studies which identified strong community support for wind farms generally. They do however note that local opposition to specific proposed wind farm schemes is based on four key themes including place attachment (and other issues not related to landscape and visual impact). The findings note "*a 'silent majority' of rural residents who do not explicitly demonstrate support through media attention or political engagement*". However, they note research indicating the impact of visual changes to a place or landscape can significantly influence attitudes towards a wind farm and highlight the sense of attachment of participants to their local landscape concluding that "*such amenity concerns are highly subjective, difficult to quantify and to compensate if at all*".

Other types of large infrastructure projects (such as transmission lines, mines and road corridors) tend to have a lower level of acceptance by the community. The greater degree of acceptance of wind farms tends to relate to their sculptural form and their presence as a symbol of renewable energy. By way of contrast, their opponents believe they are unattractive 'industrial' intrusions that clutter the skyline.

Wilson and Dyke (2015) in their research *pre– and post–installation community perceptions of wind farm projects: the case of Roskrow Barton* identified the complexity of determining and addressing community attitudes to wind farms noting that "*the value that individuals attribute to the countryside varies from person to person depending on experience and memories. Judgement is, thus, subjective with some disliking the appearance of wind farms and finding them ugly, whereas others only see graceful structures*". Their research concluded that (for this example), "*although negative perceptions can be found both pre–and post–installation, collectively the community have become used to the wind turbines and that attitudes have generally become more favourable*".

Limited information is available regarding the likely attitude of the local community to the Project. As such, for the purposes of this assessment, subjective interpretation of the Project has been avoided. The focus has instead been directed to assessing the likely significance of the impact (i.e., a transparent judgement on the sensitivity of the landscape resource, combined with the anticipated magnitude of change) as described further below.

The findings of court cases where wind farm development has been challenged on the grounds of landscape and visual amenity can be a useful reference for understanding the influence that community perception has on development decisions, particularly in relation to consideration of views from private properties. For example, in Perry and Others v Hepburn Shire Council and Others (VCAT, 2007) the finding identified three important principles in relation to the significance of views from dwellings (and the public realm in general):

- Visibility does not equate to an unreasonable visual impact
- Visual impact can be horizontal or vertical in its dimensions
- Visual impact can be mitigated by landscaping and landform.

This also cites the finding of the *Portland Wind Energy Project Panel Report* that concluded:

"Private dwellings [...] should retain outlooks that are not dominated by wind farm plant. That is not to say that a wind farm cannot affect outlooks from dwellings or public places. Clearly it may unavoidably be the case that outlooks from say 3 out of 5 habitable rooms in a dwelling or over 180 degrees of horizon from a garden may be substantially affected by development.... However, it should not be acceptable in principle to dominate all available outlooks from all habitable rooms and 360 degrees of horizon from a garden..."

3.3 Desktop analysis

Key information sources have been identified and reviewed as a component of the desktop analysis. These sources include:

- Relevant planning schemes, policies, guidelines and management plans from the State Government and local government authorities (refer **Section 5: Legislative context and standards)**
- Publicly available information on recreation spaces and public visitor areas
- Traffic count data (obtained from Main Roads Western Australia traffic map February 2024)
- Mapping available from Landgate's Map Viewer Plus (imagery obtained February 2024)
- Digital aerial photography (imagery obtained February to April 2024 from Google Earth)
- Cadastral data (showing roads, property boundaries and built areas)
- Other data on the existing environment available online (as described in the reference list)
- Existing infrastructure.

A preliminary desktop analysis of existing landscape character and visual amenity for the Site, as well as the wider Study Area, was undertaken which included analysis of the

underlying topography, land cover and landscape values. These findings were then verified and expanded through the field survey.

3.4 Preparation of visibility analysis mapping (VAM / ZTV)

A Visibility Analysis Map (VAM), sometimes also known as a 'Zone of Theoretical Visibility' (ZTV) study, comprises a digitally mapped representation of the area within which a proposed development may have an influence or effect upon views and visual amenity. It is often used as a tool to select representative viewpoints for more detailed assessment.

Global Mapper v20.3 software has been used to model the VAM contours at 10 metre intervals acquired through the Elvis Elevation Information System (Geoscience Australia, 2024) which was used to create a digital elevation model at 30 metre resolution which was for further analysis. This was clipped to the 30 km Study Area offset buffer and projected into MGA94 Zone 50 coordinates. The 'Calculate Viewsheds at Selected Points' analysis tool in 'Global Mapper' was used to determine those cells where an observation point at 1.5 m height above ground level (an approximation of a viewer's eye level) could theoretically be able to view the transmitter features (291 m Blade Tip and 200 m Hub Height elevations at wind turbine locations). Global Mapper produces separate viewshed polygon layers for each wind turbine which are then summed together into a final combined ZTV raster dataset.

It should be noted that the calculation of the ZTV does not consider the presence of built development, which can locally reduce the availability of receptors' views. However, based on field observations, it is considered that because built development within the Study Area is generally minimal, it would be unlikely to significantly affect the extent of the visibility zone. The ZTV is also a 'worst case scenario' as it does not account for vegetation, which can significantly affect visibility locally and, particularly, along road corridors, associated with the property boundaries and gardens of residences and over large, forested areas (such as State forests).

The four ZTVs prepared to support this in of this LVIA (refer **Section 8.1: Visibility Analysis Mapping (VAM)** and **Appendix 1)** are based on the wind turbine layout within the Site shown on **Figure 2** comprising a total of 25 wind turbines with a height to blade tip of up to 291 m.

In interpreting the VAM mapping, three important issues need to be recognised:

- The accuracy of the VAM is affected by the limitation of the Digital Elevation Model (DEM) used to establish the surface elevation (AHD), which consisted of a 30 m cell raster grid.
- VAM mapping is based on the ground surface elevation only and does not take account of detailed variations in ground plane such as intervening vegetation, buildings or minor changes in topography, such as road cuttings. Where such features intervene between the viewer and the proposed wind farm (e.g., tree belts alongside roads or within fields, vegetation in gardens of rural properties and forested areas such as state forests), then this may reduce the visibility of the project – often substantially from individual vantage points.
- VAM mapping is based on the current wind turbine layout. Minor adjustments to wind turbine location and heights may be possible. However, as the mapping is based upon maximum heights and number of wind turbines, the mapping is

considered to represent a reasonable assessment of potential views of the Project once operational.

Therefore, whilst it is considered that the presence of vegetation in the Study Area would likely reduce visibility of the Project locally and regionally, impacts on vegetation extent and quality such as bushfires and land clearing can affect the extent to which this occurs.

3.5 Field survey

A field visit to assess the Site was carried out between 26 to 28 October 2023 by two qualified landscape architects / landscape planners both with extensive experience in LVIA, including wind farm development and landscape photography. The weather during the field assessment was generally dry and sunny with moderate cloud cover, enabling generally sufficiently clear views towards the Site for the purposes of undertaking LVIA.

The field assessment was used to ground truth the findings of the desktop assessment and to undertake an on–site assessment of landscape character and visual amenity. Photographs were taken to:

- portray landscape character.
- inform the viewpoint assessment from representative viewpoints.
- provide base images to produce photographic simulations and visualisations.

The field visit focused on those aspects of the landscape with potential to be of the greatest sensitivity to the Project and to gain an appreciation of those aspects of the Project most likely to affect landscape character and visual amenity. Viewpoints were recorded using a camera with built in Global Positioning System (GPS) unit.

3.6 Identification of potential project impacts

This component of the LVIA includes consideration of infrastructure and exemplar imagery that is likely to be associated with the Project, such as the presence of wind turbines, substation, access tracks, meteorological masts etc.). These potential impacts are further discussed in Section 4: Potential Project Impacts.

3.7 Landscape impact assessment methodology

3.7.1 Identification and description of landscape character types and areas

Landscape character assessment is a tool for identifying what makes one place different from another. It identifies what makes a place distinctive, without necessarily assigning a value to it. This approach has been used to establish the existing character of the landscape and to provide a framework for measuring the impact of the Project on landscape character, which is a requirement of the *Position Statement: Renewable energy facilities*. The landscape character assessment also includes consideration of whether identified LCTs contain areas identified as having high scenic amenity value.

Informed by *Reading the Remote: Landscape Characters of Western Australia* (Department of Conservation and Land Management (CALM), 1994) LCTs have been defined that provide a framework for describing these areas methodically. Where necessary, these have been further subdivided into Landscape Character Areas (LCAs), which are geographically distinct areas. The general character of the landscape is

described in Section 6: Regional Landscape Context, whilst the identified LCTs are described in Section 7.1: Landscape character baseline.

3.7.2 Judgement of landscape sensitivity

The sensitivity of a landscape is judged on the extent to which it can accept change of a particular type and scale without adverse effects to existing landscape character.

The assessment of anticipated sensitivity (and consequent likely impact to) landscape character and amenity is based on the scale and layout of the Project and how this relates to the characteristics of the receiving landscape. For example, simple large–scale landscapes (such as Image A in Illustration 1 below) are likely to be less sensitive to large scale wind farm developments; while landscapes of small scale (e.g., characterised by relatively 'human scale' buildings and features, such as Image B in Illustration 1) would generally be less tolerant of such development proposals. Consideration is also given to designations or landscape policies (as identified, for example, in a local planning scheme) in determining the sensitivity of a landscape to change.

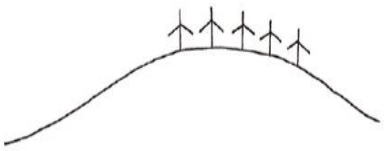


Image A: Turbines create a simple image in the landscape.

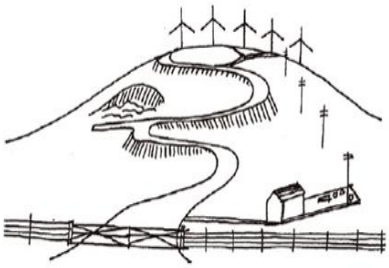


Image B: Turbines create a complex image and conflicts with the small-scale landscape character.

Illustration 1: Comparisons between siting wind turbines in landscapes of different scale and character [Image source: SNH (2017) Siting and Designing of Windfarms in the Landscape]

Levels of sensitivity, shown in Table 3, vary according to the type of development and the nature of the landscape. Key aspects that have been considered when identifying the level of sensitivity associated with each landscape character type include:

- The landscape's inherent values (e.g., perceptual qualities, cultural importance, and any specific values that may apply such as landscape planning designations).
- The landscape's ability to absorb changes associated with the Project (e.g., the extent to which the Project may fit or be absorbed into the landform, land use, pattern, scale, or texture of the existing landscape).

Table 3: Defining landscape sensitivity

Sensitivity of landscape	Attributes of landscape sensitivity categories
High	A landscape protected by national designation and/ or widely acknowledged for its quality and value; a landscape with distinctive character and low capacity to accommodate the type of change envisaged.
Medium	A moderately valued landscape, perhaps a regionally important landscape and / or protected by regional/state designation or on a scenic amenity overlay in a local planning scheme, and /or where its character, land use, pattern and scale have limited capacity to accommodate a degree of the type of change envisaged.
Low	A landscape valued to a limited extent, perhaps a locally important landscape or where its character, land use, pattern and scale is likely to have the capacity to accommodate the type of change envisaged.
Negligible	A landscape which is not valued for its scenic quality or where its character, existing land use, pattern and scale are tolerant of the type of change envisaged, and the landscape has capacity to accommodate change.

3.7.3 Magnitude of change to landscape character

The magnitude of change to landscape character depends on the nature, scale and duration of the change that is expected to occur. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape and is based upon that part of the landscape character type which is likely to be impacted to the greatest extent by the Project before the application of any mitigation.

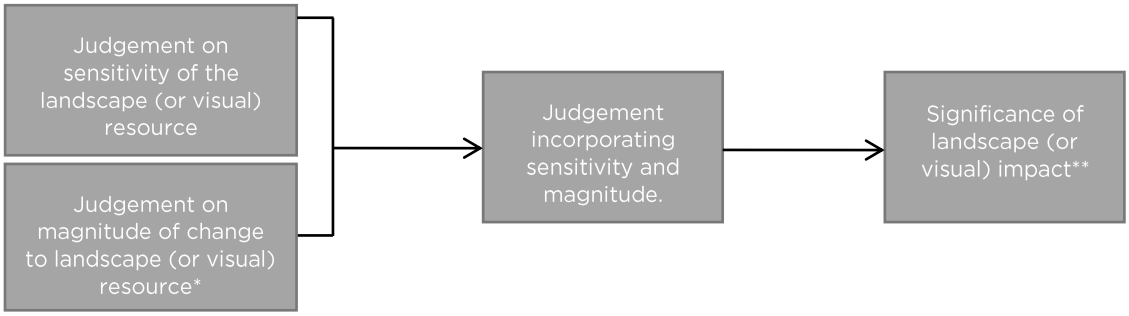
Magnitude of change is described as negligible (barely perceptible change), low (noticeable change), medium (considerable change) or high (dominant change), as illustrated in Table 4. The descriptions of magnitude and sensitivity are illustrative as there is no defined boundary between levels of impacts.

Table 4: Defining magnitude of change to landscape character

Magnitude of Change	Typical Examples
High	Dominant change: A clearly evident and frequent/continuous change in landscape characteristics affecting an extensive area, which is likely to fundamentally change the character of the landscape.
Medium	Considerable change: A considerable change in landscape characteristics, frequent or continuous and over a wide area or a clearly evident change, but over a restricted area.
Low	Noticeable change: A noticeable change in landscape characteristics over a wide area or a considerable change over a restricted area but will not fundamentally change landscape character.
Negligible	Barely perceptible change: An imperceptible, barely or rarely perceptible change in landscape characteristics.
No impact	No change: No change in landscape characteristics.

3.7.4 Overall significance of effect on landscape character

An evaluation of overall potential effects on landscape is based on the sensitivity of the existing landscape to change and the magnitude of change that is likely to occur. No prescribed methods for assessment of significance of landscape impacts exist; therefore, professional judgement and experience are applied. The significance of impact is therefore determined by considering the sensitivity of the landscape receptor and the magnitude of change expected because of the proposed development, as shown in the process diagram in **Illustration 2**. Each landscape is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles which can be used as a guide to this process that provide transparency about how judgements have been made.



** There is no standard methodology for the quantification of the magnitude of effects; however, it is generally based on the scale or degree of change to the landscape resource, the nature of the effect and its duration.*
*** Overall landscape impact is determined by combining the sensitivity of the landscape resource with the magnitude of landscape change. Professional judgement is used to determine the overall significance of impact based on these two elements.*

Illustration 2 Approach to evaluating the significance of landscape change

The overall significance of change to landscape amenity is determined by using **Table 5**.

Table 5: Determining level of effect on landscape values

Level of effect		Magnitude of change in landscape			
		High (Dominant change)	Medium (Considerable change)	Low (Noticeable change)	Negligible (Barely perceptible change)
Sensitivity of landscape	High	Major	Moderate to Major	Moderate	Minor to Moderate
	Medium	Moderate to Major	Moderate	Minor to Moderate	Minor
	Low	Moderate	Minor to Moderate	Minor	Minor to Negligible
	Negligible	Minor to Moderate	Minor	Minor to Negligible	Negligible

Denotes a 'Significant' impact.

Denotes a 'not Significant' impact.

Note: where no impacts would be experienced 'No Impact' is recorded

3.8 Visual impact assessment methodology

3.8.1 Identification and description of visual receptor audiences and viewpoints

Visual receptor audiences are assessed and described in terms of the views which can be obtained from selected representative viewpoints within the Study Area. Potential representative visual audiences have been identified. Potential visual receptors have been identified based on a range of parameters including:

- Proximity of the receptor: the most effected visual receptors are typically anticipated to be located within a 5 km radius of the closest wind turbine, unless elevated vantage points are present within the wider landscape surrounding the Site.
- Type of visual receptor/visual receptor audience, for example:
    - a permanent resident of a residential dwelling within town (noting that areas zoned as 'general residential' within Williams and 'future urban' within Narrogin are located approximately 8.3 km and 11.3 km from the nearest wind turbine respectively)
    - a permanent resident of a rural residential dwelling within developed 'rural residential' areas (the closest of which are located approximately 5.3 km west and 9.7 km east of the nearest wind turbine)
    - a permanent resident of an isolated rural dwelling or homestead
    - drivers or passengers of vehicles passing through, or alongside, the Study Area
    - members of the public accessing marked recreational areas (e.g., in national parks, state forests, footpaths, public parks and sportsgrounds), tourism attractions (e.g. Downderry Wines) community facilities (e.g. Narrogin Gliding Club) and educational institutions (e.g. Western Australian College of Agriculture Narrogin)
    - a rural, industrial or commercial worker (excluding those employed as part of the Project).

These visual receptor audiences and representative viewpoints are discussed further in Section 8.2: Visual audiences and viewpoint selection.

3.8.2 Judgement of visual sensitivity

The sensitivity of each viewpoint, and the visual receptor audiences which it represents, is considered to be dependent upon:

- The importance of the view, its existing scenic qualities, and the presence of other existing man-made elements in the view
- The type of the visual receptor audience and their likely interest in the view (e.g., residents, visitors to important/valued landscapes or visitors to non-designated areas, motorists)
- The volume of visual receptors and the duration of time that receptors spend experiencing the view.

The *Guidelines for Landscape and Visual Impact Assessment* (2002) states "*changes affecting large numbers of people are generally more significant than those affecting a relatively small group of users.*" Similarly, The Guidelines for Landscape and Visual Impact Assessment (2013) states the visual receptors most susceptible to change include *"... residents at home...people, whether residents or visitors who are engaged in outdoor recreation, including use of public rights of way whose attention or interest is likely to be*

focused on the landscape and on particular views; …communities where views contribute to the landscape setting enjoyed by residents in the area". This guidance is reflected in the method used to assess the sensitivity of the viewpoints to the Site e.g., views from a regionally important location where viewers' interest is specifically focussed on the landscape (such as views from a scenic viewpoint in a national park) have been judged as having a high sensitivity to change as have large numbers of residential viewers.

Levels of sensitivity, shown in Table 6, vary according to the type of development and the visual receptor audience.

Table 6: Defining viewpoint sensitivity

Sensitivity	Attributes of viewpoint sensitivity categories
High	Large numbers of viewers or those with proprietary interest and prolonged viewing opportunities such as residents and users of attractive and/or well–used recreational facilities. Views from a regionally important location whose interest is specifically focussed on the landscape e.g., national park.
Medium	Medium numbers of residents (e.g., rural communities and townships) and moderate numbers of visitors with an interest in their environment e.g., visitors to state forests, including bush walkers, horse riders, trail bikers. Larger numbers of travellers with an interest in their surroundings e.g., local designated scenic routes. Views encompassing landscapes valued on account of their scenic amenity values e.g., identified by a scenic overlay in a local planning scheme.
Low	Small numbers of rural residents, receptors with a passing interest in their surroundings or transient views e.g., those travelling along principal roads and/or where scenic quality is already compromised. Viewers whose interest is not specifically focussed on the landscape e.g., workers, commuters, truck drivers.
Negligible	Very occasional numbers of viewers with a passing interest in their surroundings e.g., those travelling along minor roads, and views from the air.

3.8.3 Magnitude of change to visual amenity from representative viewpoints

The magnitude of change to views and visual amenity depends on the nature, scale and duration of the change that is expected to occur. The magnitude of change also depends on the loss, change or addition of any feature in the field of view of the receptor, or any change to the backdrop to, or outlook from, a viewpoint. The assessment assumes a worst-case wind turbine height, without mitigation. The level of effects on a view depends on the extent of visibility, degree of obstruction of existing features, degree of contrast with the existing view, angle of view, duration of view and distance from the Site.

Magnitude of change is described as negligible (barely perceptible change), low (noticeable change), medium (considerable change) or high (dominant change), as illustrated in Table 7.

Table 7: Defining magnitude of change to visual amenity

Magnitude of change	Typical examples
High	Dominant change: Major changes in view at close distances, affecting a substantial part of the view, continuously visible for a long duration, or obstructing a substantial part or important elements of view. Generally, short distances (typically < 2.5 km) to the nearest wind turbine and one or more wind turbines visible in their entirety.
Medium	Considerable change: Clearly perceptible changes in views at intermediate distances, resulting in either a distinct new element in a significant part of the view, or a more wide-ranging, less concentrated change across a wider area. Generally, short to medium views (typically 2.5 km - 5 km) to the nearest wind turbine and generally the entire swept path of the blades of one or more wind turbines visible.
Low	Noticeable change: Minor changes in views at long distances or visible for a short duration, and/or are expected to blend in with the existing view to a moderate extent. Generally, medium to long distance views (typically 5 km – 10 km) to the nearest wind turbine and at least half the swept path of one or more wind turbines visible.
Negligible	Barely perceptible change: Change which is barely visible at a very long distance or visible for a very short duration, and/or is expected to blend with the existing view. Distant views (generally, >10 km) to the nearest wind turbine and/or only a small part of one or more wind turbines visible.
No impact	No change: No visible change as a result of Project infrastructure.

3.8.4 Overall significance of impact on visual amenity from representative viewpoints

The evaluation of overall potential impacts on visual amenity is based on the sensitivity of existing views to change and the magnitude of change that is likely to occur. No prescribed methods for assessment of significance of impacts on visual amenity exist; therefore, professional judgement and experience are applied to identify the level of significance. Each viewpoint is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles which can be used as a guide to this process, which provides transparency about how judgements have been made. The overall significance of change to visual amenity and individual viewpoints is determined by using Table 8.

Table 8: Determining level of effect on visual amenity

Level of effect		Magnitude of change in landscape			
		High (Dominant change)	Medium (Considerable change)	Low (Noticeable change)	Negligible (Barely perceptible change)
Sensitivity of viewer	High	Major	Moderate to Major	Moderate	Minor to Moderate
	Medium	Moderate to Major	Moderate	Minor to Moderate	Minor
	Low	Moderate	Minor to Moderate	Minor	Minor to Negligible
	Negligible	Minor to Moderate	Minor	Minor to Negligible	Negligible

Denotes a 'Significant' impact.

Denotes a 'not Significant' impact.

Note: where no impacts would be experienced 'No Impact' is recorded

Impacts which are graded as being 'Moderate', 'Moderate to Major' or 'Major' are those which are given greatest weight, relative to other levels of landscape impact, in decision making. They usually concern immediate landscapes around proposed wind farm sites and close views seen by sensitive viewers. 'Minor to Moderate' levels of impact are of progressively reducing importance. Impacts graded as 'Minor' also constitute effects which warrant consideration, but individually carry little weight in the decision-making process.

Impacts on the visual resource have been described by representative views in the Study Area. Impacts can be short term (i.e., those occurring during installation/construction of a development) or long term (i.e., those lasting for the lifetime of the Project). In addition, they can be wide-spread (i.e., taking up a large proportional change in the view) or localised.

As stated previously, the impact or effect of a wind farm is a subjective issue. Whilst some people regard wind turbines as attractive, graceful structures that symbolise clean energy; others find wind turbines unattractive and an unwelcome addition cluttering the skyline. For the purposes of this assessment, subjective interpretation of the Project has been avoided; rather, the focus has been directed on the significance of the impact (i.e., a transparent judgement on the sensitivity of the visual resource, combined with the anticipated magnitude of change to the view).

3.8.5 Preparation of visualisations

Visualisations (sometimes referred to as photomontages) are artists' illustrations that aim to represent an observer's view of a proposed development. For the purposes of this assessment, visualisations have been compiled to appreciate the potential visual impact of the presence of the Project from a selection of the representative viewpoints, which are described in **Section 8.3: Viewpoint assessment** and illustrated in A3 format (in **Appendix 2**).

The methodology for the visualisation production has been based on the *Draft National Wind Farm Development Guidelines* (EPHC, 2010) and international guidance including the *Guidelines for Landscape and Visual Impact Assessment Second Edition* (2002) and *Guidelines for Landscape and Visual Impact Assessment Third Edition* (2013) and the *Visual Representation of Windfarms: Good Practice Guidance* (SNH, 2017).

The photomontages have been generated using digital photographs stitched from images obtained on Site, GIS software, and 3D modelling software (Trimble Sketchup) to geolocate, generate and render the wind turbines. Existing points onsite and background terrain is used to reference the position/direction of the photography with the 3D model camera. The rendered outputs are then layered into the existing image where background and foreground of the imagery is separated to allow for the rendered information to be inserted (Adobe Photoshop). It should be noted that every reasonable effort has been made to ensure the images are representative and have not been manipulated to downplay the extent of impact. This has, for example, included ensuring that the rendering provides an adequate 'contrast' between the wind turbine and background elements (e.g., lighter rendering against a dark backdrop and vice versa).

To ensure the photomontages consistently present a view which is representative of the human eye, the field assessment photographs were taken at average human viewing height. Photos were taken using a Canon EOS 6D Mark II camera (full frame sensor Digital Single Lens Reflex (DSLR)) with either a Sigma 50mm f/1.4 DG JSM lens or Sigma 24 mm f/1.4 DG JSM lens where near the Project (to ensure sufficient vertical FoV). The respective horizontal FoV of these lenses is approximately 40 and 75 degrees.

Photo stitching software and Adobe Photoshop were used to piece together the adjoining images to produce the montage. Although the parameters of human vision when stationary is often quoted as falling between the 45–60° (SNH, 2017), humans generally move their eyes, heads and bodies as necessary to experience a view. Therefore, a wider field of view has been used for the photomontages from which an inset representative field of view (75°) has been taken that is considered representative of the human field of view which is in line with good practice. For example, The Draft National Wind Farm Development Guidelines (EPHC, 2010) states "*In creating a photomontage, depictions should not exceed 124º horizontal field of view*". In addition, the Visual Representation of Windfarms Good Practice Guidance (SNH, 2006) notes that "*…the size of photograph required to represent a view will vary for different projects and viewpoints, depending on the key characteristics of a view that need to be included within the image (defined by the landscape architect or experienced specialist assessor on Site), and the extent of the proposed windfarm which needs to be included*".

3.9 Lighting assessment

The Project aviation impact assessment has recommended that wind turbines should be fitted with obstacle lighting to maintain an acceptable level of safety to aircraft, primarily associated with night operations at Narrogin aerodrome. The Civil Aviation Safety Authority (CASA) will be consulted to confirm the extent of lighting required.

There would also likely be some minimal ancillary security lighting associated with infrastructure/compounds. However as no information is available at this stage on proposed lighting, and AS/NZS4282:2023 does not apply to lighting systems that are of a cyclic or flashing nature, it is considered there is no requirement to undertake an obtrusive lighting assessment.

3.10 Cumulative landscape and visual impact assessment

The aim of the cumulative LVIA, described in Section 12: Cumulative landscape and visual impacts , is to describe and assess the ways in which the Project could potentially have additional impacts when considered in combination with other proposed and built developments in the wider area.

The cumulative LVIA is informed by descriptions of other similar scale projects to the extent that such data was publicly available at the time of this assessment. The cumulative situation may change as applications are made or withdrawn. Therefore, the cumulative assessment is current as of September 2024. The cumulative impact assessment methodology follows a qualitative method based on a three–step process, as follows:

Table 9: Cumulative impact assessment methodology

Cumulative Assessment	
Step 1	**Identification and description of existing projects within the LVIA Study Area:** The projects included in the cumulative assessment are those that are considered 'likely' to proceed and/or have sufficient information in the public domain (e.g. a development application or information on a developer's website) to enable an assessment of the potential impacts. Projects need to be located sufficiently close (considered to be <50 km) to the Project for cumulative landscape and visual effects to be possible.
Step 2	**Project screening i.e. exclusion of projects anticipated to generate a negligible cumulative impact on landscape and visual amenity or with insufficient information:** A provisional review has been conducted to streamline the assessment process to eliminate projects which are anticipated to generate negligible landscape and visual impacts or are considered, have insufficient information available or are unlikely to proceed.
Step 3	**Assessment of potential for cumulative landscape and visual impacts:** This step determines the nature and extent of potential impacts in relation to landscape and visual values of the region, as determined through the assessment criteria in the main LVIA. The assessment considers if the identified cumulative impact would be: • "Combined" – impacts that occur where a static receptor is able to view two or more developments from a standpoint/viewpoint within the receptors arc of vision (assumed to be 120 degrees for the purpose of this assessment) at the same time. • "Successive"– impacts that occur where a receptor is able to view two or more developments from a viewpoint but needs to turn their head to see them. • "Sequential" – impacts that occur where a receptor is moving from one area to another, for instance when a person is travelling along a road or track and is able to see two or more developments at the same, or at different times as they pass along the route. Sequential effects can potentially affect views from routes over a wide area, but with the exception of the largest developments (e.g. adjacent windfarms), have a limited effect when the developments are 25 km or more apart.

4. Potential Project Impacts

4.1 Key sources of potential impact

This section describes the key components of the Project that are relevant to this LVIA.

This assessment is based upon a 25 wind turbine layout, for which the Proponent is seeking development approval for a Material Change of Use. The proposed wind turbines, BESS, substation, access roads and other associated infrastructure are situated within the Site. It should be noted that development approval for the Project may allow some 'micro-siting' adjustments of wind turbine and infrastructure locations but these will be confined to within the Site.

Key components of the development activities anticipated for the construction/installation, operation, and decommissioning and rehabilitation which are relevant to the assessment of landscape and visual impacts are set out in this section.

In describing wind turbines, it is necessary to understand the following components (described from bottom to top):

- foundations, typically concrete.
- towers, typically steel or concrete.
- nacelles (with gearbox and generator) which are attached to the hub.
- rotors comprising a central hub and three steel blades, typically steel. The term 'blade tip' refers to the tip of the blade at the uppermost point in its rotation.

4.1.1 Construction phase

The construction phase of the Project is temporary and is estimated to be of a duration of 30 months, commencing Q3 2025. Site components and activities that may potentially impact on the landscape (including landscape features, character and amenity) and views and visual amenity during construction are described in Table 10.

Table 10: Potential impacts during construction phase

Construction activities and infrastructure	Indicative project imagery
Site establishment and civil works Civil works including levelling, earthworks, and local vegetation clearance and reinstatement work.	 *Source: LatStudios*

Construction activities and infrastructure	Indicative project imagery
Wind turbine foundations, hardstands and electrical infrastructure Construction of reinforced concrete wind turbine foundations (excavation will be determined at detailed design phase and is estimated to be approximately 15 m in radius to produce a hardstand of approximately 100 m by 50 m) and high voltage underground collector cable (installed adjacent to the access road where possible). Any of the material excavated to create the foundations will be stockpiled and reused to cover the foundations. Surplus material will be reused on site. Concrete for the foundations will be mixed at concrete batching plants which are proposed to be part of the laydown areas within the Project site. Concrete batching material may be sourced off-site.	 *Source: LatStudios*
Wind turbines and meteorological mast(s) Progressive installation of the wind turbines and permanent meteorological mast (If required).	 *Source: Neoen*  *Source: Neoen*
Construction traffic movement and materials storage Progressive transportation of the wind farm components (i.e., wind turbine blades, towers, hubs/nacelles); movement of plant and vehicle movements, including load deliveries to site; and onsite storage of the wind fa rm components.	 *Source: LatStudios* 

Construction activities and infrastructure	Indicative project imagery
	Source: LatStudios
Substation, BESS and overhead transmission connection Construction of proposed BESS and substation in the centre of the site. Construction of a 5 km overhead transmission line will be required to connect the substation to the existing Western Power 220 kV line located at the southern boundary of the Site. The overhead line will require a cleared corridor of up to 70 m wide and will avoid native vegetation as far as practicable (noting that the proposed alignment traverses rural landscapes).	 *Source: LatStudios*  *Source: Neoen*  *Source: Neoen*
Construction compounds and laydown areas A number of laydown areas will be established throughout the Project Area These will also function as construction compound areas. The temporary construction compounds and laydown areas will be located in already cleared areas and be formed into hardstand. Prior to forming the hardstand area, the topsoil will be removed and stockpiled adjacent to the hardstand area. The exact locations, nature and number of the temporary construction compounds and laydown areas will be established in consultation with the relevant landowners when a full construction methodology is determined. The construction compound areas will be used to manage construction activities. These compounds will likely include: portacabins (site offices, first aid facilities, canteen facilities, waste disposal and toilets); storage containers for tools and equipment; storage areas for plant, fuel storage, material and components; wash down facilities; and sufficient parking for the workforce, deliveries and visitors. Temporary offices, lunchrooms, and ablutions may also be established on wind turbine hardstands during the construction period.	 *Source: LatStudios*  *Source: LatStudios*

Construction activities and infrastructure	Indicative project imagery
These areas will also accommodate temporary storage of construction plant equipment, wind farm components and construction materials prior to moving to their ultimate destination. The areas may also be used for rock crushing and stockpiles, and concrete batching equipment. Following the completion of the construction phase, these areas may be reinstated using the stockpiled topsoil depending on the landowner's requirements and will be rehabilitated to pre-construction condition.	
Operations and maintenance facility The proposed area for the substation is also proposed to include the operational and maintenance facility. These areas typically contain vehicle parking spaces, septic ablutions and wash down areas as appropriate.	
External and internal site access roads A new access road will be constructed opposite Rosedale Road to provide access from Clayton Road and will form the main access for traffic to the Site. The existing Cornwall Road located off Narrogin-Williams Road will be used as a secondary access to the electrical ancillary infrastructure/battery storage/substation area. Internal access tracks will be installed throughout the Site to connect wind turbines and other infrastructure. The following design criteria and mitigation measures were applied to the access track layout to mitigate potential impacts: • access tracks will be an average of 10 m wide (widths will vary depending on various construction requirements (e.g. reinforcement batters) topography and cabling requirements) • regular passing places and turning areas will be instated • watercourse crossings will be minimised • tracks will not be sealed • tracks will be constructed from locally sourced aggregate where available • The construction of access tracks will vary depending on localised ground conditions. Conditions impacting construction include the existing vegetation, nature of the topsoil, level of moisture in the ground, geotechnical base and localised topography. • Post construction, the areas that were cleared to create batters and corners will be rehabilitated. Roads will be maintained and need to remain passable for oversize over mass loads in the event of a blade replacement during operation. Therefore, trees that could grow to become future obstructions will not be	 *Source: LatStudios*  *Source: LatStudios*

Construction activities and infrastructure	Indicative project imagery
planted where large oversailing blades could be transported in. Appropriate signage will be installed on relevant roads during the construction period to comply with necessary health and safety requirements.	
Construction workforce and accommodation camp It is estimated that the maximum (peak) construction workforce will comprise of up to 250 staff during a 30-month construction period. It is expected that some of the workforce will commute from Narrogin (approximately 15 minute drive), Williams (approximately 15 minute drive) or Collie (approximately 1.25 hour drive) and will not require additional accommodation. Other workers may be accommodated in an on-site accommodation camp, local rental houses, hotels and motels in the surrounding localities and towns	 *Source: LatStudios*

4.1.2 Operational phase

The operational phase of the Project is estimated to last approximately 30 years. The potential impacts on the landscape (including landscape features, character, and qualities) and visual amenity during operation are outlined in Table 11.

