PETER HAACK
CONSULTING

Heywood BESS

Landscape and Visual Impact and Visual Assessment Report

15 May 2025

THIS REPORT HAS BEEN PREPARED FOR COGENCY ON BEHALF OF ATMOS RENEWABLES.

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Quality Assurance

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1 INTRODUCTION

The Proponent, Atmos Renewables, intends to submit a Development Application (DA) for the development of a utility-scale Battery Energy Storage System (BESS), the Heywood BESS (the Project), north of the existing Heywood Terminal Station in Western Victoria. The project location is approximately 4km south of Heywood and ~300km west of Melbourne. (refer to ***Figure 1***).

The 18 hectare (ha) Primary Parcel is located at 100 Golf Course Road. It is an area of flat, predominately cleared land, bounded by Golf Course Road to the northeast and Mount Clay State Forest to the south. Areas of mostly open pasture with scattered trees extend from the southwest to the northeast.

The Primary Development Area comprises approximately 5.7ha of the Primary Parcel and involves the construction of the BESS units, an on-site substation and associated support infrastructure. South of the Primary Parcel, an underground transmission cable is proposed to connect the on-site substation to the existing Heywood Terminal Station located approximately 1km to the south.

This preliminary landscape and visual impact assessment (PLVIA) report has been prepared by Peter Haack Consulting for inclusion in the Development Application.

Figure 1 - Project location – Broad context (Source: Google Maps).

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2 METHODOLOGY

This preliminary assessment report considers how the proposed components of the Project may impact on surrounding visually sensitive receptors. Additionally, it provides guidance on the potential placement of Project components to reduce potential visual impacts.

The methodology as outlined below is undertaken at a higher level at the preliminary assessment phase than at the final assessment phase. However, the approach and principles are the same.

2.1 Approach

While there are no specific legislative requirements for the methodology of an assessment such as this in Victoria, the profession typically refers to the guidance offered by:

- Technical Supplement -Landscape and Visual Impact Assessment - Large-Scale Solar Energy Guideline, NSW DPIE (2022).
- Guidance for Landscape and Visual Impact Assessment (GLVIA), Third Edition, Landscape Institute and Institute of Environmental Management & Assessment (2013).
- Guidance Note for Landscape and Visual Assessment, Australian Institute of Landscape Architects (AILA) (2018).

The methodology used for this Project, described below, conforms generally to the direction offered by the above guidelines as well as other proven assessment methodologies.

This preliminary and final assessment reports assess the landscape and visual impact of the Project, that is the day-to-day visual effects on people's views.

The method to measure visual impacts is based on the combination of the sensitivity of viewers to the proposed change and the magnitude of the Project on that visual setting or view.

The following study components were included as part of this assessment:

- Review the Project with regard to potential visual impacts.
- Characterisation of the existing landscape and visual setting.
- Qualitatively assess:
    - Visual modification at key viewpoints – How would the Project contrast with the landscape character of the surrounding setting?
    - Visual sensitivity at key viewpoints – How sensitive would viewers be to the Project?
    - Potential night-lighting impacts.
    - Potential glare or glint impacts.
- Propose visual impact mitigation and management measures.

2.2 Assessment of landscape and visual impacts

The landscape and visual impact assessment is based on a detailed analysis of the landscape and visual setting and an assessment of the potential impacts of the Project on its viewshed.

The critical issues considered for this LVIA were:

- The number and location of sensitive viewing locations;

- The duration of the view – either static (generally long term - > 1 hour) and mobile (generally short term continually moving and static for no longer than 5 minutes);
- The degree to which the proposed works would be visible;
- The quality of the landscape setting; and
- The degree to which the Project contrasts or is compatible with the visual character of the setting – the visual modification level.

The assessment method assumed that if the Project would not be seen, there is no impact (refer to *Table 1*).

VISUAL IMPACT	Visual/Viewer Sensitivity		
	High	Moderate	Low
Level of Visual Modification to the Setting			
High	High	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Low
Very Low	Low	Very Low	Very Low
Not Visible	No Impact	Not Impact	No Impact

Table 1 - Visual impact determination matrix.

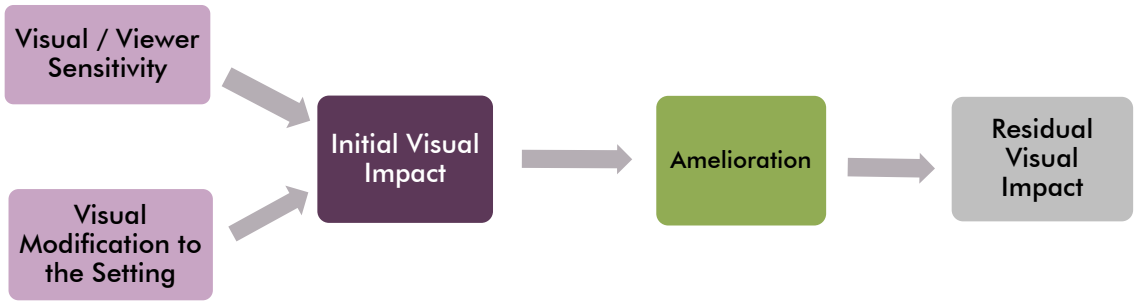

Diagram 1 - Visual impact assessment process.

