

Appendix E Preliminary Landscape and Visual Impact Assessment



Langley Vale Solar Farm & BESS

Preliminary Visual Impact Assessment



We at Moir Studio acknowledge the traditional custodians of the lands and waters of Australia - most notably the Awabakal Nation in which our office resides and the Ngunnawal Nation, on whose traditional land this Project resides. As a practice, we recognise First Nations' ongoing contribution to Country and deep spiritual connection to Place. We pay our respects to Elders both past and present.

Langley Vale Solar Farm & BESS

Preliminary Visual Impact Assessment

Prepared for
NGH

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1.0 Introduction

1.1 Introduction

Moir Studio have been engaged by NGH Pty Ltd on behalf of Elgin Energy (the Proponent) to prepare a Preliminary Visual Impact Assessment (PVIA) for the proposed Langley Vale Solar Farm & BESS (the Project). This PVIA will be part of the Scoping Report seeking the Secretary's Environmental Assessment Requirements (SEARs) on order to prepare an Environmental Impact Statement (EIS)

The purpose of this PVIA is to provide a preliminary assessment of the potential visual impacts associated with the Project.

The PVIA for the project has been prepared in accordance with the following documents:

- *Large-Scale Solar Energy Guideline: Guidance for State significant large-scale solar energy development* (referred to hereafter as 'the Guideline') developed by the Department of Planning, Housing and Infrastructure (November 2024)
- *Large-Scale Solar Energy Guideline: Technical Supplement for Landscape Character and Visual Impact Assessment* (referred to hereafter as 'the Technical Supplement') developed by the Department of Planning, Housing and Infrastructure (November 2024)
- *State Significant Development Guidelines - Preparing a Scoping Report. Appendix A to the state significant development guidelines.* (referred to hereafter as 'the SSD Guidelines') developed by the Department of Planning, Infrastructure and Environment (October 2022)

1.2 Professional Experience

The Technical Supplement states: '*professional assessment skills are critical to an effective visual impact assessment. The applicant is expected to engage relevant professionals (for example, landscape architects, architects, environmental planners, geographers, or other visual assessment specialists) with demonstrated experience and capabilities*' (DPHI, 2024b).

Moir Studio is a professional design practice and consultancy specialising in Landscape Architecture, Urban Design and Landscape and Visual Impact Assessment. Our team has extensive experience undertaking Landscape Character and Visual Impact Assessments (LCVIAs) for large-scale infrastructure and renewable energy projects. In the context of our knowledge and with guidance from the Guideline and the Technical Supplement, we have developed methodologies to ensure a comprehensive and qualitative assessment of the Project.

Recent experience includes the preparation of LVIAs for the following solar farm projects of similar scale:

- Bendemeer Solar Farm LVIA (Bendemeer, NSW)
- Richmond Valley Solar Farm LVIA (Casino, NSW)
- Blind Creek Solar Farm Project LVIA (Bungendore, NSW)
- Glenellen Solar Farm LVIA (Glenellen, NSW)
- Oxley Solar Farm LVIA (Castledoyle, NSW)
- Stubbo Solar Farm LVIA (Stubbo, NSW)

1.3 Overview of Preliminary Visual Impact Assessment for Solar Farms

The Technical Supplement explains that the visual impact assessment process consists of two key stages:

Stage 1 - Preliminary Assessment

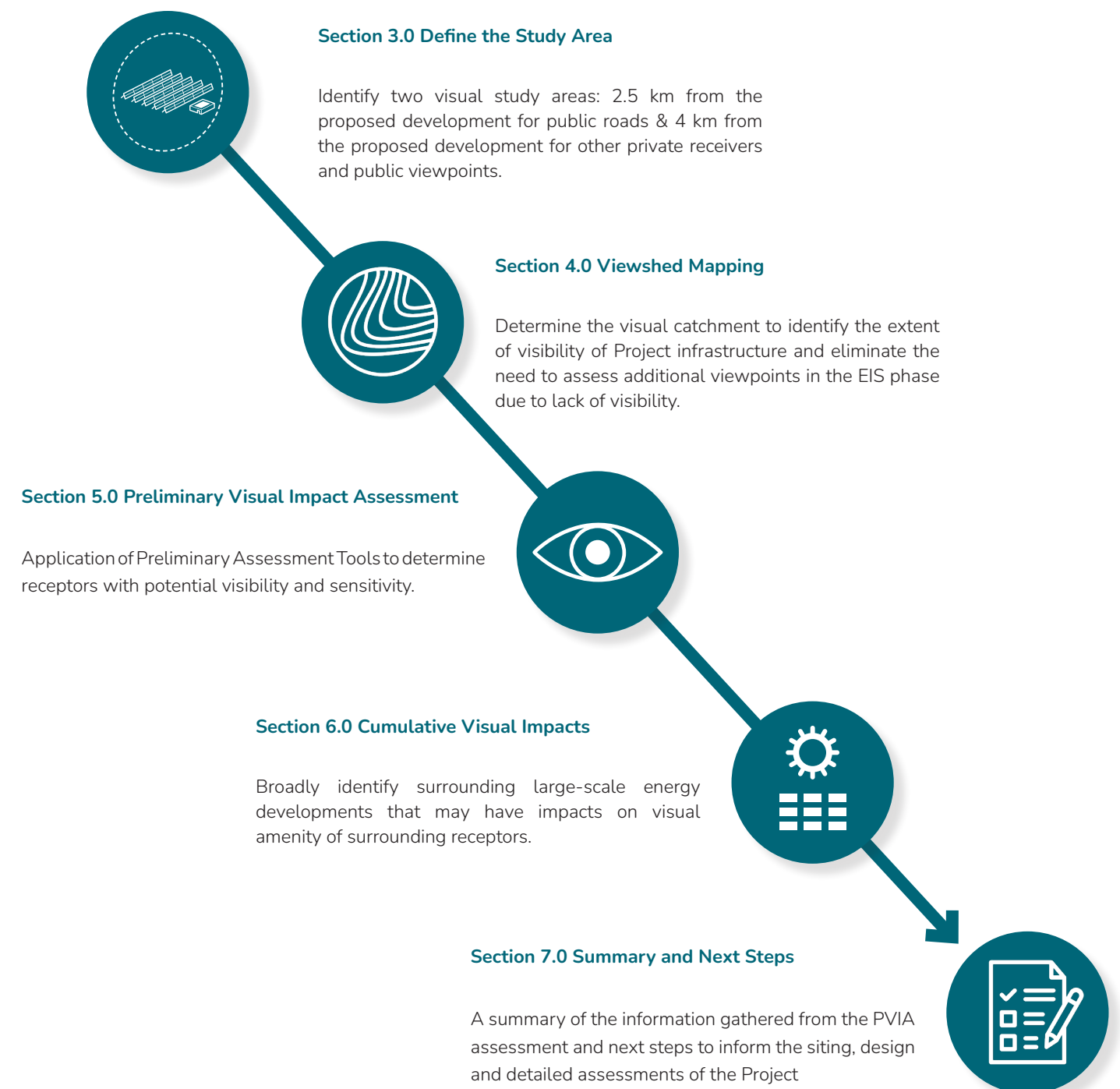
Stage 2 - Detailed Assessment

The PVIA forms Stage 1 - Preliminary Assessment and will be submitted to the Department of Planning, Housing & Infrastructure (DPHI) along with the Scoping Report as part of the SEARs request.

Stage 1 - Preliminary Assessment involves using the Preliminary Assessment Tools, which help identify potential viewpoint locations where a solar project may have visual impacts and may require further consideration. This stage allows for early identification of potential impacts, which can inform and refine the proposed development layout. These tools assist in pinpointing locations and viewpoints likely to experience minimal to no impact, which is valuable for early consultation, ensuring fieldwork and assessments focus on area with potential visual impacts.

1.4 Study Method

The following flow chart provides a high level overview of the structure of the PVIA in accordance with the scoping requirements outlined in the Technical Supplement.



2.0 Project Overview

2.1 Regional Context

The Project will be located between the towns of Gunning and Collector in Southeastern NSW, approximately 45km northeast from Canberra ACT, within the Upper Lachlan Shire Local Government Area (LGA). Surrounding features include Belmont Nature Reserve, the townships of Gunning and Collector, the Meadow Creek and the Lerida Creek.

The land surrounding the Project is not located within a Renewable Energy Zone (REZ), however there are multiple renewable energy projects operating within the region, including the Collector Wind Farm and Cullerin Range Wind Farm (see **Figure 01**).

2.2 Project Site

The Project Site is primarily rural landscape used for agricultural purpose such as grazing vegetation.