Table 11: Potential impacts during operational phase

Development activities and infrastructure	
Wind turbines and associated wind turbine hardstands (estimated to be approximately 100 m x 50 m up to around 110 x 80 m). It has been assumed that development scenarios would include up to 25 wind turbines at up to a maximum of 291 m high (maximum blade size of 91 m and maximum hub height of 200 m). It is noted that the wind turbines aviation obstacle lighting for aviation safety reasons will be confirmed in consultation with CASA. A permanent meteorological mast/wind monitoring tower is also likely to be required.	 *Source: LatStudios*
Access roads to wind turbines (driving width of approximately 5.5 m after construction with 0.5 m road shoulders and a 1.5 m drain on one or both sides of the road), typically gravel capped.	 *Source: Neoen*

Development activities and infrastructure	
An operations, maintenance, and storage building, BESS, one wind farm substation with associated electrical ancillary infrastructure, and additional operational infrastructure areas are anticipated as part of the development. Five km of overhead transmission lines connecting the substation to the Western Power terminal located on the Southern boundary of the site.	 *Source: Neoen*  *Source: Neoen*

4.1.3 Decommissioning and rehabilitation phase

At the end of the operational lifetime of the Project's infrastructure, the Proponent may apply to repower the wind farm (replace the wind turbines) or replace the wind turbine components, such as the gearbox and generator.

Alternatively, the Project may be decommissioned. Decommissioning and rehabilitation would be conducted in accordance with all relevant approvals and authorisations and would involve the wind turbines and all other above–ground infrastructure on–Site being dismantled and removed from the Site, returning the landscape and associated views to their present condition. This includes all the underground infrastructure to a depth of 500 mm and overhead interconnection, and possibly the substation infrastructure. The tower bases would be cut back below 500 mm or topsoil built up over the foundation to achieve a similar result.

The access roads, if not required for farming purposes or fire access, would be removed and the Site reinstated to original condition and use. Access gates, if not required for farming purposes, would also be removed. The underground cables located below 500 mm that contain no harmful substances can be recovered if economically attractive or left in the ground. Terminal connections would be cut back to below 500 mm.

Site restoration and rehabilitation would allow rural activities to recommence in the areas of previous wind farm infrastructure after the wind farm infrastructure has been decommissioned.

This stage would be of shorter duration than the construction phase, consisting of the dismantling of all above ground structures and the reinstatement of disturbed ground. Typical elements would include temporary contractor compounds, and fencing, plant and vehicle movements (including use of tall cranes), laydown areas and machinery and material storage.

The duration of the decommissioning and rehabilitation activities are only temporary (up to approximately 12 months) and impacts on the landscape (including landscape features

and its inherent character and qualities) and visual amenity are considered to be beneficial. Over the longer term it is anticipated that rehabilitation will reinstate the landscape character, views and visual amenity to their former conditions.

5. Legislative context and standards

This section summarises the key legislation, planning policies and guidance that have been identified that inform the LVIA process and/or indicate the sensitivity of the landscape to change. Where applicable, these provisions are shown on **Figure 4**.

The emphasis of this section is to identify those aspects of landscape or visual amenity that require assessment under legislation or relevant planning schemes so that these can be appropriately identified and assessed within the landscape assessment or visual assessment process. The purpose is to determine the extent to which valued and protected landscape and/or visual aspects may be potentially affected. Notably, it is not a formal assessment of the acceptability of the Project from a planning perspective; this is ultimately the responsibility of those determining any development application.

5.1 National

5.1.1 The Environment Protection and Biodiversity Act 1999 (EPBC Act)

The *Environment Protection and Biodiversity Conservation Act* 1999 (Cth) (EPBC Act) (Australia Government Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2023) is the 'key piece' of commonwealth legislation relating to the environment and is focussed on matters of national environmental significance (MNES), which are based primarily on Australia's responsibilities under international agreements on environmental protection as well as the 1997 Heads of agreement on Commonwealth and State roles and responsibilities for the Environment.

There is no specific national legislation requiring or directing the assessment of scenic amenity for renewable or major infrastructure projects. However, the EPBC Act requires assessment of any 'action' that will have, or is likely to have, a significant impact on MNES, including the critically endangered Eucalypt Woodlands of the Western Australian Wheatbelt occurring within the Site. However, as these woodlands are not specifically protected on account of their scenic or landscape character value (rather they are protected for their significant biodiversity value) impacts on landscape and visual values associated with this vegetation community have not been considered in detail in this LVIA.

5.1.2 AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting

AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting (AS/NZS 2482:2023) (Standards Australia, 2023) sets out guidelines for the control of the obtrusive effects of outdoor lighting and gives recommended limits for the relevant lighting parameters to contain these effects within tolerable levels. It refers to the potential effects of lighting systems on receptors including nearby residents and users of adjacent roads. It does not apply to road lighting or lighting systems that are of a cyclic or flashing nature.

Should lighting be proposed as part of the Project, the relevant considerations of this standard should be addressed – noting that public lighting and lighting for aviation safety is excluded from the standard as it is provided in the interest of public safety and security.

5.1.3 AS4970-2009: Protection of Trees on Development Sites

AS4970-2009: Protection of Trees on Development Sites (Standards Australia, 2009) provides guidance on the principles for protecting trees on land subject to development. Where development is to occur, the Standard provides guidance on how to decide which

trees are appropriate for retention, and on the means of protecting those trees during construction work.

5.2 State

The relevant provisions of documents identified as being relevant to the LVIA process within the Western Australia State regulatory context for LVIA practice and policy are summarised in the sections below and described in detail in **Appendix 3**.

5.2.1 Environmental Protection Act 1986

Part IV - Environmental Impact Assessment of the Environmental Protection Act 1986 (WA) (EP Act) may require the consideration of potential impacts on landscape and visual values in accordance with relevant Environmental Factor Guidelines (Refer **Appendix 3** for details).

5.2.2 State Planning Strategy 2050

The *State Planning Strategy 2050* (SPP 2050) (WAPC, 2014) is the highest order planning document in Western Australia. The SPP 2050 provides the strategic context for planning and development decisions throughout the State and promotes renewable energy initiatives.

A key objective of the SPP 2050 relating to the environment is "*to conserve biodiversity, achieve resilient ecosystems, protect significant landscapes and manage the State's natural resources in a sustainable manner.*"

5.2.3 State Planning Framework

This objective is supported by the *State Planning Framework State Planning Policy 1* (SPP 1) (WAPC, 2017) which provides the overall vision and is further articulated and applied by strategies, policies and plans dealing with planning issues or regions of the State.

5.2.4 State Planning Policy 2.0 - Environment and Natural Resources Policy

State Planning Policy 2.0 - Environment and Natural Resources Policy (SPP 2.0) (WAPC, 2021) defines the principles and considerations that represent good and responsible planning in terms of environment and natural resource issues within the framework of the State Planning Strategy. The SPP 2.0 notes that "*Western Australia has a diversity of high value landscapes and scenic areas, many of which are unique to Australia"* and that planning strategies, schemes and decision making should:

- identify and safeguard landscapes with high geological, geomorphological or ecological values, as well as those of aesthetic, cultural or historical value to the community, and encourage the restoration of those that are degraded.
- in areas identified in the above, consider the level or capacity of the landscape to absorb new activities and incorporate appropriate planning and building design and siting criteria to ensure that new development is consistent and sensitive to the character and quality of the landscape.
- consider the need for a landscape, cultural or visual impact assessment for land use or development proposals that may have a significant impact on sensitive landscapes.

5.2.5 State Planning Policy 2.5 - Rural Planning

The purpose of *State Planning Policy 2.5 - Rural Planning* (SPP 2.5) (WAPC, 2016) is to protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. SPP 2.5 supports the protection of valued landscape and views within planning schemes, strategies and decision making.

5.2.6 Position Statement: Renewable energy facilities

The *Position Statement: Renewable energy facilities* (WAPC, 2020) outlines the WAPC's requirements to support the consistent consideration and provision of renewable energy facilities within Western Australia. It supersedes *Planning Bulletin No. 67 Guidelines for Wind Farm Development* (WAPC, 2004).

The policy identifies assessment measures to facilitate appropriate development of renewable energy facilities. It seeks to ensure these facilities are in areas that minimise potential impact upon the environment, natural landscape and urban areas while maximising energy production returns and operational efficiency.

The objectives of this position statement are to:

- guide the establishment of renewable energy facilities to support the *State Energy Transformation Strategy* (Energy Transformation Taskforce, 2019)
- outline key planning and environmental considerations for the location, siting and design of renewable energy facilities.
- promote the consistent consideration and assessment of renewable energy facilities.
- facilitate appropriate development of renewable energy facilities while minimising any potential impact upon the environment, natural landscape, and urban areas.
- encourage informed public engagement early in the renewable energy facility planning process.

Relevant to this LVIA, the position statement notes that the location and siting of a renewable energy facility may require a visual and landscape impact assessment that addresses:

- landscape significance and sensitivity to change, site earthworks, topography, extent of cut and fill, the extent and type of vegetation, clearing and rehabilitation areas, land use patterns, built form character, public amenity and community values.
- likely impact on views including the visibility of the facility using view shed analysis and simulations of views from significant viewing locations including residential areas, major scenic drives and lookouts.
- layout of the facility including the number, height, scale, spacing, colour, surface reflectivity and design of components, including any ancillary buildings, signage, access roads, and incidental facilities
- measures proposed to minimise unwanted, unacceptable or adverse visual impacts.

It notes that *Visual Landscape Planning in WA: a manual for evaluation, assessment, siting and design* (WAPC, 2007) and *Wind Farms and Landscape Values* (Australian Wind Energy Association and the Australian Council of National Trust, 2005) provide detailed guidance on visual and landscape impact assessments.

While the *Position Statement: Renewable energy facilities* has been superseded, it includes useful information about key considerations for wind farm development in relation to LVIA. As such, a summary of its key guidance is contained in **Appendix 3**.

5.2.1 Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design

Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design (WAPC, 2007) provides advice to state agencies, local governments, developers and the community on techniques for incorporating visual landscape planning into the planning system and is intended to be used as a guide so that the practices of visual landscape evaluation and visual impact assessment can continue to evolve and mature over time.

The manual notes that a landscape and visual assessment should be presented using best practice techniques and notes that visual impact is based on several factors which affect the perceived visual quality. Several statements are included within the manual relevant to the landscape character of the Study Area:

- Western Australia's image has been shaped and defined by its rural and remote landscapes.
- The Wheatbelt region has a distinct character of broad-acre farming lots with stands of remnant vegetation, as well as shelterbelts of trees to protect the soils from wind and water erosion.
- The colours of the agricultural areas over the state vary and include the orange dolerite in the wheat-belt, with the occasional York gums.
- Rural areas have been somewhat undervalued for their inherent visual, aesthetic character, and landscape quality tends to be overlooked in statutory processes in rural areas, instead the perception of the land has primarily been in terms of economic return.

5.2.2 Wheatbelt Region parks and reserves management plan 95 2021

The *Wheatbelt Region parks and reserves management plan 95 2021* (Department of Biodiversity, Conservation and Attractions (DBCA), 2021) covers 745 existing reserves or parcels of land within the Wheatbelt Region, totalling more than 1,118,168 ha managed by the department in accordance with the Conservation and Land Management Act 1984 (WA) (CALM Act). This includes areas within the Study Area referred to as the 'Dryandra Woodlands' which includes areas within national park, state forest and nature reserve and other freehold crown land.

The management plan notes that "*spectacular rock outcrops and breakaways, lakes, wetlands and riparian areas, dramatic displays of seasonal colour and distinctive natural vegetation combine to create Wheatbelt landscapes of outstanding scenic quality.*"

It also notes that the Wheatbelt Region has significant visual landscape values including:

- major rock outcroppings (granite, laterite and dolerite based)
- distinctive stands of vegetation especially the inland eucalypt woodlands (such as salmon gums and gimlet) and species-rich heath lands on upper slopes, dramatic displays of seasonal colour (such as spring wildflowers)
- lakes, rivers, streams and wetlands (such as Dumbleyung Lake).

The plan also recognises that modified agricultural landscapes also provide visually pleasing views seen from high vantage points across the region, especially during the winter to spring cropping season.

Relevant management strategies proposed in the plan include to "*identify, sensitively manage and minimise degradation of visual landscape values, particularly along access corridors, tourist destinations, lookout points and prominent natural features consistent with department standards*".

5.2.3 Dryandra Woodland Management Plan No. 70 2011

While the *Dryandra Woodland Management Plan No. 70 2011* (DEC, 2011) has been superseded by the *Wheatbelt Region parks and reserves management plan 95 2021,* the document will continue to be used operationally as subsidiary management documents, where they are consistent with the *Wheatbelt Region parks and reserves management plan 95 2021*. As such, relevant provisions from this plan have been included in this review to inform the basis of the sensitivity and values of these landscapes.

Of relevance to this LVIA, the plan notes that:

- Bushwalking, camping, wildflower appreciation and scenic driving is a key recreation and tourism value.
- The primary attractions of Dryandra Woodland include the areas naturalness, peacefulness and the scenic quality of its open woodlands
- Many of the roads and tracks provide either open views across a wide, sweeping landscape of forested hills and farmland, or enclosed views within the wandoo woodlands.
- Lookouts, such as Contine Hill, provide important opportunities for sightseeing along with two scenic drive trails, the 25 km 'Sounds of Dryandra Woodland' and the 23 km 'Darwinia Drive'.
- The Dryandra Woodland is within the Dryandra Uplands, which is a component of the Wheatbelt Plateau Landscape Character Type.
- Dryandra's landscape is characterised by its diversity in vegetation (open woodland to closed heath) and landform (gentle valley slopes to abrupt breakaway areas), and its historic built components (the village and homestead sites).
- The visual quality of this landscape is a resource in its own right and should be considered concurrently with other values when management decisions are made.

5.3 Regional

At the regional level, the site is located within the Wheatbelt Region. Regional policies and guidelines relevant to LVIA and the assessment of the Project are summarised below and discussed in further detail in Appendix 3.

5.3.1 Wheatbelt Regional Planning and Infrastructure Framework

The *Wheatbelt Regional Planning and Infrastructure Framework* (WAPC, 2015) is a regional strategic planning document that provides an overview of regional planning issues and a basis for ongoing planning and development.

The framework includes several relevant provisions for the protection of landscape and scenic values in the Wheatbelt region. This includes the Valued Natural Amenity objective

requires that "*environmental and landscape values that support the social, cultural and economic development of the region are managed for current and future generations*."

The framework also identifies the broad landscape units of the Wheatbelt – as Coastal, Hills, Wheatbelt and Woodlands on Map 6.

5.3.2 Other relevant documents

The following regional planning documents have also been reviewed and considered in the preparation of this LVIA:

- *RDA Wheatbelt Regional Plan 2013 – 2018 – Version 1* (Regional Development Australia Wheatbelt Inc., 2013)
- *Wheatbelt South Sub-Regional Economic Strategy* (RPS in collaboration with the Wheatbelt Development Commission, 2014)
- *Hotham Williams Economic Development Alliance Strategic Plan 2016-2020* (2016).

5.4 Local

At the local level, the Site is located within the Shire of Narrogin and Shire of Williams jurisdictions, however, as the visibility of the wind farm is likely to extend into adjacent LGAs including the Shire of Cuballing, Shire of Wandering, Shire of Boddington, Shire of West Arthur and Shire of Wagin, relevant provisions of these planning schemes are also considered. A very small part of the Shire of Pingelly LGA is also located within the Study Area; however, this has not been considered in detail due to the distance of this area from the Project and likelihood that views from this area towards the Project would be negligible due to the distance and intervening landform.

The provisions of the relevant provisions within these planning strategies and schemes are summaries in Section 5.4.1: Summary of key local planning provisions and described in further detail in Appendix 3.

5.4.1 Summary of key local planning provisions

The Site encapsulates areas located within the Rural zones within the Shire of Narrogin and Shire of Williams jurisdictions. As such, the key provisions of these documents relevant to the assessment of landscape and visual values are summarised below, noting that no local planning strategy has been prepared for the Shire of Williams.

The *Shire of Narrogin Local Planning Scheme No. 3* (DPLH, 2023) identifies that renewable energy facilities are an accepted use within the Rural zone subject to planning approval, and notes that the objectives of the Rural zone include to "*provide for the maintenance or enhancement of specific local rural character*" and *"to maintain and enhance the environmental qualities of the landscape, vegetation, soils and water bodies, to protect sensitive areas especially the natural valley and watercourse systems from damage*". The recently adopted *Local Planning Policy No. D11 – Wind Farm/Wind turbines* (DPLH, 2024) requires the assessment of proposed wind farms impacts on landscape and visual values in accordance with the requirements of the *Position Statement: Renewable energy facilities* (WAPC, 2020), and that wind turbines are sited and designed to minimise adverse impacts on the environment and the community, based on best industry standards.

Policy provisions relevant to this LVIA include:

- General Requirements:
    - Wind farms and wind turbines shall be sited and designed to minimise adverse impacts on the environment and the community, based on best industry standards.
    - The minimum recommended setback from property boundaries shall be a minimum of 3 times the total height of the structure including, the propellor blades at the highest point or 500 metres, whichever is greater.
- Visual and Landscape Impact:
    - Wind farms and wind turbines shall be designed to integrate to the greatest extent possible into the natural and rural landscape setting. A Visual and Landscape Impact Assessment is required that addresses the following:
        - landscape significance and sensitivity to change, site earthworks, topography, the extent and type of vegetation, clearing and rehabilitation areas, land use patterns, built form character, public amenity and community values.
        - likely impact on views including the visibility of the facility using view shed analysis and simulations of views from significant viewing locations including residential areas, major scenic drives and lookouts.
        - layout of the facility including the number, height, scale, spacing, colour, surface reflectivity and design of components, including any ancillary buildings, signage, access roads, and incidental facilities.
        - measures proposed to minimise unwanted, unacceptable or adverse visual impacts.
    - It is also recommended that the developer include reference to the WAPC *Visual Landscape Planning Manual and the Wind farm and Landscape Values* (2005) published by the Western Australian Wind Energy Association and Australian Council of National Trust.

Shire of Williams Town Planning Scheme No. 2 (Department of Planning, Lands and Heritage (DPLH), 2010) does not include any specific requirements for to the protection of scenic amenity and landscape character values or landscaping within this zone and no local planning strategy or scenic amenity mapping has been prepared for the Shire of Williams.

However, the *Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities)* (Shire of Williams, 2023) was adopted on 20 December 2023 and includes the following objectives relevant to the LVIA:

- To reduce the amenity impact of wind farms by ensuring a satisfactory minimum distance from sensitive land uses
- To decrease the visual impact of wind farms by implementing a minimum distance to neighbouring lot boundaries
- To protect areas of visual significance and ensure wind turbines are appropriately and sensitively sited
- To ensure that wind farms are located so as not to have any detrimental impact on Williams Townsite, views from Williams Townsite or any other residential areas.

Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities) requires that a Visual and Landscape Impact Assessment is required and shall:

a) Describe the appearance of changes in the landscape caused by the proposed wind farm
b) Identify the view of the wind farm from key sensitive land uses, views from key locations of major roads/tourist routes (including rest areas), heritage places; any tourist facilities and recreational reserves
c) Ensure photos in the report include a view of the existing landscape and a photomontage with the wind turbines superimposed
d) Include all images in colour with a high quality/ resolution;
e) Include a clear plan that shows the location of where each photo was taken, the direction it was taken, and numbering of each photo location
f) Be in accordance with the WAPC; *Visual Landscape Planning in Western Australia' manual and the 'Wind Farms and Landscape Values* (2005) produced by the Australian Wind Energy Association and Australian Council of National Trust.

The planning policy also requires that wind farms are to be designed, sited and operated to minimise their visual impacts and shall meet the following requirements:

a) A setback of at least 1.5 kilometres between any wind turbine and a sensitive land use, that is not associated with the development
b) A setback of 800m between any wind turbine from a non-participating neighbouring lot boundary, unless otherwise agreed to in writing by the affected property owner at the time of lodgement of a formal development application
c) Locating wind turbines in flatter landscapes, where feasible, to reduce visibility due to shortening the visual perspective of the structures
d) Blades on wind turbines to rotate in the same direction; Ensure that all wind turbines have uniformity in terms of colour, size, and shape; and
e) Implementation of landscaping within the development site to mitigate visual impact to the greatest extent possible from sensitive land uses.

The *Shire of Narrogin Local Planning Strategy* (WAPC, 2020) includes several provisions relevant to the protection of visual landscape values within the Shire, including the attractive landscape setting of the rural town of Narrogin. The strategy states that the "*local landscape has limited capacity to absorb new activities that are inconsistent with its current visual character and qualities*" and identifies the following areas and features as having the highest scenic quality within the Shire:

- major rock outcrops
- vegetation with a diversity of species, height, colour and density, strong form, colour and texture contrasts with surrounding landscape (e.g., clumped remnant vegetation)
- distinctive stands of vegetation with strongly defined growth habits, texture and colour.

It also acknowledges that the landscape qualities of the Shire contribute greatly to its sense of place and distinct, local identity, and notes that the rural landscape is dominated by expanses of cereal crops and open views over wide, shallow, undulating valleys of ancient drainage channel, whilst remnant vegetation may be seen along roadsides, creek lines or property entrances and isolated hills and granite outcrops are distinct visual features.

The strategy includes the following vision for the protection of visual values:

> *Protect, conserve and enhance landscapes in the Shire with high scenic qualities for the benefit of current and future generations and encourage development which is sensitive to local landscape character and quality.*

The strategy is supportive of the development of renewable energy projects within the Shire and includes a number of strategies to assist with the integration of developments within the landscape, including requirements for landscape and visual impact assessment where impacts on sensitive landscapes will occur, the need for careful planning, siting and design of new development and the desire for overhead powerlines within settlements or adjacent to urban gateways, scenic routes and tourism/heritage precincts to be undergrounded.

Overall, both schemes include several development requirements addressing potential amenity issues relating to construction impacts, such as those associated with laydown areas. This includes the requirement to prepare an LVIA and requirements for vegetation screening, landscaping, and fencing to mitigate amenity impacts. Several additional documents have also been reviewed due to the potential for the Project to have indirect impacts on the landscape and visual values of adjacent shires within the Study Area, including:

- *Shire of Boddington Local Planning Strategy* (Shire of Boddington, 2018)
- *Shire of Boddington Planning Scheme No. 3* (Shire of Boddington, 2021)
- *Shire Of Boddington Local Planning Policy No. 11* Landscaping and Revegetation (Shire of Boddington, n.d.)
- *Shire of West Arthur Local Planning Scheme No. 2* (Shire of West Arthur, 2012)
- *Shire of Cuballing Local Planning Strategy* (Edge Planning & Property, 2019)
- *Shire of Cuballing Planning Scheme No. 2* (DPLH, 2021)
- *Shire of Wandering Local Planning Strategy* (WAPC, 2007)
- *Shire of Wandering Planning Scheme No. 3* (DPLH, 2005)
- *Shire of Wagin Local Planning Scheme No. 2 District Zoning Scheme* (DPLH, 2019).

As noted above, a very small part of the Shire of Pingelly LGA is also located within the Study Area, however, this has not been considered in detail due to the distance of these areas from the Site.

These schemes are generally supportive of the protection of visual amenity and landscape character values, most notably with regards to the visual setting of rural towns, impacts on views from major roads and tourist routes, the avoidance of native vegetation clearing and development along ridges and skylines in areas of high landscape/environmental value and require the consideration of the amenity of any future planned communities or residential areas.

6. Regional Landscape Context

The Project is located between the towns of Williams and Narrogin, in the southern part of the Wheatbelt region of Western Australia, referred to as the Wheatbelt South Sub Region (WAPC, 2023). The Site and its wider landscape context are illustrated in **Figure 1**, **Figure 2** and **Figure 3** included in **Appendix 1**.

6.1 Settlement and infrastructure

The Site lies in a predominantly rural area comprising isolated farmsteads, forested and natural landscapes within the Shire of Narrogin and Shire of Williams. Narrogin Shire has a total population of 4,779 (LGAs) and is known as the 'heart of the Wheatbelt'. The western most parts of the town of Narrogin are located 8.3 km east of the Site and the town has a total population of 3,745 (Urban Centres and Localities (UCL)) (ABS, 2021).

The wider area also includes the small rural towns of Williams and Cuballing. The town of Williams has a population of 424 (UCL) (ABS, 2021). The town centre is situated approximately 9.7 km southwest of the Site. Cuballing, with a population of 384 (UCL) (ABS, 2021), is situated approximately 15.3 km to the northeast of the Site.

Several smaller townsites and their associated rural localities are located within the Study Area. These areas support additional rural residential receptors, as described in **Table 12**. In addition, several other rural localities are located within the Study Area.

Table 12: Suburbs and localities

Suburb and Locality	Population (Suburbs and Localities) (ABS, 2021)	Distance from Site
Highbury	247	Approximately 17.1 km southeast of the Site
Popanyinning	208	Approximately 28.2 km northeast of the Site
Piesseville	49	Approximately 29.7 km southeast of the Site
Yornaning	49	Approximately 22.4 km northeast of the Site

The State Heritage listed Dryandra Woodland Settlement, a former forestry settlement is maintained as an accommodation facility and is located 13.2 km north of the site. The complex is noted for its contribution to the aesthetic values of the landscape and is set in a dense enclosed woodland. In addition, it is noted that the approach along a narrow dirt track enhances its aesthetic value due to the sense of isolation afforded (Heritage Council of Western Australia, 2009). In addition, whilst noted as a townsite, the site of Congelin and Yilliminning predominately support bushland and do not support any township development. Therefore, these settlements have not been considered further in this assessment.

The Albany Highway and the Great Southern Highway are the key routes within the Study Area, traversing the western and eastern parts of the Study Area, respectively. The Albany Highway passes through Williams is situated approximately 1.8 km from the Site boundary at its nearest point, with an Annual Average Daily Traffic (AADT) of between 2,663 and 4,452 vehicle movements a day (Main Roads Western Australia (MRWA), 2023). The Great Southern Highway (Northam Cranbrook Road) passes through Narrogin and is situated approximately 10.3 km from the eastern most part of the site boundary with an AADT of

up to 1,492 (MRWA, 2023). Another key road is the Williams-Narrogin Highway (Williams-Kondinin Road) which traverses the site, with an AADT of 999 near the intersection of Cornwall Road (within the site boundary) and 1,574 on the western outskirts of Narrogin. Several roadside rest areas are situated on these key routes, the nearest of which are situated on Williams-Kondinin Road and located approximately 2.3 km and 1.9 km from the nearest wind turbine within the Site.

Other key roads and their AADT counts (MRWA, 2023) within the Study Area include:

- Collie-Williams Road with an AADT of 467 north of Marling Road.
- Pinjarra-Williams Road with an AADT of 808 to the east of Williams (near Culbin Boraning Road).
- Williams-Darkan Road with an ADDT of 137 south of Dardadine Road
- Piesseville - Tarwonga Road with an AADT of 394 to the east of the Albany Highway.
- Several other connector roads without AADT counts, including:
    - Tarwonga Road
    - Narrogin Kondinin Road
    - Narrogin - Harrismith Road
    - Wandering - Narrogin Road
    - Cuballing West Road
    - Cuballing East Road.

Other local roads (frequently unsealed/gravel) occur around and through the Site accessing local farmsteads and the surrounding farmland. Key local distributors include Clayton Road, Rosedale Road, Congelin - Narrogin Road and York-Williams Road. Examples of access roads include Hardie Road, Cornwall Road, Cowcher Road, Eddington Road and Bradford Road, which are situated near the site. Narrogin Aerodrome is situated approximately 6.5 km west of the town, approximately 1.3 km from the Site and is home to the Narrogin Gliding Club. The Narrogin Gliding Club offers flight training courses and experiences to view the landscape from above and provides overnight accommodation on site.

The nearest operational railway is a single gauge railway that passes through the town of Narrogin, which is part of the Great Southern Railway line owned by Arc Infrastructure (Arc Infrastructure, 2023). Other railway infrastructure owned by the Public Transport Authority includes the Brunswick Junction to Narrogin section, which includes 186 km of narrow-gauge rail between Bowelling and Narrogin. This section of railway was decommissioned in 1979 and repurposed as the Collie Darkan Rail Trail, a 60 km multi-purpose trail (used by cyclists, horse riders and walkers) between Collie and Narrogin which opened in 2005 and was extended to Dardadine in 2017 (TrailsWA, 2020 and Rail Trails Australia, n.d.). The Shire of Narrogin and Shire of Williams are currently investigating the feasibility for a rail trail connecting the towns of Narrogin and Williams, as part of the Collie Darkan Rail Trail along the old railway line (RailTrails Australia, 2024).

There is little large-scale built infrastructure in the local area except for electricity transmission lines and agricultural buildings and that associated with towns. The existing Muja Terminal to Narrogin South 220 kV high voltage overhead transmission line traverses the Study Area and southern part of the Site. An additional 66 kV overhead transmission line runs between Narrogin to Wagin within the south-western part of the Study Area (AEMO, 2023).

The Site is traversed by existing water pipeline owned by Water Corporation, which is part of the drinking water network and typically runs parallel to the Williams-Narrogin Highway (Williams-Kondinin Road) in the vicinity of the site (Water Corporation, 2023).

6.2 Landform and hydrology

As shown on Figure 5, the landform within the Site and wider landscape is largely defined by undulating rises and low hills with elevations up to around 430 m AHD divided by a series of gently inclined plains associated with waterways. Key topographic points of interest in and around the site include:

- Contine Hill (420 m AHD), situated to the north of the Site boundary and the Caernarvon Hills, Montague Hills and Barron Hills located in the northern part of the LIVA Study Area
- Kondening Katta (330 m AHD), situated to the east of the town of Williams and to the west of the southern part of the Site boundary
- Wanerie Katta (377 m AHD), situated to the west of the town of Williams.
- Koomulmining Hill and Mount Hillman located in the south-western part of the Study Area
- Saunders Hill (430 m AHD), situated to the north of Narrogin.

The northern part of the Study Area is within the Murray River catchment, which includes the Williams subcatchment (within which the Site is located) and the Hotham subcatchment. The key waterway within this catchment is the Hotham River, which is fed by the Fourteen Mile Brook, Crossman River, Williams River and their tributaries. Parts of the upper reaches of the Williams River and several of its tributaries including Junction Brook, Geeralying Brook and Mujiting Brook are located within the Site.

The southern part of the Study Area is within the Blackwood River catchment and the Upper Blackwood/Arthur subcatchment. The Arthur River traverses the south-eastern part of the Study Area. Key tributaries within the Study Area include the Yilliminning River, Hillman River, Narrogin Brook and Dardadine Gully.

These waterways are associated with lower lying gently inclined plains, including some areas within the Site associated with the Williams River and Junction Brook.

6.3 Geology, soils, landscape, and vegetation communities

6.3.1 Geology

Digital 1:100 000 State interpreted bedrock geology of Western Australia mapping (Department of Mines, Industry Regulation and Safety, 2019) shows the geology of the Study Area as comprising:

- Yilgarn Craton granites (A-g-Y):
    - A-gg-y - Granodiorite with minor monzogranite, diorite, and microgranite; may include hornblende-bearing phases; metamorphosed.
    - A-mggn-Y - Tonalite–trondhjemite–granodiorite gneiss; may include metamonzogranite; moderately to strongly deformed; typically, amphibolite facies; contains mafic rafts.

- A-gm-Y - Monzogranite; common biotite and rare local hornblende; minor granodiorite and syenogranite; fine to coarse grained; equigranular to porphyritic; massive to weakly foliated; metamorphosed.

- South West Terrane greenstones (A-md-YSW):
  - A-xmd-mwa-YSW - Metamorphosed siliciclastic sedimentary rocks interleaved with amphibolite; may contain minor banded iron-formation, gabbro and granite sheets; amphibolite to granulite facies.

The digital 1:500 000 regolith map of Western Australia shows areas of exposed rock, saprolite, and saprock, residual or relict material (includes ferruginous, siliceous, and calcareous duricrust), slope deposits (includes colluvium and sheetwash, alluvium in drainage channels, floodplains, and deltas) and, to a lesser extent sandplains, mainly eolian (includes some residual deposits) within the Study Area. These all occur within the Site except for sandplains.

6.3.2 Interim Biogeographic Regionalisation for Australia

The Interim Biogeographic Regionalisation for Australia (IBRA) is a biogeographic regionalisation of Australia developed by the Australian Government's (then known as) Department of Sustainability, Environment, Water, Population and Communities and represents a landscape–based approach to classifying the land surface of Australia. The IBRA data consists of two datasets: IBRA bioregions, which are a larger scale regional classification of homogenous ecosystems; and subregions, which are more localised.

Whilst bioregions have been defined mainly for the purposes of ecosystem planning and monitoring, the nominal attributes that make up IBRA are climate, lithology/geology, landform, vegetation, flora and fauna, and land use, which are themes typically used to define landscape character at a high level. IBRA 7.0, released in 2012, delineates 89 biogeographic regions and 419 sub regions, each reflecting a unifying set of major environmental influences which shape the occurrence of flora and fauna and their interaction with the physical environment across Australia. The bioregion information enables a high–level desktop understanding of the different landscapes of the Study Area.

As defined by IBRA 7.0 (2012), the Site and Study Area are divided in a north south direction by two IBRA regions, with areas in the west situated within the Jarrah Forest (JAF) region and the Northern Jarrah Forest (JAF01) subregion, whilst areas to the east are within the Avon Wheatbelt (AVW) region and the Katanning (AVW02) subregion. The descriptions for the sub-regions that accompany IBRA 7.0 are not currently published. However, the *A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002* report compiled by the Department of Conservation and Land Management (DCLM, 2002) contains descriptions of these areas, which have been adapted and provided in Table 13.