2.2.1 Visual sensitivity

In this report, the approach to the determination of visual sensitivity is consistent with the USDAFS visual management system[1].

[1] Landscape Aesthetics – A Handbook for Scenery Management, Agricultural Handbook No. 701. United States Department of Agriculture Forest Service (1995).

The visual sensitivity of a development depends on a range of viewer characteristics. The primary characteristics used in this report include:

- Land use;
- Distance of the development from viewers; and
- Visibility from sensitive land use areas.

Visual sensitivity is a measure of how critically a change to the existing environment would be viewed from various land uses (refer to ***Table 2***). Different activities have different sensitivity levels. For example, tourists on holiday would generally view changes to a landscape more critically than industrial workers in the same area. Similarly, individuals would view changes to the visual setting of their homes more critically than changes to the broader area in which they travel or work.

The next critical component to rating the visual sensitivity is the distance of the development from the identified visual use area. There are three viewing situations to consider:

- foreground (0 - 1 km);
- midground (1 km – 4 km); and
- background (> 4 km).

As the distance increases from a proposed development to a sensitive land use area, the level of viewer sensitivity decreases based on a perceptual dis-association based on a reduction in relative proximity.

Visual Use Area	Foreground		Midground		Background
	Local Setting		Sub–Regional Setting		Regional Setting
	0 – 0.5 km	0.5 – 1 km	1 – 2 km	2 – 4 km	> 4 km
Residences	H	H	H	M	L
Tourism & Accommodation	H	H	H	M	L
"A" Category Roads *(Henty Highway)*	H	M	M	L	L
Sporting uses *(Golf Course)*	M	L	L	L	VL
"C" Category Roads *(Woolsthorpe-Heywood Road)*	M	L	L	L	VL
Conservation Reserve	M	L	L	L	VL
Local Roads	L	L	L	VL	VL
Agricultural Areas	L	L	L	VL	VL
Industrial Area	VL	VL	VL	VL	VL
Railway line -freight only	VL	VL	VL	VL	VL

Legend - H = High, M = Moderate, L = Low, VL = Very Low

Table 2 - Typical Viewer (visual) Sensitivity.

Another consideration in defining the level of sensitivity in situations where a development is proposed adjacent to an existing development of a similar form and scale, is that of de-sensitisation. In this scenario, those residing adjacent to the existing development may have become accustomed to its presence and may be less sensitive to an extension with a similar character.

Conversely, the additional development may result in a cumulative impact, with some becoming hyper-sensitised. Given the potential for varying reactions, the methodology takes a cautionary approach and defines all uses at the same sensitivity level as a "greenfields" site.

2.2.2 Visual modification to the existing setting

The level of visual modification resulting to a setting from a proposed development, or the degree to which the setting is modified, can be best measured as an expression of the visual interaction, or the level of visual contrast between the Project and the existing visual environment.

A high level of magnitude, or a high degree of visual modification, will result if the major components of the Project contrast strongly with the existing landscape.

A low level of magnitude, or a low degree of visual modification, will occur if there is little or minimal visual contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the proposed development and the environment in which it sits. In this situation, the proposed development may be noticeable, but does not markedly contrast with the existing, already modified landscape (refer to *Table 3*).

The degree of magnitude or modification would generally decrease as the distance from the Project to various viewing locations increases.

The presence of the existing power related infrastructure, including the terminal station and surrounding powerlines, provides the Project with a significant degree of visual fit within the already modified landscape setting.

Modification Level	Description
High	The proposal is highly visible and intrusive regarding the size, scale and geographical extent, and would disrupt views currently experienced from sensitive land use areas and/or strongly contrasts with the existing landscape setting which has limited capacity for change.
Moderate	The proposal partially intrudes regarding the size, scale and geographical extent or somewhat obstructs current views from sensitive land use areas and/or a noticeable compositional change to the existing landscape setting in which there is moderate capacity for change.
Low	The proposal is barely perceptible resulting in minor deterioration to the view currently experienced from sensitive land use areas; and/or results in a small change to the existing landscape setting in which change is possible without harm.
Very Low	There is minimal compositional contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the proposal and the environment in which it sits. In this situation, the proposal may be noticeable but does not markedly contrast with the existing landscape setting.
Not Visible	There are no views of the proposal components and as such, there is no impact.

Table 3 - Typical scenarios for determining the visual modification level.