2.3 The Project

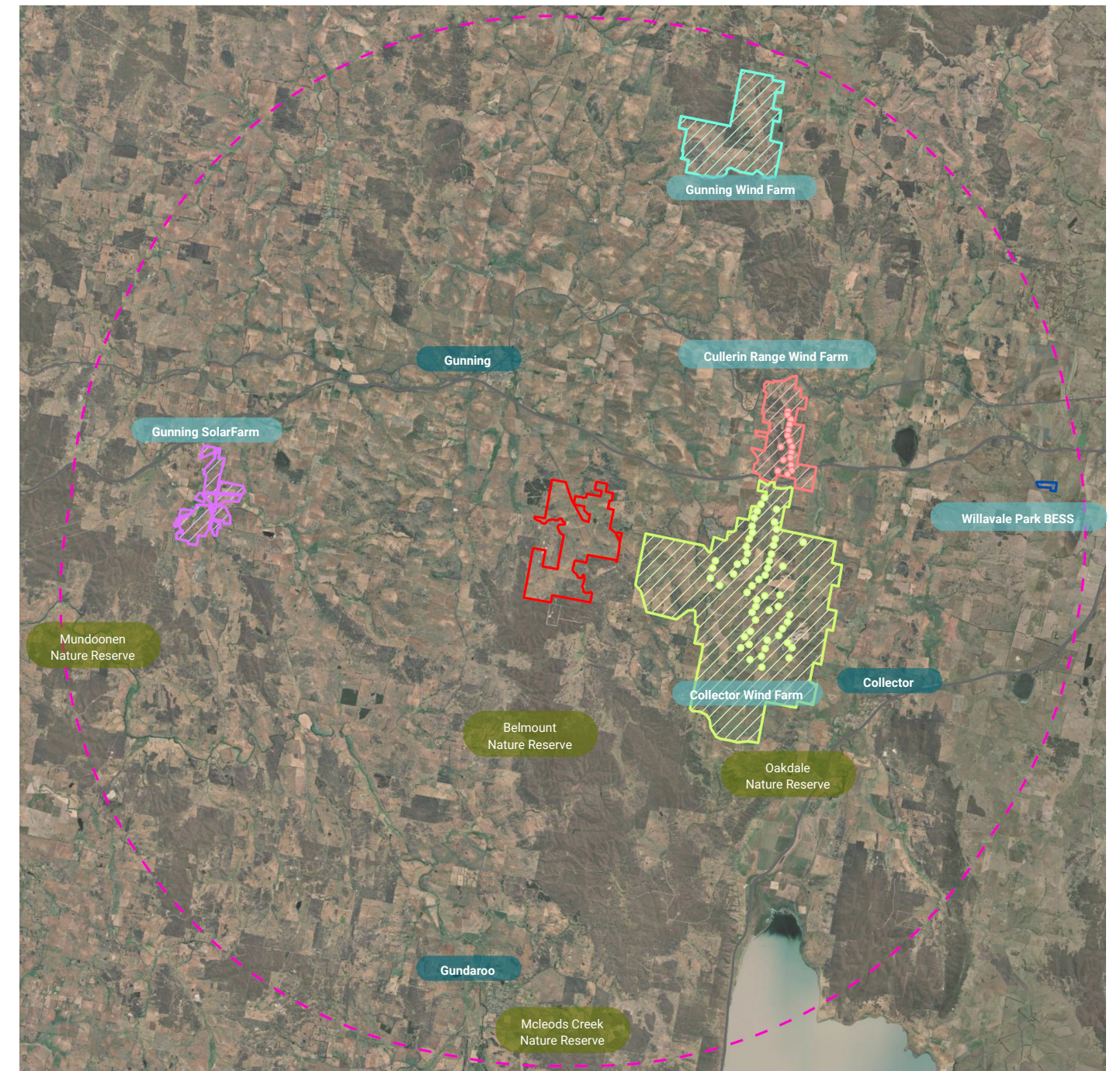
The Project will involve the construction, operation, and decommissioning of a PV solar facility with a capacity of up to 330 MW DC and 250 MW AC that would supply electricity to the National Electricity Market (NEM) via the existing 330 kV overhead transmission lines through the proposed onsite substation. The Project also includes a DC coupled centralised Battery Energy Storage System (BESS) with an indicative capacity of 500 MW / 4 hour (2000/MWh).

The Project will also include:

- Approximately 65 solar inverters
- Approximately 68 BESS inverters
- Approximately 68 Power Conversion Units (PCUs)
- Medium voltage (MV) transformers
- Substations, control room, maintenance facility

Other ancillary infrastructure include:

- Operation and Management (O&M) facility
- Parking and staff facilities
- Construction laydown areas and storage warehouses
- Security fencing
- Underground cables
- Water and sewerage holding tanks
- Internal access and road upgrades



LEGEND

- | | | |
|---|--|--|
| Project Boundary | ● Cullerin Range Wind Farm Turbine Layout | Gunning Wind Farm |
| 20km Scoping Area | Willavale Park BESS | Collector Wind Farm |
| ● Collector Wind Farm Turbine Layout | Gunning Solar Farm | Cullerin Range Wind Farm |

Figure 01 Site Context

Basemap Source - ArcGIS, 2025

2.4 The Solar (PV) Array

From a visual impact perspective, the PV Array is anticipated to be the most significant component of the Project.

This PVIA uses the maximum tilt position of 3.5m for the solar panels to ensure a worst-case scenario. The actual height of the panels will vary throughout the day as they track the sun, and it is unlikely that the panels will reach their maximum tilt for extended periods. The final layout and Project details, including the BESS design, solar panel configuration, and other infrastructure, will be finalised after further assessments and during the EIS phase.

The tracking system structure axis runs from north to south, enabling the PV modules to follow the sun's path from the east in the morning through to the west in the afternoon, maximising energy production throughout the day. A backtracking function ensures that the module rows are not shading each other. The operational rotation range of the tracking system is typically +/- 60 degrees from the horizontal position. The maximum height of the PV modules above natural ground is up to 3.5m, as shown in **Figure 02**.

The final number of PV module arrays and tracker designs will depend on detailed design, equipment availability and commercial considerations. These dimensions may alter based on site constraints such as all geotechnical and topographic conditions, boundaries, riparian zones, existing vegetation and access tracks. The assessment has been completed using the worst-case scenario with the panels assumed at their highest pitch.

The Development Footprint encompasses all infrastructure associated with the Project including the PV Array and BESS facility.

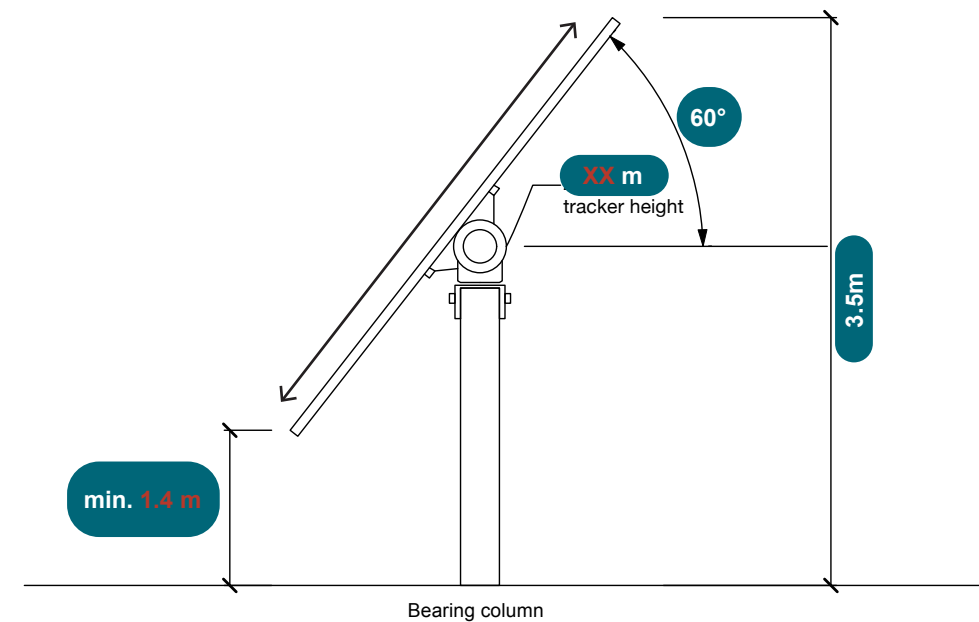


Figure 02 Solar Panel Parameters

3.0 Defining the Study Area

3.1 Study Area

As outlined in the Technical Supplement the first step of the Scoping stage is for the applicant to identify two visual study areas of:

2.5km from the Project Boundary for public roads

4km from the Project Boundary for other private receivers and public viewpoints.

The Technical Supplement states: *'The calculations can be based on either the project area, or the development footprint depending on the level of information available at the time'*. For the purpose of this report, the Study Area has been based on the Project Boundary, the extents of these Study Areas can be seen in **Figure 03**. The following sections outline the identified elements within the two defined Study Areas.

3.1.1 2.5km from the Project Boundary

39 non-associated dwellings have been identified within 2.5km from the Project.