Table 13 IBRA subregion descriptions

IBRA subregion name, code and total area (ha)	Description (DCLM, 2002)
Katanning AVW02 2,992,99 ha	The Avon Wheatbelt is an area of active drainage dissecting a Tertiary plateau in Yilgarn Craton. Gently undulating landscape of low relief. Proteaceous scrub heaths, rich in endemics, on residual lateritic uplands and

IBRA subregion name, code and total area (ha)	Description (DCLM, 2002)
	derived sandplains; mixed eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands on Quaternary alluvials and eluvials. Within this, AW2 is the erosional surface of gently undulating rises to low hills with abrupt breakaways. Continuous stream channels that flow in most years. Colluvial processes are active. Soil formed in colluvium or in-situ weathered rock. Includes woodland of Wandoo, York Gum and Salmon Gum with Jam and Casuarina.
Northern Jarrah Forest JAF01 1,898,803 ha	Duricrusted plateau of Yilgarn Craton characterised by Jarrah-Marri forest on laterite gravels and, in the eastern part, by woodlands of Wandoo - Marri on clayey soils. Eluvial and alluvial deposits support Agonis shrublands. In areas of Mesozoic sediments, Jarrah forests occur in a mosaic with a variety of species-rich shrublands. The climate is Warm Mediterranean. Northern Jarrah Forest incorporates the area east of the Darling Scarp, overlying Archaean granite and metamorphic rocks of an average elevation of 300 m, capped by an extensive lateritic duricrust, dissected by later drainage and broken by occasional granite hills. In the east the laterite becomes deeply dissected until it compresses isolated remnants. Rainfall is from 1300 mm on the scarp to approximately 700 mm in the east and north. Vegetation comprises Jarrah - Marri forest in the west with Bullich and Blackbutt in the valleys grading to Wandoo and Marri woodlands in the east with Powder bark on breakaways. There are extensive but localised sand sheets with Banksia low woodlands. Heath is found on granite rocks and as a common understorey of forests and woodlands in the north and east. The majority of the diversity in the communities occurs on the lower slopes or near granite soils where there are rapid changes in site conditions.

6.3.3 Soil Landscape Mapping

Soil landscape mapping indicates that there are two zones within the Study Area, with areas in the east associated with the Eastern Darling Range Zone, and areas in the west, and the majority of the Study Area located within the Southern Zone of Rejuvenated Drainage. These zones and the systems (which consist of a range of land units) present within them are described in Table 14.

Table 14: Soil Landscape Mapping Zones and Systems within the Study Area

Eastern Darling Range Zone	
Moderately to strongly dissected lateritic plateau on granite with eastward-flowing streams in broad shallow valleys, some surficial Eocene sediments. Soils are formed in laterite colluvium or weathered in-situ granite.	
System	Description
Marradong Upland System (lateritic plateau)	Plateau remnants, in the central Eastern Darling Range, with sandy gravel, loamy gravel, grey deep sandy duplex and loamy duplex. Jarrah-marri-wandoo forest and woodland.
Quindanning System (valley system)	Deep granitic valleys, in the northern and central Eastern Darling Range, with deep sandy duplex soils, shallow sand, loamy duplex and bare rock. Marri-wandoo-york gum-jam woodland.

Eulin Uplands System (upland system)	Plateau remnants, in the south of the Eastern Darling Range (Blackwood Catchment). Gravel, sandy duplex soil and wet soil. Jarrah-marri-wandoo forest and woodland.
Darkan System (dissected edge of lateritic plateau)	Undulating rises and rolling low hills, in the south of the Eastern Darling Range (Blackwood Catchment). Gravels (mostly sandy) and grey sandy duplex (mostly deep). Wandoo-jarrah-marri woodland.
Beaufort System (valley system)	Broad valley floors, in the southern Zone of Rejuvenated Drainage (Blackwood Catchment). Grey sandy duplex soils and saline wet soils. Wandoo-sheoak-jam woodland. Located along the Beaufort, Carlecatup and Hillman Rivers.
Southern Zone of Rejuvenated Drainage	
Erosional surface of gently undulating rises to low hills. Continuous stream channels that flow in most years. Colluvial processes are active. Soils formed in colluvium or in-situ weathered rock.	
System	Description
Dryandra System (upland system)	Gently undulating granitic terrain, in the central Zone of Rejuvenated Drainage, with deep sandy duplex, loamy duplex and brown loamy earth. Wandoo-Sheoak woodland.
Narrogin System (upland system)	Interfluves with significant gradient, aggressively stripped by headward incision, at the headwaters of the Hotham and Blackwood catchments. Numerous dolerite dyke swarms.
Dellyanine System (upland system)	Undulating rises and low hills on granite, with frequent granitic rocky and dissected laterite uplands, in the southern Zone of Rejuvenated Drainage. Grey sandy duplex (shallow and deep), sandy gravel and red deep sandy duplex. Wandoo-Sheoak woodland, flooded gum and York gum vegetation.
Pumphreys Bridge System (valley system)	Valley floors associated with the Dryandra System, in the central Zone of Rejuvenated Drainage, with deep sandy duplex, pale deep sand and wet soil (often saline). Wandoo-sheoak-jam woodland, tea tree scrub and samphire flats.
Whinbin System (upland system)	Undulating rises, in the southern Zone of Rejuvenated Drainage. Grey sandy duplex (mostly deep), sandy gravel and alkaline red shallow loamy duplex. Wandoo-Sheoak woodland.
Arthur River System (valley system)	Broad valley floors, occurs along the Arthur River, Blackwood Catchment north of Wagin in the southern Zone of Rejuvenated Drainage. Saline wet soil, salt lake soil, grey sandy duplex. Wandoo woodland, Ti-tree scrub and samphire flats.

The Site includes areas within the Dryandra, Narrogin, Dellyanine, Marradong Upland and Quindanning systems, and is dominated by yellow/brown deep sandy duplex soils, whilst grey deep sandy duplex soils, brown deep loamy duplex soils, deep sandy gravels, duplex sandy gravels, loamy gravels and areas of bare rock also occur. These granitic and alluvial soils are fertile and consequently support farmland across the Site and within the surrounding Wheatbelt area. In addition, mesas or 'mallet hills' and breakaways (a landform found on the edge of a plateau or plateau remnant, where a relatively flat lateritic upland ends abruptly in a low scarp above a debris slope) are a common feature

of the rejuvenated drainage zone (Department of Primary Industries and Regional Development, 2010).

6.3.4 Vegetation communities

Large contiguous areas of remnant vegetation are typically contained to national parks, nature refuges, reserves and state forests (described in **Section 6.4: Land use, tourism, and** recreation), while riparian corridors, road reserves also support some vegetation and smaller isolated patches also occur throughout the rural landscape. There is a strong relationship between soil types and remnant vegetation. As described in **Table 13** and **Table 14**.

6.4 Land use, tourism, and recreation

According to the Catchment Scale Land Use of Australia – Update 2020 dataset (Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), 2021), existing land use within and adjacent to the Study Area is predominantly rural and dominated by cropping (including canola, and cereal crops such as wheat, oats and barley) and grazing (including sheep and beef cattle) on modified pastures. The areas around Narrogin and Williams support urban development, recreational uses, manufacturing, and industrial uses (such as bulk grain storage) and rural living on acreage properties. There are no mining tenements within the site boundary, however, there are some active and proposed exploration licences within the broader area (Department of Mines, Industry, Regulation and Safety, 2023).

As noted above, areas of residual native vegetation cover are largely confined to national parks, nature refuge, reserves, and state forests (which also support some plantation forestry), whilst smaller patches of vegetation are scattered throughout the landscape and associated with riparian corridors (ABARES, 2021). As described in the Wheatbelt Region Parks and Reserves Management Plan (Western Australia Conservation and Parks Commission, 2019):

Rapid and extensive agricultural development of the Wheatbelt from the early 1900s has led to what today is one of the most productive cropping regions in Australia. However, little natural vegetation remains, with 57 percent of the South West Botanic Province (SWBP), more than 80 percent of the Avon Wheatbelt bioregion and more than 90 percent of some parts of the Wheatbelt Region cleared.

There is one national park within the Study Area; Dryandra Woodland National Park. The nearest part of the national park is situated approximately 20 m to the north of the Site and approximately 3.7 km from the nearest wind turbine. The national park was declared a national park in January 2022, and includes former areas Lol Gray State Forest and Montague State Forest (Department of Biodiversity, Conservation and Attractions (DBCA), 2023).

The Dryandra Woodland National Park is part of the 28,351 ha Dryandra Woodland, which is comprised of seventeen areas within the national park, Lol Gray State Forest, Montague State Forest, and nature reserves. The Dryandra Woodland is a popular tourism destination (with 69,529 annual visits during 2016-2017 (DBCA, 2021)) provides numerous opportunities for visitors to enjoy the park, including:

- Contine Hill, a historic site, picnic area and lookout that provides ‘spectacular views across a wide, sweeping landscape of forested hills and farmland’. The short

Breakaway Walk starts at the picnic area and provides 'expansive views illustrating the contrast between farmland and the original dryandra woodland which existed before extensive clearing' (DBCA, 2023).
- Old Mill Dam, which includes a picnic area and provides access to the Woylie Walk and Wandoo Walk (a trail developed for night-time experiences)
- Lol Gray picnic area, which is the starting point for the Lol Gray Loop and longer Lol Gray Trail, which provides 'spectacular views over Dryandra' (DBCA, 2023).
- Congelin Dam, picnic area and the Congelin Siding Walk
- Barna Mia animal sanctuary, which provides a guided nocturnal wildlife experience.
- Irabina Study Centre, a small education space
- Dryandra arboretum, a 'living gallery' of different tree species with a picnic area.
- The Ochre Trail, accessed from Tomingley Road.
- Congelin and Gnaala Mia campgrounds
- The State heritage listed Lions Dryandra Woodland Village which provides accommodation and access to the Kawana Walk
- The Darwinia Drive, a 23 km long interpretive drive trail that traverses parts of the national park.
- The Sounds of Dryandra Woodland audio drive trail, a 25 km drive trail (DEC, 2011).
- The Three Mesas Walk and the Kwongan Walk within the 'Candy Block' (Doug Swakins, 2015).

There are no other nationally protected landscapes located within or adjacent to the Study Area. However, there are numerous nature reserves and timber reserves including two small nature reserves areas immediately adjacent to the Site boundary. These reserves are primarily important for the protection of flora, fauna and biodiversity values rather than scenic amenity values and generally provide for informal recreation use, apart from the following:

- Williams Nature Reserve located approximately 800 m west of Williams, which includes a picnic area, the 1.5 km Echidna trail, and a lookout (Sawkins, 2023).
- Highbury Nature Reserve, which is located within the township of Highbury 15 km south of Narrogin, is a wildflower hotspot, and includes the Highbury Walk Trail (Trails WA, 2023),
- The Newman Block (part of an unnamed nature reserve that was previously part of Highbury State Forest), which is situated 24 km southwest of Narrogin and includes two walking trails, the Orchid Walk and the Sandplain Walk (Doug Sawkins, 2018).

Several additional recreation parks and reserves managed by local shires provide additional opportunities for recreation and are local tourist attractions within the Study Area, including:

- Foxes Lair, situated to the immediate west of the town of Narrogin, which includes three picnic areas and several recreation trails including the Banksia Circuit, Breakaway Circuit, Valley Circuit, Clayput Circuit, Granite Trail, and the Griffo Circuit (a mountain bike trail). The Breakaway Circuit provides opportunities for elevated views across the region (Doug Sawkins, 2015)
- The Narrogin arboretum, located to the east of Foxes Lair
- Yilliminning Rock Reserve located 19 km east of Narrogin, which includes a picnic area, the George Brockway Tree and 'an impressive 48 m high granite inselberg

which offers panoramic views over the surrounding bush and farmland' (Doug Sawkins, 2016 and Shire of Narrogin, 2023)
- Railway Dam located in Narrogin is a free camp site and includes a picnic area, a jet boat course, and two walks, the Dam Walk and the Archibald Park Walk (Shire of Narrogin, 2023 and Doug Sawkins, 2023)
- Gnarojin Park located in Narrogin on Narrogin Brook, which includes the Narrogin Recreation Trail, Noongar Dreaming Path and the Centenary Path (Shire of Narrogin, 2023)
- Yornaning Dam located approximately 22 km northeast of the Site includes picnic facilities, barbeques, and provides opportunities for swimming and access to the Yornaning Dam Tea Tree Trail and the Yornaning Dam Catchment Trail (Shire of Cuballing, 2023).

Several promoted tourist drives and trails are also located within the Study Area, including:

- The *Great Southern Drive* that follows the Albany Highway (Tourism Western Australia (TWA), 2024)
- The *Wineries, Woodlands and Wheatbelt Trail*, which includes the towns of Narrogin and Williams as well as Foxes Lair, Railway Dam, Gnarojin Park, Lake Toolibin, Barna Mia, Williams Nature Reserve and Downderry Wines as key destinations to visit (Australia's Golden Outback, 2021)
- The *Dryandra Woodland Drive*, a 560 km round trip from Perth to Narrogin which includes Narrogin, Yornaning Dam, Popanyinning, Cuballing and Dryandra Woodland as part of its itinerary (RAC Travel, 2017)
- The *Narrogin Heritage Trail*, a 117 km drive loop between Narrogin and Williams that incorporates several roads including the Great Southern Highway, Wandering-Narrogin Road, Cuballing Road, Spouse Road, Clayton Road, Rosedale Road, Williams-Narrogin Road, Cowcher Road, Manaring Road, Graham Road, Dumberning Road, Cooraminning Road, Katta Road and Marsh Street (Western Australian Heritage Committee (WAHC), 1988)
- The *Narrogin Townsite Trail*, a 14 km drive trail within Narrogin (WAHC, 1988)
- The *Williams Heritage Trail*, which includes a 1 km walk along the main street of Williams and a 35 km scenic drive to Quindanning (WAHC, 1988)
- The *Darwinia Drive* and *Sounds of Dryandra Woodland* scenic drive trails within Dryandra Woodland National Park (DEC, 2011)
- A promoted 17 km scenic tourist drive from Narrogin to Yilliminning Rock (TWA, 2024) that follows Boundain North Road, Marramucking Road, Cannell Road, Birdwhistle Road and Yilliminning Road which takes visitors to the old Yilliminning townsite, historic Marramucking Well and Yilliminning Nature Reserve (Doug Sawkins, 2016).

Areas within the Study Area also attract visitors on account of their astrotourism appeal (Astrotourism Western Australia, 2024), including:

- Narrogin which is identified as an 'astrotourism town'
- Narrogin Golf Club which is identified as an 'observing site'
- Yilliminning Rock and Contine Hill which are identified as 'astrophotography hot spots' and located on the Astrophotographers' Paradise Trail.

A range of other facilities and attractions are present within the Study Area, including the Dryandra Country Visitor Centre and Lions Lookout (within Narrogin), Highbury Townsite, Narrogin Gliding Club (which operates out of Narrogin Aerodrome, approximately 1.3 km northeast of the Site), Downderry Wines (approximately 4.9 km southeast of the Site), Western Australian College of Agriculture Narrogin (approximately 3.1 km east of the Site) and the Collie Darkan Rail Trail, which will introduce additional sensitive receptors into the area.

6.5 Regional landscape character

Reading the Remote: Landscape Characters of Western Australia (CALM, 1994) provides an inventory of the diverse and unique landscapes in Western Australia and provides a broad scale framework for describing landscape character values, including with consideration of aesthetic values associated with LCTs. The study also defines Landscape Character Sub Types, which are distinctive subdivisions within broader LCTs.

At the regional level, the site is located within the Dryandra Uplands Landscape Character Sub Type of the Wheatbelt Plateau LCT, while western parts of the Study Area are within the Darling Uplands Landscape Character Sub Type of the Darling Plateau LCT (CALM, 1994). Descriptions of the Dryandra Uplands and Darling Uplands Landscape Character Sub Types are reproduced in **Appendix 3**. *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) also identifies the scenic qualities of landscape features within the Dryandra Uplands and Darling Uplands Sub Types (refer **Appendix 3**), which have informed the landscape character assessment.

These boundaries generally accord with landscape units depicted on Map 6 of the *Wheatbelt Regional Planning and Infrastructure Framework*, which identifies eastern and western parts of the Study Area as within the 'Wheatbelt' and 'Hills' landscape units respectively.

7. Landscape assessment

7.1 Landscape character baseline

Six LCTs have been identified within the Study Area informed by a review of broad scale landscape units identified in *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) and the *Wheatbelt Regional Planning and Infrastructure Framework*; the IBRA, pre-European vegetation mapping (DPIRD, 2024) and soil landscape mapping datasets (DPIRD, 2022); and the findings of fieldwork investigations. These LCTs and their associated LCAs (where appropriate) are identified in **Figure 6** and **Table 15**.

Table 15 : Landscape Character Types and Areas

Landscape Character Type (LCT)	Landscape Character Areas (LCAs)	Potential Project impact
LCT A: Rural and Forested Uplands	LCA A1: Dryandra – Narrogin Rural and Forested Uplands	Direct
	LCA A2: Eastern Darling Range Rural and Forested Uplands	Indirect
	LCA A3: Dellyanine – Whinbin Rural and Forested Uplands	Indirect
LCT B: Major Watercourses[2]	LCA B1: Hotham River major watercourse and tributaries	Indirect
	LCA B2: Fourteen Mile Brook major watercourse	Indirect
	LCA B3: Crossman River major watercourse and tributaries	Indirect
	LCA B4: Williams River major watercourse and tributaries	Direct
	LCA B5: Hillman River major watercourse	Indirect
	LCA B6: Arthur River major watercourse	Indirect
	LCA B7: Daradine Gully major watercourse	Indirect
	LCA B8: Narrogin Brook major watercourse	Indirect
	LCA B9: Buchanan River major watercourse	Indirect

[2] Also includes major tributaries of noted watercourses where present.

Landscape Character Type (LCT)	Landscape Character Areas (LCAs)	Potential Project impact
LCT C: Broad alluvial plains	LCA C1: Arthur River broad alluvial plains	Indirect
	LCA C2: Hillman River broad alluvial plains	Indirect
LCT D: Rural settlements[3]	LCA D1: Narrogin Rural Settlement	Indirect
	LCA D2: Williams Rural Settlement	Indirect
	LCA D3: Cuballing Rural Settlement	Indirect
	LCA D4: Highbury Rural Settlement	No Impact
	LCA D5: Popanyinning Rural Settlement	No Impact
	LCA D6: Piesseville Rural Settlement	No Impact
	LCA D7: Yornaning Rural Settlement	No Impact
	LCA D8: Dryandra Woodland Rural Settlement	Indirect
LCT E: Reserves and Forests	LCA E1: Dryandra Woodland Reserves and Forests	Indirect
	LCA E2: Highbury Reserves and Forests	Indirect
	LCA E3: Williams Reserve and Forest	Indirect
	LCA E4: Foxes Lair Reserve and Forest	Indirect
	LCA E5: White Road Reserve and Forest	Indirect
	LCA E6: Thomas Hogg Reserves and Forests	Indirect
	LCA E7: Lions Reserve and Forest	Indirect
	LCA E8: Marramucking Reserve and Forest	Indirect
	LCE E9: Yilliminning Reserves and Forests	Indirect
	LCE E10: Newman Reserves and Forests	Indirect
LCT F: Granite Outcrops	LCA F1: Yilliminning Rock Granite Outcrop	Indirect

7.2 Landscape character assessment

Only two LCTs identified within the Study Area is anticipated to be directly impacted by the Project, *LCT A: Rural and forested uplands* (*LCA A1: Dryandra – Narrogin Rural and Forested Uplands*) and *LCT B: Major Watercourses*. The likely sensitivity of LCT A and an assessment of the likely magnitude of change and significance of the effect of the Project on the landscape amenity values of this LCT are described in **Table 16**.

[3] Also includes the heritage listed Dryandra Woodland Settlement

Impacts on *LCT B: Major Watercourses* have not been assessed in detail. While small parts of *LCA B4: Williams River major watercourse and tributaries* are located within the Site, the layout of the access road network is not yet available. It is however understood that several watercourse crossings will be required. These will be located within the Site and typically be collocated with existing watercourse crossings. While these crossings will likely require some level of upgrade (culverts or floodway), any impacts on the character of these watercourses is anticipated to be highly localised and would not result in a significant impact to the overall character of this LCT.

Other LCTs present in the wider Study Area are not directly impacted by the Project as they do not occur within the Project footprint and have therefore not been assessed in detail. A high-level assessment of the sensitivity of these LCTs and their associated LCAs and the likely magnitude of change and significance of the indirect effect of the Project on their landscape amenity values (i.e., landscape setting) is provided in **Section 7.3: Summary of landscape impact assessment** and **Table 17**.

7.2.1 Landscape Character Type A

Table 16: Summary description of LCT A

Type A: Rural and forested uplands	
Landscape baseline assessment	
Location and boundaries	Associated with undulating and rolling rises to dissected low hills and plateau remnants that support agricultural land uses and some patches of vegetation, forming a rural farmland mosaic. There are three LCAs of this type in the Study Area which have been defined based on subtle variations in terrain, geology, vegetation, and soils, as such, these boundaries are diffuse. The Project is located within and will directly impact the Dryandra – Narrogin Rural and Forested Uplands (LCA A1). No direct impacts within LCA A2 and A3 are anticipated.
Typical character images:	

Broad open views across the gently undulating rural and forested landscape (LCA A1)

Rural structures and historic buildings contribute to the agricultural character of the landscape (LCA A1)

Existing high voltage transmission lines (LCA A1)

Densely vegetated roadside shelterbelts are typical of this LCT (LCA A1)	*Sedgelands and Eucalyptus spp. along a tributary of Geeralying Brook (LCA A1)*	*View along Williams-Kondinin Road showing dense roadside vegetation (LCA B1)*
		
Narrogin Aerodrome and Gliding Club (LCA A1)	*Elevated and distant views across the rural and forested landscape (LCA A2)*	*Rural grazing land with small granite outcrops and boulders (LCA B3)*

Key characteristics	• Sparsely settled landscape, with isolated homesteads, typically located on hillsides overlooking gullies and in small creek valleys or on gently elevated locations. Historic buildings and sites contribute to this LCTs agricultural character. • Dominated by agricultural land uses (cereal crops and pasture) with associated rural infrastructure including sheds, barns, rural dams and fencing. • Undulating and rolling rises to dissected low hills, typically between 200 m and 450 m AHD with higher elevations associated with areas in the vicinity of Contine Hill (420 m AHD), Saunders Hill (438 m AHD), Wanerie Katta (377 m AHD) and Kondening Katta (330 m AHD). • These elevated areas are interspersed with level plains and gently inclined rises associated with watercourses. • Stands and patches of vegetation – particularly associated with reserves, roadside shelterbelts, fences, watercourses, outcroppings of granite and local variations in topography – create visual interest in the landscape and contrast strongly with agricultural areas. Where vegetation along roadsides is dense, views across the rural landscape are restricted. • Western parts of the Study Area are dominated by mixed woodlands comprising *Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri) and *Eucalyptus wandoo* (wandoo), while areas in the east are dominated by *Eucalyptus loxophelba* (york gum), *Eucalyptus salmonophloia* (salmon gum), *Acacia acuminata* (jam) and *Allocasuarina huegeliana* (rock sheoak) woodlands. Heath, *Eucalyptus accedens* (powderbark), *Eucalyptus astringens* (brown mallet) and *Eucalyptus wandoo* (wandoo) also occur on isolated mesas and breakaways. • This LCT contains the headwaters of several tributaries of major watercourses and creeks throughout the Study Area (LCT B). Vegetation along these watercourses and drainage lines is dominated by *Eucalyptus loxophelba* (york gum), *Eucalyptus rudis* (flooded gum) and sedgelands. • Presence of mesas and lateritic breakaways (most evident within LCA A1) and small granitic rocky outcrops (most evident within LCA A3).
Precedent modifications and infrastructure elements	• Highly modified landscape for agricultural practices, including clearing of land for cropping and grazing. • Traversed by the Great Southern Railway line and the Albany Highway, Great Southern Highway, Williams-Kondinin Road, Pinjarra-Williams Road, Collie Williams Road, and several other regional and

	local distributor roads. Other local access roads and tracks (typically unsealed) provide access throughout this LCT including to private properties. • Where roads and access tracks traverse watercourses located throughout this LCT, bridge and culvert infrastructure are often present. • Presence of telecommunication infrastructure, high voltage transmission lines and above-ground water pipelines. • The Narrogin Aerodrome is located within this LCT (LCA A1).
Landscape character sensitivity assessment	• Considered to be representative of typical rural landscape qualities within the Wheatbelt (i.e., a common Landscape Type) • Generally, a low degree of perceived naturalness and intactness, except for areas containing large tracts of remnant or regrowth vegetation, such as areas within reserves. • Somewhat remote, except for areas in proximity to towns, highways, and major roads. • This LCT is predominantly visually open, and long distant views are possible in areas where extensive vegetation clearance enables panoramic views to distant horizons, particularly when viewed from elevated areas. • No parts of this LCT are protected on account of their landscape or scenic amenity values. • This LCT contains some localised areas supporting landscape elements of high scenic quality (WAPC, 2020 and Calm, 1994) including: o Well defined V-shaped or U-shaped valleys (e.g., Hotham River and Blackwood River valleys) o Areas of remnant native vegetation of a natural appearance exhibiting an attractive diversity of colour, height and species that contrasts strongly with the surrounding landscape. • This LCT also contains landscape elements of moderate scenic quality (WAPC, 2020 and CALM, 1994) including: o Undulating country which is not visually dominate but is surrounded by similar landforms. o Minor rock outcroppings o Broad or shallow valleys and tributaries o Seasonal wetlands, intermittent streams, and creek lines o Open forest and woodland combined with natural openings and species mix in patterns that offer some visual and structural diversity and moderately contrast with the surrounding landscape (e.g., riparian and roadside remnant vegetation). • Traversed by several scenic routes including the *Great Southern Drive*, *Narrogin Heritage Trail*, and the Narrogin to Yilliminning Rock tourist drive. • Generally, this LCT (including areas within the Site) is considered to contain landscapes of moderate scenic value. Due to the harmonious but typical rural character, regional and local value of the landscape and absence of any formal landscape planning designations, it is considered that this landscape has some capacity to accommodate the changes proposed. Therefore, the overall inherent sensitivity of large parts of this landscape is considered to be ***medium***. • However, the sensitivity of areas supporting landscape features acknowledged as having high scenic value (e.g., distinctive valleys

	and areas of diverse and visually interesting remnant vegetation) is ***high*** (noting that none of these areas are directly impacted by the Project).
Landscape evaluation	
Magnitude of change assessment	• Parts of LCA A1 are within the Site and directly impacted by proposed wind turbine locations and ancillary infrastructure including construction compounds and laydown areas, temporary telecommunications infrastructure, powerlines, meteorological masts, and access roads. • Within LCA A1, the magnitude of change is anticipated to be considerable due to the following factors: o Localised vegetation clearing to accommodate wind turbines and access tracks (albeit noting that this is anticipated to be minimal as extensive parts of this LCT are already cleared). o The introduction of new, large–scale infrastructure within what is currently a relatively undeveloped rural landscape. • Therefore, it is anticipated that the Project will have a clearly evident impact on the landscape character of this LCT, due to direct impacts on areas of medium scenic value. However, as these impacts are not wide-ranging and are limited to part of LCA A1, it is considered that this represents a ***medium*** magnitude of change. • Indirect impacts on areas of high scenic value (such as those supporting contiguous areas of remnant vegetation) near the Project are considered to represent a ***low*** magnitude of change (as the presence of wind turbines will impact on the setting of these landscapes, however, will not fundamentally change their landscape character). • Other parts of this LCT within LCA A2 and A3 are not directly impacted by the project. Therefore, any impacts on these LCAs would be indirect. • It is also noted that should the project be decommissioned, the removal of the wind turbines and Site remediation would allow for the landscape to be returned largely to its current visual condition over time i.e., the impacts on the landscape character of this LCT are considered to be largely reversible.
Significance of effect	• The effect of the Project on *LCT A: Undulating and grazed uplands* is considered to be up to ***moderate*** and therefore, ***not significant.***

7.3 Summary of landscape impact assessment

The landscape character assessment has defined six LCTs within the Study Area, informed by a review of broad scale landscape units identified in Reading the Remote: Landscape Characters of Western Australia (CALM, 1994) and the Wheatbelt Regional Planning and Infrastructure Framework; the IBRA, pre-European vegetation mapping (Department of Primary Industries and Regional Development (DPIRD), 2024); soil landscape mapping datasets (DPIRD, 2022); and the findings of fieldwork investigations.

The presence of scenic landscape elements as identified in Wheatbelt Region parks and reserves management plan 95 2021 (DBCA, 2021), Reading the Remote: Landscape Characters of Western Australia (CALM, 1994), and the Shire of Narrogin Planning Strategy (WAPC, 2020) have been considered within the definition of LCTs and the assessment of sensitivity ratings in the landscape character assessment where applicable.

Based on the landscape character assessment described in **Section 7.2: Landscape character assessment** and the method for assessing landscape significance set out in **Table 5**, a summary of the baseline analysis and overall likely landscape impact anticipated during the operation of the Project is provided for each LCT in **Table 17.**

Table 17: Summary of landscape impact assessment

LCT and LCA	Sensitivity	Magnitude of change	Significance of effect
LCT A: Rural and forested uplands			
LCA A1: Dryandra – Narrogin Rural and Forested Uplands	Medium (general rural areas)	Direct – medium	Moderate
	High (reserves)[4]	Indirect – low	Moderate
LCA A2: Eastern Darling Range Rural and Forested Uplands	Up to high	Indirect – low	Up to Moderate
LCA A3: Dellyanine – Whinbin Rural and Forested Uplands	Up to High	Indirect – low	Up to Moderate
LCT B: Major watercourses			
LCA B1: Hotham River major watercourse and tributaries	Up to High	Indirect – negligible	Minor to Moderate
LCA B2: Fourteen Mile Brook major watercourse	Medium	Indirect – negligible	Minor
LCA B3: Crossman River major watercourse and tributaries	Up to High	Indirect – negligible	Minor to Moderate

[4] Associated with state and council owned land reserves and contiguous areas of remnant vegetation within private ownership.

LCT and LCA	Sensitivity	Magnitude of change	Significance of effect
LCA B4: Williams River major watercourse and tributaries	Up to High	Direct – negligible	Minor to Moderate
LCA B5: Hillman River major watercourse	Up to High	Indirect – negligible	Minor to Moderate
LCA B6: Daradine Gully major watercourse	Medium	Indirect – negligible	Minor
LCA B7: Arthur River major watercourse	Up to High	Indirect – negligible	Minor to Moderate
LCA B8: Narrogin Brook major watercourse	Medium	Indirect – negligible	Minor
LCA B9: Buchanan River major watercourse	Medium[5]	Indirect – negligible	Minor
LCT C: Broad alluvial plains			
LCA C1: Arthur River broad alluvial plains	Low	Indirect – negligible	Minor to negligible
LCA C2: Hillman River broad alluvial plains	Low	Indirect – negligible	Minor to negligible
LCT D: Rural Settlements			
LCA D1: Narrogin Rural Settlement	High	Indirect – negligible	Minor to moderate
LCA D2: Williams Rural Settlement	High	Indirect – low	Moderate
LCA D3: Cuballing Rural Settlement	High	Indirect – negligible[5]	Minor to moderate
LCA D4: Highbury Rural Settlement	High	No impact	No impact
LCA D5: Popanyinning Rural Settlement	High	No impact	No impact
LCA D6: Piesseville Rural Settlement	Medium	No impact	No impact
LCA D7: Yornaning Rural Settlement	Medium	No impact	No impact
LCA D8: Dryandra Woodland Rural Settlement	High	Indirect – negligible[6]	Minor to moderate
LCT E: Reserves and Forests			

[5] Whilst the Buchanan River is a major watercourse, it is not considered representative of a watercourse of high scenic quality due to the impacts of dryland salinity on this system within the Study Area.
[6] While the landscape setting of Cuballing and Dryandra Woodland Settlement are not anticipated to be affected by the Project, the precautionary principle has been applied in this instance, to account for changes in existing screening vegetation structure (e.g., due to clearing or natural events such as bushfire).

LCT and LCA	Sensitivity	Magnitude of change	Significance of effect
LCA E1: Dryandra Woodland Reserves and Forests	High	Indirect – low	Moderate
LCA E2: Highbury, Reserves and Forests	High	Indirect – negligible	Minor to Moderate
LCA E3: Williams Reserves and Forests	High	Indirect – low	Moderate
LCA E4: Foxes Lair Reserves and Forests	High	Indirect – negligible	Minor to Moderate
LCA E5: White Road Reserves and Forests	Medium	Indirect – negligible	Minor
LCA E6: Thomas Hogg Reserves and Forests	Medium	Indirect – negligible	Minor
LCA E7: Lions Reserves and Forests	High	Indirect – negligible	Minor to Moderate
LCA E8: Marramucking Reserves and Forests	Medium	Indirect – negligible	Minor
LCA E9: Yilliminning Reserves and Forests	High	Indirect – negligible	Minor to Moderate
LCA E10: Newman Reserves and Forests	High	Indirect – negligible	Minor to Moderate
LCT F: Granite Outcrops			
LCA E1: Yilliminning Rock Granite Outcrop	High	Indirect – negligible	Minor to Moderate

8. Visual assessment

8.1 Visibility Analysis Mapping (VAM)

VAM has been produced to support the assessment of potential visual impacts associated with the Project, as outlined in Section 3.4: Preparation of visibility analysis mapping (VAM / ZTV).

The VAM represents the locations within the Study Area within which the Project may theoretically be seen (i.e. wind turbines may potentially be visible), based on terrain data alone. This is determined through a GIS process that generates 'digital cross sections' to determine areas where landform would block views of all (or, where stated in some cases, part) of the wind turbines. A preliminary VAM was used to inform the (preliminary) selection of representative viewpoints and to inform the fieldwork.

Based on the identification of key issues associated with the baseline assessment, four VAM maps have been produced based on the Site layout and proposed maximum wind turbine height. The Project is modelled on:

- Figure 7: Blade Tip ZTV Assessment – Zone of Theoretical Visibility, which shows the area from which it is theoretically possible to see any blade tip (part or whole wind turbine) on the Site (up to 25 wind turbines) and, conversely, the area from which it will not be possible to see any wind turbine blade tips (part or whole wind turbine).
- Figure 8: Blade Tip ZTV Assessment – Number of Visible Wind turbines, which indicates how many tips (whole or parts of any wind turbines) would potentially be visible – categorised by a gradient scale indicating from 1 to 25 wind turbines visible.
- Figure 9: Hub Height ZTV Assessment – Zone of Theoretical Visibility, which shows the area from which it is theoretically possible to see any wind turbine hub (hub or whole wind turbine) on the Site (up to 25 wind turbines) and, conversely, the area from which it will not be possible to see any wind turbine blade tips (part or whole wind turbine).
- Figure 10: Hub Height ZTV Assessment – Number of Visible Wind turbines, which indicates how many wind turbine hubs (junction of wind turbine blades and wind turbine) would potentially be visible – categorised by a gradient scale from 1 to 25 wind turbine hubs visible.

The potential visibility of ancillary infrastructure elements (e.g., BESS, access roads and the substation) was not modelled, as it is considered that compared to the scale of the wind turbines, the visibility of these Project components would be more localised.