2.2.3 Occupied field of view – Visual prominence

To assist with the assessment of visual prominence, this report defines several viewsheds which are based on distance from the Project. The methodology is based on the reduction of impact with an increase in distance between a given viewpoint and the Project. The potential visual impact of the Project will also, to a large extent, depend on how much of the central field of vision it occupies (refer to *Table 4*, *Table 5* and **Figure 2**).

Throughout the visual catchment, the degree of visual prominence will generally decrease as the distance from the development site to various viewing locations increases.

The quantitative assessment of visual prominence, i.e., how much is potentially visible, is intertwined with the distribution, height and density of vegetation as well as topography throughout the visual catchment, elements which can screen views of a development from a particular viewpoint. Visual prominence helps inform the process of determining the visual modification level as previously outlined in the above section.

Degrees of Field of View Occupied	Potential Visual Prominence – Horizontal Field of View
Less than 5°	*Insignificant – Low Visual Prominence* The development may not be highly visible in the view unless it contrasts strongly with the background.
5° – 30°	*Potentially Noticeable – Moderate Visual Prominence* The development may be noticeable. The degree that it intrudes on the view will be dependent on how well it integrates with the landscape setting.
Greater than 30°	*Potentially Dominant – High Visual Prominence* The development will be highly noticeable.

Table 4 - Horizontal line of sight – Visual impact / visual prominence.

Degrees of Field of View Occupied	Potential Visual Prominence – Vertical Field of View
0° - 0.25°	*Barely Discernible – Very Low Visual Prominence* A very thin line in the landscape.
0.25° - 0.5°	*Insignificant - Low Visual Prominence* A thin line in the landscape.
0.5° – 2.5°	*Potentially Noticeable – Moderate Visual Prominence* The development may be noticeable. The degree that it intrudes on the view will be dependent on how well it integrates with the landscape setting.
Greater than 2.5°	*Potentially Dominant – High Visual Prominence* The development will be highly noticeable, although the degree of visual intrusion will depend on the landscape setting and the width/spread of the object.

Table 5 - Vertical line of sight – Visual impact / visual prominence.

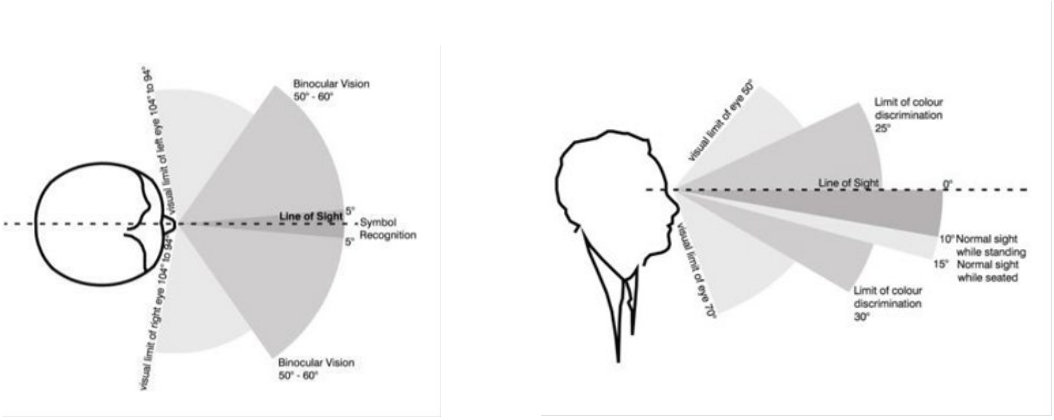

Figure 2 – Horizontal and vertical field of view.

2.2.4 Residual impacts

The effectiveness of the measures proposed in mitigating the landscape and visual impacts resulting from the Project is demonstrated by comparing the visual impact during initial operation with the residual impact when the proposed landscape measures have mostly matured, which is typically ten (10) years following initial establishment.

Generally, residual impacts would be reduced by at least one level where landscape measures have been proposed and have matured, as a result of the filtering of, or inhibiting views to the Project.

2.2.5 Cumulative impact

2.2.5.1 Simultaneous cumulative impact

Simultaneous cumulative impact refers to occurrences where an impact may result from several potential visual intrusions being visible from an individual location at the one time.

2.2.5.2 Sequential cumulative impact

Sequential cumulative impact refers to occurrences when the viewer must move to another viewpoint to see different developments. Sequential cumulative impacts most typically apply to road users as they traverse the landscape along major roads.

2.3 Lighting impacts

AS-NZS-4282-2019 Control of the obtrusive effects of outdoor lighting provides standards for the assessment and limitation of lighting impacts. The standard identifies four environmental zones for exterior lighting which are categorised by the degree of artificial lighting within an area. For example, national parks would be categorised as an intrinsically dark landscape (Category A1), whereas a city centre with high levels of night-time activity would be categorised as a high district brightness area (Category A4).

The standard is aimed at the minimisation of light spill. Regardless of the existing brightness of a particular setting, it is a widely accepted principle that light spill, particularly upward light spill, be minimised wherever possible.