A number of public roads have been identified within 2.5km of the Project Boundary. These roads include:

- Bradbury Lane
- Collector Road
- Hume Highway
- Mullers Lane
- Pucketts Lane

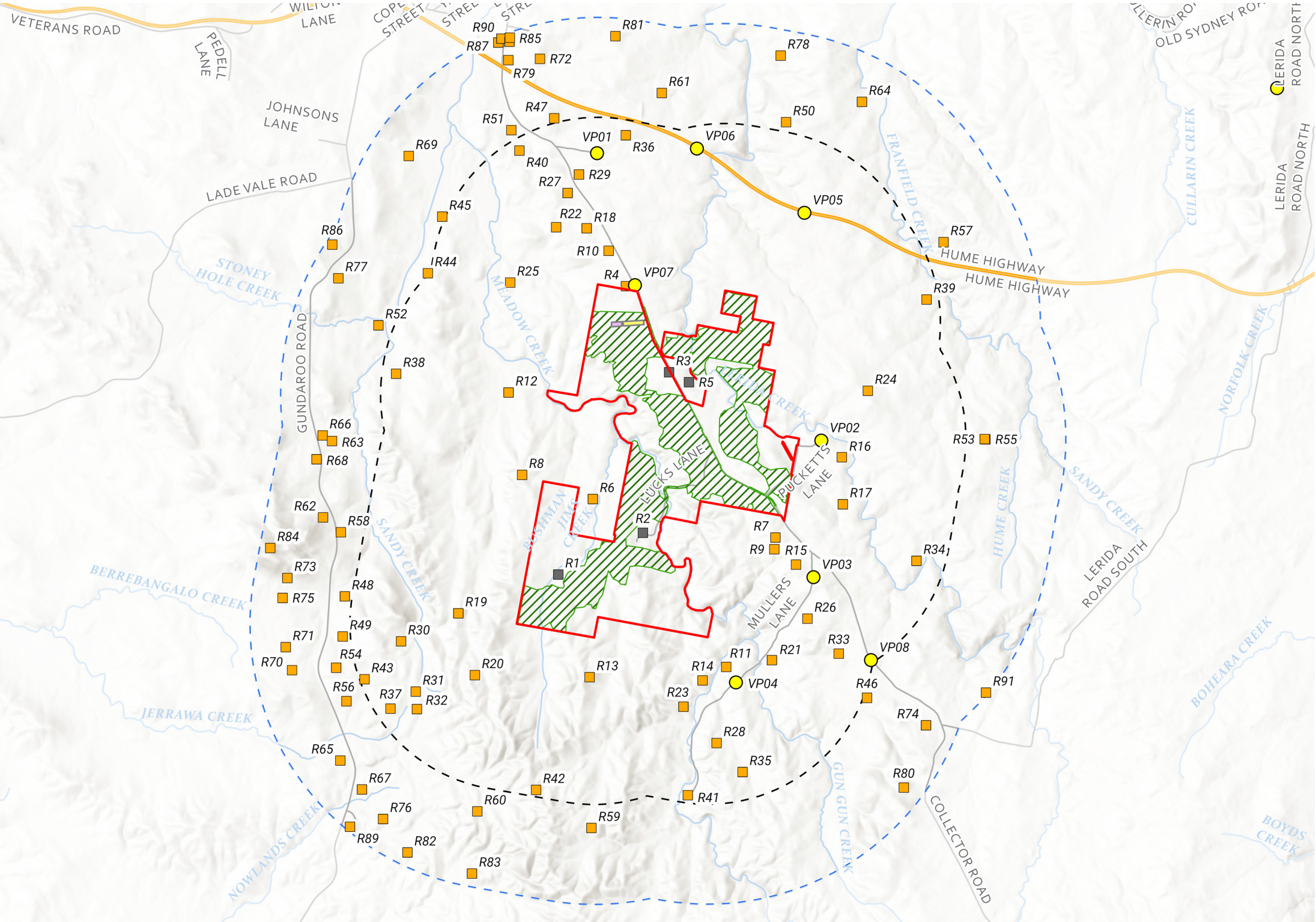
Representative viewpoint locations have been selected for roads identified within the 2.5 km study area. The representative viewpoint locations have been selected with regards to the viewshed mapping undertaken in **Section 4.0** to represent worst case scenario views.

3.1.2 4km from the Project Boundary

In accordance with the Technical Supplement, other public and private viewpoints within 4km of the Project Boundary must be identified and assessed.

The preliminary stages of identifying Private Receptors (non-associated dwellings) involve a desktop analysis of potential Receptor locations, and at this preliminary stage the assessment may have missed some dwellings and/or assumed some sheds to be dwellings. Subsequent ground truthing exercises will be undertaken during the EIS to accurately confirm the nature and occupancy of these identified locations, refining the quantity of private receptors requiring further assessment.

A preliminary assessment has identified **87** non-associated dwellings within 4km of the Project Boundary. Among the 87 of the non-associated dwellings, only **34** of them will be further assessed as they show visibility to the Project with regards to the viewshed mapping undertaken in **Section 4.0** to represent worst case scenario views.

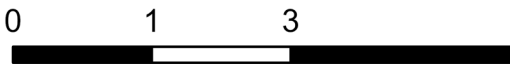


Study Area

LEGEND

- Project Boundary
- Substation Area
- BESS Area
- Development Footprint
- Public Viewpoint
- Non-Associated Dwelling
- Associated Dwelling
- 4km from Project Boundary
- 2.5km from Project Boundary
- Roads
- Watercourse

Figure 03 Study Area
Basemap Source - ArcGIS, 2025



4.0 Viewshed Mapping

4.1 Viewshed Mapping

A viewshed map identifies all areas from which a development may be viewed. Viewshed mapping can be achieved using geographic information systems (GIS) that account for topography and line of sight between viewpoints and the Project. The purpose of the viewshed map is to eliminate further the need to assess viewpoints that fall below the lines in the Preliminary Assessment Tool if the analysis shows there is intervening terrain that would block the line of sight to a particular viewpoint.

Viewshed mapping was undertaken to eliminate viewpoint locations that will not have a line of sight to the proposed solar panels (refer to **Figure 04**). It is important to note that the viewshed map provides an assessment based on topography alone and does not take into account intervening elements such as vegetation and structures. Therefore, the viewshed map represents a theoretical worst-case scenario.

Viewshed mapping has been undertaken based on a maximum panel height of 3.5m from the Development Footprint.

Summary of Viewshed Map

The following provides a summary of the viewshed assessment:

- A total of 53 non-associated dwellings identified within the Study Area (4km from the Project Boundary) have no line of sight to the Project due to intervening topography.
- **34** non-associated dwellings were identified as having a line of sight to the Project (based on an assessment of topography alone)
- Most of the Collector Road connecting Gunning and the Project does not have a line of sight to the Project.
- The Project will be potentially visible from scattered parts of the Hume Highway for a total of 3.1km between Gunning and Goulburn.

4.2 Reverse Viewshed Mapping

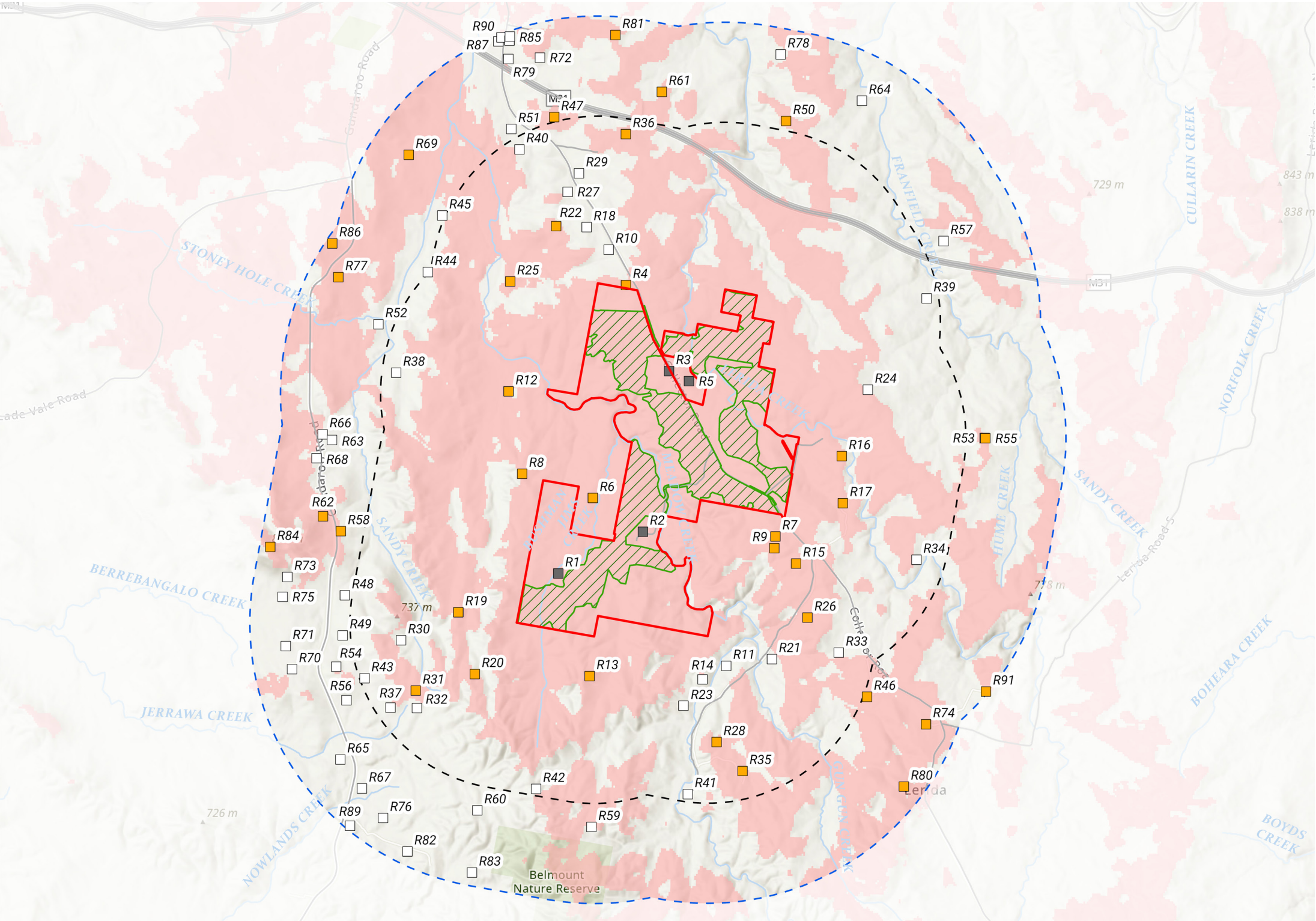
The Technical Supplement states: *“The applicant should also consider undertaking a reverse viewshed analysis. This can be a useful tool to refine the project design process to reduce any significant impacts. It can also be used to communicate the visibility of certain parts of the project and aid consultation with the community. This analysis should be used to highlight parts of the project that can be seen from the greatest number of viewpoints”* (DPHI, 2024b).