Figure 7 to Figure 10 in Appendix 1 show that the Project is theoretically visible within a relatively large portion of the Study Area due to the height of the wind turbines. In interpreting this data, the influence of the undulating and elevated terrain within the Study Area is apparent, particularly beyond approximately 5 km from the Site.

Areas with limited theoretical visibility towards the Project are generally associated with low-lying areas situated at some distance from the Project where potential views are obscured due to intervening undulating topography. This is particularly evident in the western part of the Study Area, where the terrain is more dissected and complex, with

deeper valleys and steeper hills and in the north and northeast. The effect of topography on limiting the availability of views toward the Project is also evidenced within Narrogin, Popanyinning, Cuballing, Highbury, and Piesseville.

There are also several areas throughout the Study Area where only partial visibility of the Project occurs (1-15 wind turbines) (Refer Figure 8 and Figure 10). These locations are typically associated with the lower parts of Site–facing slopes of undulating terrain within the Study Area where views are more restricted by intervening topographical elements.

Most expansive views of the Project where up to 25 wind turbines are theoretically visible (based on terrain data alone) are typically obtained from locations in close proximity to wind turbines, or in elevated areas or lower lying and open plains at some distance from the Site with clear views towards the Project (e.g., localised areas within the township of Williams with open, unobstructed views toward the Site, areas traversed by the Albany Highway, Williams-Kondinin Road, Clayton Road and areas to the east of Highbury).

However, many of these potential views (apart from elevated views with clear visibility of the Site) have the potential to be restricted by local screening elements such as vegetation (particularly forested areas and roadside shelterbelts). As such, it is considered that in many instances the actual visibility of the Project would be far less than indicated. It is also acknowledged that within Narrogin and Williams, the presence of urban development, vegetation and infrastructure may also further limit visibility of the Project.

It is also acknowledged that as viewing distance increases, the dominance of wind turbines within the landscape is considered to be reduced, as they comprise a relatively smaller part of the overall landscape view. Contrarily, in locations where close views towards wind turbines are possible, the visual impact may be more dominant due to proximity of the viewer to the Project.

8.2 Visual audiences and viewpoint selection

The visual baseline has been assessed and is described in terms of potential for views to be obtained by selected visual audiences within the Study Area.

It is considered that the viewers (visual receptors) who may experience views of the Project are likely to include:

- Residents living in settlements around the Site, including Williams and Narrogin.
- Residents living on rural properties in the farmland on and surrounding the Site (including houses and homesteads – some of which provide short-stay accommodation for visitors to the region).
- Farmers and other people working in the rural landscape around the Site.
- Visitors and workers at Narrogin Aerodrome, including recreational ‘gliders’
- Visitors and staff at Downderry Wines.
- Students and staff at the Western Australian College of Agriculture Narrogin (noting that views from the campus are somewhat restricted by terrain and vegetation).
- Any recreational users of the landscape, particularly those visiting Dryandra Woodland National Park, accessing scenic lookouts (e.g., Contine Hill and Lions Lookout) and staying at the State Heritage listed Dryandra Woodland Settlement or campgrounds (noting that views from these areas are largely restricted by local vegetation).

- Motorists using key roads within the Study Area, particularly Williams-Kondinin Road and Clayton Road which traverse the Site, and other key roads within the Study Area, such as the Albany Highway, Great Southern Highway.
- Motorists accessing sections of Dryandra Woodland National Park, via Wandering - Narrogin Road, Dumberning Road and Tomingley Road.
- Travellers using smaller local roads within and around the Site such as Rosedale Road, Congelin - Narrogin Road and York-Williams Road, Hardie Road, Cornwall Road, Cowcher Road, Eddington Road and Bradford Road.
- Tourists passing through the Study Area by vehicle, particularly users of scenic routes around the Site including those within Dryandra Woodland National Park.

Based on an analysis of the VAM, the types of visual audiences and visual receptors likely to be affected by the Project, and the field investigation, seventeen viewpoints have been selected for detailed assessment **(Figure 11)**.

These viewpoints are considered representative of the receptors noted above with the potential to be impacted by the Project. They are also considered to represent in some instances the 'worst case' scenario for a range of likely viewers around the Study Area, as they include locations where the most receptors are likely to be present and are taken from areas with relatively open views. For example, representative views from towns and residential areas have been taken from the most elevated area or edge of the settlement where views are more open and accessible.

The views obtained from representative viewpoints are shown on **Figure 13** to **Figure 33** (**Appendix 1**) and summarised in **Table 18**.

Table 18: Representative viewpoints selection

Code	Description	Visual Audience
VP1	Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams	Represents typical views experienced by residents and visitors of Williams, including those recreating at the Williams Sports Pavilion.
VP2	Viewpoint 2: North-easterly view from Brooking Street, Williams	Represents typical views experienced by residents of and visitors to Williams and transient views experienced by those travelling in vehicles on Brooking Street.
VP3	Viewpoint 3: Northerly view from Munthoola Street, Williams	Represents typical views experienced by residents of Williams on the northern outskirts of the town, and transient views experienced by those travelling in vehicles on Munthoola Road.
VP4	Viewpoint 4: North-easterly view from the Albany Highway, Williams	Represents typical views of passing vehicles on the Albany Highway and similar views experienced by a low number of nearby rural residential receptors and rural workers in the area.
VP5	Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams	Represents typical views of passing vehicles on Williams-Kondinin Road and similar views experienced by a low number of nearby rural residential receptors and rural workers in the area.

Code	Description	Visual Audience
VP6	Viewpoint 6: North-westerly view from Geeralying Road, Dumberning	Represents typical views of passing vehicles on Geeralying Road, and similar views experienced by a low number of nearby rural residential receptors and rural workers in the area.
VP7	Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning	Represents typical views of passing vehicles on Tarwonga Road and similar views experienced by visitors to Downderry Wines and a low number of nearby rural residential receptors and rural workers in the area.
VP8	Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin	Represents typical views of passing vehicles on Williams-Kondinin Road and similar views experienced by a low number of nearby rural residential receptors and rural workers in the area.
VP9	Viewpoint 9: Westerly view from Lions Lookout, Narrogin	Represents typical views of visitors to Lions Lookout and similar views experienced from other elevated areas in the eastern parts of Narrogin.
VP10	Viewpoint 10: Westerly view from Wiese Road, Narrogin	Represents typical views experienced by residents of Narrogin on the western outskirts of the town and transient views experienced by those travelling in vehicles on Weise Road.
VP11	Viewpoint 11: Westerly view from the top of Yilliminning Rock, Boundain	Represents typical views experienced by visitors to Yilliminning Rock, within Yilliminning Rock Reserve.
VP12	Viewpoint 12A: Westerly view from Contine Hill Lookout in Lol Gray State Forest, Minigin	Represents typical views experienced by visitors to Contine Hill Lookout and Contine Hill picnic area, within Dryandra Woodland National Park. This includes those undertaking the nearby Breakaway Walk and Fire Tower Walk.
VP13	Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams	Represents typical views experienced by those undertaking the Ochre Trail within Dryandra Woodland National Park.
VP14	Viewpoint 14: South-easterly view from Clayton Road, Williams	Represents typical views of passing vehicles on Clayton Road and similar views experienced by a low number of nearby rural residential receptors and rural workers in the area.
VP15	Viewpoint 15: South-westerly view from Cowcher Road, Minigin	Represents typical views of passing vehicles on Cowcher Road. Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area and those accessing the Narrogin Aerodrome.
VP16	Viewpoint 16: Southerly view from Curnows Road, Minigin	Represents typical views of passing vehicles on Curnows Road, similar views experienced by a low number of nearby rural residential receptors and rural workers in the

Code	Description	Visual Audience
		area, and of views obtained from the section of Dryandra Woodland National Park to the north of this viewpoint.
VP17	Viewpoint 17: South-westerly view from Clayton Road adjacent to Narrogin Aerodrome, Minigin	Represents typical views of passing vehicles on Clayton Road and similar views experienced by visitors to the Narrogin Aerodrome.

8.2.1 Residential viewers in rural towns and settlements

As described in **Section 6.1: Settlement and infrastructure** there are several rural towns within the Study Area.

Key impacts on residential receptors within the Study Area are anticipated to be associated with potential views from the towns of Williams and Narrogin.

Views from Williams are moderately distant and would be experienced by a moderate number of potential receptors with permanent views towards the Project. Receptors located on the eastern outskirts of the town are anticipated to experience prolonged views toward wind turbines, the nearest of which (located on Munthoola Street) is 8.7 km away. Rural residential receptors located to the east of the main town area are located 5.3 km from the nearest wind turbine. Views from Williams are assessed in:

- Section 8.3.1: Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams
- Section 8.3.2: Viewpoint 2: North-easterly view from Brooking Street, Williams
- Section 8.3.3: Viewpoint 3: Northerly view from Munthoola Street, Williams.

Residential receptors on the western outskirts of Narrogin are located approximately 11.3 km from the nearest wind turbine and likely to experience prolonged views toward wind turbines. While distant views toward the blade tips and top of wind turbines may be possible from other areas within Narrogin, such as the elevated Lions Lookout, typically local topography and screening vegetation will reduce the visibility of the Project and large areas of the town will likely not experience views toward the Project. Views from Narrogin have been assessed in:

- Section 8.3.9: Viewpoint 9: Westerly view from Lions Lookout, Narrogin
- Section 8.3.10: Viewpoint 10: Westerly view from Wiese Road, Narrogin.

No views from Cuballing, Highbury, Popanyinning, Piesseville, Yornaning or the historic Dryandra Woodland Settlement have been included in this assessment as:

- Views from highly localised areas within Cuballing and the historic Dryandra Woodland Settlement (which provides short-stay accommodation within Dryandra Woodland National Park) may be theoretically possible based on VAM mapping. However, fieldwork investigations identified that views toward the Project from these areas are typically extensively screened by intervening landform and vegetation. As such, no viewpoint assessments have been included from these areas, as it is considered the Project will be at most, barely perceptible when viewed above/through existing vegetation.

- The towns of Highbury and Yornaning are surrounded by vegetation within nature reserves and Council owned land used for environmental conservation, public open space and community uses. This vegetation and the situation of these towns behind subtle elevated rises limits views toward the Project from these areas. Therefore, it is considered unlikely views toward the Project will be experienced from these towns.
- The small rural towns of Popanyinning and Piesseville are located at such distance from the Site and/or provided no visibility toward the Project due to intervening landform and vegetation.

The Study Area also includes a moderate number of rural properties, some of which are located within the Site and are 'participating properties' as the landowner has agreed to the wind farm development. While the wind turbines are very close and would have a high visual impact on these dwellings, residents would likely not object to the wind turbines on landscape or visual grounds. Therefore, the effect on participating properties is not considered.

However, there are several other properties and rural dwellings located throughout the Study Area with potential views to wind turbines. Views from publicly accessible locations considered representative of views experienced by these rural receptors have been considered, particularly views from properties located near the Site boundary and proposed Project infrastructure, as discussed in:

- Section 8.3.4: Viewpoint 4: North-easterly view from the Albany Highway, Williams
- Section 8.3.5: Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams
- Section 8.3.6: Viewpoint 6: North-westerly view from Geeralying Road, Dumberning
- Section 8.3.7: Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning
- Section 8.3.8: Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin
- Section 8.3.14: Viewpoint 14: Southerly view from Clayton Road, Williams
- Section 8.3.15: Viewpoint 15: South-westerly view from Cowcher Road, Minigin
- Section 8.3.16: Viewpoint 16: Southerly view from Curnows Road, Minigin.

8.2.2 Workers

The majority of the Study Area is a working rural landscape, predominantly arable lands which require a low intensity of workers. Rural workers would experience views of the wind farm as they go about their daily activities. All workers would be focussed on their activities, although rural workers may enjoy the rural setting. The extent of view would change in accordance with the topography and locally depending on the presence of vegetation.

No specific viewpoints have been selected to assess this because views from the rural properties (described above) and local roads (described below) are considered to be representative of views of workers on rural properties.

8.2.3 Recreational users and visitors

The potential impact of the Project upon recreational viewers within national parks, nature reserves and recreation reserves and tourism destinations within the Study Area has also been considered.

8.2.3.1 Dryandra Woodlands

The Dryandra Woodlands (comprising several blocks within Dryandra Woodlands National Park and Lol Gray, Highbury and Montague state forests) is a popular regional tourism destination with an array of visitor facilities.

Areas within Dryandra Woodland National Park are located approximately 20 m from the Site at their nearest point, and approximately 3.7 km from the nearest wind turbine. While close views may be possible from this section of the park, no formal recreation facilities or infrastructure is provided in this area. However, views from the adjacent Curnows Road (**Section 8.3.16: Viewpoint 16: Southerly view from Curnows Road, Minigin**) that follows the parks southern boundary would represent the worst visual impact potentially experienced by a low number of visitors accessing this part of the national park.

The nearest formal visitor facilities are located within Lol Gray State Forest, approximately 1.9 km north of the Site, associated with Contine Hill Picnic Area, Contine Hill Lookout and the Fire Tower and Breakaway trails. This area was visited and a representative viewpoint from Contine Hill Lookout is provided in **Section 8.3.12: Viewpoint 12: Views from Contine Hill Picnic Site in Lol Gray State Forest, Minigin**. Views from the picnic area and walking trails were heavily obscured by vegetation. While theoretically the Project may be visible from elevated areas in the vicinity of these popular recreation destinations, the height and density of this vegetation (in its present state) would likely make wind turbines difficult to discern.

Impacts on other destinations within the northern sections of the Dryandra Woodlands are represented by views experienced from the Ochre Trail in **Section 8.3.13: Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams.** Based on fieldwork findings, glimpsed views are also available from parts of the Sounds of Dryandra Drive Trail; however, these are fleeting and more distant than views from the Ochre Trail and have therefore not been assessed in detail.

The following destinations within the park were also visited during fieldwork investigations, however, as no clear views toward the Project were possible, have not been included in this assessment:

- the State heritage listed Lions Dryandra Woodland Village (also discussed above in **Section 8.2.1: Residential viewers in rural towns and settlements**)
- Congelin and Gnaala Mia campgrounds
- Congelin dam and Old Mill Dam picnic areas
- Barna Mia animal sanctuary.

Based on VAM mapping, it is anticipated that distant views from other parts of the national park supporting formal recreation infrastructure and not accessed during field work investigations (such as the Woylie Walk, Kawana Walk, Lol Gray Trail, Lol Gray Loop, Lol Gray picnic area, Lol Gray Lookout, Three Mesas Walk and the Kwongan Walk) may be possible, however, it is considered that views from the Ochre Trail represent a 'worst case' scenario in this instance.

Other views from Highbury State Forest, Montague State Forest and associated nature reserves within the Dryandra Woodlands have not been assessed in detail.

8.2.3.2 Williams Nature Reserve

Views from Williams Nature Reserve were assessed during fieldwork investigations. While distant filtered and elevated views may be possible toward the Project from the lookout and the Echidna Trail, no viewpoint assessment was included due to the screening influence of existing vegetation within the reserve.

Easterly view from lookout on the Echidna trail within Williams Nature Reserve

8.2.3.3 Highbury Nature Reserve

As Highbury Nature Reserve is located at such distance from the Site, it is anticipated that visibility toward the Project would be largely restricted due to intervening landform and vegetation. Therefore, no detailed viewpoint assessment was included from this reserve.

8.2.3.4 Foxes Lair and Narrogin arboretum

Views from elevated vantage points within Foxes Lair were assessed during fieldwork investigations, including from the Claypit Circuit and Breakaway Walk. No clear views toward the Project were identified, as views in the direction of the Project from the Claypit Circuit are heavily filtered by vegetation, and views experienced along the Breakaway Walk are focused to the east. The Narrogin arboretum is located at a lower elevation, and no views toward the Project are available. As such, no viewpoint assessment was included from Foxes Lair or the Narrogin arboretum.

Westerly view from the Claypit Circuit within Foxes Lair

8.2.3.5 Railway Dam and Gnarojin Park

Views toward the Project from Railway Dam and Gnarojin Park are not likely as they are screened by intervening topography as indicative by the VAM. As such, no viewpoint assessment was included from these locations.

8.2.3.6 Yilliminning Rock Reserve and Yilliminning Rock

Yilliminning Rock Reserve and Yilliminning Rock are a popular local tourism destination. No views toward the Project are possible from lower-lying and forested parts of the reserve, however, elevated and very distant views toward the Project are possible from the top of Yilliminning Rock, as discussed in **Section 8.3.11: Viewpoint 11: Westerly view from the top of Yilliminning Rock, Boundain.**

8.2.3.7 Yornaning Dam

Views from Yornaning Dam were assessed during fieldwork investigations. However, due to the distance of this location from the Project and intervening landform and vegetation, no views toward the Project were identified. Therefore, no viewpoint assessment was included from this reserve.

8.2.3.8 Scenic routes and lookouts

In addition to the above, views experienced toward the Project by travellers on the following regional and local tourist drives that traverse the Study Area and key tourism destinations have also been assessed:

- The *Great Southern Drive:*
    - Section 8.3.4: Viewpoint 4: North-easterly view from the Albany Highway, Williams.
- The *Narrogin District Trail:*
    - Section 8.3.4: Viewpoint 4: North-easterly view from the Albany Highway, Williams
    - Section 8.3.5: Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams
    - Section 8.3.8: Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin
    - Section 8.3.14: Viewpoint 14: Southerly view from Clayton Road, Williams.
- The *Williams Heritage Trail:*
    - Section 8.3.4: Viewpoint 4: North-easterly view from the Albany Highway, Williams
- Downderry Wines, which is located on the *Wineries, Woodlands and Wheatbelt Trail:*
    - Section 8.3.7: Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning
- Lions Lookout, which is part of the *Narrogin Townsite Trail:*
    - Section 8.3.9: Viewpoint 9: Westerly view from Lions Lookout, Narrogin.

No potential views toward the Project were identified from the northern end of the Collie Darkan Rail Trail during fieldwork investigations.

8.2.3.9 Narrogin Aerodrome

Views from Clayton Road, upon which the Narrogin Aerodrome is located were also assessed during fieldwork investigations. Views from the aerodrome are assessed in Viewpoint 17: South-westerly view from Clayton Road adjacent to Narrogin Aerodrome, Minigin.

No assessment of visual impacts upon aerial views experienced by receptors in the air has been included.

8.2.4 General road users

As described in **Section 6.1: Settlement and infrastructure**, the Study Area is traversed by several key roads, including the Albany Highway, Great Southern Highway and Williams-Kondinin Road. These roads, along with several other local roads (such as Clayton Road which traverses the Site) will provide a range of transient viewing opportunities towards the Project, noting that the extent to which the Project would affect the views is intrinsically linked to the distance of these routes from the Project.

Due to the varied and undulating topography of the Site and its landscape context and the presence of roadside vegetation and remnant bushland areas throughout the Study Area, visibility from these roads is highly variable.

An assessment of the potential impact of the Project on road users on key road routes has been provided for the following:

- Albany Highway (Section 8.3.4: Viewpoint 4: North-easterly view from the Albany Highway, Williams)
- Williams-Kondinin Road (Section 8.3.5: Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams and Section 8.3.8: Viewpoint 6: North-westerly view from Geeralying Road, Dumberning)

Viewpoints taken from the following local roads have also been assessed:

- Brooking Street (Section 8.3.2: Viewpoint 2: North-easterly view from Brooking Street, Williams)
- Munthoola Street (Section 8.3.3: Viewpoint 3: Northerly view from Munthoola Street, Williams)
- Geeralying Road (Section 8.3.6: Viewpoint 6: North-westerly view from Geeralying Road, Dumberning)
- Tarwonga Road (Section 8.3.7: Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning)
- Weise Road (Section 8.3.10: Viewpoint 10: Westerly view from Wiese Road, Narrogin)
- Clayton Road (Section 8.3.14: Viewpoint 14: Southerly view from Clayton Road, Williams and Section:8.3.17: Viewpoint 17: South-westerly view from Clayton Road adjacent to Narrogin Aerodrome, Minigin)
- Cowcher Road (Section 8.3.15: Viewpoint 15: South-westerly view from Cowcher Road, Minigin)
- Curnows Road (Section 8.3.16: Viewpoint 16: Southerly view from Curnows Road, Minigin).

8.3 Viewpoint assessment

Using the VAM studies, field surveys and the method for assessing significance described in **Section 3.8.2: Judgement of visual sensitivity**, a summary of the baseline analysis and overall likely visual impact anticipated during the operation of the Project is provided for each viewpoint in **Table 19** to **Table 35**.

8.3.1 Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams

Table 19: Likely visual effect of the Project on Viewpoint 1

Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams	
Visual baseline assessment	
 *Existing view from Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams* Refer to Figure 13 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 33°1'53.796" S 116°52'34.836" E
Elevation	• 279.5 m
Description	• North-easterly elevated view from the Williams Sports Pavilion, providing elevated, open, moderately distant views toward the Project. • Represents typical views experienced by residents and visitors of Williams, including those recreating at the Williams Sports Pavilion. • Located within *LCT F: Rural settlements*, this view provides elevated views across the Williams Sporting Precinct towards the Williams River and the town centre. Elevated and forested landscapes within *LCT A: Rural and forested uplands* provide a scenic backdrop to this view. • Precedent infrastructure evident within this view includes that associated with the Williams Sporting Precinct (including flood lighting) and Williams Lion Park, a telecommunication tower, powerlines, streetlights, commercial buildings, fencing, roads and infrastructure associated with Williams.
Key visual sensitivities	• Key visual receptors include: ○ A moderate number of residents of Williams who would experience prolonged views from this area and are considered to have a high level of interest in their surroundings. ○ Recreational users of Williams Sporting Precinct and other nearby facilities within Williams are considered to have a moderate level of interest in views from this location. ○ Nearby rural residential receptors who may experience similar views toward the Project. • Despite its location within a rural settlement this view has a predominantly open space and vegetated character. As such, the presence of existing

Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams	
	urban infrastructure only marginally reduces the overall sensitivity of this view. • As this location provides prolonged viewing opportunities for both residents of and visitors to Williams and is a well-used recreational facility, this viewpoint is considered to have a **high** sensitivity overall.
Visual evaluation	
 *Visualisation from Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams* Refer to Figure 13 in Appendix 2 for appropriate scaled image and wider panoramic visualisation.	
Magnitude of change assessment	• Nearest wind turbine is located approximately 10.1 km northeast of this location. • The Project is anticipated to result in a noticeable change due to distant views from this location toward the top of and blade tips of a moderate number of wind turbines. • At this distance the Project will result in a minor change to the view. While it will introduce new large-scale infrastructure elements into the background of the view, it is anticipated that the wind turbines will not form a dominate element within the view (as they only appear above localised parts of the ridgeline behind the town as viewed from this location). • Therefore, the magnitude of change is **low**.
Significance of effect	The effect of this development on VP1 is **moderate** and **not significant.**

8.3.2 Viewpoint 2: North-easterly view from Brooking Street, Williams

Table 20: Likely visual effect of the Project on Viewpoint 2

Viewpoint 2: North-easterly view from Brooking Street, Williams
Visual baseline assessment


Viewpoint 2: North-easterly view from Brooking Street, Williams	
Existing view from Viewpoint 2: North-easterly view from Brooking Street, Williams Refer to Figure 14 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 33°1'34.236" S 116°52'52.83" E
Elevation	• 276.4 m
Description	• North-easterly view from Brooking Street, the main street of Williams, providing moderately distant, filtered views toward the Project. • Represents typical views experienced by residents of and visitors to Williams. • Also representative of transient views experienced by those travelling in vehicles on Brooking Street. • Located within *LCT F: Rural settlements*, this view provides views of the town centre along Brooking Street and has a strong civic character, with the Williams Police Station, Volunteer Fire and Rescue Service and St John Ambulance centre, a public park, and skate park evident within the view. • Other precedent infrastructure evident within this view is typical of a rural town centre and includes telecommunications towers and infrastructure, powerlines, streetlights, floodlights, residential dwellings, fencing, roads and infrastructure associated with Williams.
Key visual sensitivities	• Key visual receptors include: o A moderate number of residents of Williams who would experience prolonged views from this area and are considered to have a high level of interest in their surroundings. o Visitors to the Brooking Street, who are considered to have a moderate level of interest in views from this location. o Receptors in vehicles travelling along Brooking Street who may experience transient views towards the Project. • Despite existing urban infrastructure evident with this view, as this view provides a prolonged viewing opportunity for both residents of and visitors to Williams and is representative of other such opportunities within the town where it may be possible to obtain similar views, this viewpoint is considered to have a **medium** sensitivity overall.
Visual evaluation	
Magnitude of change assessment	• Nearest wind turbine is located approximately 9.4 km northwest of this location. • The Project is anticipated to result in a noticeable change due to moderately distant views from this location toward the top of and blade tips of a moderate number of wind turbines within the background of the view. • However, it is anticipated that visible wind turbines will blend somewhat into the existing view, due to the presence of existing vertical elements impacting the skyline in the foreground and the visual dominance of urban development within Williams. • In addition, the presence of existing built structures and vegetation within the town is anticipated to further restrict the availability of open views toward the Project from the town. • Therefore, the magnitude of change is **low**.
Significance of effect	• The effect of this development on VP2 is **minor to moderate** and **not significant**.

8.3.3 Viewpoint 3: Northerly view from Munthoola Street, Williams

Table 21: Likely visual effect of the Project on Viewpoint 3

Viewpoint 3: Northerly view from Munthoola Street, Williams	
Visual baseline assessment	
 *Existing view from Viewpoint 3: Northerly view from Munthoola Street, Williams* Refer to Figure 15 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 33°1'14.01" S 116°53'8.682" E
Elevation	• 288.5 m
Description	• Northerly view from Munthoola Road, providing moderately distant views toward the Project. • Represents typical views experienced by residents of Williams, including those located on Munthoola Road and on the north-eastern outskirts of the town. • Also representative of transient views experienced by those travelling in vehicles on Munthoola Road. • While this viewpoint is located within *LCT F: Rural settlements*, this view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands* as it is on the outskirts of Williams. • Precedent infrastructure evident within this view includes Munthoola Road, rural fencing, telecommunications infrastructure and a recently constructed rural residential dwelling.

Key visual sensitivities	• Key visual receptors include:
	  ○ A moderate number of residents of Williams who would experience prolonged views from this area and are considered to have a high level of interest in their surroundings.
	  ○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.
	  ○ A low number of receptors in vehicles travelling along Munthoola Road who may experience transient views towards the Project.
	• Due to the moderate number of residential and rural residential receptors in the vicinity of Williams with the potential to experience close and prolonged views towards the Project, this viewpoint is considered to have a **medium** sensitivity overall.

Visual evaluation	

Viewpoint 3: Northerly view from Munthoola Street, Williams	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 8.8 km northeast of this location. • The Project is anticipated to result in a noticeable change due to moderately distant views from this location toward the top of and blade tips of a moderate number of wind turbines within the background of the view (when looking northeast along Munthoola Road). • While existing vegetation and topography will provide some screening of the Project from this location, the Project will result in a minor change to the view, as it will introduce new large-scale infrastructure elements into the background of the view. This will impact the relatively undeveloped rural and vegetated setting of the north-eastern parts of Williams, however, at this distance is anticipated to blend somewhat into the view. • Therefore, the magnitude of change is **low**.
Significance of effect	• The effect of this development on VP3 is **minor to moderate** and **not significant.**

8.3.4 Viewpoint 4: North-easterly view from the Albany Highway, Williams

Table 22: Likely visual effect of the Project on Viewpoint 4

Viewpoint 4: North-easterly view from the Albany Highway, Williams	
Visual baseline assessment	
	
Existing view from Viewpoint 4: North-easterly view from the Albany Highway, Williams Refer to Figure 16 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 33°1'9.816" S 116°52'31.53" E
Elevation	• 284.2 m
Description	• North-easterly view from the Albany Highway (edge of road reserve), providing open, distant views toward the Project[7]. • Represents typical views of passing vehicles on the Albany Highway. • Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area.

[7] Note: This viewpoint was taken from a section of the Albany Highway where clear views were obtained towards the Project. Along other parts of the Albany Highway, views are typically restricted by roadside vegetation or intervening topography.

Viewpoint 4: North-easterly view from the Albany Highway, Williams	
	• The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of rural fencing.
Key visual sensitivities	• Key visual receptors include: o A moderate number of receptors in vehicles travelling along the Albany Highway (average daily traffic count of 3,294, 17.4% of which is heavy vehicles) (Main Roads Western Australia, 2024) who may experience transient views towards the Project. o A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties. • Due to the moderate number of receptors travelling along the Albany Highway (which is part of the Great Southern Tourist Way, *Williams Heritage Trail* and the *Narrogin District Trail*) with the potential for transient views towards the Project and low number of nearby permanent receptors, this viewpoint is considered to have a **medium** sensitivity overall.
Visual evaluation	
Magnitude of change assessment	• Nearest wind turbine is located approximately 10.2 km northeast of this location. • The Project is anticipated to result in a noticeable change due to distant views from this location toward the top of and blade tips of a wind turbines associated with the Project within the background of the view (situated behind the ridgeline). While this will introduce new large-scale infrastructure into what is currently a relatively undeveloped rural landscape across a substantial portion of the view, at this distance, it is anticipated that the Project will blend somewhat into the background of the view. • Additionally, due to the speed at which travellers along the Albany Highway are travelling, except for nearby rural residential receptors, views to the Project from the Albany Highway are anticipated to be transient, and typically partially or totally obscured by the presence of screening roadside vegetation and local topography. • Therefore, the magnitude of change is considered to be **low**.
Significance of effect	• The effect of this development on VP4 is **minor to moderate** and **not significant**.

8.3.5 Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams

Table 23: Likely visual effect of the Project on Viewpoint 5

Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams	
Visual baseline assessment	
 *Existing view from Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams* Refer to Figure 17 and Figure 18 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 33°0′34.2″ S 116°58′42.45″ E
Elevation	• 302.7 m
Description	• Northerly view from Williams-Kondinin Road (edge of road reserve), providing relatively open, close views toward the Project[8]. • Represents typical views of passing vehicles on Williams-Kondinin Road where no roadside vegetation is present (i.e., worst case). • Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of rural fencing, a rural farm dam, telecommunications infrastructure, and the rooftops of agricultural buildings (evident in the background of the view).
Key visual sensitivities	• Key visual receptors include: o A moderate number of receptors in vehicles travelling along Williams-Kondinin Road (average daily traffic count of 999 (east of Cornwall Road), 20.2% of which is heavy vehicles) (Main Roads Western Australia, 2024) who may experience transient views towards the Project. o A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.

[8] Note: This viewpoint was taken from a section of Williams-Kondinin Road where clear views were obtained towards the Project. Along other parts of Williams-Kondinin Road, views are typically restricted by roadside vegetation.

Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams	
	• Due to the moderate number of receptors travelling along Williams-Kondinin Road (including those following the Narrogin District Trail) with the potential for transient views towards the Project and low number of nearby permanent receptors, this viewpoint is considered to have a **medium** sensitivity overall.
Visual evaluation	
 *Visualisation from Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams* Refer to Figure 17 and Figure 18 in Appendix 2 for appropriate scaled image and wider panoramic visualisation.	
Magnitude of change assessment	• Nearest wind turbine is located approximately 1.7 km north of this location. • The Project is anticipated to result in a dominant change due to close views from this location toward several wind turbines (situated behind the foreground ridge) wind turbine, as well as the top of and blade tips of a large number of wind turbines within the mid and background of the view. This will introduce new large-scale infrastructure into what is currently a relatively undeveloped rural landscape and affect an extensive part of the view. • While not anticipated to be clearly evident from this location, the new overhead transmission line connection will traverse Williams-Kondinin Road approximately 4.2 km to the east of this location. The overhead line will require a cleared corridor of up to 70 m and travellers along this road will experience close (albeit transient) views toward the cleared corridor, transmission towers and lines. This will further contribute to the intensification of large-scale infrastructure in the area and provision of additional viewing opportunities toward the wind turbines from Williams-Kondinin Road due to clearing. • However, it is noted that due to the speed at which travellers along Williams-Kondinin Road are travelling, except for nearby rural residential receptors and rural workers, views to the Project from Williams-Kondinin Road are anticipated to be transient, and typically partially or totally obscured by the presence of screening roadside vegetation. • Therefore, the magnitude of change is, at most, **high**.
Significance of effect	• The effect of the wind turbines on VP5 is **moderate to major** and **significant.**

8.3.6 Viewpoint 6: North-westerly view from Geeralying Road, Dumberning

Table 24: Likely visual effect of the Project on Viewpoint 6

Viewpoint 6: North-westerly view from Geeralying Road, Dumberning	
Visual baseline assessment	
 *Existing view from Viewpoint 6: North-westerly view from Geeralying Road, Dumberning* Refer to Figure 19 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 33°1'27.786" S 116°59'14.61" E
Elevation	• 346.0 m
Description	• North-westerly view from Geeralying Road providing open, elevated views toward the Project. • Represents typical views of passing vehicles on Geeralying Road, a dead-end road which provides access to nearby rural properties. • Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of Geeralying Road, rural fencing, a rural dam, telecommunications infrastructure (including a mast radiator tower in the background of the view) and rural buildings (evident in the background of the view).

Key visual sensitivities	• Key visual receptors include:
	  ○ A low number of receptors in vehicles travelling along Geeralying Road who may experience transient views towards the Project.
	  ○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.
	• Due to the low number of receptors travelling along Geeralying Road with the potential for transient views towards the Project and low number of nearby permanent receptors, this viewpoint is considered to have a **low** sensitivity overall.

Visual evaluation	
Magnitude of change assessment	• Nearest wind turbine is located approximately 2.1 km northwest of this location. • The Project is anticipated to result in a dominant change due to close views from this location toward the entirety of several wind turbines, as well as the top of a large number of wind turbines within the mid and background of the view. This will introduce new large-scale infrastructure

Viewpoint 6: North-westerly view from Geeralying Road, Dumberning	
	into what is currently a relatively undeveloped rural landscape and affect an extensive part of the view. • The new overhead transmission line connection, which will require a cleared corridor of up to 70 m, will also be evident within this view. This will further contribute to the intensification of large-scale infrastructure in the area. • The proposed substation and BESS are located approximately 2.6 km northwest of this location, however, are anticipated to be predominately screened by foreground topography and vegetation. • While the presence of existing vegetation is anticipated to somewhat restrict views toward some wind turbines associated with the Project, this affect will be marginal in this location. • Therefore, the magnitude of change is **high**.
Significance of effect	• The effect of the wind turbines on VP6 is **moderate** and therefore **not significant**.