2.3.1 Lighting impact scenarios

Glow
Light glow is typically an upward projection of light that results in illumination of the night sky above a lighting source. It is intensified, or more visually apparent when foggy or cloudy as the light reflects or disperses of water droplets in the atmosphere. Glow is visible over significant distances.

Spill
Spill is light that falls on adjacent sensitive surfaces, both vertical and horizontal, and is most intrusive where it illuminates private open spaces or spills through windows.

Hot spots
Hot spots relate to concentrated areas of bright light in an otherwise less well illuminated setting. Hot spots will be most visible where are elevated.

Kinetic / movement
Lights that change colour or flash can draw the attention of a viewer. As the speed of the colour change or blink increases in speed, so too will its prominence of ability to draw attention.

2.4 Limitations of the assessment

There are these following limitations associated with this assessment:

- The LVIA process aims to be objective and, as such, seeks to describe any changes factually. Potential changes resulting from the Project have been defined. However, the significance of these changes requires qualitative (subjective) judgements to be made. Therefore, the conclusions to this assessment combine both objective measurement and subjective professional interpretation. This assessment has attempted to be objective, however, it is recognised that visual assessment can be highly subjective, and individuals are likely to associate different visual experiences to the study area;
- The impact assessment is focused on the current land uses and zoning; and
- Methodology of the construction works are currently unknown and dependent upon planning approvals. However, we have assumed that the impacts during construction would result in a similar degree of visual impact to that of the operational phase assessment findings, pre-amelioration.

3 COMPONENTS OF THE PROJECT

3.1 Site boundaries

The Primary Parcel is located at 100 Golf Course Road, Heywood. It is a wedge-shaped parcel of land, approximately 18 ha in area. It is part of Lot 2, Title Plan 020650J.

Some temporary and underground works such as the Heywood Terminal Station transmission connection will extend outside of the Primary Parcel into the more broadly defined Project Area. The extents of these key areas are illustrated in **Figure 3**.

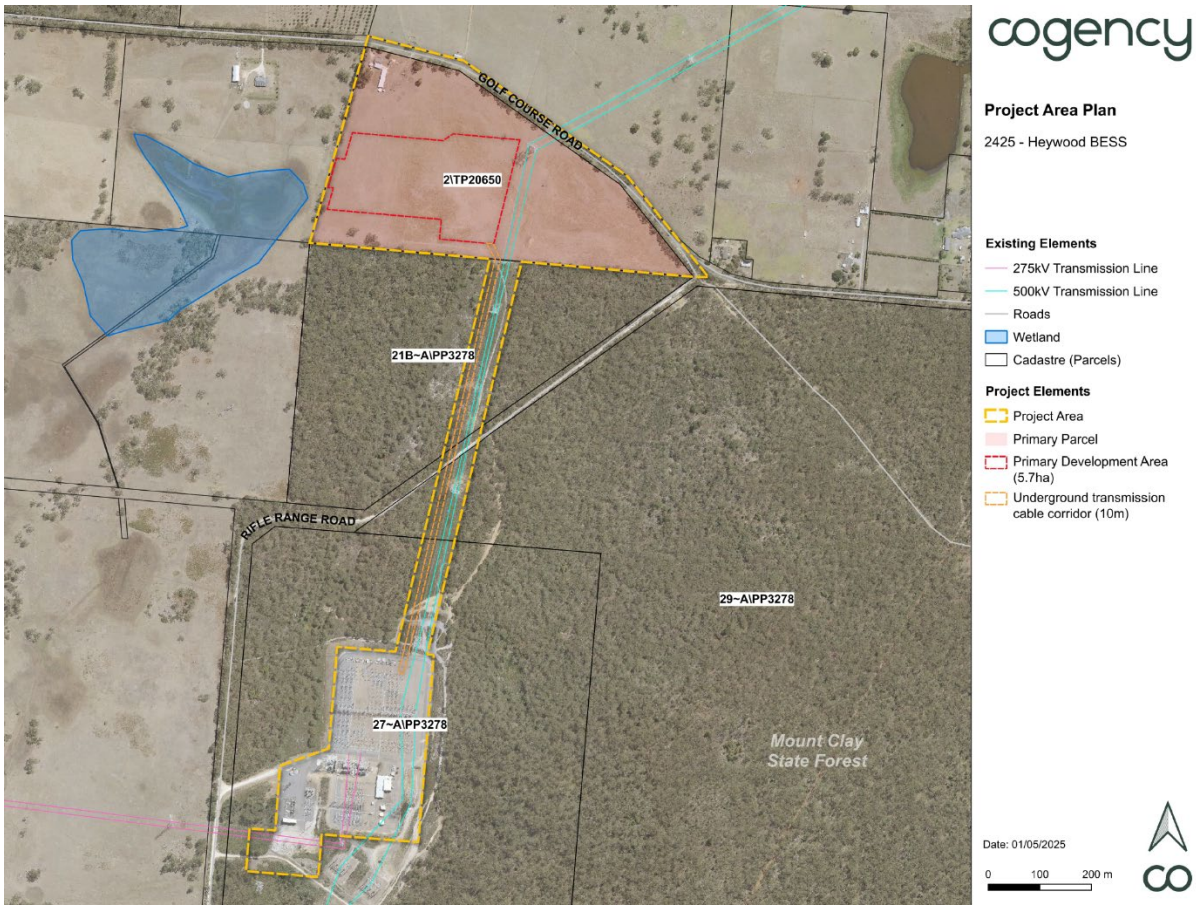

Figure 3 – Project Area, Primary Parcel and Primary Development area extents. (Source: Cogency)