Figure 06 represents a reverse viewshed map that takes into account a total of **34** non-associated dwellings located within 4km of the Project Boundary that has a line of sight to the Project, as shown in the viewshed mapping. This figure shows parts of the Development Footprint that are likely to be visible from these non-associated dwellings. This assessment also represents a bare ground scenario, i.e., a landscape without intervening elements such as vegetation and structures. Therefore, the reverse viewshed map represents a theoretical worst-case scenario.

Summary of Reverse Viewshed Map

The following provides a summary of the reverse viewshed assessment:

- Based on the reverse viewshed mapping, the majority of the Development Footprint will be viewed by up to **seven (7)** non-associated dwellings.
- Some limited areas of the Development Footprint have the potential to be viewed by up to 20 non-associated dwellings. This includes an area in the Northern tip and Southern tip of the Project .



Viewshed Map

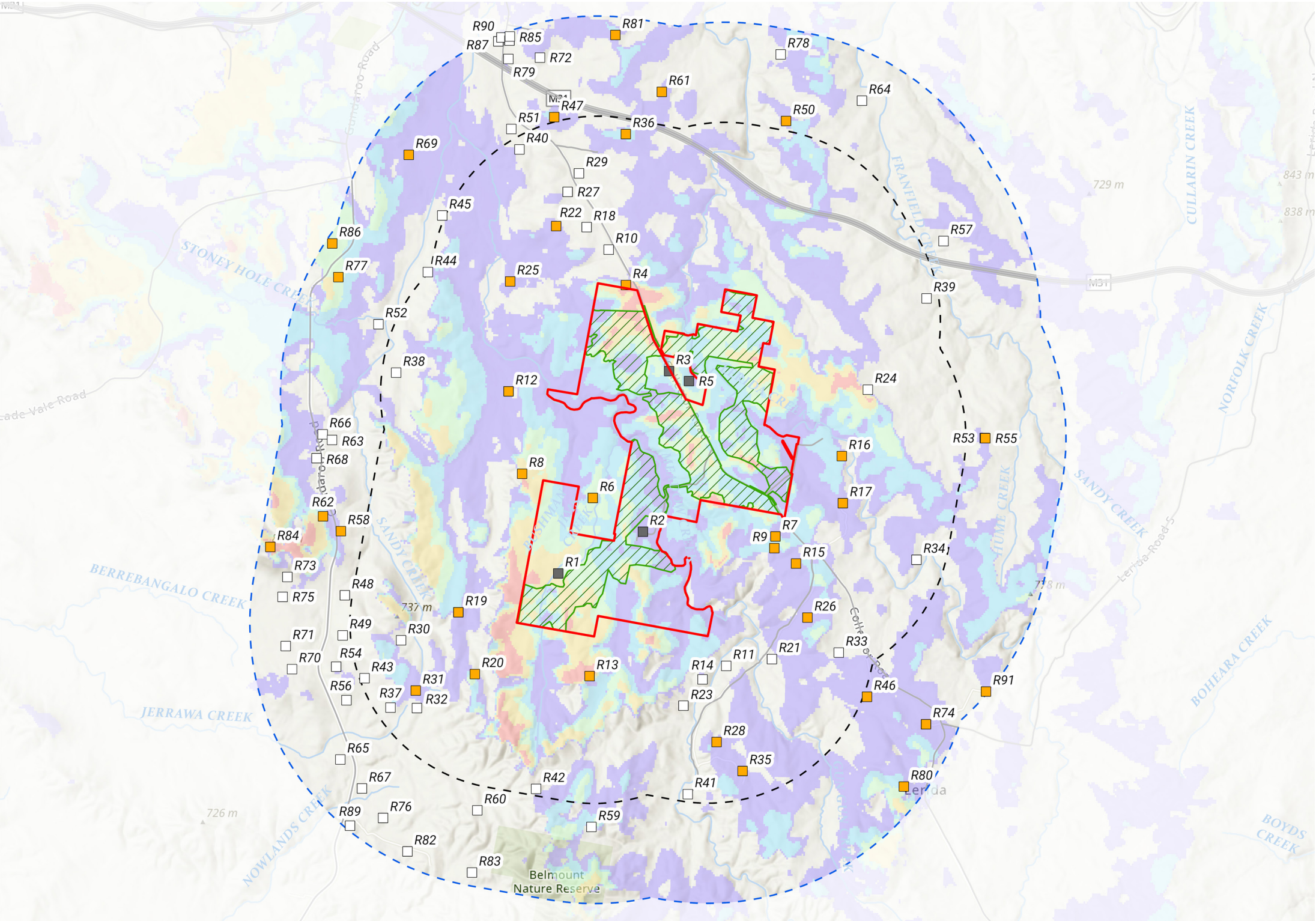
LEGEND

- Project Boundary
- Development Footprint
- Non-Associated Dwelling
- Associated Dwelling
- Non-Associated Dwellings with No Visibility (Based on Viewshed Mapping)
- 2.5km from Project Boundary
- 4km from Project Boundary
- Roads
- Watercourse

Extent of Project visible based on viewshed map

- With Project Visibility

Figure 04 Viewshed Map
Basemap Source - ArcGIS, 2025



Viewshed Map

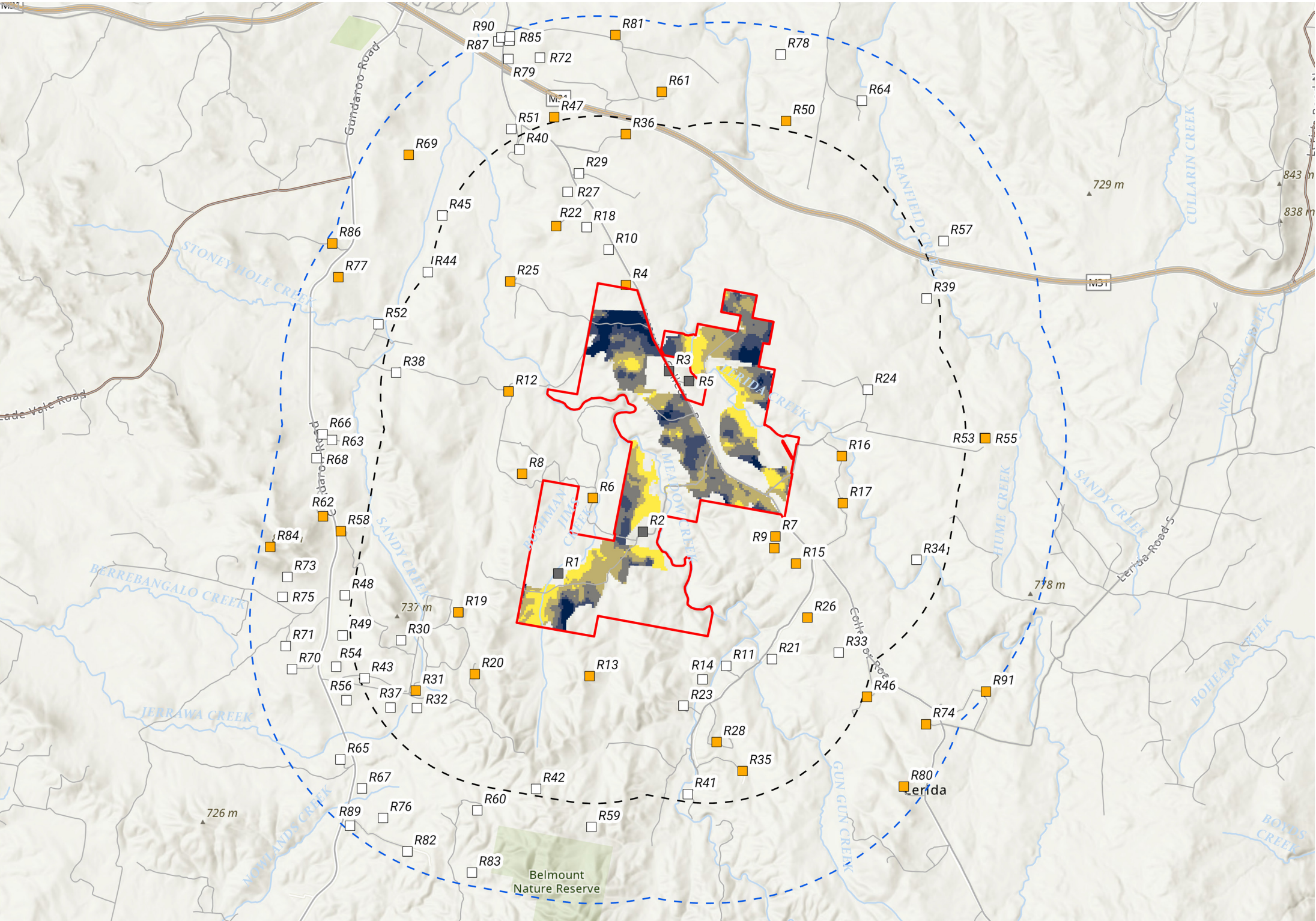
LEGEND

- Project Boundary
- Development Footprint
- Non-Associated Dwelling
- Associated Dwelling
- Non-Associated Dwellings with No Visibility (Based on Viewshed Mapping)
- 2.5km from Project Boundary
- 4km from Project Boundary
- Roads
- Watercourse