8.3.7 Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning

Table 25: Likely visual effect of the Project on Viewpoint 7

Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning	
Visual baseline assessment	
 *Existing view from Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning* Refer to Figure 20 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 33°0'50.418" S 117°6'34.32" E
Elevation	• 344.3 m
Description	• North-westerly view from Tarwonga Road near Downderry Wines, providing elevated, open, and moderately distant views toward the Project. • Represents typical views of passing vehicles on Tarwonga Road. • Also considered representative of similar views experienced by visitors to Downderry Wines and a low number of nearby rural residential receptors and rural workers in the area. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of infrastructure associated with Downderry Wines, rural fencing, a rural

Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning	
	farm dam, telecommunications infrastructure, and the existing high voltage transmission line (evident in the background of the view).

Key visual sensitivities	• Key visual receptors include:
	  ○ A low number of receptors in vehicles travelling along Tarwonga Road who may experience transient views towards the Project.
	  ○ Visitors to Downderry Wines, a local tourism attraction that is part of the *Wineries, Woodlands and Wheatbelt Trail*.
	  ○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.
	• Due to the anticipated low number of receptors travelling along Tarwonga Road with the potential for transient views towards the Project, low number of nearby permanent receptors and anticipated high level of interest in views experienced by visitors to Downderry Wines across the rural landscape, this viewpoint is considered to have a **medium** sensitivity overall.

Visual evaluation	
Magnitude of change assessment	• Nearest wind turbine is located approximately 7.9 km northwest of this location. • The Project is anticipated to result in a noticeable change due to moderately distant views from this location toward the top of and blade tips of a large number of wind turbines within the background of the view. This will introduce new large-scale infrastructure into what is currently a relatively undeveloped rural landscape. However, at this distance, as the wind turbines are situated behind the ridgeline (which supports scattered vegetation) they are not anticipated to form a dominate visual element within the view. • Therefore, the magnitude of change is **low**.
Significance of effect	• The effect of the wind turbines on VP7 is **minor to moderate** and therefore **not significant.**

8.3.8 Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin

Table 26: Likely visual effect of the Project on Viewpoint 8

Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin
Visual baseline assessment

Existing view from Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin Refer to Figure 21 in Appendix 2 for appropriate scaled image and wider panoramic view.

Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin	
Location	• 32°58′28.32″ S 117°4′50.424″ E
Elevation	• 372.7 m
Description	• Westerly view from Williams-Kondinin Road (edge of road reserve), providing open, moderately close views toward the Project[9]. • Represents typical views of passing vehicles on Williams-Kondinin Road. • Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of rural fencing, a rural farm dam, telecommunications infrastructure, and the rooftops of agricultural buildings (evident in the midground of the view).
Key visual sensitivities	• Key visual receptors include: o A moderate number of receptors in vehicles travelling along Williams-Kondinin Road (average daily traffic count of 1,552 (east of Tawonga Road), 22.1% of which is heavy vehicles) (Main Roads Western Australia, 2024) who may experience transient views towards the Project. o A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties. • Due to the moderate number of receptors travelling along Williams-Kondinin Road (including those following the Narrogin District Trail) with the potential for transient views towards the Project and low number of nearby permanent receptors, this viewpoint is considered to have a **medium** sensitivity overall.
Visual evaluation	
Magnitude of change assessment	• Nearest wind turbine is located approximately 4.3 km northwest of this location. • The Project is anticipated to result in a considerable change due to moderately close views from this location toward the entirety of several wind turbines, and partial views to a large number of wind turbines within the background of the view. This will introduce new large-scale infrastructure into what is currently a relatively undeveloped rural landscape across and affect an extensive part of the view. • The new overhead transmission line connection, which will require a cleared corridor of up to 70 m, will also be evident within this view. This will further contribute to the intensification of large-scale infrastructure in the area. • However, it is noted that due to the speed at which travellers along Williams-Kondinin Road are travelling, except for nearby rural residential

[9] Note: This viewpoint was taken from a section of Williams-Kondinin Road where clear views were obtained towards the Project. Along other parts of Williams-Kondinin Road, views are typically restricted by roadside vegetation.

Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin	
	receptors and rural workers, views to the Project from Williams-Kondinin Road are anticipated to be transient, and typically partially or totally obscured by the presence of screening roadside vegetation. • Therefore, the magnitude of change is **medium**.
Significance of effect	• The effect of the wind turbines on VP5 is **moderate** and **not significant**.

8.3.9 Viewpoint 9: Westerly view from Lions Lookout, Narrogin

Table 27: Likely visual effect of the Project on Viewpoint 9

Viewpoint 9: Westerly view from Lions Lookout, Narrogin	
Visual baseline assessment	
 *Existing view from Viewpoint 9: Westerly view from Lions Lookout, Narrogin* Refer to Figure 22 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°55'57.864" S 117°11'31.752" E
Elevation	• 403.1 m
Description	• Westerly view from Lions Lookout in Narrogin, providing elevated views over the town and distant views toward the Project. • Represents typical views of visitors to Lions Lookout. • Also considered representative of similar views experienced from other elevated areas in the eastern parts of Narrogin. • While located within Narrogin, the foreground of the view is considered more characteristic of *LCT A: Rural and forested uplands* as it is an open space within a forested character. Glimpsed views to infrastructure typical of *LCT F: Rural settlements* associated with the town is evident in the mid and background of the view. • Precedent infrastructure evident within this view is typical of a rural town, and includes telecommunications towers and infrastructure, powerlines, residential dwellings and fencing.
Key visual sensitivities	• Key visual receptors include: o Visitors to Lions Lookout, which is part of the *Narrogin Townsite Trail*, including tourists, who may experience distant views toward the Project and are considered to have a high level of interest in views experienced from the lookout. o A moderate number of residents of Narrogin who would experience similar prolonged views from nearby areas toward the Project and are considered to have a high level of interest in their surroundings.

Viewpoint 9: Westerly view from Lions Lookout, Narrogin	
	• Despite some existing urban infrastructure evident within this view, as this lookout provides a prolonged viewing opportunity for both residents of and visitors to Narrogin and is representative of other such opportunities within the town including from private residences where it may be possible to obtain similar views, this viewpoint is considered to have a **high** sensitivity overall.
Visual evaluation	
Magnitude of change assessment	• Nearest wind turbine is located approximately 15.3 km south-southwest of this location. • The Project is anticipated to result in a noticeable change due to distant views from this location toward the top of and blade tips of wind turbines associated with the Project within the background of the view (behind the ridgeline). • While the wind turbines will contrast strongly with the forested ridgeline, at this distance, it is anticipated that visible wind turbines will blend somewhat into the existing view, due to the presence of existing vertical elements along the ridgeline and the screening influence of foreground vegetation. • Therefore, the magnitude of change is considered to be at most, **low**.
Significance of effect	• The effect of the wind turbines on VP9 is **moderate** and therefore **not significant**.

8.3.10 Viewpoint 10: Westerly view from Wiese Road, Narrogin

Table 28: Likely visual effect of the Project on Viewpoint 10

Viewpoint 10: Westerly view from Wiese Road, Narrogin	
Visual baseline assessment	
	
Existing view from Viewpoint 10: Westerly view from Wiese Road, Narrogin Refer to Figure 23 and Figure 24 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°56'13.596" S 117°8'55.578" E
Elevation	• 372.5 m
Description	• Westerly view from Wiese Road, providing open, distant views towards the Project. • Represents typical views experienced by residents of Narrogin, including those located on Weise Road and on the western outskirts of the town. • Also representative of transient views experienced by those travelling in vehicles on Weise Road.

Viewpoint 10: Westerly view from Wiese Road, Narrogin	
	• While this viewpoint is located within *LCT F: Rural settlements*, this view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands* as it is on the western outskirts of the Narrogin. • Precedent infrastructure evident within this view includes rural fencing, telecommunications infrastructure, and rural buildings.

Key visual sensitivities	• Key visual receptors include:
	  ○ A low number of residents on the western outskirts of Narrogin (which supports large lot residential development) who would experience prolonged views from this area and are considered to have a high level of interest in their surroundings.
	  ○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.
	  ○ A low number of receptors in vehicles travelling along Weise Road who may experience transient views towards the Project.
	• Due to the low number of residential and rural residential receptors on the western outskirts of Narrogin with the potential to experience distant and prolonged views towards the Project, this viewpoint is considered to have a **medium** sensitivity overall.

Visual evaluation	
 *Visualisation from Viewpoint 10: Westerly view from Wiese Road, Narrogin* Refer to Figure 23 and Figure 24 in Appendix 2 for appropriate scaled image and wider panoramic visualisation.	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 11.3 km south-southwest of this location. • The Project is anticipated to result in a noticeable change due to distant views from this location toward the top of and blade tips of a moderate number of wind turbines within the background of the view (behind the ridgeline). • However, at this distance and due to the presence of vegetation along extensive parts of the ridgeline evident in the background of the view, it is anticipated that visible wind turbines will blend somewhat into the existing view, and only impact a small portion of the view. • Therefore, the magnitude of change is **low**.
Significance of effect	• The effect of the wind turbines on VP10 is **minor to moderate** and therefore **not significant**.

8.3.11 Viewpoint 11: Westerly view from the top of Yilliminning Rock, Boundain

Table 29: Likely visual effect of the Project on Viewpoint 11

Viewpoint 11: Westerly view from the top of Yilliminning Rock, Boundain	
Visual baseline assessment	
 *Existing view from Viewpoint 11: Westerly view from the top of Yilliminning Rock, Boundain* Refer to Figure 25 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°56′38.46″ S 117°22′22.968″ E
Elevation	• 381.5 m
Description	• Westerly view from the top of Yilliminning Rock, providing elevated, open, very distant views towards the Project. • Represents typical views experienced by visitors to Yilliminning Rock, within Yilliminning Rock Reserve. • This viewpoint is located within with *LCT A: Rural and forested uplands* and has a strong rural and vegetated character. • Precedent infrastructure evident within this view includes rural fencing, roads, some rural buildings, and telecommunications infrastructure (in the background of the view). • However, due to the elevated, panoramic, and vast views afforded from this lookout, existing infrastructure does not have a strong influence on the character of the landscape, as it forms a very minimal part of the view.
Key visual sensitivities	• Key visual receptors include visitors to Yilliminning Rock and Yilliminning Rock Reserve, including tourists, who may experience very distant views toward the Project and are considered to have a high level of interest in views from the rock across the rural landscape. This includes visitors accessing the reserve at nighttime for astrophotography and stargazing. • As Yilliminning Rock provides panoramic and prolonged viewing opportunities for visitors across the rural landscape and is a promoted regional and local tourism and recreation destination, this viewpoint is considered to have a **high** sensitivity overall.
Visual evaluation	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 31.8 km west of this location. • The Project is anticipated to result in a barely perceptible change due to very distant views from this location toward the upper parts of and blade tips of wind turbines associated with the Project within the background of the view. • However, at this distance and due to the presence of midground vegetation along ridgelines, it is anticipated that visible wind turbines will

Viewpoint 11: Westerly view from the top of Yilliminning Rock, Boundain	
	blend somewhat into the existing view, and only impact a very small portion of the view. • Therefore, the magnitude of change is **negligible**.
Significance of effect	• The effect of the wind turbines on VP11 is **minor to moderate** and therefore **not significant**.

8.3.12 Viewpoint 12: Views from Contine Hill Picnic Site in Lol Gray State Forest, Minigin

Table 30: Likely visual effect of the Project on Viewpoint 12

Viewpoint 12: Views from Contine Hill Picnic Site in Lol Gray State Forest, Minigin	
Visual baseline assessment	
 *Existing view from Viewpoint 12A: Westerly view from Contine Hill Lookout in Lol Gray State Forest, Minigin*  *Existing view from Viewpoint 12B: Southerly view from Fire Tower Walk in Lol Gray State Forest, Minigin* Refer to Figure 28in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°52'56.004" S 117°0'13.788" E (12A) • 32°52'59.268" S 117°0'18.594" E (12B)
Elevation	• 429.1 m (12A) • 436.1 m (12B)
Description	• Contine Hill Picnic Area within Lol Gray State Forest provides several opportunities for elevated views across the surrounding forested and rural landscape. • Represents typical views experienced by visitors to Contine Hill Picnic Area, including those that access the lookout and walking trails including the Breakaway Walk and Fire Tower Walk within Lol Gray State Forest.

Viewpoint 12: Views from Contine Hill Picnic Site in Lol Gray State Forest, Minigin	
	• The primary view from Contine Hill Lookout (Viewpoint 12A) is to the west and provides open views across the rural and forested landscape. • Other views in the direction of the Project from walking trails (Viewpoint 12B) are typically heavily vegetated. • This viewpoint is located within with *LCT G: Wheatbelt Forests* and foreground elements within the view have a strong natural and vegetated character. The rural and forested landscape mosaic associated with *LCT A: Rural and forested uplands* and other parts *LCT G: Wheatbelt Forests* is evident in the mid and background of the view from the lookout, while other views are restricted by vegetation and have a largely natural character • Precedent infrastructure evident in the area includes that associated with the lookout, walking tracks, directional signage, rural fencing, and some rural buildings. • Where more distant views are possible, such as those from the lookout, existing infrastructure does not have a strong influence on the character of the landscape, as it forms a very minimal part of the overall view.
Key visual sensitivities	• Key visual receptors include visitors to Contine Hill Picnic Area, including tourists accessing the lookout and walking tracks, who may experience distant views toward the Project and are considered to have a high level of interest in views from this section the Dryandra Woodlands. This includes visitors accessing the area at nighttime for astrophotography and stargazing. • As Contine Hill Lookout provides panoramic and prolonged viewing opportunities for visitors across the rural and forested landscape and the Contine Hill Picnic Area is a promoted regional and local tourism and recreation destination, both viewpoints 12A and 12B are considered to have a **high** sensitivity overall.
Visual evaluation	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 5.7 km south of the nearest formal recreation area at Contine Hill (part of the Breakaway Walk). • The primary views experienced from Contine Hill Lookout are not directly impacted by the Project, as the Project is situated behind viewers. Therefore the Project will have no impact on the lookout. • Filtered views toward the Project may be experienced from other parts of the picnic area and walking trails. • However, due to the presence of intervening landform and dense vegetation, it is anticipated that views toward the Project will be unlikely to be noticeable • Therefore, the magnitude of change on Viewpoint 12 A is considered to be **no impact** and on Viewpoint 12 B the magnitude is considered to be **negligible**.
Significance of effect	• The effect of the wind turbines on VP12 is **minor to moderate** and therefore **not significant.**

8.3.13 Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams

Table 31: Likely visual effect of the Project on Viewpoint 13

Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams	
Visual baseline assessment	
 *Existing view from Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams* Refer to Figure 28 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°47'50.232" S 116°56'33.828" E
Elevation	• 377.6 m
Description	• Southerly view from the Ochre Trail, providing elevated, open, distant views towards the Project framed by vegetation. • Represents typical views experienced by those undertaking the Ochre Trail within Dryandra Woodland National Park. • This viewpoint is located within with *LCT G: Wheatbelt Forests* and predominately has a strong natural and vegetated character. The rural and forested landscape mosaic associated with *LCT A: Rural and forested uplands* and other parts *LCT G: Wheatbelt Forests* is evident in the mid and background of the view. • Precedent infrastructure within this view does not have a strong influence on the character of the landscape, as it forms a very minimal part of the view. This is due to the distance of this location from areas used for agricultural purposes.
Key visual sensitivities	• Key visual receptors include those undertaking the Ochre Trail, including tourists, who may experience distant views toward the Project and are considered to have a high level of interest in views from the trail. • Also considered representative of potential views from other nearby elevated vantage points within Dryandra Woodland National Park. • As this section of the Ochre Trail provides elevated viewing opportunities for visitors across the forested and rural landscape and is a formal recreation trail within Dryandra Woodland National Park, which is a regional tourism and recreation destination, this viewpoint is considered to have a **high** sensitivity overall.

Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams	
Visual evaluation	
 *Visualisation from Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams*  *Wireframe visualisation from Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams (turbines shown in red behind vegetation)* Refer to Figure 28 and Figure 29 in Appendix 2 for appropriate scaled image and wider panoramic visualisation.	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 16.3 km southeast of this location. • The Project is anticipated to result in a noticeable change due to distant views from this location toward the top of and blade tips of wind turbines associated with the Project within the background of the view. • However, at this distance and due to the presence of vegetation along the Ochre Trail that filters views toward the Project, it is anticipated that visible wind turbines will blend somewhat into the existing view, only impact a small portion of the view, and be glimpsed intermittently. • Therefore, the magnitude of change is, at most, **low**.
Significance of effect	• The effect of the wind turbines on VP13 is **moderate** and therefore **not significant.**

8.3.14 Viewpoint 14: Southerly view from Clayton Road, Williams

Table 32: Likely visual effect of the Project on Viewpoint 14

Viewpoint 14: South-easterly view from Clayton Road, Williams	
Visual baseline assessment	
 *Existing view from Viewpoint 14: South-easterly view from Clayton Road, Williams* Refer to Figure 30and Figure 31 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°56'30.846" S 116°57'32.064" E
Elevation	• 314.2 m
Description	• South-easterly view from Clayton Road (edge of road reserve), providing relatively open, close views towards the Project. • Represents typical views of passing vehicles on Clayton Road. • Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area and from other parts of Clayton Road where similar views will be experienced. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of Clayton Road, rural fencing, and some agricultural buildings (evident in the background of the view).
Key visual sensitivities	• Key visual receptors include: o A low number of receptors in vehicles travelling along Clayton Road who may experience transient views towards the Project. o A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties. • Due to the low number of receptors travelling along Clayton Road (including those following the Narrogin District Trail) with the potential for transient views towards the Project and low number of nearby permanent receptors, this viewpoint is considered to have a **low** sensitivity overall.

Viewpoint 14: South-easterly view from Clayton Road, Williams	
Visual evaluation	
 *Visualisation from Viewpoint 14: South-easterly view from Clayton Road, Williams* Refer to Figure 30and Figure 31 in Appendix 2 for appropriate scaled image and wider panoramic visualisation.	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 3.6 km east of this location. • The Project is anticipated to result in a dominant change to this view experienced from Clayton Road, as close views toward the Project will be experienced from this location toward wind turbines within the mid and background of the view. The Project will affect a substantial part of this view. Similar views will be experienced when travelling along other parts of Clayton Road, which provides prolonged and close viewing opportunities toward the Project, with the nearest wind turbine located approximately 1.7 km south of the road at its closest point. • This will introduce new large-scale infrastructure into what is currently a relatively undeveloped rural landscape, which will be clearly evident from this location and other parts of Clayton Road. • Therefore, the magnitude of change is up to **high**.
Significance of effect	• The effect of the wind turbines on VP14 is **moderate** and therefore **not significant**.

8.3.15 Viewpoint 15: South-westerly view from Cowcher Road, Minigin

Table 33: Likely visual effect of the Project on Viewpoint 15

Viewpoint 15: South-westerly view from Cowcher Road, Minigin	
Visual baseline assessment	
 *Existing view from Viewpoint 15: South-westerly view from Cowcher Road, Minigin* Refer to Figure 32 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°55′23.898″ S 117°3′35.046″ E
Elevation	• 348.7 m
Description	• South-westerly view from Cowcher Road (edge of road reserve), providing open, close views towards the Project. • Represents typical views of passing vehicles on Cowcher Road. • Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of Cowcher Road, rural fencing, rural dams and some agricultural buildings (evident in the background of the view).

Key visual sensitivities	• Key visual receptors include:
	  ○ A low number of receptors in vehicles travelling along Cowcher Road who may experience transient views towards the Project.
	  ○ A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.
	• Due to the low number of receptors travelling along Cowcher Road with the potential for transient views towards the Project and low number of nearby permanent receptors, this viewpoint is considered to have a **low** sensitivity overall.

Visual evaluation	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 4.6 km south-west of this location. • The Project is anticipated to result in a considerable change due to close views from this location toward a large number of wind turbines within the background of the view. • While existing vegetation and foreground topography will provide some screening of the lower portion of wind turbines from this location, at this distance the Project will result in a major change to the view, as it will introduce new large-scale infrastructure into what is currently a relatively

Viewpoint 15: South-westerly view from Cowcher Road, Minigin	
	undeveloped rural landscape across and affect a large part of the view. In addition, similar views will be experienced from other parts of Cowcher Road, where closer views towards wind turbines are possible with the nearest wind turbine located approximately 300 m from the road. • Therefore the magnitude of change is **medium**.
Significance of effect	• The effect of the wind turbines on VP15 is **minor to moderate** and therefore **not significant.**

8.3.16 Viewpoint 16: Southerly view from Curnows Road, Minigin

Table 34: Likely visual effect of the Project on Viewpoint 16

Viewpoint 16: Southerly view from Curnows Road, Minigin	
Visual baseline assessment	
 *Existing view from Viewpoint 16: Southerly view from Curnows Road, Minigin* Refer to Figure 33 and Figure 34 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°54'12.9" S 117°0'7.554" E
Elevation	• 353.5 m
Description	• Southerly view from Curnows Road, providing elevated, open, close views towards the Project. • Represents typical views of passing vehicles on Curnows Road, a dead-end road which provides access to nearby rural properties. • Also considered representative of similar views experienced by a low number of nearby rural residential receptors and rural workers in the area, and of views obtained from the section of Dryandra Woodland National Park to the north of this viewpoint. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of Curnows Road, rural fencing, rural dams and some agricultural buildings (evident in the background of the view).
Key visual sensitivities	• Key visual receptors include: o A low number of receptors in vehicles travelling along Curnows Road who may experience transient views towards the Project. o A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties.

Viewpoint 16: Southerly view from Curnows Road, Minigin	
	○ A very low number of receptors accessing the section of Dryandra Woodlands National Park to the immediate north of this viewpoint, noting that no formal recreation trails or facilities are in this area. • Due to the low number of receptors travelling along Curnows Road with the potential for transient views towards the Project and low number of nearby permanent receptors, this viewpoint is considered to have a **low** sensitivity overall.
Visual evaluation	
 *Visualisation from Viewpoint 16: Southerly view from Curnows Road, Minigin* Refer to Figure 33 and Figure 34 in Appendix 2 for appropriate scaled image and wider panoramic visualisation.	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 3.7 km south of this location. • The Project is anticipated to result in a considerable change due to moderately close views from this location toward a large number of wind turbines within the mid and background of the view. The Project will affect a substantial part of this view. • This will introduce new large-scale infrastructure into what is currently a relatively undeveloped rural landscape, which will be clearly evident from this location and experienced when travelling along Curnows Road, which provides prolonged and elevated viewing opportunities toward the Project. • Therefore, the magnitude of change is **medium**.
Significance of effect	• The effect of the wind turbines on VP16 is **minor to moderate** and therefore **not significant.**

8.3.17 Viewpoint 17: South-westerly view from Clayton Road adjacent to Narrogin Aerodrome, Minigin

Table 35: Likely visual effect of the Project on Viewpoint 17

Viewpoint 17: South-westerly view from Clayton Road adjacent to Narrogin Aerodrome, Minigin	
Visual baseline assessment	
 *Existing view from Viewpoint 16: Southerly view from Curnows Road, Minigin* Refer to Figure 35 in Appendix 2 for appropriate scaled image and wider panoramic view.	
Location	• 32°55′33.456″ S 117°4′43.65″ E
Elevation	• 333.5 m
Description	• South-westerly view from Clayton Road, providing close views towards the Project which are restricted by existing buildings associate with the Narrogin Aerodrome. • Represents typical views of passing vehicles on Clayton Road. • Also considered representative of similar views experienced visitors to the Narrogin Aerodrome and nearby receptors at the Narrogin Gliding Club. • The view has a strong rural and vegetated character consistent with *LCT A: Rural and forested uplands.* • Precedent infrastructure evident within this view is limited to the presence of Clayton Road, rural fencing, rural dams and infrastructure associated with the aerodrome.
Key visual sensitivities	• Key visual receptors include: o An anticipated moderate number of receptors accessing the Narrogin Aerodrome and Gliding Club. o A low number of receptors in vehicles travelling along Clayton Road who may experience transient views towards the Project. o A low number of nearby rural residential receptors and rural workers who may experience similar views toward the Project from their dwellings and properties. • Due to the moderate number of receptors likely to experience and be interested in views from the aerodrome, this viewpoint is considered to have a **medium** sensitivity overall.
Visual evaluation	
Magnitude of change assessment	• Nearest proposed wind turbine is approximately 6.2 km southwest of this publicly accessible location. The nearest section of paved runway is approximately 5.2 km from the nearest wind turbine, and is not in line with the approach. • The Project is anticipated to result in a noticeable change to views experienced from the Narrogin Aerodrome, due to the potential for

Viewpoint 17: South-westerly view from Clayton Road adjacent to Narrogin Aerodrome, Minigin	
	moderately distant views toward wind turbines associated with the Project. • This will introduce new large-scale infrastructure into the rural landscape. However, existing vegetation within the rural landscape (including shelter belts along Cowcher Road) is considered likely to somewhat reduce the visible of the Project. • It is noted that the Project is not anticipated to be visible from this exact location at the entrance to the Narrogin Aerodrome, as it will be screened by buildings evident within the foreground of the view. However, views to turbines will be possible from other nearby parts of Clayton Road. • Therefore, the magnitude of change is **low**.
Significance of effect	• The effect of the wind turbines on VP17 is **minor to moderate** and therefore **not significant.**

8.4 Summary of visual impact assessment

A summary of the baseline analysis and overall likely visual impact anticipated during the operation of the Project (as described in **Section 8.3: Viewpoint assessment**) associated with the presence of wind turbines and ancillary infrastructure is presented in **Table 36.**

Table 36: Summary of visual impact assessment

Viewpoint	Sensitivity	Magnitude of change	Significance of effect
Viewpoint 1: North-easterly view from Williams Sports Pavilion, Williams	High	Low	Moderate (not significant)
Viewpoint 2: North-easterly view from Brooking Street, Williams	Medium	Low	Minor to moderate (not significant)
Viewpoint 3: Northerly view from Munthoola Street, Williams	Medium	Low	Minor to moderate (not significant)
Viewpoint 4: North-easterly view from the Albany Highway, Williams	Medium	Low	Minor to moderate (not significant)
Viewpoint 5: Northerly view from Williams-Kondinin Road, Williams	Medium	High	Moderate to major (significant)
Viewpoint 6: North-westerly view from Geeralying Road, Dumberning	Low	High	Moderate (not significant)
Viewpoint 7: North-westerly view from Tarwonga Road near Downderry Wines, Dumberning	Medium	Low	Minor to moderate (not significant)
Viewpoint 8: Westerly view from Williams-Kondinin Road, Minigin	Medium	Medium	Moderate (not significant)
Viewpoint 9: Westerly view from Lions Lookout, Narrogin	High	Low	Moderate (not significant)

Viewpoint	Sensitivity	Magnitude of change	Significance of effect
Viewpoint 10: Westerly view from Wiese Road, Narrogin	Medium	Low	Minor to moderate (not significant)
Viewpoint 11: Westerly view from the top of Yilliminning Rock, Boundain	High	Negligible	Minor to moderate (not significant)
Viewpoint 12A: Westerly view from Contine Hill Lookout in Lol Gray State Forest, Minigin	High	No Impact	No Impact
Viewpoint 12B: Southerly view from Fire Tower Walk in Lol Gray State Forest, Minigin	High	Negligible	Minor to moderate (not significant)
Viewpoint 13: Southerly view from the Ochre Trail in Dryandra Woodland National Park, Williams	High	Low	Moderate (not significant)
Viewpoint 14: South-easterly view from Clayton Road, Williams	Low	High	Moderate (not significant)
Viewpoint 15: South-westerly view from Cowcher Road, Minigin	Low	Medium	Minor to moderate (not significant)
Viewpoint 16: Southerly view from Curnows Road, Minigin	Low	Medium	Minor to moderate (not significant)
Viewpoint 17: South-westerly view from Clayton Road adjacent to Narrogin Aerodrome, Minigin	Medium	Low	Minor to moderate (not significant)

9. Construction and decommissioning assessment

9.1 Construction / installation impacts

The wind farm infrastructure will be located within *LCT A: Rural and forested uplands* within LCA A1: Dryandra – Narrogin Rural and Forested Uplands.

Based on the potential construction phase elements identified in **Section 4.1: Key sources of potential impact**, there are likely to be short term (approximately 24 months) changes and effects to the landscape character, views and visual amenity during the construction of the Project. This includes transportation of the crew between activity Sites and nearby towns and the presence of large–scale machinery constructing and installing the Project.

Due to the undulating nature of parts of LCT A, construction activities (including excavation, trenching, earthmoving, vegetation clearance/trimming, installing the wind turbines by crane and temporary lighting) are considered likely to be evident.

Construction impacts are likely to be most evident and experienced by nearby isolated rural receptors and rural workers in close proximity to the Project. It is anticipated that construction activity would be most visible from Clayton Road and Cornwall Road (which will form the primary and secondary site access points) as well from Narrogin-Williams Road and other local roads that traverse the Site (such as Cowcher Road).

It is anticipated that the construction activity on Site would be less perceptible from settlements near the Study Area, including Narrogin and Williams (apart from the installation of wind turbines) due to their distance from the Project. However, it is likely that the transient presence of construction workers, plant and the transport of project materials and components will be evident within these areas. These temporal impacts may also be evident within other towns beyond the 30 km Study Area, such as Collie, which may also support additional accommodation.

Because the effects of construction activities are temporary, it is considered that construction impacts are of lower potential significance than those effects identified in **Section 7.2: Landscape character assessment** and **Section 8.3: Viewpoint assessment**.

9.2 Decommissioning impacts

At the end of the operational lifetime of the Project (approximately 30years), if the Site is not repowered, it is assumed the wind farm infrastructure will be decommissioned and the Site will be rehabilitated, returning the landscape character largely to its present condition.

It is anticipated that the impacts that result from decommissioning of the Project will be very similar to those during the construction phase over a duration of approximately 6–12 months.

Accordingly, there are likely to be short term changes and effects on the landscape character, views and visual amenity as a result of the presence of construction crews and large–scale machinery removing the Project components and rehabilitating the affected Sites (e.g., localised regrading of landform, spreading topsoil and seeds). Most above–ground infrastructure apart from roads (which are left to benefit the farmers) will be removed (e.g., all wind turbines, transmission lines, etc). The land will then be rehabilitated

in line with development permit conditions and specific landowner agreements. Some infrastructure may remain in–situ depending on landowner preferences.

While the extent of access tracks retained post–decommissioning (or retention of other ancillary infrastructure such as substations) is not understood at this time, it is expected that following decommissioning, the development would result in a low impact on the appearance of the surface landscape in the long term.

10. Mitigation measures

This section outlines the standard operating procedures and other factors considered to reduce and manage the impact of a wind farm on landscape character and visual amenity. Due to the size of the proposed wind turbines (up to 291 m) and undulating and typically cleared landscape associated with the Site, it is not typically possible to fully 'screen' or 'hide' all the wind turbines or associated infrastructure within the landscape. However, vegetation can contribute to reducing the extent of wind turbine structures visible in some situations, for example, the effect of dense roadside shelterbelts on reducing the availability of open views experienced from passing vehicles.

The measures outlined below could assist in providing a more harmonious appearance to the Project overall, particularly in relation to the most sensitive receptors identified in Section 8: Visual assessment, comprising rural residential properties lying close to the Project, a select number of recreational receptors (including visitors to Dryandra Woodland National Park and the Narrogin Aerodrome), receptors within the towns of Williams and Narrogin and travellers on major highways.

The mitigation framework seeks, as a first priority, to minimise adverse landscape and visual impacts through careful design and siting of infrastructure then, secondly, to implement detailed design tailored to the specific location to manage any adverse impacts identified.

Given that the wind turbines are potentially visible within 30 – 40 km or beyond (depending on weather conditions), the proposition of providing and maintaining off site planting to manage all views of the Project is not practical. The mitigation framework focusses on managing the impact of construction activities, managing the visual amenity of nearby residents and viewers most adversely affected by the Project (including through the consultation process), post construction site rehabilitation activities (e.g., reinstating temporary access roads and storage areas), and providing advice for the decommissioning of the Project. Table 37 describes measures identified to mitigate impact.

Table 37: Potential mitigation measures to minimise landscape and visual effects

Proposed mitigation category	Description of measures to minimise landscape and visual effects
Activities undertaken during construction and operation	
Facilities siting and design – detailed design	• Facilities to be designed to minimise impact on the current land use, including minimising land take / loss of productive agricultural land wherever practicable. • Facilities to be designed / located to minimise tree and other vegetation removal where practicable, particularly vegetation identified as having MNES and MSES value or that contributes to roadside vegetation buffers (e.g. provision of new site access roads). • A semi-matt finish on the wind turbine towers, nacelles and blades is to be used to avoid potential visual impacts from blade glint caused by reflection of the sun. • Access roads to be tidily maintained and include gates (where necessary) similar in style to those in the surrounding rural landscape.

Proposed mitigation category	Description of measures to minimise landscape and visual effects
	• After-dark construction lighting to be controlled to minimise effects on sensitive visual receptors including potential impacts upon identified dark sky sites. • The natural line of the landscape to be used wherever practicable to reduce visibility and assist integration of the Project infrastructure, e.g., follow the contours with access tracks to avoid the visual impact of tracks crossing hillslopes to the greatest extent possible.
Landscape strategy to hide / screen the substation and other elements	• During the detailed design of the Project, landscape elements (landform, vegetation, hard elements as appropriate) that will interrupt sightlines from particular sensitive vantage points may be considered where a significant visual impact is identified; particularly nearby residences (following individual consultation with affected landowners). For example, shelterbelt planting adjacent to the property line of an affected residence or within the Site. It is noted that such action would be for the purposes of community relations and is not considered a core mitigation strategy under planning regulations such as Shire of Williams, *Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities)*. • It should be noted that screening effects to mitigate tall structures such as 291 m wind turbines are only effective where features providing screening (e.g., trees and tall shrubs) are located close to the viewer (or visual receptor). Screening features located at a distance from the viewer will be less effective in containing views i.e., wind turbines of this size would be visible above the treetops. • Any new tree and shrub planting, proposed as part of any detailed landscape design for the Project will help integrate each component into the surrounding landscape. Any screening to consist of mixed plants of local provenance including some fast-growing species, as appropriate to the local landscape character and existing vegetation communities.
Construction management and rehabilitation	• A construction environmental management plan to be developed that seeks to control landscape and visual effects including: o Conducting design reviews prior to ordering of materials to ensure that low-glare, semi-matt products and the correct colours have been specified. o Locating construction compounds within visually unobtrusive location(s) where practicable. o Ensuring maintenance of tidy and contained construction compound. o Maintaining roads providing access to site compounds and installation works areas free of dust and mud during construction. o Protection of valued features (e.g., remnant vegetation, watercourses), using fencing to keep contractors out of areas where damage may result. o Undertaking construction in sensitive areas in dry weather wherever possible to minimise visual impacts that can result from sedimentation and erosion caused by heavy rain. o Controlling the movement and location of plant and materials during the construction period.