3.2 Key features of the facility

As illustrated in **Figure 4,** the Project involves the development of a 5.7ha BESS facility.

The primary works and components associated with the Project include:

- The BESS and on-site substation (within the Primary Development Area); and
- The underground transmission connection to the Heywood Terminal Station (extending into the broader Project Area).

Other key features of the Project include:

- Operation & maintenance building – inclusive of control room;
- Radiant heat barrier;
- Construction laydown area;
- Retention basin; and
- Asset protection zone.

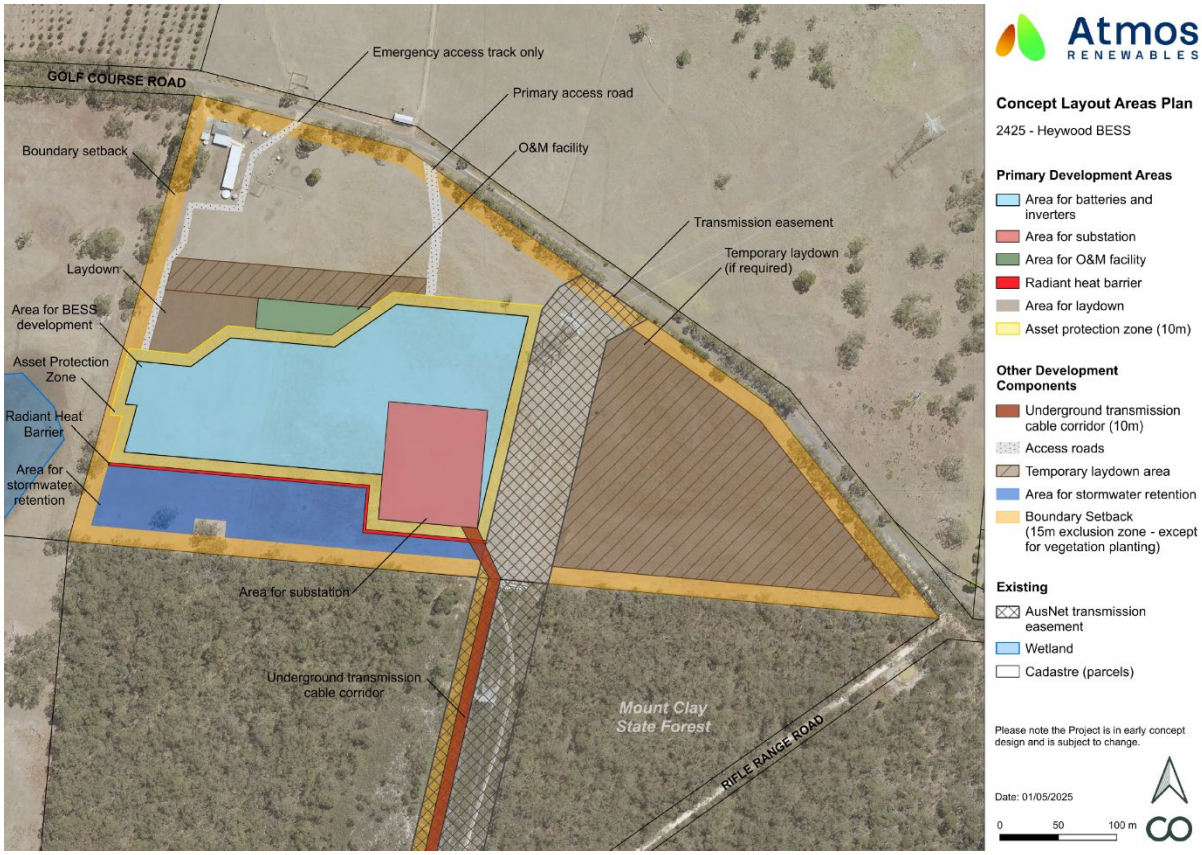

Figure 4 – Proposed concept layout of the Project (Source: Atmos Renewables, April 2025).

3.3 Detail of project components

The most visible components of the Project that may result in visual impacts to surrounding sensitive receptors are outlined below.

3.3.1 BESS units

Batteries will be housed inside BESS containers constructed of steel. They will be approximately 3m high with an indicative footprint of 6m x 2.4m (refer to ***Figure 5***).