Viewshed Legend

- 1 - 20% of the project visible
- 21 - 40% of the project visible
- 41 - 60% of the project visible
- 61 - 80% of the project visible
- 81 - 100% of the project visible

Figure 05 Viewshed Map
Basemap Source - ArcGIS, 2025



Reverse Viewshed Map

LEGEND

- Project Boundary
- Non-Associated Dwelling
- Associated Dwelling
- Non-Associated Dwellings with No Visibility (Based on Viewshed Mapping)
- 2.5km from Project Boundary
- 4km from Project Boundary
- Roads
- Watercourse

Reverse Viewshed Legend

- 1 - 4 Dwellings
- 3 - 7 Dwellings
- 8 - 10 Dwellings
- 11 - 13 Dwellings
- 14 - 20 Dwellings

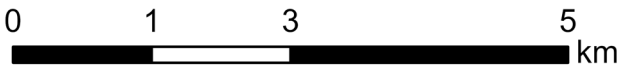


Figure 06 Reverse Viewshed Map
Basemap Source - ArcGIS, 2025

5.0 Preliminary Visual Impact Assessment

5.1 Overview of the Preliminary Visual Impact Assessment

The Technical Supplement specifies that: “All public viewpoints and private receivers identified in the scoping report need to be assessed in some level in the environmental impact statement. A full visual impact assessment is not required if features completely obstruct the view of the project.” (DPHI, 2024b). Additionally, it outlines that: “Applicants can begin by carrying out a simple assessment using desktop data and high-level assumptions. They should conduct further assessment if impacts are likely to be moderate or higher.” (DPHI, 2024b).

The next steps of assessment are to undertake a visual impact assessment for the private and public receivers identified through the previous steps in this PVIA. The Technical Supplement states that the “level of a visual impact assessment required for private receivers and public viewpoints should be proportionate to the likely impacts of the development. Applicants can begin by carrying out a simple assessment using desktop data and high-level assumptions. They should conduct further assessment if impacts are likely to be moderate or higher.” (DPHI, 2024b).

Although not required until the EIS stage of the Project, Moir Studio have commenced the simple assessment of private receivers to assist the proponent in identifying receivers requiring further assessment.

The simple assessment tools are employed to identify viewpoints requiring intermediate and detailed assessment in the Environmental Impact Statement (EIS). These tools can help eliminate viewpoints that are unlikely to experience significant impacts. The determination of impact is based on the vertical and horizontal field of view a development is likely to occupy from each viewpoint. This is influenced by factors such as distance, height, elevation changes, and the width of the proposed project. (DPHI, 2024).

Figure 07 summarises the requirements of the Simple Assessment and identifies the relevant sections of the report where these requirements have been addressed.

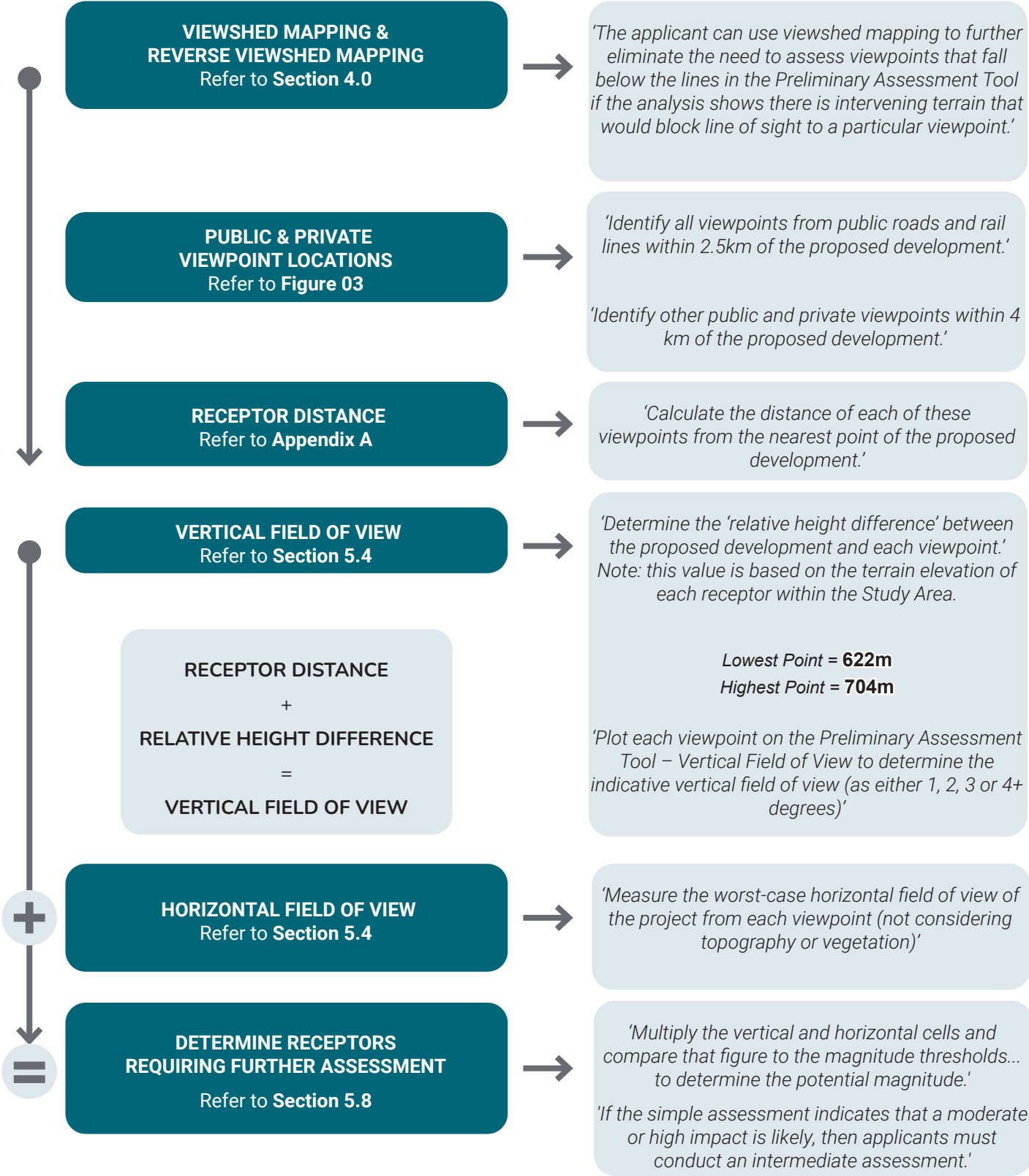


Figure 07 Overview of the Simple Assessment
Source - Adapted from DPHI, 2024b

5.2 Visual Impact Assessment Methodology

The Technical Supplement states: *"The likely impacts of a large-scale solar energy development can only be determined by understanding the sensitivity of an area or view to change and the magnitude of a proposed development in that area or view"* (DPHI, 2024b).

The methodology for determining visual magnitude and visual sensitivity are outlined in **Section 5.4** and **Section 5.5**.

5.3 Viewpoint Selection

As stated in the Technical Supplement, private receptors (non-associated dwellings) and public viewpoints (picnic areas, lookouts, recreation areas, etc.) are assessed to within 4km of the Project, and road and rail receptors (public receptors) were assessed within 2.5km of the Project (DPHI 2024b).

The Technical Supplement states: *"The calculations can be based on either the project area, or the development footprint depending on the level of information available at the time. A more refined approach that uses the development footprint, may result in less viewpoints requiring assessment."* (DPHI, 2024b).

5.4 Visual Magnitude

The visual magnitude of a project is determined by the volume of the horizontal and vertical fields of view occupied.

5.4.1 Vertical Field of View Calculation

As stated in the Technical Supplement, the worst-case vertical field of view from each viewpoint is calculated using the relative height difference between the Project and each viewpoint (refer to **Figure 08**) and the distance of the viewpoint from the Project. The viewpoints are added to the DPHI-provided spreadsheet document to determine the vertical field of view of either **1, 2, 3, or 4 degrees**.

5.4.2 Horizontal Field of View Calculation

Figure 09 illustrates how the horizontal field of view is calculated for each viewpoint location. For the purpose of this report, the horizontal field of view has been calculated based on the Development Footprint (including PV Array, substation and BESS) to provide a worst-case scenario assessment. The horizontal field of view measurement is then divided by 10 to determine the approximate number of horizontal cells the Project would theoretically occupy.

5.4.3 Visual Magnitude Threshold

To calculate the visual magnitude, multiply the vertical cells (vertical field of view) by the horizontal cells (horizontal field of view divided by 10) and compare the figure to the visual magnitude ratings in **Table 01**.