Proposed mitigation category	Description of measures to minimise landscape and visual effects
	○ Instigating progressive rehabilitation of disturbed areas using suitably qualified and experienced contractors, including bush regenerators where the aim is to reinstate pre-existing natural communities. ○ Where necessary, the topsoil at all construction sites and compounds to be carefully scraped from the site to a depth of 200-600 mm (the actual depth of the topsoil) and stored in mounds no greater than 2 m high at the perimeter of sites and along the edge of the cabling route, for re-use.

In addition to mitigation, the Proponent may like to consider legacy opportunities such as scenic viewing areas, recognising that the wind farm will be a prominent landmark and feature of the local area and is likely to be of interest to tourists. These could be co-located with existing local visitor attractions.

11.Residual impacts

Residual impacts relate to any changes in the overall level of effect for potential impacts after the implementation of mitigation. Although a number of reasonable mitigation measures are suggested that may be applied to help reduce the extent of the Project's effect on landscape character and visual amenity, such mitigation measures are considered unlikely to alter the significance of the level of landscape effect assessed in Section 7: Landscape assessment or visual effect assessed in Section 8: Visual assessment. Even the most thorough mitigation strategy has limited potential to screen views of 291 m high wind turbines, even if this were to be a desirable outcome.

Subsequently, the residual impact is considered to be as per those impacts identified in Table 17 and Table 36 above, and in the conclusions below.

12. Cumulative landscape and visual impacts

The aim of the cumulative LVIA is to describe and assess the ways in which the Project may have additional landscape and visual impacts when considered together with other large–scale projects within or proposed within the wider landscape context of the Site.

12.1 Projects considered in cumulative assessment

Based on the methodology described in Section 3.10: Cumulative landscape and visual impact assessment, a desktop review was undertaken to identify potential projects for consideration in the cumulative impact assessment. This included a search of Referred Significant Proposals and online public materials. As a result of this review, the following large–scale projects, identified and described in **Table 38** and shown on **Figure 12**, are considered in this assessment.

Table 38: Projects for consideration in cumulative impact assessment

Project / Proponent	Distance from Project	Description	Project Status	Timing
Narrogin Solar Farm (Ace Power)	~10 km east of Site	Proposed 200 MW direct current solar farm, located to the south of Wanerie Road on the Great Southern Highway approximately 4 km south of Narrogin within Shire of Narrogin. The Project would also include a BESS.	Preliminary assessments and community consultation	TBC
Dardadine Wind Farm (RES)	~30 km southwest of Site	Proposed 800 MW 120 turbine wind farm at Daradine within Shire of Williams.	Preliminary assessments and community consultation	Construction proposed to start in 2027
Lightsource BP Wind and Solar Farm (Lightsource BP)	~25 km east of Site	Proposed 600 MW hybrid renewable energy generation facility, including wind generation, solar and energy storage located more than 15 km northeast of the town of Narrogin within Shire of Narrogin.	Preliminary assessments and community consultation	TBC
Bellweather Wind Farm (Acciona Energy)	Investigation area located ~ 1.2 km south of Site	Proposed 3 GW wind farm development with up to approximately 400 turbines. Located to the south of Williams and traversed by the Albany Highway, Williams-Darkan Road and Coalfields Road. Located within Shire of Williams, Shire of Narrogin, Shire of West Arthur and Shire of Wagin.	Preliminary assessments and community consultation	Construction proposed to start in 2028

Other projects identified within the area of influence but excluded from this assessment due to their small scale and distance from the Site include:

- Narrogin FutureEnergy Park (FutureEnergy Australia Pty Ltd)
- Regional Waste Disposal Facility (Shire of Cuballing / Wagin Voluntary Group of Councils).

12.2 Cumulative landscape and visual impact assessment

Due to their scale, it is considered that other identified wind farms have the greatest potential for cumulative impacts within the rural landscape context. Three proposed wind farm projects have been identified within or in close proximity of the LVIA study area. These wind farms are all in early development with proponents currently undertaking preliminary assessments and community engagement activities.

The proposed Bellweather Wind Farm investigation area is located approximately 1.2 km to the south of the Site and is proposed to have up to 400 turbines (Acciona, 2024). Should this project proceed, construction is expected to begin in 2028. Due to the proximity of this proposal to the Project, it is anticipated cumulative effects associated with this Project would be most noticeable.

The proposed Dardadine Wind Farm, Lightsource BP Wind and Solar Farm, and Narrogin Solar Farm are located approximately 30 km southwest, 25 km east and 10 km east of the Site respectively.

In the event that all proposed wind farm projects are developed, it is anticipated that *combined* cumulative impacts between the Project and Bellweather Wind Farm would be evident. As a *combined* cumulative impact relates to a static viewpoint (assumed 120 degree field of view), due to the close proximity of these projects, views toward these two projects would be likely to be experienced from the surrounding area and include close views toward proposed turbines associated with both sites. For example, scenarios where turbines associated with both projects may be visible in a single view may include from locations in the town of Williams, on the Albany Highway or Williams Kondinin Road.

Whilst views towards both projects may be possible, proposed wind turbines associated with both projects are anticipated to be at least 5 km apart at their closest point. These projects individually may result in a significant visual impact when viewed from the Albany Highway (Bellwether Wind Farm, depending on turbine layout) or Williams Kondinin Road (Narrogin Wind Farm, for example refer to Viewpoint 5). However, the potential for significant *combined* cumulative impacts associated with these projects is anticipated to be limited to highly localised impacts on parts of Williams-Kondinin Road in locations where close views toward both Projects may be possible. While similar views may be experienced from surrounding local roads (e.g. Glenfield Road), the sensitivity of these rural areas is considered to be low. The potential for significant *combined* cumulative impacts would need to be confirmed once the layout for the Bellwether Wind Farm has been developed. No significant *combined* cumulative impacts are anticipated due to the Dardadine Wind Farm or Lightsource BP Wind and Solar Farm due to their distance from the Project.

Successive impacts, that is views where a receptor can view both of the described wind farms from one viewpoint (a 360° view), are likely. Similar to the *combined impacts* identified, the potential for significant successive impacts is anticipated to be limited to areas where close views toward both the Project and the proposed Bellweather Wind Farm are possible. Whilst it is theoretically possible for receptors to experience views to multiple wind farm projects from the town of Williams and Narrogin, including regionally

significant lookouts such as Lions Lookout in Narrogin, due to the distance of these locations from the proposed turbine locations, it is anticipated that significant *successive impact*s are likely to be minimal as it is unlikely that any of the projects would represent a considerable or dominant change on the affected viewpoint(s) at a distance.

With respect to the proposed solar farms, it is noted that while these represent large–scale built interventions within the landscape, the form of built infrastructure is generally lower and typically less visible compared to wind farm projects, with the exception of any project views obtained from elevated viewpoints. Typically, solar farms are located on lower lying/flatter areas where the effects of surrounding topography and vegetation have a greater influence on screening. Therefore, *combined* and *sequential* impacts are unlikely between the Project and the identified Narrogin Solar Farm and Lightsource BP Solar Farm, except for a number of limited locations located in close proximity to solar farm infrastructure. As these solar farms are located greater than 10 km from the Project, it is considered that at this distance there are unlikely to be dominant significant effects associated with either scheme.

Sequential impacts comprising views of both wind farms and solar farms are likely, particularly given the network of highways and key roads around the LVIA Study Area, which traverse or are located adjacent to proposed wind and solar farm sites. For example, it is possible that a motorist travelling north along the Albany Highway towards Williams may experience views of Dardadine Wind Farm, Bellweather Wind Farm and the Project. As the layouts are not currently available for these projects, it is assumed that, while close views toward Bellweather Wind Farm may be possible, dominant significant impacts due to *sequential impacts* are unlikely. However, this would need to be confirmed once the layouts are developed. In addition it is noted that for some viewers the intensification of development in a largely rural area will be perceived negatively, whereas for some viewers driving through the landscape and experiencing views of the wind farms while travelling along the highway may be seen as a point of interest.

In summary, with the exception of the potential for localised combined impacts on a small section of Williams-Kondinin Road due to the potential for close views toward both the Project and proposed Bellwether Wind Farm, due to the distance between the other proposed wind farms and solar farms, the potential for other significant cumulative impacts is considered to be limited. However, there is potential for the landscape to appear more intensively developed, particularly as experienced in sequential views when driving around the wider Project Area, which may affect the perception of the rural character of the region. It is also noted that the planning schemes reviewed are supportive of renewable energy provided impacts on sensitive areas are considered and managed.

13. Conclusions

This LVIA has used a range of desk–based and field–based analysis techniques to assess the impact of the Project on the landscape and visual character of the Study Area in accordance with the requirements of the SPP 2050 and best practice techniques, as required by *Visual Landscape Planning in WA: a manual for evaluation, assessment, siting and design* (WAPC, 2007).

The potential for the Project to result in impacts to MNES, has been considered. While MNES occur within the Site, no matters assessed under the EPBC Act have been identified by this assessment as being protected on account of their aesthetic value.

The assessment has also considered scenic amenity values identified in relevant state, regional and local planning documents, reserve management plans and *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994). The following landscape features, where present within the Study Area, are considered to have high scenic amenity value and are valued at the State, regional and local level:

- Isolated and distinctive peaks, hills and rock outcrops (including mesas, areas of granite, laterite and dolerite and groups of boulders)
- Distinctive terrain features (e.g., scarps and breakaways)
- Distinctive strands of vegetation with a diversity of species, form, height, texture, colour and density or that provide a high level of textural contrast with surrounding landscape, such as:
    - inland eucalypt woodlands (such as salmon gums and gimlet)
    - species-rich heath lands on upper slopes
    - dramatic displays of seasonal colour (such as spring wildflowers)
    - patches of remnant vegetation.
- Distinctive and well-defined V-shaped and U-shaped valleys.
- Lakes, rivers, streams, pools, wetlands, and reservoirs with a natural appearance where permanent water is present within the landscape.

Landscapes considered to have moderate scenic amenity value include:

- Modified agricultural landscapes, especially during the winter to spring cropping season.
- Rounded hills typical of the area and minor outcrops
- Other areas of vegetation with a lower degree of diversity of species, form, height, texture, colour, and density that contrast moderately with the surrounding landscape.
- Broad slopes or valleys that are not distinctly defined.
- Seasonal waterways and wetlands or somewhat modified reservoirs.

Landscapes considered to have low scenic amenity value include:

- Large expanses of indistinctly dissected landform with limited topographic features of visual interest and few landmarks by which to orient.
- Extensive areas of similar vegetation with limited variation in diversity and colour.
- Water features absent.

The *Shire of Narrogin Local Planning Strategy* states that the "*local landscape it has limited capacity to absorb new activities that are inconsistent with its current visual character and qualities"*. However, the capacity of a landscape to accommodate wind farm development depends on the degree of impact the development will have on the existing character of the landscape; and the extent to which this impact can be modified and reduced by design (for example layout, component design and landscaping).

There are few landscapes in which a wind farm will not be a new and distinctive element. In order to perform their function effectively, wind turbines are very tall in comparison to most built elements and need to be located in open and/or elevated landscapes. Therefore, they are difficult (virtually impossible) to conceal, even if this were desirable, and are likely to be highly visible. Wind farms are therefore likely to introduce new elements into the landscape that affect the perception of landscape character. Accordingly, *all* wind farms will unavoidably result in some significant changes to the landscape and visual resource (character and views) due to their size, prominence and/or location.

In undertaking the assessment of visual impacts for the Project, it is also necessary to acknowledge that varying attitudes to wind energy developments and their associated impact are expressed by different individuals and constituencies.

The key issues identified are the changes in the character of the landscape within the Site boundaries and visual impacts on the settlements of Narrogin and Williams, as well as upon individual rural properties, road users and receptors (such as those at the Narrogin Aerodrome) nearest the Project, especially within around 5 km of the nearest wind turbine, where the wind turbines would have the greatest influence on the visual character of the landscape. This is particularly critical where views toward the Project will impact a significant proportion of the available view from a location (e.g., roads that traverse the Site). The visual impacts on views from Williams-Kondinin Road were also identified as a key consideration.

13.1 Landscape impact assessment

The landscape character assessment has defined six LCTs within the Study Area. The LCTs identified have been informed a review of broad scale landscape units identified in *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994) and the *Wheatbelt Regional Planning and Infrastructure Framework*; the IBRA, pre-European vegetation mapping (Department of Primary Industries and Regional Development (DPIRD), 2024); soil landscape mapping datasets (DPIRD, 2022); and the findings of fieldwork investigations. This assessment also considers the presence of scenic landscape elements within LCTs in accordance with the *Wheatbelt Region parks and reserves management plan 95 2021* (DBCA, 2021), *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994), and the *Shire of Narrogin Planning Strategy* (WAPC, 2020).

Only two LCTs identified within the Study Area are anticipated to be directly impacted by the Project, *LCT A: Rural and forested uplands* (*LCA A1: Dryandra – Narrogin Rural and Forested Uplands*) and *LCT B: Major Watercourses* (*LCA B4: Williams River major watercourse and tributaries*). The sensitivity of LCT A is up to high, associated with areas supporting landscape features acknowledged as having high scenic value (forested areas within reserves) and medium elsewhere for areas considered to be more representative of

typical rural character of the Dryandra Uplands region (which includes those areas of LCA A1 directly impacted by the Project).

The sensitivity of LCT B is also up to high, however, only localised parts of *LCA B4: Williams River major watercourse and tributaries* are located within the Site. While the Project will require some watercourse crossings within the Site and typically be collocated with existing watercourse crossings. Therefore, any impacts on the character of these watercourses is anticipated to be highly localised and would not result in a significant impact to the overall character of this LCT.

Other LCTs present in the wider Study Area are not directly impacted by the Project as they are not located within the project footprint, therefore any impacts on these areas would be indirect.

The landscape impact assessment has concluded that there would be:

- Direct **moderate, not significant** impacts on LCT A (*LCA A1: Dryandra – Narrogin Rural and Forested Uplands*) due to the significant influence of wind turbines on localised parts of these rural areas.
- Direct, **minor to moderate, not significant** impact on LCT B (LCA B4: Williams River major watercourse and tributaries) due to the potential for localised impacts associated with watercourse crossings within the Site.

No director significant impacts have been identified on LCT C, LCT D, LCT E or LCT F.

13.2 Visual impact assessment

The visual assessment has considered the impact of the Project on views and visual receptor audiences present around the Site. It is noted that much of the Study Area is sparsely populated, however there are settlements located throughout the Study Area including Williams and Narrogin situated at a moderate distance from the Project. The introduction of new wind turbines and associated infrastructure (including access tracks, a substation, BESS and high voltage overhead feeder lines) at the Site will inevitably change views experienced by people living in, working in and visiting this area and the surrounding landscape.

The VAM indicates that views of wind turbines would be theoretically visible through large parts of the Study Area and the visibility of the Project is largely influenced by the undulating terrain, which provides vantage points and opportunities for long distance views toward the Site, and the distance from the Project. However, as determined through the field analysis many of these potential views are restricted by local screening elements such as tree belts along road corridors and creeks. As such, it is considered that in many instances the actual visibility of the Project is far less than indicated by the modelling (e.g., views from Yornaning are not possible due to its vegetated setting). It is also acknowledged that within Narrogin and Williams, the presence of urban development and infrastructure also further limits the visibility of the Project.

The potential for views within 30 km of the Site was considered and seventeen viewpoints were selected to represent the views of identified receptors including:

- Residents living in the rural towns of Williams and Narrogin
- Residents living on rural properties in the farmland on and surrounding the Site
- Farmers and other people working in the rural landscape around the Site

- Visitors and workers at Narrogin Aerodrome, including recreational 'gliders', and to a lesser extent
- Visitors and staff at Downderry Wines
- Recreational users of the landscape, including those visiting Dryandra Woodland National Park, Foxes Lair, Contine Hill Lookout and Picnic Area, Lions Lookout and Yilliminning Rock
- Motorists (including tourists) using roads within the Study Area including the Albany Highway, Williams-Kondinin Road, Clayton Road, Cowcher Road and Curnows Road.

No representative viewpoints were included from Cuballing, Highbury, Popanyinning, Piesseville, Yornaning or the historic Dryandra Woodland Settlement, as it is not considered that views toward the Project are likely from these locations due to the distance of these locations from the Project and the presence of intervening topography and vegetation. Should distant, filtered views toward the Project be evident from these locations, it is anticipated that these would be barely perceptible and **not significant**. The visual impact assessment has concluded that there would be:

- **Moderate to Major, Significant**, impacts on passing motorists on Williams-Kondinin Road (Viewpoint 5) where close views toward wind turbines are possible. However it is noted that existing roadside shelterbelts contribute significantly to reducing the availability of these close views toward the Project.

All other visual impacts are considered to be **not significant**, including:

- **Moderate, Not Significant,** impacts on visitors to the Williams Sports Pavilion (Viewpoint 1), rural residents located in close proximity to the Project (Viewpoint 6, which includes views of the overhead transmission line and potential glimpses of the BESS), other more distant glimpsed views from Williams-Kondinin Road (Viewpoint 8, which also includes views of the overhead transmission line), Lions Lookout (Viewpoint 9), Dryandra National Park (Viewpoint 13), and passing motorists along local roads situated in close proximity to the Site where close views to wind turbines will be possible, such as Clayton Road (Viewpoint 14).
- **Minor to moderate, Not Significant,** impacts on views from the Albany Highway (Viewpoint 4) and local roads situated at a moderately close distance from the Project (Viewpoint 16), general areas within the town of Williams (Viewpoint 2 and Viewpoint 3), the western outskirts of Narrogin (Viewpoint 10), Downderry Wines (Viewpoint 7), Yilliminning Rock (Viewpoint 11) and potential glimpsed views from the picnic area and walking trails within the Contine Hill section of Lol Gray State Forest (Viewpoint 12B)and the Narrogin Aerodrome (Viewpoint 17) and passing motorists on local roads situated at some distant from the nearest wind turbine such as Cowcher Road (Viewpoint 15).
- **No impact** on the primary view from Contine Hill Lookout (Viewpoint 12A) and the towns of Highbury, Popanyinning, Piesseville and Yornaning.

Should distant filtered views toward the Project be evident from Cuballing and the historic Dryandra Woodland Settlement above existing vegetation (noting no clear or open views toward the Project were identified during fieldwork investigations), it is anticipated that these would represent a barely perceptible magnitude of change and the visual impacts on these areas would be **not significant**.

13.3 Conclusions

In comparison with other, well-established, forms of development in the countryside (e.g., associated with arable farming and grazing industries), wind turbines are relatively unfamiliar, prominent elements within the landscape. Wind farms in particular are vertical and have the unique characteristic of movement. Individually or in groups, wind turbines will be distinctive features in the landscape. However, the anticipated landscape and visual impacts need to be considered in parallel with other matters, such as the following:

- The limited locational flexibility of wind farms (e.g., requirement of windy locations, feasible connection to the grid and/ or supply network) and the need to find a balance between maximising energy generation whilst minimising impacts (i.e., siting can be influenced by non–operational factors, including local landscape characteristics).
- Although the Study Area comprises a strong and typical rural character, the number of permanent visual receptors obtaining prolonged close distance views to the Site is limited to nearby rural receptors.
- While there are settlements within the LVIA Study Area that account for larger quantities of receptors, these are typically located some distance from the Site where the likely impact of the Project is reduced and more influenced by the presence of intervening vegetation and topography.

This LVIA has been undertaken in accordance with the requirements of the SPP 2050, the Shire of Narrogin *Local Planning Policy No. D11 – Wind Farm/Wind turbines* (DPLH, 2024) and the Shire of Williams *Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities* (Shire of Williams, 2023). This LVIA has also considered the requirements of the *Position Statement: Renewable energy facilities* (WAPC, 2020) and best practice techniques, as required by *Visual Landscape Planning in WA: a manual for evaluation, assessment, siting and design* (WAPC, 2007).

The potential for the Project to result in impacts on MNES and 'significant landforms', has been considered. While MNES occur within the Site, no matters assessed under the EPBC Act have been identified by this assessment as being protected on account of their aesthetic value. No 'significant landforms' considered to meet the EPA's criteria are anticipated to occur within the Site or be directly impacted by wind turbine locations.

While Project infrastructure will have direct localised impacts on two of the identified LCTs (*LCT A: Rural and forested uplands* (*LCA A1: Dryandra – Narrogin Rural and Forested Uplands*) and *LCT B: Major Watercourses* (*LCA B4: Williams River major watercourse and tributaries*), no significant effects on landscape have been identified.

With regards to visual impacts, it is considered that 291 m high wind turbines will be visible, due to their scale and the undulating character of the Site where the wind farm is proposed. The visual assessment has identified that views towards the Project will be experienced by a variety of receptors, including local residents, rural workers and motorists and visitors who may be undertaking tourist drives, visiting key tourism destinations or travelling along roads that traverse the Site and LVIA Study Area. Significant affects are only anticipated for one of the identified seventeen representative viewpoints. This relates to close-range views experienced by passing motorists travelling along Williams-Kondinin Road (noting that existing roadside shelterbelts contribute significantly to reducing the availability of these views and that views from Williams-Kondinin Road are experienced at speed).

No significant impacts on views from the town of Narrogin, Williams, Dryandra Woodlands National Park or other key recreation and tourism facilities have been identified. It is important to note that while there will be a moderate change to the character of the Site and a significant change to only one of the seventeen representative viewpoints identified above, because of the introduction of wind turbines and ancillary infrastructure into the rural landscape, viewers will respond in different ways to the change. Landscape appreciation is relative, and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences. Some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact.

The potential for significant cumulative impacts is considered to be limited. The greatest potential impacts relate to localised combined impacts on a small section of Williams-Kondinin Road where there is potential for close views toward both the Project and proposed Bellwether Wind Farm. Due to the distance between the other proposed wind farms and solar farms in the area and the Project, significant combined and sequential impacts are not anticipated. However, there is potential for the landscape to appear more intensively developed, particularly as experienced in sequential views when driving around the wider Project Area, which may affect the perception of the rural character of the region.

Mitigation of identified impacts has been considered. It is acknowledged that completely screening views of 291 m high wind turbines is not generally possible, even if this were to be a desirable outcome. However, opportunities to enhance the integration of the wind farm into the landscape including through the retention and provision of vegetation have been described (particularly through the retention and strengthening of roadside shelterbelts along road corridors which restrict the availability of views toward the Project).

In conclusion, the assessment considers that the Project will not result in any significant impacts on the landscape character of the Site. However, wind turbines will be visible against the backdrop of rolling hills and introduce new, dominant visual elements into what is currently a relatively undeveloped and typical rural landscape. Significant visual impacts have been identified for only one of the identified representative viewpoints associated with close views toward the Project from the Williams-Kondinin Road where open and close-range, glimpsed views toward the Project are possible from breaks in the roadside shelterbelts. Other close-range views of the Site will also be possible from local roads that traverse or bound the Site; however, it is anticipated that these views will be experienced by fewer receptors. All other visual receptors are considered to have no to moderate impacts.

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Appendix 1: GIS Figures

The following GIS figures have been prepared by Umwelt to support the LVIA:

Figure 1: Regional Context

Figure 2: Site

Figure 3: Study Area

Figure 4: Landscape Planning Designations

Figure 5: Landform and Hydrology Context

Figure 6: Landscape Character Types

Figure 7: Blade Tip ZTV Assessment – Zone of Theoretical Visibility

Figure 8: Blade Tip ZTV Assessment – Number of Visible Wind turbines

Figure 9: Hub Height ZTV Assessment – Zone of Theoretical Visibility

Figure 10: Hub Height ZTV Assessment – Number of Visible Wind turbines

Figure 11: Key Visual Receptors, Tourist Drives and Representative Viewpoints

Figure 12: Cumulative Impact Assessment

Appendix 2: Viewpoints and visualisations

The following viewpoint figures and visualisations have been prepared based on field photography by LatStudios:

Appendix 3: Policy Review

National planning and legislative context

Table A3-1: Review of national standards and guidance relevant to LVIA

The Environment Protection and Biodiversity Act 1999 (EPBC Act)
The *Environment Protection and Biodiversity Conservation Act* 1999 (Cth) (EPBC Act) is the 'key piece' of commonwealth legislation relating to the environment and is focussed on matters of national environmental significance (MNES), which are based primarily on Australia's responsibilities under international agreements on environmental protection as well as the 1997 Heads of agreement on Commonwealth and State roles and responsibilities for the Environment. There is no specific national legislation requiring or directing the assessment of scenic amenity for renewable or major infrastructure projects. However, the EPBC Act requires assessment of any 'action' that will have, or is likely to have, a significant impact on a MNES, including the critically endangered Eucalypt Woodlands of the Western Australian Wheatbelt occurring within the Site. As these woodlands are not protected on account of their scenic or landscape character value (rather they are protected for their biodiversity value) impacts on this vegetation community have not been considered further in this LVIA.
AS/NZS 4282:2023 Control of the obtrusive effects of outdoor lighting (Standards Australia, 2023)
This standard sets out guidelines for the control of the obtrusive effects of outdoor lighting and gives recommended limits for the relevant lighting parameters to contain these effects within tolerable levels. It refers to the potential effects of lighting systems on receptors including nearby residents and users of adjacent roads. It does not apply to road lighting or lighting systems that are of a cyclic or flashing nature. Should lighting be proposed as part of the Project, the relevant considerations of this standard should be addressed – noting that public lighting is excluded from the standard as it is provided in the interest of public safety and security.
AS4970-2009: Protection of Trees on Development Sites (Standards Australia, 2009)
This Standard provides guidance on the principles for protecting trees on land subject to development. Where development is to occur, the Standard provides guidance on how to decide which trees are appropriate for retention, and on the means of protecting those trees during construction work.
Best Practice Guidelines for Implementation of Wind Energy Projects in Australia (Clean Energy Council, 2018)
The aim of the Guidelines is to describe the environmental, amenity and stakeholder consultation aspects of the planning, approval and operational aspects of wind farms. Consideration of technical/commercial and contractual aspects are also included where the issues are of public interest. The Guidelines do not replace existing energy or environmental planning legislation, policy or regulations at local, state or federal levels but can be used to support these assessments. Project proponents must ensure they are developing their project according to the current legislation, policy and/or regulations relevant to the location of their project.

Issue/Concern	Purpose/Intent
Attributes of a Best Practice Windfarm	The guidelines identify five key attributes of a Best Practice Wind Farm, the following of which are relevant to the assessment of impacts on landscape and visual values: **Socially sustainable** • The wind farm proponent will actively seek stakeholder participation and support through well-planned, open, inclusive and responsive engagement processes. • The proponent will ensure sound and consistent methodologies are applied to assess and identify the most appropriate siting of the wind farm for landscape, amenity and environmental impacts. **Environmentally sustainable** • The wind farm will be sensitive to the environment. Any significant negative impacts will be avoided or minimised and appropriately managed or offset as required during its development, construction, operation and decommissioning.
Landscape and visual assessment requirements	The existing landscape must be described, and the potential landscape and visual impact of the proposed wind farm assessed and evaluated. A comprehensive landscape assessment: • Should describe the landscape and evaluate its capacity for change in relation to the visual impact of the proposed development. • Must always consider visual amenity in the context of the existing environment. • Must consider local community values and the value that the local community puts on landscape character and attributes. The guidelines reference the Wind Farms and Landscape Values National Assessment Framework (Auswind and Australian Council of National Trusts, 2005) - which provides a comprehensive process for assessing, evaluating and managing the visual impacts of wind farms, whilst leaving the actual technical methods, tools and techniques for developers to decide upon.
Future development	As wind farms often have lifespans greater than 20 years, some consideration should also be given to the potential of future dwellings (such as vacant lots upon which a dwelling may be constructed without a planning permit) where required as a result of the planning framework.
Cumulative impacts	Consideration of the cumulative impacts of the wind farm together with other development in the area may also be appropriate although this can be difficult in practice. Cumulative impacts can refer to landscape and visual effect.
Indigenous heritage	Prior to commencement of any project or development that requires ground disturbance or excavation or substantial changes to landscape access and visual amenity, it is important to determine whether the area contains known Aboriginal heritage or has the potential to have heritage values.
Shadow flicker	The proponent will need to assess the predicted duration of shadow flicker (the intermittent shading of the sun by the blades of the wind turbine) at relevant locations.

	While typically identified as an issue that must be considered at proposed wind farms, only Victoria provides a limit for shadow flicker (30 hours per year – experienced immediately surrounding the area of a dwelling). Consideration of some mitigating effects, such as cloud cover, may also be allowable depending on local guidelines. The common objective of all proponents should be that shadow flicker from wind farms does not detrimentally affect the amenity of nearby landowners.
Draft National Wind Farm Development Guidelines (Environment Protection and Heritage Council, 2010)	
Appendix C ("Landscape") of the 'Draft National Wind Farm Development Guidelines' provides guidance to ensure the impacts of wind farms on landscape values are fully understood and clearly reported.	
Issue/Concern	**Purpose/Intent**
Landscape character impacts	Advocates reporting on the anticipated *extent* to which wind farm development may impact on the existing character of the landscape and its features. In particular, it recommends dividing the study area into "*character units for the purpose of evaluation; and developing strategies to manage and plan for each character unit*".
Landscape significance impacts	Recommends reporting on the *significance* of a landscape and clearly outlining which aspects of significance (if any) a wind farm would impact on. The significance of the impact is dependent on the landscape value and sensitivity (i.e., scenic, character, visual and community values) and the anticipated magnitude of change.
Impacts on viewsheds and views	Encourages reporting on the anticipated impact of the wind farm on visual amenity, through representative viewsheds and views (static and dynamic).
Impacts on community values	Advocates "*direct community input*" into the assessment of landscape and visual impacts, through definition of (predominantly subjective) community landscape values. For example, local people often have strong attachment to the outlook from a particular viewpoint, and this knowledge should inform choice of viewpoints for impact assessment.
Cumulative Impacts	Recommends reporting on the cumulative landscape and visual effects resulting from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it). Cumulative impacts may occur where there are no other wind farms in the area, but by virtue of combination with other major infrastructure or large-scale developments (e.g., industrial, urban, large-scale agricultural) and/or direct or indirect landscape changes (e.g., vegetation clearing) which may alter the overall character or values of an area.
Management and mitigation	Management and mitigation refer to recommended actions to reduce anticipated residual impacts. However, the onus should be on the siting, design and layout of the wind farm development, rather than relying on mitigation measures.

State

Table A3-2: Review of state legislation, policy and guidance relevant to LVIA

Environmental Protection Act 1986
Part IV - Environmental Impact Assessment may require the consideration of potential impacts on landscape and visual values in accordance with the relevant Environmental Factor Guidelines (included below).
Environmental Factor Guideline: Landforms (Environmental Protection Authority, 2018)
• The environmental objective of the factor Landforms is *'to maintain the variety and integrity of significant physical landforms so that environmental values are protected'*. • Define landforms as *'the distinctive, recognisable physical features of the earth's surface having a* characteristic *shape produced by natural processes. A landform is defined by the combination of its geology (composition) and morphology'.* • The *guidance is intended for assessment of impacts on potentially significant landforms, which can be determined using the following criteria:* o Variety - The landform is a particularly good or important example of its type. The landform is not well represented over the local, regional or national scale or differs from other examples at these scales, either naturally or as a result of cumulative impacts from existing and reasonably foreseeable activities, developments and land uses. o Integrity - The landform is intact, being largely complete or whole and in good condition. o Ecological importance - The landform has a distinctive or exclusive role in maintaining existing ecological and physical processes; for example, by providing a unique microclimate, source of water flow, or shade. The landform supports endemic or highly restricted plants or animals. o Scientific importance - The landform provides evidence of past ecological processes or is an important geomorphological or geological site. The landform is of recognised scientific interest as a reference site, or an example of where important natural processes are operating. o Rarity - The landform is rare or relatively rare, being one of the few of its type at a national, regional or local level. o Social importance - The landform supports **significant amenity**, cultural or heritage values linked to its defining physical features. • The landform does not have to meet all criteria, and may only meet one, to be considered a significant landform. • The guideline notes that impacts on 'mesas' is a key issue. • Whilst not specifically relevant to the assessment of aesthetic impacts, if significant landforms are identified within the Site, then the assessment of impacts on these specific features should be considered. In addition, the consideration of these attributes within the landscape assessment will be made.
Environmental Factor Guideline: Social Surroundings (Environmental Protection Authority 2018)
• Notes that for the purpose of EIA, amenity values include both visual amenity, and the ability for people to live and recreate within their surroundings without any unreasonable interference with their health, welfare, convenience and comfort. • Notes that "*Natural landscapes and views often contribute to visual amenity, such as areas of high heritage, cultural or social significance due to their natural features or scenic quality*" and that "*Amenity values can be highly subjective*".

• The EPA expects proponents to consider and/or design proposals with appropriate distances in mind, informed by recognised published separation distance guidelines to ensure human health and wellbeing, local amenity and aesthetic enjoyment continue. • Notes that large-scale developments within areas of significant aesthetic value may impact on aesthetic (social) values.
Environmental Factor Guideline: Inland Waters (Environmental Protection Authority, 2018)
• Includes requirement for the consideration of impacts on inland waters with significant cultural and aesthetic values.
State Planning Strategy 2050 (WAPC, 2014)
The State Planning Strategy is the highest order planning document in Western Australia. The State Planning Strategy provides the strategic context for planning and development decisions throughout the State. The Western Australian Planning Commission's State Planning Strategy 2050 promotes renewable energy initiatives.

Reference	Relevant planning provisions
Vision – Sustained growth and prosperity	A diverse state; offering a diversity of ecosystems, landscapes, enterprises, people and cultures. In 2050, the diversity of Western Australia's natural assets and unique landscapes, ecosystems, peoples, enterprises, cultural landscapes and historic heritage places will be celebrated, protected and recognised as an important contributor to sustained prosperity.
Strategic Goal 5 – Conservation	Western Australia's unique natural environment encompasses pristine and diverse natural areas both onshore and offshore, with world-renowned biodiversity, scenic landscapes, heritage sites, marine and coastal areas and places of cultural significance. The clean and beautiful natural environment is a major contributor to the State's liveability and attractiveness. South West Australia is a global biodiversity hotspot that includes Mediterranean-type forests, woodlands and scrub eco-regions. The region has highly diverse landscapes and species, and has a wet winter, dry summer Mediterranean climate. It is one of five such regions in the world. Historically, land management practices have led to native vegetation being extensively cleared, with less than 40% remaining in the southwest. It is important that the conservation of this region continues to be achieved. Conservation will increase the resilience of the State's natural environment by limiting the clearing of native vegetation, maximising natural habitat protection and rehabilitation, avoiding development in environmentally sensitive areas, and reducing the fragmentation of vegetation by urban and industrial development
1.3 Tourism	The diverse natural and cultural landscapes of the State offer an array of unique experiences to visitors and communities. Western Australia's environment and landscape character create a unique and attractive holiday destination and ecotourism is one of the State's key tourism markets.
3.1 Spaces and Places	Identifies 'character and amenity' and 'landscape and scenic quality' as factors that contribute to the identity of spaces and places.