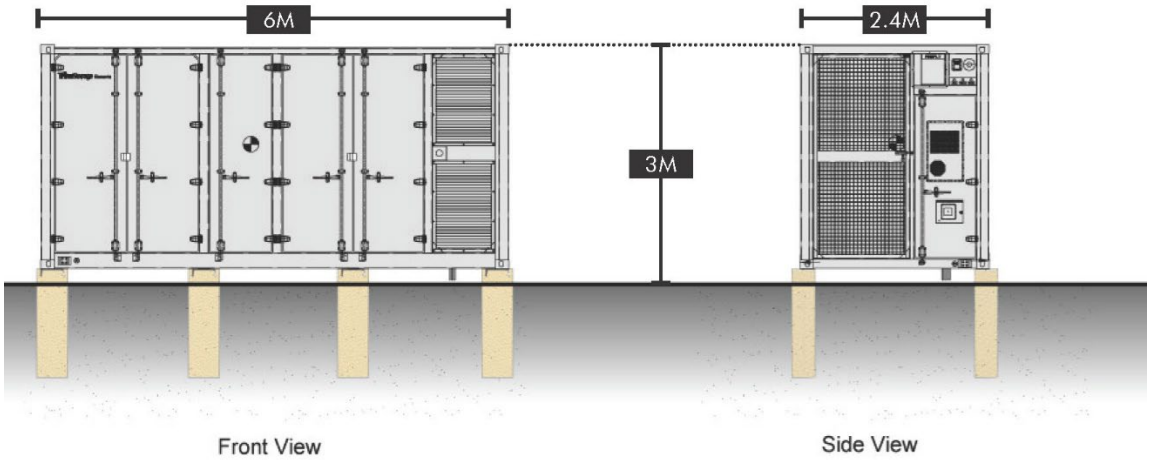

Figure 5 – Typical BESS container.

3.3.2 Inverter units

Inverter units are required to convert Direct Current (DC) electricity into Alternating Current (AC) before being fed into the local electricity grid network. The inverter unit is typically housed in a cabin-like structure mounted on a concrete base. They will be approximately 3m high with an indicative footprint of approximately 2.8m x 1.6m (refer to ***Figure 6***).

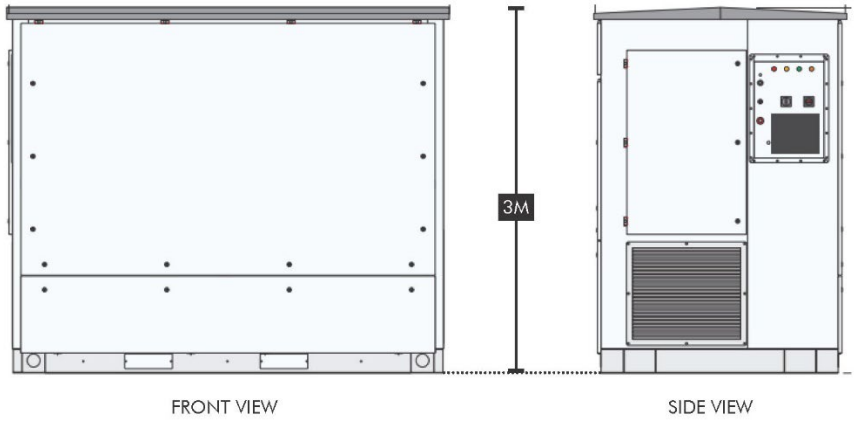

Figure 6 – Typical inverter unit – front and side elevations.

3.3.3 Substation

The substation and associated hardstand areas will occupy a footprint of approximately 100m x 85m, with most elements being approximately 6m and maximum height of 9.8m (refer to ***Figure 7***).

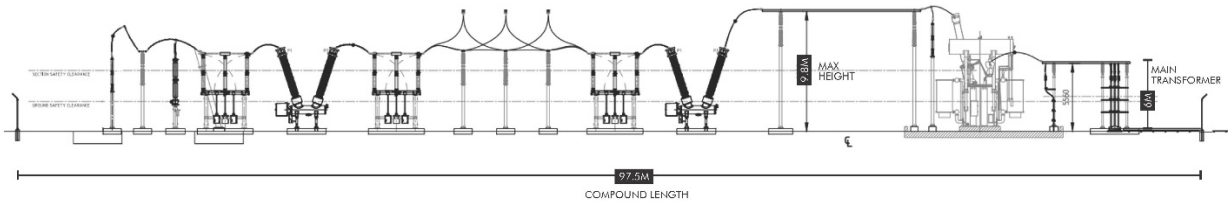

Figure 7 – Elevation view of a typical substation.