VISUAL MAGNITUDE THRESHOLDS	
Number of Occupied cells	Visual Magnitude Rating
1 - 7	Very Low
8 - 14	Low
15 - 25	Moderate
26 - 36	High
37 +	Very High

Table 01 Visual Magnitude Rating
Source - Adapted from DPHI, 2024

Project located above and below viewpoint (a - c)



Project located above viewpoint (a - b)



Project located below viewpoint (b - c)

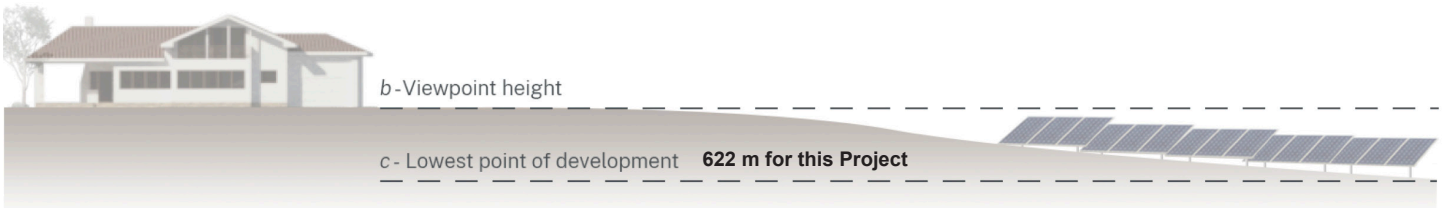


Figure 08 Relative Height Calculations
Source: DPHI, 2024

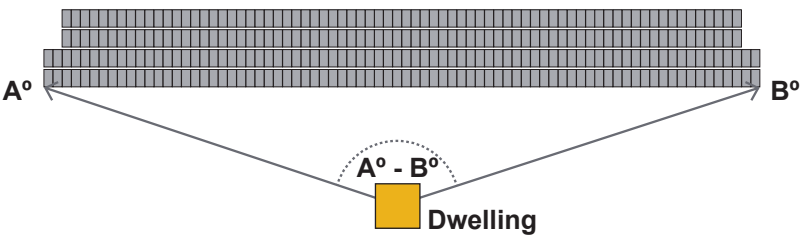


Figure 09 Horizontal Field of View Calculations

5.5 Visual Sensitivity

Visual sensitivity refers to the quality of the existing view and how sensitive the view is to the proposed change. The visual sensitivity is determined through the following three steps:

- Step 1. Determine Viewpoint Sensitivity
- Step 2. Determine Scenic Quality
- Step 3. Determine Visual Sensitivity

5.5.1 Viewpoint Sensitivity

Viewpoint sensitivity relates to the relative importance of viewpoints and the value that the community or visitors may place on landscapes viewed from public use areas, public travelways and non-associated residences such as dwellings. The sensitivity of each viewpoint is assigned as one of four (4) sensitivity ratings (very low, low, moderate, high). For the purposes of the Simple Assessment, all non-associated dwellings have been rated as moderate sensitivity, and all public viewpoints (in this Project, all are public roads) have been rated as very low (as per **Table 2** 'Viewpoint sensitivity levels and examples', of the Technical Supplement).

5.5.2 Scenic Quality

Scenic quality refers to the relative scenic, cultural or aesthetic value of the landscape within the viewshed based on the presence or absence of key landscape features known to be associated with community perceptions of very low, low, moderate, or high scenic quality. It is typically a complex process undertaken by experts in visual impact assessment and considers community values. For the purposes of the Simple Assessment, the scenic quality has been rated as low - moderate based on desktop analysis and aerial imagery (as per **Table 4** 'Frame of reference for scenic quality values', of the technical supplement).

5.5.3 Overall Visual Sensitivity

Once the viewpoint sensitivity and scenic quality are determined, these can be combined using the visual sensitivity matrix in **Table 02** to determine the overall visual sensitivity of each identified viewpoint.

For the Simple Assessment, the visual sensitivity of private viewpoints (non-associated dwellings) resulted in a moderate overall visual sensitivity, and the public viewpoints (from public roads) resulted in a very low overall visual sensitivity.

VISUAL SENSITIVITY MATRIX				
Viewpoint Sensitivity Level	High Scenic Quality	Moderate Scenic Quality	Low Scenic Quality	Very Low Scenic Quality
HIGH	HIGH	HIGH	MODERATE	LOW
MODERATE	HIGH	MODERATE	MODERATE	LOW
LOW	MODERATE	LOW	LOW	VERY LOW
VERY LOW	VERY LOW	VERY LOW	VERY LOW	VERY LOW

Table 02 Visual Sensitivity Matrix
Source - Adapted from DPHI, 2024

5.6 Visual Impact

Once visual magnitude and visual sensitivity have been established for each viewpoint, the overall visual impact is determined by combining the magnitude and sensitivity ratings according to the matrix in **Table 03**.

Viewpoints with very low or low visual impact do not require further assessment. Viewpoints that have a moderate or high visual impact will require a further Intermediate Assessment.

		VISUAL SENSITIVITY RATING			
		HIGH	MODERATE	LOW	VERY LOW
MAGNITUDE RATING	VERY HIGH	HIGH	HIGH	MODERATE	MODERATE
	HIGH	HIGH	MODERATE	MODERATE	LOW
	MODERATE	MODERATE	MODERATE	LOW	LOW
	LOW	MODERATE	LOW	LOW	VERY LOW
	VERY LOW	LOW	LOW	VERY LOW	VERY LOW

Table 03 Visual Impact Rating
Source - Adapted from DPHI, 2024

5.7 Viewpoint Identification

In accordance with the Technical Supplement, private receptors (Non-associated dwellings) were assessed within 4km of the Project Boundary and road and rail receptors (Public Receptors) were assessed within 2.5km of the Project Boundary (DPHI, 2024b).

The following provides an overview of the viewpoint selection process. Viewpoints have been illustrated in **Figure 03**.

5.7.1 Public Receptors

Eight(8) public viewpoints have been selected to represent roads and rail receptors within 2.5km of the Project Boundary to represent a preliminary visual impact from the Project. These include:

- Bradbury Lane
- Collector Road x2
- Hume Highway x2
- Mullers Lane x2
- Pucketts Lane
- Red Hill Road

Public viewpoints have been selected based on a desktop assessment and will be confirmed on Site during field work phase.

5.7.2 Private Receptors

In accordance with the Technical Supplement, other public and private receptors within 4km of the Project Boundary must be identified and assessed.

- Of these 87 non-associated dwellings, **34** were identified with a theoretical line of sight of the Development Footprint as per the viewshed mapping in **Section 4.0**
- The 34 non-associated dwellings were assessed using the Preliminary Assessment Tool. Results of which are found in **Appendix A**

5.8 Results of the Simple Assessment

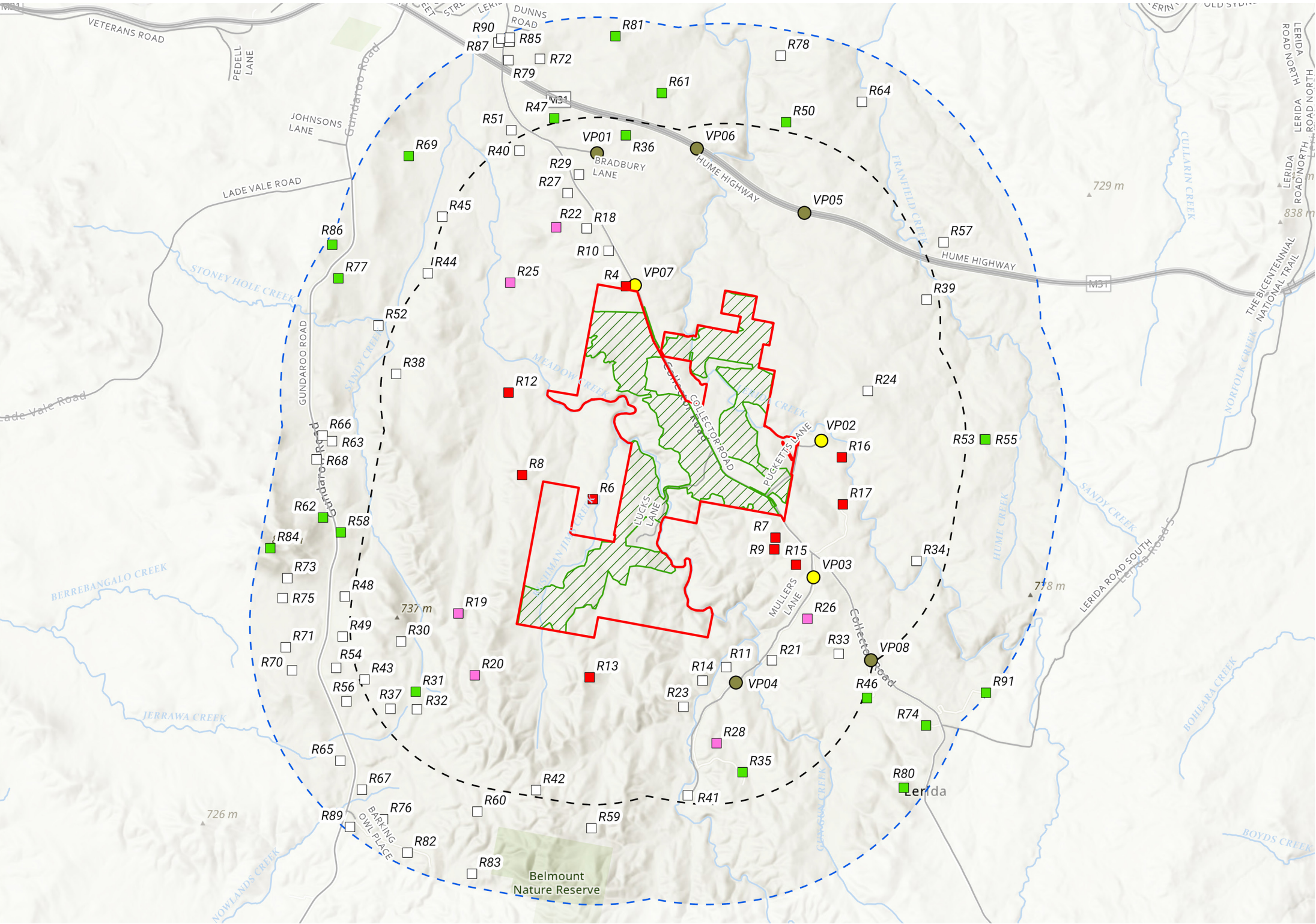
The simple assessment tools are employed to identify viewpoints requiring intermediate and detailed assessment in the EIS. Public and Private Receptors that indicate a Moderate or High visual impact will require further assessment. The results of the Simple Assessment are summarised below.