3.3 Health and Wellbeing	People are often attracted to spaces and places with iconic landscapes, unique histories, exciting activities or which provide an overall calming influence. These spaces and places offer people inspiration, stress relief, aesthetic values and a sense of spirituality and belonging.
4 Environment	Objective: To conserve biodiversity, achieve resilient ecosystems, protect significant landscapes and manage the State's natural resources in a sustainable manner

State Planning Framework (WAPC, 2017)

State Planning Policy 1 (SPP 1) is the State Planning Framework, which outlines all the state and regional policies, plans, strategies and guidelines which apply to land use and development in WA.

SPP 1 provides the overall vision and is further articulated and applied by strategies, policies and plans dealing with particular planning issues or regions of the State.

Reference	Relevant planning provisions
General Principles for Land Use Planning and Development	The following principles are derived from the State Planning Strategy 2050 (2014). They form the basis for this Framework and form the underlying principles for all State and regional plans, policies and strategies. Environment Principle: Conserve the State's natural assets through sustainable development. The protection of environmental assets and the wise use and management of resources are essential to encourage more ecologically sustainable land use and development. Planning should contribute to a more sustainable future by: • promoting the conservation of ecological systems and the biodiversity they support including ecosystems, habitats, species and genetic diversity. • assisting in the conservation and management of natural resources, including air quality, energy, waterways and water quality, land, agriculture and minerals, to support both environmental quality and sustainable development over the long term. • protecting areas and sites with significant historic, architectural, aesthetic, scientific and cultural values from inappropriate land use and development • adopting a risk-management approach which aims to avoid or minimise environmental degradation and hazards; and preventing environmental problems which might arise as a result of siting incompatible land uses close together. Table 5 references the Guidelines for Visual Landscape Planning in Western Australia (discussed further below).

State Planning Policy 2.0 - Environment and natural resources policy

SPP 2.0 defines the principles and considerations that represent good and responsible planning in terms of environment and natural resource issues within the framework of the State Planning Strategy.

Reference	Relevant planning provisions
5.1 General matters	• Notes that planning strategies, schemes and decision making should:

	○ Protect significant natural, Indigenous and cultural features, including sites and features significant as habitats and for their floral, cultural, built, archaeological, ethnographic, geological, geomorphological, visual or wilderness values. ○ Support conservation, protection and management of native remnant vegetation where possible, to enhance soil and land quality, water quality, biodiversity, fauna habitat, landscape, amenity values and ecosystem function.
5.5 Biodiversity	• Notes that "*Biodiversity is also fundamental to the quality and character of the landscape and in providing recreational opportunities, aesthetic value and cultural identity*."
5.9 Landscape	• Notes that "*Western Australia has a diversity of high value landscapes and scenic areas, many of which are unique to Australia"* and that planning strategies, schemes and decision making should: ○ Identify and safeguard landscapes with high geological, geomorphological or ecological values, as well as those of aesthetic, cultural or historical value to the community, and encourage the restoration of those that are degraded. ○ In areas identified in the above, consider the level or capacity of the landscape to absorb new activities and incorporate appropriate planning and building design and siting criteria to ensure that new development is consistent and sensitive to the character and quality of the landscape. ○ Consider the need for a landscape, cultural or visual impact assessment for land use or development proposals that may have a significant impact on sensitive landscapes.
State Planning Policy 2.5 - Rural Planning (WAPC, 2016)	
The purpose of SPP 2.5 is to protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. Ensuring broad compatibility between land uses is essential to delivering this outcome.	
Reference	**Relevant planning provisions**
Rural landscape values	• This policy applies to rural land and rural land uses in Western Australia. • Rural land accommodates significant environmental assets and natural landscape value…which need to be factored into planning for rural areas.
5.10 Managing and improving environmental and landscape attributes	The planning system is well-placed to address environmental and landscape values when land use change is contemplated, to ensure that negative impact from development is minimised. Environmental and landscape attributes will be managed and improved by: • supporting and promoting private conservation areas within Western Australia in addition to State and local government conservation reserves • supporting the establishment of environmental corridors in strategies and schemes, including connection of State and local reserves and waterways and wetlands within private conservation areas • considering future ownership and management arrangements prior to the zoning of land for conservation purposes • supporting rural living proposals with a conservation theme that result in improved environmental outcomes, where that land is

	identified as suitable for future rural living subdivision in a strategy or scheme, in accordance with the policy requirements of clauses 5.2 and 5.3. • supporting the inclusion into strategies and schemes of provisions that promote protection of valued landscape and views, as required. • making planning decisions that support the protection of water resources and their dependent environments in order to maintain or improve water quality.
Position Statement: Renewable energy facilities (WAPC, 2020)	
This document outlines the WAPC's requirements to support the consistent consideration and provision of renewable energy facilities within Western Australia. It supersedes *Planning Bulletin 67 Guidelines for Wind Farm Development* (2004). The policy identifies assessment measures to facilitate appropriate development of renewable energy facilities. It seeks to ensure these facilities are in areas that minimise potential impact upon the environment, natural landscape and urban areas while maximising energy production returns and operational efficiency.	
Reference	Relevant planning provisions
Policy Objectives	The objectives of this position statement are to: • guide the establishment of renewable energy facilities to support the State Energy Transformation Strategy (March 2019). • outline key planning and environmental considerations for the location, siting and design of renewable energy facilities. • promote the consistent consideration and assessment of renewable energy facilities. • facilitate appropriate development of renewable energy facilities while minimising any potential impact upon the environment, natural landscape, and urban areas. • encourage informed public engagement early in the renewable energy facility planning process.
Local planning framework – local planning strategy	The local planning strategy should indicate landscape protection areas that should exclude renewable energy facilities. Where a local government does not have an approved strategy, the subject site may require detailed evaluation as to the landscape qualities as part of the overall planning assessment. For example, areas of high environmental and landscape value may be unsuitable for large scale wind or solar farm development. Visual landscape analysis, including view shed mapping, may be undertaken to enable important views and landscape character to be identified and protected.
Community consultation	Early consultation with the community and stakeholders by the proponents is encouraged to ensure that the proposal is compatible with existing land uses on and near the site.
Visual and landscape impact (key issue: our emphasis)	The location and siting of a renewable energy facility may require a visual and landscape impact assessment that addresses: • landscape significance and sensitivity to change, site earthworks, topography, extent of cut and fill, the extent and type of vegetation, clearing and rehabilitation areas, land use patterns, built form character, public amenity and community values. • likely impact on views including the visibility of the facility using view shed analysis and simulations of views from significant viewing

	locations including residential areas, major scenic drives and lookouts. • layout of the facility including the number, height, scale, spacing, colour, surface reflectivity and design of components, including any ancillary buildings, signage, access roads, and incidental facilities. • measures proposed to minimise unwanted, unacceptable or adverse visual impacts. • *Visual Landscape Planning in WA: a manual for evaluation, assessment, siting and design,* (November 2007) and the Australian Wind Energy Association and the Australian Council of National Trusts Publication *Wind Farms and Landscape Values* (2005) provide detailed guidance on visual landscape impact assessments.
Construction Impact	Site disturbance should be minimised during construction through careful siting and measures to address erosion, drainage run-off, flooding, water quality, retention of remnant vegetation, stabilisation of top soil, and weed and disease hygiene vehicle and machinery access and movement.
Decommissioning	A decommissioning program should be separately developed in relation to removal of the facility and any rehabilitation requirements
Planning Bulletin No. 67 - Guidelines for Wind Farm Development (superseded) (Western Australian Planning Commission, 2004)	
This Planning Bulletin is intended to provide local government, other relevant approval authorities and wind farm developers with a guide to the planning framework for the balanced assessment of land-based wind farm developments, throughout the State of Western Australia. These guidelines identify the planning issues relevant to wind farm developments and suggests measures to be considered on a case-by-case basis to reduce the impact of wind farm developments. While this document has been superseded by the *Position Statement: Renewable energy facilities* it includes useful information about key considerations for wind farm development in relation to LVIA so is included here for reference.	
Reference	Relevant planning provisions
Objectives of the Guidelines	The guidelines identify four key objectives, the following of which are relevant to the assessment of impacts on landscape and visual values: • Facilitate the development of wind farms in an efficient, cost-effective and ***environmentally responsible*** manner that meets community needs; while considering the needs of developers, and State and national imperatives. • ***Minimise disturbance to the environment*** (including landscape) and loss of public amenity in the establishment, operation, maintenance and decommissioning of wind farms (*our emphasis*).
Key issues	The following effects are identified as key issues concerning the development of wind farms: • Visual impact on landscape. • Other amenity issues, including “shadow flicker”, blade glint and overshadowing.
Site analysis requirements	A site analysis or audit will be required, including plans, photographs and any other material, which describes the site and matters that influence the proposal. Applications for wind farms should include:

	• A context statement for the locality including current planning framework, significant features, sites of cultural significance, characteristics, contours, existing land uses and ownership. • A technical assessment on the suitability of the site…including landscape significance.
Landscape and visual impact assessment requirements	A landscape and visual assessments should be presented using best practice techniques. Visual impact is based on a number of factors which affect the perceived visual quality. The degree to which a wind farm development will impact on the landscape will depend upon: • Siting, layout and design of the wind turbines, infrastructure, signage and ancillary facilities, including provision for tourism. • Number, colour, shape, height and surface reflectivity of the towers and blades. • Visibility of the development, having regard to the location, distance from which the development is visible, skyline and view sheds. • Significance and sensitivity of the landscape, having regard to topography, the extent and type of vegetation, natural features, land use patterns, built form character and community values. Where appropriate a landscape and visual impact assessment should be supported by computer visualisation/simulation view shed analysis, static seen area diagram and other modelling data.
Mitigation methods	Methods to ameliorate visual impact include: • Ensuring all wind turbines look alike, have a clean, sleek appearance and that the blades rotate in the same direction. • Minimising the number of wind turbines, as appropriate, by using the largest possible model (subject to the visual absorption capabilities and environmental considerations of the site) rather than numerous small ones. • Siting the wind farm, ancillary buildings, access roads and transmission infrastructure to complement the natural landform contours and landform backdrop, including ridgelines. • Ensuring the choice of materials and colour (e.g., off-white and grey for wind turbines, low contrast for roads) for the development complements the skyline and the backdrop of the view sheds. • Minimising removal of vegetation and using advanced planting of vegetation screens as visual buffers where appropriate. • Ensuring good quality vegetation and landform rehabilitation, on-site and off-site, where appropriate. • Locating wind turbines to reflect landscape and topographical features (e.g., a random pattern may suit a rolling, varied landform and a linear pattern may suit a coastal edge, farm or industrial site). • Avoiding clutter, such as advertisements and apparatus.
Construction impacts	Consideration of impacts on landscape and visual values associated with construction impacts including staging, phasing and freight transportation proposals.
Decommissioning and reinstatement	Consideration of impacts on landscape and visual values associated with decommissioning and reinstatement proposals.
Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design (WAPC, 2007)	

This manual provides advice to state agencies, local governments, developers and the community on techniques for incorporating visual landscape planning into the planning system.

Visual landscape evaluation and visual impact assessment are evolving practices which are continuing to develop to take into account new and emerging issues and techniques. This manual should, therefore, be regarded as a 'work in progress'. It has been produced as a first step in visual landscape planning and will be used as a guide so that the practices of visual landscape evaluation and visual impact assessment can continue to evolve and mature over time.

Reference	Relevant planning provisions
State planning framework	The State Planning Strategy states that one of the criteria for plans is to "ensure that significant landscapes are identified and protected" and "that development proposals incorporate measures to retain or enhance landscape elements and vegetation". State Planning Policy No 2: Environment and Natural Resource Policy elaborates on the importance of protecting and enhancing landscapes by stating that planning strategies, schemes and decision making should: • identify and protect landscapes with high natural resource values (such as ecological, **aesthetic** or geological) and encourage the restoration of degraded landscapes; (*our emphasis*) • consider the capacity of landscapes to absorb development and the need for careful planning, siting and design of new development in a way which is sensitive to the character of the landscape. • consider the need for a landscape or visual impact assessment for development proposals that may impact upon sensitive landscapes.
visual impact	This is the tool used to assess the impact of development on the landscape to ensure that development is sympathetic to the landscape character and complies with adopted policies and rules.
Rural landscape character and values	The Manual references the following relevant to the landscape character of the Study Area: • Western Australia's image has been shaped and defined by its rural and remote landscapes. • The Wheatbelt region has a distinct character of broad-acre farming lots with stands of remnant vegetation, as well as shelterbelts of trees to protect the soils from wind and water erosion. • The colours of the agricultural areas over the state vary…from the orange dolerite in the wheat-belt, with the occasional York gums. • …rural areas have been somewhat undervalued for their inherent visual, aesthetic character, and landscape quality tends to be overlooked in statutory processes in rural areas, instead the perception of the land has primarily been in terms of economic return. • In recent years there has been some indication that community attitudes toward rural landscapes are changing; with a greater priority being placed on action to address landscape values and changes to rural character…
Visual landscape planning methods	A landscape and visual assessment should be presented using best practice techniques. Visual impact is based on a number of factors which affect the perceived visual quality. The visual landscape management system developed by the Department of Environment and Conservation (DEC) (Appendix 6) has suited the requirements of that agency in broad scale planning and managing its

	public lands, primarily in natural settings. There has been a call for a visual landscape planning model for private land (consisting of natural, rural and built landscapes) that would complement the DEC system. Western Australia has no single model for visual landscape planning in the context of the current planning system. The Manual provides an effective generic model that is a hybrid amalgam of those that have preceded it. The Manual identifies several broad steps common to most visual landscape planning methodologies and the methods developed for this manual are consistent with these. There are also standard sequential steps for visual impact assessment of development proposals. The process developed for this manual comprises five steps. • Step 1: Determine visual management objectives. • Step 2: Describe proposed development. • Step 3: Describe the potential visual impacts. • Step 4: Develop visual management measures. • Step 5: Prepare final recommendations and options for monitoring.
Wheatbelt Region parks and reserves management plan 95 2021 (Department of Biodiversity, Conservation and Attractions, 2021)	
The management plan covers 745 existing reserves or parcels of land within the Wheatbelt Region, totalling more than 1,118,168 ha managed by the department in accordance with the Conservation and Land Management Act 1984 (CALM Act). This includes areas within the Study Area referred to as the 'Dryandra Woodlands' which includes areas within national park, state forest and nature reserve and other freehold crown land.	
Reference	Relevant planning provisions
3 Key values and management issues	• Notes that "*spectacular rock outcrops and breakaways, lakes, wetlands and riparian areas, dramatic displays of seasonal colour and distinctive natural vegetation combine to create Wheatbelt landscapes of outstanding scenic quality*."
17 Visitor activities	• Notes that most visitors to the Wheatbelt Region are self-drive tourists. • Notes that the planning area has significant visual landscape values including: o major rock outcroppings (granite, laterite and dolerite based) o distinctive stands of vegetation especially the inland eucalypt woodlands (such as salmon gums and gimlet) and species-rich heath lands on upper slopes, dramatic displays of seasonal colour (such as spring wildflowers) o lakes, rivers, streams and wetlands (such as Dumbleyung Lake). • The modified agricultural landscapes also provide visually pleasing views seen from high vantage points across the region, especially during the winter to spring cropping season. • Visual landscape values are also considered as part of the department's impact assessments for other development proposals in the Region. • Includes the following relevant management strategies: o Identify, sensitively manage and minimise degradation of visual landscape values, particularly along access corridors, tourist destinations, lookout points and prominent natural features consistent with department standards.
22 Other resource use	• Notes that "*Public utilities provide essential community needs but can have serious visual impacts and cause permanent loss of natural*

	values" and seeks that "*Proposals for utilities and services should be subject to physical, biological, social and visual considerations, and wherever possible should be located outside existing or proposed conservation reserves.*"
Dryandra Woodland Management Plan No. 70 2011 (DEC, 2011) – superseded	
This management plan was superseded by the *Wheatbelt Region parks and reserves management plan 95 2021*, however, these previous planning documents will continue to be used operationally as subsidiary management documents, where they are consistent with the *Wheatbelt Region parks and reserves management plan 95 2021*. As such, relevant provisions from this plan have been included in this review to inform the basis of the sensitivity and values of these landscapes.	
Reference	Relevant planning provisions
4 Key values	• Notes that bushwalking, camping, wildflower appreciation and scenic driving is a key recreation and tourism value.
26 Visitor opportunities	• Notes that '*The primary attractions of Dryandra Woodland are the naturalness, peacefulness and* ***scenic quality of its open woodlands*** *and the opportunity to see threatened mammal species. These features provide Dryandra with a unique ambience that is becoming increasingly scarce in our ever developing world. Many people see access to such places as essential for human health, and it is therefore considered crucial that these precious qualities are protected for future generations.*' *(our emphasis)*
27.1 Vehicle access	• Access to Dryandra Woodland is predominantly from the Wandering - Narrogin Road for blocks north of Narrogin, and from the Dumberning Road for blocks in the Highbury area. • The most frequently used road is Tomingley Road, which essentially is the main thoroughfare between the Wandering-Narrogin Road in the east and the York-Williams Road in the west, which recorded about 29,000 visits in 2009-10.
28.3 Scenic driving and sightseeing	• Many of the roads and tracks provide either open views across a wide, sweeping landscape of forested hills and farmland, or enclosed views within the wandoo woodlands. • Lookouts, such as Contine Hill, provide an important opportunity to facilitate sightseeing with minimal impact on the environment. • Includes two scenic drive trails, the 25 km 'Sounds of Dryandra Woodland' and the 23 km 'Darwinia Drive'.
36 Public utilities and services	• Notes that mitigation measures for impacts on physical (e.g., landform degradation), visual (e.g., loss of amenity through clearing of native vegetation) and social (e.g., recreation experiences) values need to be considered.
28.1 Overnight stays	• Notes that in 2009-2010 there were over 49,000 visitors to Dryandra Woodland, including about 12,000 visitors camping at Congelin Campground and about 5,000 visitor nights spend at Dryandra Village.
29 Visual landscape	• Notes that *'Landscape management is based on the premise that the visual quality of any landscape is a resource in its own right and can be assessed and managed in much the same way as other resource values, such as fauna, flora, water and recreation. The role of landscape management is to ensure that all uses and activities are planned and implemented to complement rather than detract from the inherent visual quality of the environments in which they occur.*'

29.1 Landscape character types	• Notes that the Dryandra Woodland is within the Dryandra Uplands, which is a component of the Wheatbelt Plateau Landscape Character Type. • Dryandra's landscape is characterised by its diversity in vegetation (open woodland to closed heath) and landform (gentle valley slopes to abrupt breakaway areas), and its historic built components (the village and homestead sites). The visual quality of this landscape is a resource in its own right and should be considered concurrently with other values when management decisions are made.
29.2 Landscape management	• Table 9 includes the following relevant visual management guidelines: o Degraded landscapes, e.g., gravel pits, should be rehabilitated after use. o Where structures are required, they should be sympathetic in design, materials and colour to complement surrounding landscape elements and be carefully sited away from major natural focal points, out of viewer sightlines and where vegetation or landform screening can be utilised. • Whilst these guidelines are relevant to management activities within the park, it is considered that these principles should be considered due to the proximity of the site to key areas (e.g., Contine Hill).

Regional

Table A3-3: Review of key regional policy and guidance relevant to LVIA

Wheatbelt Regional Planning and Infrastructure Framework (WAPC, 2015)	
The *Wheatbelt Regional Planning and Infrastructure Framework* is a regional strategic planning document that provides an overview of regional planning issues and a basis for ongoing planning and development	
Reference	**Purpose / intent**
1.6.1 The Wheatbelt's comparative advantage	The framework identifies *'clean air and skies and open space'* as one of the key advantages and positive characteristics of the region.
2.2 Wheatbelt Objectives	The Valued Natural Amenity objective states that: • Environmental and landscape values that support the social, cultural and economic development of the region, and are managed for current and future generations.
5 Valued Natural Amenity	The Valued Natural Amenity objective requires that "environmental and landscape values that support the social, cultural and economic development of the region are managed for current and future generations." The plan notes that "the region's diverse natural environment stretches from the species-rich kwongan heathlands along the coast north of Perth, over the forests and woodlands fringing the Perth to Bunbury area, across the expansive broad-acre agricultural land, and to the Great Western Woodlands bordering the Goldfields Esperance region." Map 6 shows the broad landscape units of the Wheatbelt – as Coastal, Hills, Wheatbelt and Woodlands. There are also several significant rivers in the

	region, including the iconic Avon River, as well as the Moore, Hill and Mortlock rivers. 5.3.1 Notes that Landscape is integral to community perception of the region's identity, and the Wheatbelt has a variety of compelling landscapes – including the Darling Scarp, fields of canola, the Avon Valley, granite outcrops or sometimes its clear blue skies. The document notes: There is a need to manage the Wheatbelt's visual landscapes, and the ways in which they are experienced, to protect their valued characteristics. This includes preservation, recognition and promotion of regionally important views through the land use planning system. An initiative to develop and implement a program to identify the region's valued landscapes and the strategic viewpoints and travel routes associated with them is included in Appendix 1A. 5.6 Requires 5) "Recognise, protect and promote the valued visual characteristics of the Wheatbelt's urban, rural and natural landscapes". It is noted that Part B Appendix 1 A of the document includes the following planned initiative (noted above): 'Develop and implement a strategy to identify the region's valued landscapes and the strategic viewpoints and travel routes associated with these.' However, it is not clear if this has yet been implemented.
RDA Wheatbelt Regional Plan 2013 – 2018 – Version 1 (Regional Development Australia Wheatbelt Inc., 2013)	
The Wheatbelt Regional Plan is a five-year strategic outlook for the Wheatbelt region prepared by Regional Development Australia Wheatbelt Inc. that aims to inform decision makers about appropriate policy for the area and to provide a focus for investment. The plan has been developed through extensive consultation as well as desk top research to ensure that the actions and strategies identified are based on robust evidence. This Strategic Regional Plan was and does not necessarily represent the views of the Australian Government, its officers, employees or agents.	
Reference	**Relevant planning provisions**
Regional Priorities and Energy Projects	States that the natural attributes of the region, particularly the coastal strip, make it particularly suitable for renewable energy projects including large scale wind farms.
Landscape Values	• The natural environment is the main attraction for tourists in the Wheatbelt and includes landscape features such as the Pinnacles and Wave Rock, recreation on the coast, waterways and wildflowers. • The natural amenity and heritage of the region is a comparative advantage. • There is a growing market for visits to the many wineries, olive groves, orchards, honey producers, etc.
Wheatbelt South Sub-Regional Economic Strategy (RPS in collaboration with the Wheatbelt Development Commission, 2014)	
This Sub-Regional Economic Strategy for Wheatbelt South provides economic analysis and evidence-based guidance to assist in investment and decision making and can therefore make a major contribution to sub-regional and whole-of-region planning. This Strategy also establishes a framework for the promotion and facilitation of economic and population growth across all towns in the sub-region.	

Reference	Relevant planning provisions
Lifestyle, Amenity and Retirement	In regard to growth within the Williams Shire, the Strategy states that: • The sub-region is well positioned to capture a growing share of Perth's residents, including new migrants to reside in the Wheatbelt South. • Opportunities in the short-to-medium terms are likely to be concentrated on the peri-urban Shires of Brookton, Wandering and Williams as well as Narrogin. • Interest has been expressed from private investors to develop lifestyle blocks along both Quindanning and Williams Rivers.
Tourism	In regard to tourism within the Williams Shire, the Strategy states that: • While it is expected that the daytrip market will continue to dominate local tourism activity, the sub-region possesses a strong current and potential exposure to 'Grey Nomad' based domestic tourism. • Development opportunities are likely to reflect cultural and nature-based assets, such as the Woolshed, nature trails (for multi-use bushwalking, horse riding and cycling activities) and Lions Park (a picturesque riverside picnic and BBQ space).
Hotham Williams Economic Development Alliance Strategic Plan 2016-2020 (2016)	
The Hotham Williams Economic Development Alliance (HWEDA) Strategic Plan was produced by the Hotham Williams Economic Development Alliance (HWEDA) to assist in providing the group with a clear strategic direction for economic development in the Marradong Region. This Strategic Plan does not necessarily represent the views of the Local Government Authorities, its officers, employees or agents.	
Reference	**Relevant planning provisions**
Regional Trends	• The Strategic Plan identifies several regional trends, including the need for diversification of industry for long term sustainability and growth of the regional economy. • The plan does not state anything specifically associated with landscape or visual values.

Local

Table A3-4: Review of key local policy and guidance relevant to LVIA

Shire of Williams Town Planning Scheme No. 2 (Department of Planning, Lands and Heritage (DPLH), 2010)	
This local planning scheme sets out the policies against which general development applications within the Williams Shire will be assessed. It is noted there are no local planning strategies or structure plans for the Shire of Williams. The site includes areas within the Rural zone.	
Reference	**Relevant planning provisions**
Part II – Effect of the Scheme	• Section 2.5 Matters Council Shall Consider notes that Council will shall consider in respect to any application for development '*the character of the proposed development in relation to the development on the adjoining land in the locality and the intended future amenity of the area and any matters specified in Part 4 of the Scheme*' as well as potential lighting impacts.

Part IV - Zone Development Controls	• The Site falls within the Rural zone. • There are no specific policies relating to renewable energy developments or landscaping within this zone. • While not directly applicable, 'the generation of electricity' is classified as 'industry' in the planning scheme, and the policy for the Industrial zone provides an indication of likely acceptable outcomes. This policy requires that '*The first 5 metres of the front setback area shall be landscaped to the satisfaction of the local government. Council may require additional landscaping to Albany Highway, adjacent residential or rural uses, or to screen a development where it is desirable to maintain a rural vista from major roads.*'
Part V – General Development Controls	• Section 5.2 Landscaping: (1) the Council may require the provision of any amount of landscaping that it considers reasonable and desirable in the circumstances.

Shire of Williams Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities (Shire of Williams, 2023)

However, the (Shire of Williams, 2023) was adopted on 20 December 2023 and includes the following objectives relevant to the LVIA:

- To reduce the amenity impact of wind farms by ensuring a satisfactory minimum distance from sensitive land uses
- To decrease the visual impact of wind farms by implementing a minimum distance to neighbouring lot boundaries
- To protect areas of visual significance and ensure wind turbines are appropriately and sensitively sited
- To ensure that wind farms are located so as not to have any detrimental impact on Williams Townsite, views from Williams Townsite or any other residential areas.

Local Planning Policy No 1 – Wind Farms (Renewable Energy Facilities) requires that a Visual and Landscape Impact Assessment is required and shall:

f) Describe the appearance of changes in the landscape caused by the proposed wind farm
g) Identify the view of the wind farm from key sensitive land uses, views from key locations of major roads/tourist routes (including rest areas), heritage places; any tourist facilities and recreational reserves
h) Ensure photos in the report include a view of the existing landscape and a photomontage with the wind turbines superimposed
i) Include all images in colour with a high quality/ resolution;
j) Include a clear plan that shows the location of where each photo was taken, the direction it was taken, and numbering of each photo location
k) Be in accordance with the WAPC; *Visual Landscape Planning in Western Australia' manual and the 'Wind Farms and Landscape Values* (2005) produced by the Australian Wind Energy Association and Australian Council of National Trust.

The planning policy also requires that wind farms are to be designed, sited and operated to minimise their visual impacts and shall meet the following requirements:

l) A setback of at least 1.5 kilometres between any wind turbine and a sensitive land use, that is not associated with the development
m) A setback of 800m between any wind turbine from a non-participating neighbouring lot boundary, unless otherwise agreed to in writing by the affected property owner at the time of lodgement of a formal development application
n) Locating wind turbines in flatter landscapes, where feasible, to reduce visibility due to shortening the visual perspective of the structures
o) Blades on wind turbines to rotate in the same direction; Ensure that all wind turbines have uniformity in terms of colour, size, and shape; and
p) Implementation of landscaping within the development site to mitigate visual impact to the greatest extent possible from sensitive land uses.

Landscaping outside of the lots being developed for a wind farm is not accepted as being a practical mechanism for visual mitigation as conditions of planning approval cannot require works outside of the development site. For the purpose of this Policy, the term 'sensitive land use' is as per the definition in the WAPC Position Statement on Renewable Energy Facilities as 'comprise land uses that are residential or institutional in nature, where people live or regularly spend extended periods of time. These include dwellings, short-stay accommodation, schools, hospitals and child care centres and generally exclude commercial or industrial premises.' The Shire will also take into account the description of types of a 'sensitive land use' as outlined in Clause 2.3 the Environmental Protection Authority 'Guidance for the Assessment of Environmental Factors'.

Shire of Narrogin Local Planning Strategy (WAPC, 2020)

The local planning strategy sets out the long-term planning directions for the shire and provides a strategic basis for the Local Planning Scheme No. 3 and should be read in conjunction with the scheme.

Tourism	• Section 3.3 identifies the following relevant actions: o Investigate opportunities for the establishment of tourist related activities at the Narrogin Aerodrome including but not limited to sky diving, gliding, hot air ballooning and scenic flights.
Power and Energy	• Section 4.4. identifies the following key relevant issues, strategies and actions: o There is a need to encourage and continue to support the development of alternative energy production in the Shire such as, micro-grids, solar and wind which have significant potential and environmental benefits. o Encourage the conversion of overhead power lines to underground distribution lines in the Shire's established settlements, urban gateways, scenic routes and tourism/heritage precincts. o Work with the Office of Energy and Western Power to secure funding assistance under the State Underground Power Program for the conversion of existing overhead power to underground distribution lines in the Narrogin and Highbury townsites, urban gateways, scenic routes and tourism/heritage precincts. o Identify current and future demand for power in the Shire and progress discussions with Western Power regarding upgrades

	to existing supplies and the provision of new sustainable power supply schemes. ○ Investigate the potential for alternative energy supplies within the Shire, including microgrids.
Transport	• Section 4.5 Transport states includes the following relevant action and supporting strategy: ○ There are currently no commercial air transport services to the Shire however an airport has been developed in the Shire which caters for irregular light aircraft movements. The airport, which is owned by the Shire, is considered an important part of the Shire's transport network, particularly in terms of emergency services, and has been identified as having significant potential to be developed to accommodate a flying school for international pilots, a number of tourist related activities including but not limited to sky diving, gliding, hot air ballooning and scenic flights and an aviation theme residential estate. ○ Support and encourage the increased and efficient usage of the Narrogin Aerodrome and create opportunities for the establishment of complementary land uses within and adjacent to the airport including, but not limited to, a flying school for international pilots, tourist related activities such as sky diving, gliding, hot air ballooning and scenic flights an aviation theme residential estate.
Visual Landscape Protection	• Section 5.4 Visual landscape protection notes that: ○ The Shire falls within the 'Wheatbelt Plateau' landscape character type and 'Dryandra Uplands' and 'Merredin Plateau' subtypes. The differences in topography, landform and vegetation across the Shire are marked and contribute to a diverse visual landscape. Areas of highest scenic quality include: ▪ major rock outcrops. ▪ vegetation with a diversity of species, height, colour and density. ▪ strong form, colour and texture contrasts with surrounding landscape (e.g., clumped remnant vegetation); and ▪ distinctive stands of vegetation with strongly defined growth habits, texture and colour. ○ The visual landscape within the Town site is characterised by its attractive setting amongst a number of gently sloping, vegetated hills surrounded by an agricultural hinterland and numerous heritage buildings in its central parts which have a coherent architectural style. ○ The visual landscape within the rural area is dominated by expanses of cereal crops and open views over wide, shallow, undulating valleys of ancient drainage channels and expansive salt lakes in its eastern parts. Lines of remnant vegetation may sometimes be seen along roadsides, creek lines or property entrances. Isolated hills and granite outcrops are a distinct visual feature surrounded by the local topography. ○ The landscape qualities of the Shire contribute greatly to its sense of place and distinct, local identity. There is a need to

	recognise the Shire's high landscape values and scenic qualities and the potential for these resources to attract residents and visitors. o Historically the rural areas of the Shire have been somewhat under-valued for their inherent visual and aesthetic character with landscape qualities often being overlooked by the local planning framework. o Community attitudes towards local rural landscapes are changing with a greater priority being placed on action to address landscape values and changes to rural character. o Increased pressure for land use change within the Shire in the future from more intensive agriculture, mining, commercial, industrial, tourism and rural living development has significant potential to have a negative impact upon local landscape character and quality. o Given the nature of the local landscape it has limited capacity to absorb new activities that are inconsistent with its current visual character and qualities. As such there is a need to control the siting of new uses to ensure that those areas identified by the local community as having important landscape value are suitably protected. • The vision and objectives for the protection of visual values is to: o Protect, conserve and enhance landscapes in the Shire with high scenic qualities for the benefit of current and future generations and encourage development which is sensitive to local landscape character and quality. • Key strategies identified and supporting actions include: o Identify and protect landscapes with high natural resource values and encourage the restoration of degraded landscapes. o Consider the capacity of landscapes to absorb development and the need for careful planning, siting and design of new development in a way which is sensitive to local landscape character. o Consider the need for a landscape or visual impact assessment for development proposals that may impact upon sensitive local landscapes. o Avoid development in areas that may result in unacceptable environmental damage or negative impacts upon the visual character and qualities of the local landscape. o Have due regard for all relevant Western Australian Planning Commission Strategies, State Planning Policies and Operational Policies when considering proposals for the development and use of land in the Shire that may have significant visual impacts. o Assess and map the visual resource values of the Shire in close consultation with the local community as time and resources permit. o Incorporate visual landscape planning into the local planning framework by including suitable provisions in Local Planning Scheme No.3 that can be applied both generally and specifically to facilitate the protection and enhancement of local landscape character and values. o Prepare, adopt and regularly review a local planning policy to ensure that landscape or visual impact assessments for scheme

	amendment and/or development proposals that may impact upon sensitive local landscapes are undertaken in accordance with the methodology contained in the Visual Landscape Planning in Western Australia Guidelines published by the Western Australian Planning Commission.
Settlements	• Section 6.0 Settlement strategy notes that: o The Yilliminning and Nomans Lake townsites have not been developed to any great extent and will not be permitted to be developed any further in the future. o Narrogin is surrounded by an extensive green belt around the edges of the town comprising significant stands of native vegetation which combined with the varying natural topography create a visually attractive natural setting for the town.
Shire of Narrogin Local Planning Scheme No. 3 (DPLH, 2023)	
This local planning scheme sets out the policies against which general development applications within the Narrogin Shire will be assessed. The site includes areas within the Rural zone.	
Reference	**Relevant planning provisions**
Part I - Preliminary	The objectives of the Scheme include: • to secure the amenity health and convenience of the Scheme Area and the residents thereof • to provide for housing choice and variety in neighbourhoods with a community identity and high levels of safety, accessibility and visual amenity • to encourage better utilisation of existing infrastructure including the increased usage of sustainable energy sources • to preserve, protect and enhance townscapes and places, buildings and objects of heritage value, historic interest, natural beauty or scientific interest which exist through the Scheme Area • to protect, conserve and enhance the environmental values and natural resources of the Scheme area including the protection of remnant vegetation and the rehabilitation and revegetation of degraded land while providing appropriate development opportunities to promote the local economy.
Part 3 - Zones and the Use of the Land	The objectives of the rural zone include: • To provide for the maintenance or enhancement of specific local rural character • To maintain and enhance the environmental qualities of the landscape, vegetation, soils and water bodies, to protect sensitive areas especially the natural valley and watercourse systems from damage. Table 3 – Zoning table identifies that renewable energy facilities are an accepted use within the Rural zone.
Part 4 – General Development Requirements	• 4.25 Outdoor Storage Areas requires that: o 4.25.1 Open air displays, industrial hire services, storage facilities, depots, laydown areas and any other open area shall be sealed, paved and/or landscaped to the satisfaction of the local government and maintained in good condition. o 4.25.2 Any open storage area, utilitarian area or any other space used in connection with a commercial or industrial use which,

	by virtue of its location and use is likely to detract from the visual amenity of the surrounding area, shall be screened from public view by a closed wall or fence no less than 1.8 metres in height, or screen landscaping approved by the local government. • 4.26 Derelict Vehicles, Machinery and Objects requires that: o 4.26.1 The storage and/or wrecking of derelict vehicles, sea containers or machinery or the storage of any materials (including fuel, raw materials, products or by-products, or waste of manufacture) within any zone shall not detracts from the amenity and safety of the locality. • 4.29 Retaining Walls and Fencing requires that: o 4.29.1 No retaining wall shall be constructed which alters the contours of the natural surface by more than 0.5 metres, or no more than 1.2 metres in the Rural Residential, Rural Smallholdings and Rural Zones, unless the local government is satisfied that the proposal will not adversely impact on the amenity of surrounding land and developments, occupants or the streetscape. o 4.29.2 The erection of any screen wall and/or fencing shall be of a uniform design, colour, material and height to the satisfaction of the local government and the local government may refuse to grant development approval for any screen wall or fence that would likely adversely affect the amenity of the occupants of the adjoining land, the immediate locality or the streetscape. o 4.29.3 Fencing shall be provided to all boundaries abutting land reserved under this Scheme, except road reserves, to prevent vehicular ingress or egress unless otherwise approved by the local government.
Shire of Narrogin Local Planning Policy No. D11 – Wind Farm/Wind turbines (DPLH, 2024)	
The Shire of Narrogin adopted Local Planning Policy No. D11 – Wind Farm/Wind turbines on the 27 March 2024, to provide a framework for the assessment, approval, and regulation of wind farms and wind turbines within the Shire of Narrogin. Relevant to this assessment, the policy objectives include to protect the "amenities of the community and the environment" and to address potential impacts, including visual and landscape impacts associated with the development. The general requirements of the policy include that wind farms and wind turbines shall be sited and designed to minimise adverse impacts on the environment and the community, based on best industry standards. Regarding the assessment of landscape and visual impacts, the policy requires that: • Wind farms and wind turbines shall be designed to integrate to the greatest extent possible into the natural and rural landscape setting. A Visual and Landscape Impact Assessment is required that addresses the following: • landscape significance and sensitivity to change, site earthworks, topography, the extent and type of vegetation, clearing and rehabilitation areas, land use patterns, built form character, public amenity and community values. • likely impact on views including the visibility of the facility using view shed analysis and simulations of views from significant viewing locations including residential areas, major scenic drives and lookouts. • layout of the facility including the number, height, scale, spacing, colour, surface reflectivity and design of components, including any ancillary buildings, signage, access roads, and incidental facilities.	