3.3.4 Operations and maintenance facilities

Operations and maintenance facilities will be located in the northern part of the Primary Development Area and may be up to 6m in height. They will include an operations and maintenance building which will be a simple structure with an indicative footprint of around 14 x 7m (refer to **Figure 8**) and a warehouse with an indicative footprint of around 27m x 14m (refer to **Figure 9**).

Figure 8 – Typical operations and maintenance building.

Figure 9 – Typical warehouse building.

3.3.5 Water tanks

Two fire water tanks approximately 2.5m high and 9.5m in diameter will be located on the northern side of the Project (refer to **Figure 10**).

Figure 10 – Typical water tank.

3.3.6 Radiant heat barrier

A radiant heat barrier will be located towards the southern side of the Project, between the retention area and the asset protection zone. It will be around 4-5m in height and made of Corten steel (refer to **Figure 11**).

Figure 11 – Example of a radiant heat wall between BESS units and a forested area.

3.3.7 Security fencing

A mesh fence up to 2.4 metres in height will be installed around the Project (refer to ***Figure 12***). The purpose of the fence is to deter theft or vandalism and prevent unauthorised access to equipment.

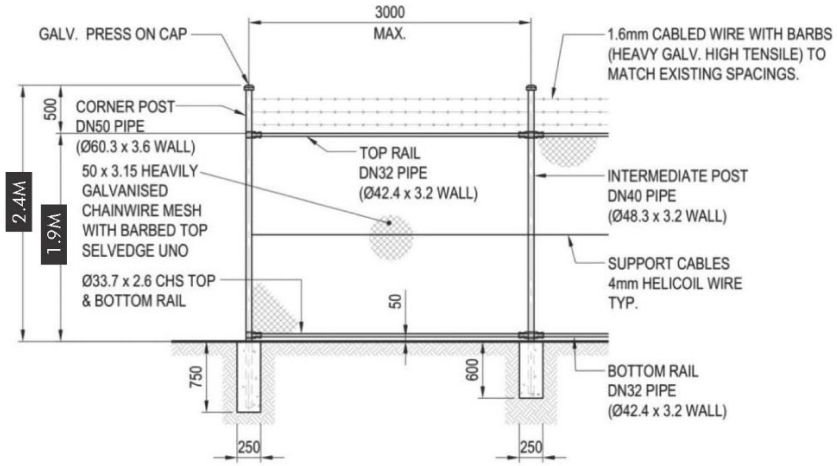

Figure 12 – Typical security fence detail.

3.3.8 Security Camera

In order to monitor the site and detect any unauthorised access, a motion sensor CCTV camera will be erected on a pole of approximately 4.5 m in height (refer to ***Figure 13***). The camera is directed into the Project area, avoiding impinging on the privacy of nearby properties, and employ infrared technology so no lighting is required.

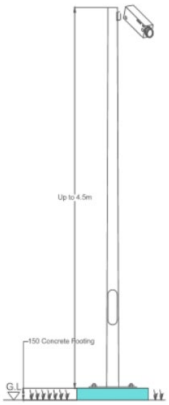

Figure 13 – Typical post mounted security camera.

3.3.9 Earthworks

While some hardstand will be required, the changes to the natural ground level will be minor. The detail of the earthworks will be resolved post-permit, but it is anticipated that there will be a relatively balanced amount of cut and fill with the increase in natural ground level likely to be no more than 300mm in any given location.

3.3.10 Transmission line

An approximately 1km section of underground cable is required to connect the Project's substation to the main grid at the Heywood Terminal Station.

4 PROJECT CONTEXT AND SETTING APPRAISAL

4.1 Land use and zoning

4.1.1 Land use

The predominant land use of Primary Parcel and much of the surrounding area from the northeast to the southwest is open pasture for grazing, with some properties combining this use with other types of farming (refer to **Figure 15**). Most rural properties contain a residence.

The area southeast of the Primary Parcel is dominated by the Mount Clay State Forest (also known as the Narrawong State Forest), including the Narrawong Flora Reserve in its western portion. This densely vegetated forest has a variety of walking trails throughout. There is a cluster of recreation activities at the southernmost end of the forest (near the "2" marker in **Figure 14**), including mountain bike trails, picnic spots and camping grounds. However, this cluster of activity is approximately 7.5km away from the Primary Parcel and not within visual proximity.

Approximately 800m south of the Primary Parcel is the Heywood Terminal Station. It is fully enclosed by the Mount Clay State Forest, aside from a cleared easement to accommodate the 500kV high voltage transmission lines which extend north to cross the Primary Parcel and continue northeast (refer to **Figure 16**). Other land uses of note within 5km of the Primary Parcel include:

- Heywood Golf Club (~2km east)
- Heywood town centre (~3.5km north)
- Heywood Recreation Reserve including Heywood Pony Club (~5km north)
- Heathmere Recreation Reserve and Southern 500 Speedway (~5km southwest)

The most significant road within the viewshed of the Primary Parcel is the Henty Highway, an "A" category highway located 1km west of the Primary Parcel at its closest point. Also of note is the "C" category Woolsthorpe to Heywood Road which is approximately 4.1km from the Primary Parcel at its closest point. Other roadways in visual proximity to the Primary Parcel are all classified as local roads. There is also railway line west of the Primary Parcel which is currently used for freight only.