Public Receptors

Eight (8) viewpoints were identified within 2.5km of the Development Footprint. Application of the Simple Assessment identified that **three (3)** require further assessment.

Private Receptors

The Simple Assessment identified **six (6)** non-associated dwellings with moderate visual impact and **10** non-associated dwellings with high visual impact ratings, equating to **16 non-associated dwellings** requiring further assessment in the EIS phase (refer to **Appendix A** and **Figure 10**).



Simple Assessment Results

LEGEND

- Project Boundary
- Development Footprint
- 2.5km from Project Boundary
- 4km from Project Boundary
- Roads
- Watercourse

Non-Associated Dwelling Results:

- High Visual Impact Rating
- Moderate Visual Impact Rating
- Low Visual Impact Rating
- Non-Associated Dwellings with No Visibility (Based on Viewshed Mapping)

Public Viewpoints Results:

- Public Viewpoint requiring further assessment
- Public Viewpoint requiring NO further assessment

Figure 10 Simple Assessment Results
Basemap Source - ArcGIS, 2025

6.0 Cumulative Visual Impact

6.1 Overview of Potential Cumulative Impacts

In accordance with the Cumulative Impact Assessment Guidelines for State Significant Projects, *"the area selected to assess relevant cumulative impacts from other developments should not be unnecessarily large or include areas where the cumulative impacts are likely to be negligible, relative to the baseline condition of the relevant Project."* (DPIE, 2022b)

The occurrence of large-scale renewable energy projects within a region has the potential to alter the perception of the overall landscape character irrespective of being viewed in a single viewshed as these projects could become part of the existing landscape. It is important to determine whether the effect of multiple projects and other major infrastructure within the region would combine to become the dominant visual element, altering the perception of the general landscape character. **Figure 11** shows other renewable energy projects that are currently proposed, operating and under construction over a broader regional context.

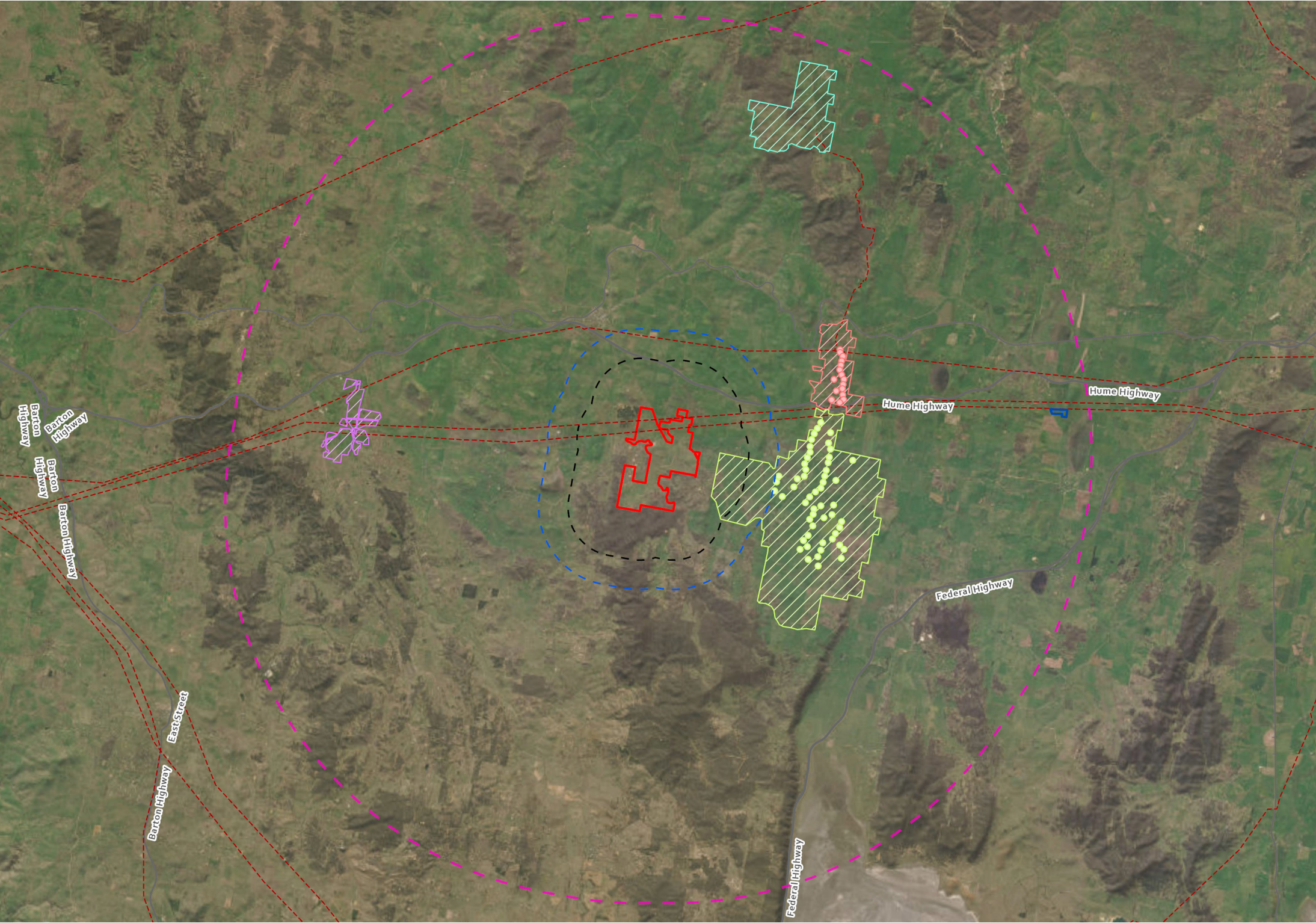
6.2 Nearby Large-Scale Renewable Energy Projects

As of July 2025, **four (4)** Renewable Energy Projects have been identified within 20km (See **Table 04**). Of these projects, **two (2)** have been identified within 10km of the Project Area: Collector Wind Farm and Cullerin Range Wind Farm. Due to the distance and intervening elements such as vegetation, topographic conditions and built forms, Projects identified beyond 10km of the Project Area will likely not contribute to cumulative visual impacts experienced by Public and Private receivers within the Study Area. Due to the proximity and its large scale, Collector Wind Farm is considered to contribute significant impacts to the general landscape character and is very likely to be the dominant visual element within the region.

Cumulative visual impacts will be assessed in detail during the EIS phase.

Name of Project	Distance to Project Area	Current Status
	* Approximate distances	
Collector Wind Farm (227MW)	1 km	Operating
Cullerin Range Wind Farm (30MW)	6.2 km	Operating
Gunning Solar Farm (BESS) (250MW)	12.4 km	DA Approved
Gunning Wind Farm (46.5MW)	14.1 km	Operating

Table 04 Nearby Renewable Energy Projects



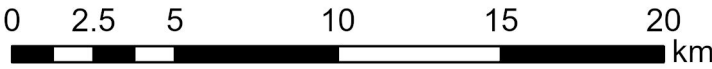
Nearby Renewable Projects

Lerida Solar Farm & BESS

LEGEND

- Project Boundary
- 20km Scoping Area
- 4km from Project Boundary
- 2.5km from Project Boundary
- Existing Transmission Line
- Willavale Park BESS
- Gunning Solar Farm
- Gunning Wind Farm
- Collector Wind Farm
- Cullerin Range Wind Farm
- Collector Wind Farm Turbine Layout
- Cullerin Range Wind Farm Turbine Layout
- Roads
- Railway

Figure 11 Nearby Renewable Projects
Basemap Source - ArcGIS, 2025



7.0 Summary and Next Steps

7.1 Summary of Findings

Due to the undulating topography characteristic of the surrounding landscape situated in the southwest from the Project, the majority of the dwellings in the area is expected to be shielded from the line of sight to the Project. Most dwellings in the east and north from the Project will be able to view the Project due to their proximity to it and the relatively flat topography in these directions. Preliminary desktop analysis suggests that intervening vegetation, including surrounding tree cover and roadside plantings, will likely fragment and reduce direct views of the Project from nearby dwellings and roadways.