- measures proposed to minimise unwanted, unacceptable or adverse visual impacts.

It is noted that these requirements are consistent with those of the *Position Statement: Renewable energy facilities* (WAPC, 2020).

The policy also recommends including reference to the *Visual Landscape Planning in Western Australia – A Manual for Evaluation, Assessment, Siting and Design* (WAPC, 2007).

Shire of Boddington Local Planning Strategy (Shire of Boddington, 2018)

This local planning strategy sets out the strategic plan for the Boddington region and informed the preparation of the Shire of Boddington Planning Scheme No. 3. None of the Site falls within the Shire of Boddington.

Reference	Relevant planning provisions
Tourism	Section 2.4.4 Tourism states that 'to attract tourists, a number of matters need to be considered, for example, visual amenity, urban design, heritage and planning controls - the conservation and enhancement of the environment and landscape is essential'.
Vision and Key Objectives	Section 3.1.1 Vision states that the Council's vision for the Shire of Boddington is of: "a vibrant and connected community, providing employment and lifestyle opportunities, a beautiful environment, and easy access to the city." Section 3.1.2 Key Objectives sets out objectives to achieve this vision, including: • To ensure that future subdivision and development within and near the Boddington townsite provides a broad range of housing and lifestyle choices that enhance the character, environment and amenity of the townsite.
Environment and Conservation	Section 2.5.6 Key Issues states that 'areas of remnant vegetation, significant conservation, landscape and biodiversity value should be protected'. Section 3.5.1 Topography states that 'The Shire of Boddington's visual amenity, created by its landscapes and vistas, is one of its key assets and needs to be protected and maintained wherever possible'. Specific relevant strategies include: • Encourage the protection of the Shire of Boddington's landscape and scenic qualities by protecting high conservation values areas from proposals to clear vegetation. • Encourage development that reflects and enhances the Shire of Boddington's natural, cultural, visual and built character. • Support the protection of landscapes and their visual amenity, as well as the character of 'view-sheds' associated with major roads and tourist routes. • Avoid and minimise development on ridges and skylines in areas where the landscape should be protected; and • Promote the rehabilitation, revegetation and restoration of denuded areas. • Specific relevant actions include that the Shire of Boddington will: • Require, where appropriate, that proponents prepare a visual impact assessment in accordance with Visual Landscape Planning in Western Australia. Section 3.5.2 Waterways and Groundwater Resources states that 'The Shire of Boddington has a diverse natural environment, with large areas of forest which depend on water from rivers, creeks and underground'. Specific

	relevant strategies include to encourage the revegetation of land adjacent to waterways. Section 3.5.3 Vegetation states that '*...areas of native vegetation should be protected and, where possible, land should be rehabilitated, and endemic plant species reintroduced*'. Specific relevant strategies include: • Encourage the retention of native vegetation and avoid the inappropriate clearing of native vegetation on privately owned land to protect, maintain and enhance the Shire of Boddington's biodiversity and landscape values. • Support rehabilitation where an area of native vegetation has become degraded. • Support conservation, management and remediation of areas of native vegetation by state government agencies, landowners and other stakeholders. • Specific relevant actions include that the Shire of Boddington will: • Seek to minimise the clearing of native vegetation, where possible and practical, for new projects, including road upgrading and widening • Require proponents to protect areas of significant native vegetation, where it is appropriate to do so, through the preparation and implementation of management plans, the creation of conservation lots, or the provision of a development exclusion area. • Support landowners to improve the retention, protection and management of native vegetation on private land. Section 3.6 Heritage states that '*The Shire of Boddington contains numerous sites of heritage and cultural value, which should be protected and promoted*'. Specific relevant strategies include to support the protection and conservation of sites with significant heritage and cultural values.
Shire of Boddington Planning Scheme No. 3 (Shire of Boddington, 2021)	
The purpose of the Scheme is to set out the local governments planning aims and intentions and to set out appropriate land uses and land use control mechanisms.	
Reference	**Relevant planning provisions**
Aims of the Scheme	Section 9 Aims of the Scheme includes the following aims relevant to protection of landscape and visual values: • encourage, direct and control quality and orderly development...so as to promote and protect...the amenity of the area. • promote sustainable development that integrates consideration of economic, social and environmental goals... • manage the use and development of land by means of zoning and development controls to achieve compatibility between land uses, and the preservation and where possible the enhancement of amenity for urban and rural uses. • maintain and protect valuable areas of agricultural production and conserve its non-urban character whilst accommodating other complementary rural activities. • recognise and, where possible, take account of the adverse cumulative impacts on biodiversity, and environmental and heritage values.

Zones and land use	Land in the southwestern part of the Shire is covered by the Rural zoning and also contains areas identified as State Forest and Public Open Space Reserves. Section 16 Zones identifies the following relevant objectives for the Rural zone: • To provide for the maintenance or enhancement of specific local rural character. • To maintain and enhance the environmental qualities of the landscape, vegetation, soils and water bodies, to protect sensitive areas especially the natural valley and watercourse systems from damage; and, • To provide for a range of non-rural land uses where they have demonstrated benefit and are compatible with surrounding rural uses.
Tree planting and vegetation corridors	Section 36 Tree planting and vegetation corridors notes that: • In order to improve the environmental amenity of areas that the local government considers deficient in tree cover, the local government may require as a condition of any development approval or recommend to the Commission a condition of subdivision, the planting of such trees and/or groups of trees and species as specified by the local government.
Preservation of amenity	Section 41 General appearance of buildings and preservation of amenity states that: • The local government may place conditions on any development approval granted to ensure the development will not have an adverse impact on the character of the area or the amenity and landscape quality of the locality.
Shire Of Boddington Local Planning Policy No. 11 Landscaping and Revegetation (Shire of Boddington, n.d.)	
The Landscaping and Revegetation policy promotes landscaping, planting and revegetation that is consistent and compatible with the areas climate and natural environment and seeks to address the local setting and improve local amenity.	
Shire of West Arthur Local Planning Scheme No. 2 (Shire of West Arthur, 2012)	
The purpose of the Scheme is to set out the local governments planning aims and intentions and to set out appropriate land uses and land use control mechanisms. None of the Site falls within the Shire of West Arthur.	
Reference	**Relevant planning provisions**
Aims of the Scheme	Section 1.6 Aims of the Scheme includes the following aims relevant to protection of landscape and visual values: ...to protect and enhance rural landscapes and environmental values...; and to protect the natural environment and biodiversity while ensuring appropriate development opportunities realised.
Zones and land use	Land in the northern parts of the Shire is covered by the Rural zoning and also contains areas identified as Conservation, State Forest, Public Purpose, Railway and Recreation and Open Space Reserves. Section 4.2 Objectives of the Zones identifies the following relevant objectives for the Rural zone:

	• To provide for intensive agricultural uses and diversified farming which retain the rural character and amenity of the locality, and which are consistent with land suitability. • To consider non-rural uses where they can be shown to be of benefit to the district and not detrimental to the natural resources or the environment; and • To have regard to use of adjoining land at the interface of the rural zone with other zones to avoid adverse effects on local amenities.
Preservation of amenity	Section 10.2 Matters to be considered by local government identifies 'the preservation of the amenity of the locality' as a matter requiring consideration during the planning approval process.
Shire of Cuballing Local Planning Strategy (Edge Planning & Property, 2019)	
This local planning strategy sets out the strategic plan for the Cuballing region and informed the preparation of the Shire of Boddington Planning Scheme No. 2. None of the Site falls within the Shire of Cuballing.	
2 – Local Profile	• 2.2.2 Rural living identifies that 'Attracting growth to the Cuballing and Popanyinning townsites will require maintaining elements of the existing townsite character, improving services and infrastructure, and achieving a high level of residential amenity, including protection from noncompatible land uses. • 2.4.4 Tourism notes that 'To attract tourists, a number of matters need to be considered, for example, visual amenity, townscape, heritage and planning controls. The conservation and enhancement of the environment and landscape is essential.' • 2.5.8 Key Environment and Conservation Issues identifies that 'Areas of remnant vegetation, significant conservation, landscape and biodiversity value should be protected.'
3 – Strategic Direction	• 3.1 Vision and Key Objectives includes the following relevant objectives: o ensure that future subdivision and development within and near the Cuballing and Popanyinning townsites provides a broad range of housing and lifestyle choices that enhance the character, environment and amenity of the townsites. o assist with growing the district's economic and employment base by encouraging greater diversification and promoting a resilient and increasingly robust economy. • 3.4.1 Hard Infrastructure notes includes S26) Allow for and promote the establishment of renewable energy facilities and operations within the district. • 3.6.1 Topography notes that 'The district's visual amenity, created by its landscapes and vistas, is one of its key assets and needs to be conserved and maintained wherever possible.' And includes the following relevant strategies: o S51) Ensure that the district's landscape and scenic qualities are conserved and maintained through the use of appropriate development controls. o S52) Ensure that development reflects and enhances the district's natural, cultural, visual and built character. o S53) Protect and enhance landscapes and their visual amenity, as well as the character of 'view-sheds' associated with main roads and tourist routes.

	○ S54) Not support development and land use intensification that will have an unacceptable detrimental impact on the views from main roads and tourist routes. ○ S55) Promote the rehabilitation, revegetation and restoration of denuded areas. ○ S56) Require, where appropriate, that proponents prepare a visual impact assessment in accordance with the Visual Landscape Planning Manual.
Shire of Cuballing Planning Scheme No. 2 (DPLH, 2021)	
The purpose of the Scheme is to set out the local governments planning aims and intentions and to set out appropriate land uses and land use control mechanisms. The north-western parts of the Study Area are within the Shire of Wandering LGA, incorporating areas within the Rural and Recreation and Open Space zones.	
Reference	**Relevant planning provisions**
Part 4 – General Development Requirements	4.10 Amenity Provisions includes the following relevant requirements: • 4.11.4 Tree Planting/Vegetation Corridors/Greenbelt - In order to improve the environmental amenity of areas that local government considers deficient in tree cover, local government may require as a condition of any development approval, the planting of such trees and/or groups of trees and species as specified by the local government.
Shire of Wandering Local Planning Strategy (WAPC, 2007)	
The local planning strategy sets out the long-term planning directions for the shire and provides a strategic basis for the Local Planning Scheme No. 3 and should be read in conjunction with the scheme. None of the Site falls within the Shire of Wandering.	
Reference	**Relevant planning provisions**
Part 10 – The land use strategy	10.1 Aims and objectives includes: • Safeguard and enhance the character and amenity of the Shire's natural and built environment. • Recognise and protect places of natural beauty and historic and scientific interest which are considered important to the heritage of the Shire.
Part 4 – Physical and biological environment	4.3.1 Land systems identifies a number of land systems within the Shire, and categorises landforms into four main groups: • Lateritic uplands • Minor valley within upland terrain • Major valleys dissected into underlying basement rocks. • Valley floors. 4.6 Vegetation notes that the southern parts of the Shire are dominated by Math, Wandoo and Jarrah woodland. 4.7 Areas of environmental significance notes that views from a picnic spot beside the Albany Highway provide outstanding scenic views from Bannister Hill (noting that this is approximately 50 km from the Site).
Shire of Wandering Planning Scheme No. 3 (DPLH, 2005)	
The purpose of the Scheme is to set out the local governments planning aims and intentions and to set out appropriate land uses and land use control mechanisms.	

Reference	Relevant planning provisions
Part 1 – Preliminary	1.7 Aims of the Scheme include: • To provide for housing choice and variety with a community identity and high levels of amenity. • To safeguard and enhance the character and amenity of the built and natural environment of the Scheme area.
Part 10 – Procedure for dealing with applications	10.2 Matters to be considered by the local government include: • The compatibility of a use or development within its setting. • The likely effect of the proposal on the natural environment and any means that are proposed to protect or to mitigate impacts on the natural environment. • The preservation of the amenity of the locality. • The relationship of the proposal to development on adjoining land or on other land in the locality including but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the proposal. • Whether adequate provision has been made for the landscaping of the land to which the planning application relates and whether any trees or other vegetation on the land should be preserved.
Shire of Wagin Local Planning Scheme No. 2 District Zoning Scheme (DPLH, 2019)	
The purpose of the Scheme is to set out the local governments planning aims and intentions and to set out appropriate land uses and land use control mechanisms. No local planning strategy is available for the Shire of Wagin.	
Reference	**Relevant planning provisions**
Part 4 – General Development Requirements	4.7 Additional site and development requirements includes: • Retention and protection of vegetation and revegetation, waterways and their buffers: Where the local government consider it would help mitigate against land degradation (e.g., salinity), protect a waterway (and its buffer) or improve the visual appearance of a development, the local government may impose conditions on any development approval requiring the retention and protection of existing vegetation (e.g., through fencing) and/or the planting of additional vegetation.

Appendix 4: Reading the Remote: Landscape Characters of Western Australia Landscape Character Sub Types and descriptions

The Dryandra Uplands and Darling Uplands Landscape Character Sub Types that occur within the Study Area, as defined in *Reading the Remote: Landscape Characters of Western Australia* (CALM, 1994), are reproduced below (Table A4-1). Scenic qualities of landscape features within these Landscape Character Sub Types are provided in Table A4-2. It is noted that these descriptions also describe areas and features not within the Study Area.

Table A4-1: Landscape Character Sub Types and descriptions (CALM, 1994) within the Study Area

Wheatbelt Plateau Landscape Character Type
Dryandra Uplands Landscape Character Sub Type
This Sub Type extends easterly from the green forests which cloak the Darling Plateau Character Type to the division which marks the westerly limit of the wide shallow valleys of the Merredin Plateau Sub Type. This area is an agricultural landscape featuring extensive open bleached blonde paddocks, occasionally punctuated by dams and windmills, with long views across the undulating terrain. The valley systems in this Sub Type have dissected the terrain more distinctly than those further east, and the headwaters of many westward flowing watercourses originate here including the Williams Murray system. The extensive catchment areas of the Avon and Blackwood Rivers have a widespread influence over the topography and the eastern margin of the Sub Type marks the limit of their constant westward flow. The vegetation of the Dryandra Uplands is dominated by cereal crops and pasture, which have pushed the native remnants to the periphery of their extent. Patches are common along fence lines, enclosing and shading roads as well as marking the meandering watercourses dissecting the gently undulating landscape. York Gums (*Eucalyptus loxophleba*) regularly feature along the drainage lines and roadsides and as scattered clumps in cleared fields. This straggly tree with rough grey bark is often seen with the low Bushy Jam Tree (*Acacia acuminata*) which dominates in shrubby remnant vegetation patches where the taller trees are not prevalent. The pale silver grey or the mottled creamy yellow of Wandoo (*Eucalyptus wandoo*) are also seen along the roadside as part of the mixed low woodland and as isolated shade trees in cleared fields. Larger areas of remnant vegetation often coincide with outcroppings of granite. They appear as tumbled piles of lichen encrusted boulders, as horizontal sheets of rock peppered with low tenacious plants such as Pincushions (*Borya sphaerocephala*), and as large domes which dominate the surrounding landscape, e.g., Boyagin Rock. Low pale terracotta-coloured hills of lateritic gravel are scattered over this terrain appearing as isolated islands surrounded by crops and pastoral land. These eroding hills are bound by small escarpments known as breakaways. These exposed, pale clay slopes are made more apparent by the patchy remnant vegetation decorating their slopes, often consisting of Powderbark Wandoo (*Eucalyptus accedens*) and Brown Mallet (*E. astringens*). The Dryandra State Forest (now a national park) is a distinctive highlight of this Sub Type as it is a reminder and impression of the part of the natural landscape which existed before the extensive clearing for farming was undertaken. This large area features a remnant Wandoo and Powderbark Wandoo woodland which is quite distinct from the expanse of agricultural land that surrounds it. The strong line created by the smooth mottled creamy yellow bark of these trees contrasts with the grey green of the sparse low herbaceous undergrowth and patches of the soft Sheoak and prickly Dryandra thicket. Dense areas of young Wandoo trees with the thin brown and silver-grey whippy trunks occur

in patches, with the glossy leaved Brown Mallet, which has also been established in plantations, seen scattered amongst the old Wandoos.

The major river systems, such as the U-shaped Hotham River valley, were the first areas to be cleared by early settlers for agriculture. Extensive areas of pastoral land dissected by stock fences, dotted with numerous flocks of sheep and occasionally cattle, intermingled with broad fields of cereal crops.

The visual attributes of the long, low grey-white storage silos and the occasional abandoned farmhouses built of local materials, are as much a part of this altered landscape as natural features. Farming communities and towns form a major part of the cultural character of this landscape, featuring many well-known historic sites and associated features. Farming communities and towns form a major part of the cultural character of this landscape, featuring many well-known historic sites and associated structures. Two of these historic sites are the Spanish Style Benedictine Monastery and community at New Norcia, and the Aboriginal settlement at Moore River near Mogumber, which were originally established to look after Aboriginal people of the south-west who were displaced by European settlement.

Northam is the largest population centre of the area, closely followed by Narrogin, and smaller communities include York, Kojonup, Toodyay and Brookton.

Darling Plateau Landscape Character Type

Darling Plateau Landscape Character Sub Type

The Darling Uplands Sub Type is an undulating, dissected land surface with the rubbly, pale orange lateritic soils and pea gravels cloaked by extensive areas of tall forest. It is an ancient erosional plateau cut by deep, steeply sided valleys, and studded with impressive domed granite outcrops (monadnocks) and boulders which protrude from the surrounding landscape, most notably at Monadnock National Park. Many small hills which rise above the general elevation include Mt Saddleback, Mt Keats and Mt Lindesay.

The Darling Uplands is bordered to the west by the Darling Scarp which is the surface expression of the Darling Fault. This rugged and rocky landscape rises abruptly from the Swan Coastal Plain Landscape Character Type to a height of approximately 300 m ASL and is clearly revealed between Munchea and Dardanup. The major proportion of its surface is made up of shallow soils and exposed extrusions of granitic caprocks, such as east of Serpentine, covered by remnants of scrubby vegetation in many areas.

The eastern region of the Darling Uplands develops into a landscape of gentler slopes with fewer distinct dissections. Similarly, the Colie region is in a depressed basin where the undulations become shallower with some broad, sandy flats and swamps, surrounded by a fringing ring of low hills.

Linking to the Darling Scarp in the vicinity of Boyanup is the Whicher Scarp, an often abrupt landform feature, such as west of Jarrahwood, which forms the gentle 'J' curve of the south-west of the Sub Type abutting the Swan Coastal Plain. This region of the Darling Uplands extends to the Leeuwin-Naturaliste Coast Character Type and is sandwiched between the two coastal plains - the Swan to the north and the Scott to the south. This area has a more subdued topography with a gently undulating plateau strewn with pale orange, gravelly laterite and sand, sloping downwards from north to south and from east to west.

To the east of this region, the landscape of the Darling Uplands becomes more distinctly rolling, occasionally studded by domed granitic outcrops and low hills, and dissected by deeply eroded, steep-sided valleys, influenced by the winding course of the Blackwood River and the numerous watercourses to the south.

This Sub Type is dominated by forests of the gnarled trees of the tall, grey fibrous barked Jarrah (*Eucalyptus marginara*) which have developed on the pale orange lateritic soils as one of the finest hardwood forests in the world. Subsequent invasion into the Jarrah forest by disease has left many stark openings, exhibiting clumps of yellowing Banksia and Blackboy as well as the emergent bare grey tenuous limbs of Jarrah, silhouetted above the surrounding green canopy and severely impacting the

visual quality of the forest. Interspersed with areas of cleared pastoral and farming land, the broad tracts of the tall trees are still the dominant characteristic of this region.

The rough, grey, red-stained trunks of Marri (*E. calophylla*) are associated with the Jarrah forest and become conspicuous in the late summertime by the bright dusting of the contrasting cream blossoms amongst the forest Marri is more common, even dominant on the loamy soils of the lower valley slopes and gullies, and towards the eastern and northern perimeters of the Sub Type. The valley floors of the Darling Uplands offer a diverse mixture of mottled, dark Blackbutt (*E. patens*), creamy, smooth barked Wandoo (*E. wandoo*), and more notably in the southern parts, pale Bullich (*E. megacarpa*).

Forming the often dense understorey beneath these trees are smaller shrubs and trees including soft Sheoak (*Allocasuarina fraseriana*), the deeply serrated olive- green leaves of the Bull Banksia (*B. grandis*), Zamia Palm (*Macrozamia reidlii*), dark green sprays of Blackboy *(Xanthorrhoea preissii*), the upright Prickly Bitter-Pea (*Daviesia decurrens*), scratchy Parrot Bush (*Dryandra sessilis*) and the low Couch Honeypot (*D. nivea*), with the bushy Snail Hakea (*H. cristata*) and Two-leaf Hakea (*H. trifurcata*).

The Jarrah forest south of Collie receives a slightly higher rainfall, and the composition of understorey shrubs is slightly different. Growing with the large serrated leaves of Bull Banksia and the soft, tall Sheoak are the narrow-leaved Snottygobble (*Persoonia longifolia*), and the pale green leaves of the Woody Pear (*Xylomelum occidentale*). The lush undergrowth spreading beneath the understorey consists of spiky Zaamia Palm, the scratchy spines of the Prickly Moses (*Acacia pulchella*), the shiny, dark green leaves of the bright purple flowering Tree Hovea (*Hovea elliprica*), grassy sprays of Black Gin (*Kingia australis*) and the strappy-leaved Pineapple Bush (*Dasypogon hooken*). The swampy regions in the upper reaches of the Margaret and Mowen Rivers feature sedgeland surrounded by Paperback (*Melaleuca preissiana*), River Banksia (*B. seminuda*) and a thick cover of graceful Peppermint (*Agonis parviceps*). Occasional isolated patches of the towering pale yellow and grey variegated trunks of the Karri (*Eucalyptus diversicolor)* appear in this southern region, rising distinctly above the surrounding vegetation.

The vegetation of the Darling Scarp depends on soil depth and rainfall. creating a variable growth pattern for many species and has created specialised and characteristic flora. The upper slopes with areas of shallow soils ,and scattered granite outcrops support the yellow trunked Butter Gum (*E. laeliae*) and the scrubby Rock Sheoak (*Allocasuarina huegeliana*). Lower slopes of the scarp and areas of deeper clay soils feature Wandoos with Marri, and where the slopes of the scarp are less acute, Jarrah becomes more dominant. Flooded Gum (*E. rudis*) and peeling white trunks of Paperbarks occur in some areas of the river valleys as they dissect the scarp to reach the Swan Coastal Plain.

Heath and herblands occur on the rough granite outcrops and domed monadnocks. Trapped water in eroded depressions over their rough surface feature a lush, green patchwork of liverworts, mosses, algae and lichens, and they are often fringed by Rock Sheoak, Oval-leaf Hakea (*H. elliptica*), Wavy-leaved Hakea (*H. widulata*), and red flowers of the sprawling Fuchsia L Grevillea (*G. bipinnatifida*).

Many smaller shrubs, climbers and herbaceous species are scattered amongst the undergrowth of the Jarrah forest. Sinuous vines with glossy leaves are seen twining over the lower branches of bushes and trees, decorated by splashes of bright red or vivid blue flowers. In the springtime, wildflowers appear in profusion. Red and green Kangaroo Paws (*Anigozanthus manglesii*), bright yellow Hibbertia (*H. hypericoides*), the sky blue Leschenaultia (*L. biloba*) and carpets of vivid yellow Wattles (*Acacia spp.)* are commonly seen amongst the undergrowth and scattered along roadsides.

Several watercourses deeply dissect the surface of the Darling Uplands and scarp with diverse valleys and irregular slopes and contribute to the extensive weathering which is evident over its surface. Major rivers which drain the area from the north to the south include the Avon, Serpentine, Murray, Collie, and Harvey. The Capel, Ludlow, Abba, Margaret, and Mowen Rivers drain the south-west comer of the Sub Type in broader U-shaped valleys, while the long, sinuous Blackwood River which, with its tributaries including Balingup Brook, St. John's Brook and St Paul's Brook, as well as the Perup, Frankland, Kent, Denmark and Hay Rivers, drains much of the southern area. Associated with these rivers are major darns including Mundaring, Serpentine, Wellington, Logue Brook and South Dandalup.

These reservoirs supply water for the Perth and metropolitan area and benefit the populations of the Swan Coastal Plain and Darling Plateau, as well as the Goldfields and pan of the Wheatbelt.

Many low, swampy depressions, often shaded by Flooded Gum (*Eucalyptus Rudi*s), are scattered over the Darling Uplands. These are generally the springs or headwaters of the creeks and tributaries which weave over the ancient land surface, such as across the open and more gently inclined landscape around the Collie region.

Extensive tracts of laterized soil on the Darling Uplands which have remained uncleared for agriculture have been designated as State Forest. As well as being used for timber production, these forested regions are managed as water catchments for the large reservoirs, for honey production and for conservation and recreation.

Many formerly forested areas which have been cleared for agriculture or were badly affected by the dieback disease have been replanted with exotic Pines (*Pinus spp.*) and Tasmanian Bluegums (*Eucalyptus globulus*). Large, uniform areas of the dark green Pines are visually dominant in the Blackwood Valley landscape between Bridgetown and Nannup, often exhibiting sharp, geometrical edges, contrasting with the surrounding landscape.

The Jarrah forest is also highly popular for tourism and recreational activities, providing many areas for picnics and barbecues, scenic drives and panoramic views, with many small towns such as Nannup featuring galleries which display artworks and fine woodcraft. Numerous walk tracks thread their way across this forested landscape, most notably the Bibbulmun Track. The larger rivers provide many leisurely or exciting pastimes and host major boating events such as the Avon Descent and the Blackwood Classic.

Clearing for agriculture in this Sub Type has been concentrated mostly on the red alluvial soils of the valleys and slopes. Grazing of sheep and cattle are widespread in several areas of the Darling Uplands. A patchwork of greens results from irrigated orchards dotting hillsides, notably in the vicinities of Hacketts Gully, Donnybrook, Balingup and Bridgetown, with linear grape vines and vegetable crops such as the potatoes and peas near Manjimup where an extensive tobacco industry was once predominant.

The Darling Uplands Sub Type is rich in several major mineral resources. Bauxite leases cover large areas to the east of the Darling Scarp around Dwellingup and Jarrahdale. Tin and tantalite have been mined in the low hills around Greenbushes since the tum of the century, and a major coal mining industry exists in the valleys of the Collie and Wilga basins. Large quarries for the extraction of blue metal occur along the Darling Scarp and its vicinity, and lateritic gravel is excavated from numerous shallow pits scattered over the region.

National Parks within this Sub Type are currently concentrated within the northern region. These include John Forrest National Park, Walyunga and Avon Valley National Parks, Serpentine National Park and The Hill's Forest which encompasses several smaller National Parks near the Perth Metropolitan area. Future conservation areas are proposed in several areas over the Darling Uplands, including National Parks near Collie and Kirup as well as smaller Conservation Parks such as the Blackwood Conservation Park and St John's Brook Conservation Park near Nannup.

Collie and Manjimup are the largest population centres of the Darling Uplands Sub Type outside the "hills" suburbs of Perth. Smaller towns including Chidlow, Jarrahdale, Dwellingup, Donnybrook, Jarrahwood, Nannup, Greenbushes and Bridgetown occur at regular intervals along its length, many of which exhibit signs of the region's timber heritage. Small timber cottages arranged in linear rows along narrow laneways are typical of these towns, often huddled in the vicinity of the local timber mill. The abandoned remnants of towns such as Grimwade and the railways that once linked them are a reminder of how prolific the timber industry once was.

Table A4-2: Dryandra Uplands Sub Type – Visual Quality Classification (CALM, 1994)

Scenic Quality	Landform	Vegetation	Waterform
High	• Isolated peaks or hills with distinctive form that become focal points e.g., Wogan Hills • Rock outcrops or jumbles of large boulders e.g., Boyagin Rock • Distinctive U-shaped valleys e.g., Hothman River Valley.	• Strongly defined patterns of vegetation of some diversity of species, colour, height and density • Vegetation which shows distinct form, line colour and texture contrasts with the surrounding landscape e.g., Wandoo at Dryandra Woodland National Park.	• Rivers and streams of permanent nature e.g., Blackwood River at Boyup Brook • Wetlands, swamps and lakes e.g., Lake Ninan.
Moderate	• Undulating country which is not visually dominate but is surrounded by similar landforms. • Broad shallow valleys.	• Vegetative patterns evident but with little diversity • Moderate contrast with surrounding landscape.	• Intermittent streams.
Low	• Large expanses of indistinctly dissected landform that provide few landmarks by which to orient.	• Extensive areas of similar vegetation such as grassland with very limited variation in colour and texture.	• Waterforms absent.

Table A4-3: Darling Uplands Sub Type – Visual Quality Classification (CALM, 1994)

Scenic Quality	Landform	Vegetation	Waterform
High	• Isolated peaks or hills with distinctive form that become focal points e.g., Mt Lindesay • Granite domes, outcrops or groups of boulders e.g., Boulder Rock • Undulating and steeply sloping terrain of distinctive shape and abrupt	• Distinctive strands of vegetation creating unusual forms or striking displays of visual colour e.g., Kangaroo Paws • Strongly defined patterns in areas of native vegetation, within openings of a natural appearance, associated with wetlands and rock forms, and unbroken stream vegetation e.g., Canning River valley. • Areas of remnant native vegetation of a natural appearance exhibiting	• Permanent watercourses with continually changing flow and characteristics and features such as rapids or waterfalls e.g., Avon River • Reservoirs, lakes and wetlands with dominant natural

	appearance e.g., Whicher Scarp • Well defined V-sharped or U-shaped valleys, heavily dissected steep slopes and/or number and configuration of lateral irregular tributaries e.g., Blackwood Valley.	an attractive diversity of colour, height and species • Gradual and naturally appearing transitions between agriculture and other land use, with forested land.	characteristics (e.g., retained fringing vegetation, design utilised existing nature features) e.g., Lake Leschenaultia • Permanent river pools e.g., Cambray Pool. •
Moderate	• Broad or shallow valleys and tributaries • Rounded hills surrounded by more landform of a similar nature. • Minor rock outcroppings • Broad slopes or extended valleys that are not distinctly defined by adjacent landforms.	• Open forest and woodland combined with natural openings and species mix in patterns that offer some visual diversity. • Vegetation pattern evident but of regular pattern relative to the surrounding landscape character. • Remnant areas of naturally appearing streamline and roadside vegetation exhibiting some structural diversity and colour.	• Seasonal wetlands, intermittent streams and creek lines • Reservoirs with some natural characteristics.
Low	• Large expanses of indistinctly dissected landform with limited topographic features of specific visual interest.	• Extensive areas of similar vegetation with limited variation in diversity and colour.	• Waterforms absent.