The Preliminary Visual Assessment adopted a 4km Study Area around the Project Boundary to identify potential visual impacts for non-associated dwellings under a worst-case scenario. Within this buffer, **34** non-associated dwellings were identified as having a potential line of sight to the Project based on the Viewshed Mapping. The simple assessment rated the visual impact for **16** of these dwellings as moderate to high, requiring further visual impact assessment during the EIS phase of the Project.

Eight (8) public viewpoints were identified within 2.5km of the Project Boundary. Of which, **three (3)** require further assessment during the EIS stage.

7.2 Next Steps

A Landscape Character and Visual Impact Assessment (LCVIA) will be prepared in accordance with the Guideline and the Technical Supplement. During the preparation of the LCVIA, detailed site investigations will be undertaken from areas identified in the preliminary assessment as having potential visibility towards the Project. This process will be undertaken using the procedures outlined in the following Guidelines:

- *Large-Scale Solar Energy Guideline: Guidance for State significant large-scale solar energy development* (referred to hereafter as 'the Guideline') developed by the Department of Planning, Housing and Infrastructure (November 2024)
- *Large Scale Solar Energy Guideline: Technical Supplement for Landscape Character and Visual Impact Assessment* (referred to hereafter as 'the Technical Supplement') developed by the Department of Planning, Housing and Infrastructure (November 2024)
- *State Significant Development Guidelines - Preparing a Scoping Report. Appendix A to the state significant development guidelines.* (referred to hereafter as 'the SSD Guidelines') developed by the Department of Planning, Infrastructure and Environment (October 2022)

Specialised modelling tools and visualisations (including photomontages) will be developed to illustrate potential views of the Project from the public and private viewpoints identified through this

report as requiring further assessment. In addition, site inspections will be undertaken from key public viewpoints identified as requiring further assessment.

The LCVIA will include an assessment of the landscape and visual impact resulting from all associated infrastructure and ancillary structures, and consideration of cumulative impacts of nearby infrastructure. Further assessment will be undertaken to assess potential impacts of glint and glare using industry standard methodology.

The cumulative impacts of surrounding renewable energy projects will be assessed as part of the LCVIA to evaluate potential effects on the broader regional landscape character. Given that one of the surrounding projects (Collector Wind Farm), which is operating, is in very close proximity (1km) to the Project, its cumulative impacts is advised to be evaluated in details.

On-site and off-site visual landscape mitigation strategies will be developed in response to further assessment and community consultation. The purpose of the mitigation strategies will be to ensure the Project is integrated into the existing landscape and to mitigate identified visual impacts to an acceptable level. There are opportunities within the Project Boundary for landscape planting to further ameliorate visual impacts of the Project, and will be explored in detail in the EIS phase.

References

Department of Planning, Housing and Infrastructure (2024). *Large-Scale Solar Energy Guideline: Guidance for State significant large-scale solar energy development*. <https://www.planning.nsw.gov.au/sites/default/files/2024-11/large-scale-solar-energy-guideline.pdf> (DPHI, 2024a)

Department of Planning, Housing and Infrastructure (2024). *Large-Scale Solar Energy Guideline: Technical Supplement for Landscape Character and Visual Impact Assessment*. <https://www.planning.nsw.gov.au/sites/default/files/2024-11/large-scale-solar-energy-guideline-visual-technical-supplement.pdf> (DPHI, 2024b)

Department of Planning, Infrastructure and Environment (2022). *State Significant Development Guidelines - Preparing a Scoping Report. Appendix A to the state significant development guidelines*. <https://www.planning.nsw.gov.au/sites/default/files/2023-03/ssd-guidelines-preparing-a-scoping-report.pdf> (DPIE, 2022a)

Department of Planning, Infrastructure and Environment (2022). *Cumulative Impact Assessment Guidelines for State Significant Projects*. <https://www.planning.nsw.gov.au/sites/default/files/2023-03/cumulative-impact-assessment-guidelines-for-ssp.pdf> (DPIE, 2022b)

Maps and Figures:

ArcGIS (2025) *World Topographic Map*. Basemap Data Available: <https://www.arcgis.com/home/item.html?id=30e5fe3149c34df1ba922e6f5bbf808f>

RenewMap (July, 2025) *Australia’s renewable energy and transmission infrastructure map*. <https://renewmap.com.au/>

Appendix A - Simple Assessment Results

Viewpoint ID	Receiver Elevation (m)	Relative Height Difference (m)	Distance to Project Boundary (m)	Vertical FOV (degree)	Horizontal FOV (degree)	Horizontal Cells	Total Occupied Cells	Visual Magnitude	Preliminary Visual Impact Rating	Assessment Requirements
VP01	620	84	2352	2°	58°	6	12	Low	Very Low	No Further Assessment Required
VP02	677	82	670	4°	128°	13	52	Very High	Moderate	Intermediate Assessment Required
VP03	730	107	1061	4°	93°	10	40	Very High	Moderate	Intermediate Assessment Required
VP04	689	82	1901	2°	91°	10	20	Moderate	Low	No Further Assessment Required
VP05	660	82	1441	2°	63°	7	14	Low	Very Low	No Further Assessment Required
VP06	622	82	2175	2°	56°	6	12	Low	Very Low	No Further Assessment Required
VP07	663	82	353	4°	144°	15	60	Very High	Moderate	Intermediate Assessment Required
VP08	733	110	2496	2°	68°	7	14	Low	Very Low	No Further Assessment Required

Table 05 Preliminary Visual Assessment Tool Results - Public Receivers

Dwelling ID	Receiver Elevation (m)	Relative Height Difference (m)	Distance to Project Boundary (m)	Vertical FOV (degree)	Horizontal FOV (degree)	Horizontal Cells	Total Occupied Cells	Visual Magnitude	Preliminary Visual Impact Rating	Assessment Requirements
R12	594	106	583	4°	138°	14	56	Very High	High	Intermediate Assessment Required
R13	740	117	598	4°	125°	13	52	Very High	High	Intermediate Assessment Required
R15	715	93	678	4°	131°	14	56	Very High	High	Intermediate Assessment Required
R16	689	77	682	4°	116°	12	48	Very High	High	Intermediate Assessment Required
R17	695	77	822	4°	114°	12	48	Very High	High	Intermediate Assessment Required
R4	662	77	47	4°	182°	19	76	Very High	High	Intermediate Assessment Required
R6	637	77	238	4°	333°	34	136	Very High	High	Intermediate Assessment Required
R7	706	83	280	4°	174°	18	72	Very High	High	Intermediate Assessment Required
R8	656	77	330	4°	165°	17	68	Very High	High	Intermediate Assessment Required
R9	708	86	448	4°	162°	17	68	Very High	High	Intermediate Assessment Required
R19	695	77	889	4°	78°	8	32	High	Moderate	Intermediate Assessment Required
R20	736	113	993	4°	66°	7	28	High	Moderate	Intermediate Assessment Required
R22	623	77	1057	3°	77°	8	24	Moderate	Moderate	Intermediate Assessment Required
R25	597	103	1297	3°	88°	9	27	High	Moderate	Intermediate Assessment Required
R26	711	88	1423	3°	98°	10	30	High	Moderate	Intermediate Assessment Required
R28	703	80	1589	2°	76°	8	16	Moderate	Moderate	Intermediate Assessment Required
R31	716	93	1823	2°	56°	6	12	Low	Low	No Further Assessment Required
R35	707	84	2084	2°	66°	7	14	Low	Low	No Further Assessment Required
R36	635	77	2269	2°	56°	6	12	Low	Low	No Further Assessment Required

Dwelling ID	Receiver Elevation (m)	Relative Height Difference (m)	Distance to Project Boundary (m)	Vertical FOV (degree)	Horizontal FOV (degree)	Horizontal Cells	Total Occupied Cells	Visual Magnitude	Preliminary Visual Impact Rating	Assessment Requirements
R46	733	110	2553	2°	64°	7	14	Low	Low	No Further Assessment Required
R47	621	80	2570	1°	53°	6	6	Very Low	Low	No Further Assessment Required
R50	637	77	2644	1°	52°	6	6	Very Low	Low	No Further Assessment Required
R55	717	94	2792	1°	67°	7	7	Very Low	Low	No Further Assessment Required
R58	669	77	2843	1°	71°	8	8	Low	Low	No Further Assessment Required
R61	616	84	2989	1°	47°	5	5	Very Low	Low	No Further Assessment Required
R62	688	77	3146	1°	69°	7	7	Very Low	Low	No Further Assessment Required
R69	579	122	3424	1°	55°	6	6	Very Low	Low	No Further Assessment Required
R74	772	149	3527	2°	55°	6	12	Low	Low	No Further Assessment Required
R77	631	77	3564	1°	61°	7	7	Very Low	Low	No Further Assessment Required
R80	808	185	3702	2°	51°	6	12	Low	Low	No Further Assessment Required
R81	625	77	3725	1°	40°	4	4	Very Low	Low	No Further Assessment Required
R84	808	185	3840	2°	56°	6	12	Low	Low	No Further Assessment Required
R86	630	77	3902	1°	57°	6	6	Very Low	Low	No Further Assessment Required
R91	765	142	3971	1°	52°	6	6	Very Low	Low	No Further Assessment Required

Table 06 Preliminary Visual Assessment Tool Results - Private Receivers