Figure 14 – Trails through the Mount Clay (Narrawong) State Forest and Narrawong Flora Reserve with Primary Parcel in red. (Sources: alltrails.com)

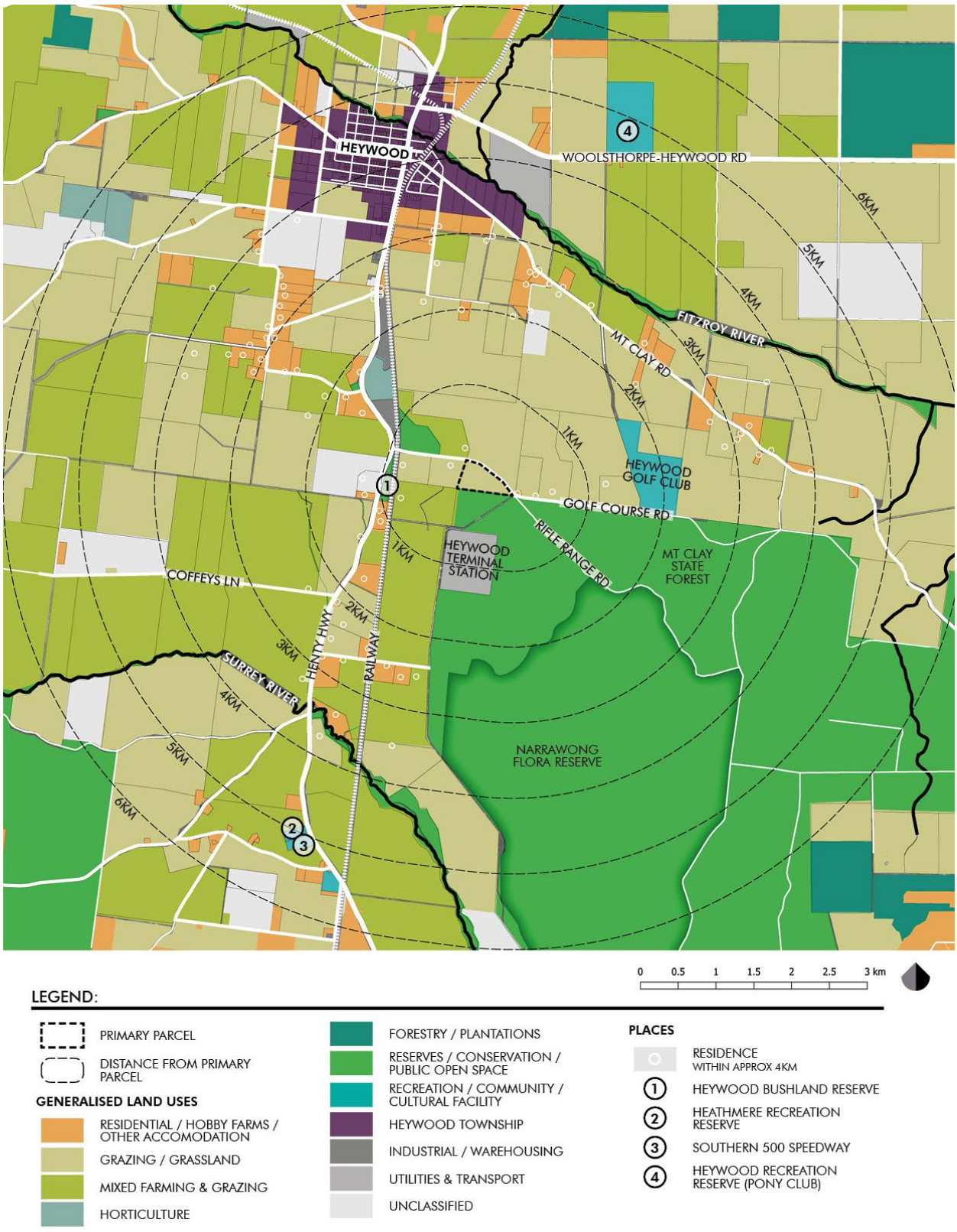

Figure 15 – Generalised land use map (Source: adapted from Victorian Land Use Information System, 2016)

Figure 16 – View south to transmission tower on the Primary Parcel and the Heywood Terminal Station in the background.

4.1.2 Zoning

The Primary Parcel is located within the Glenelg Shire Council area. The entirety of the Primary Parcel is zoned Farming Zone (FZ) (refer to ***Figure 17***).

There are no specific landscape and visual related objectives for the zone, however, siting and design issues for consideration include:

- *The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.*
- *The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.*

There are no planning overlays of relevance to landscape and visual matters.

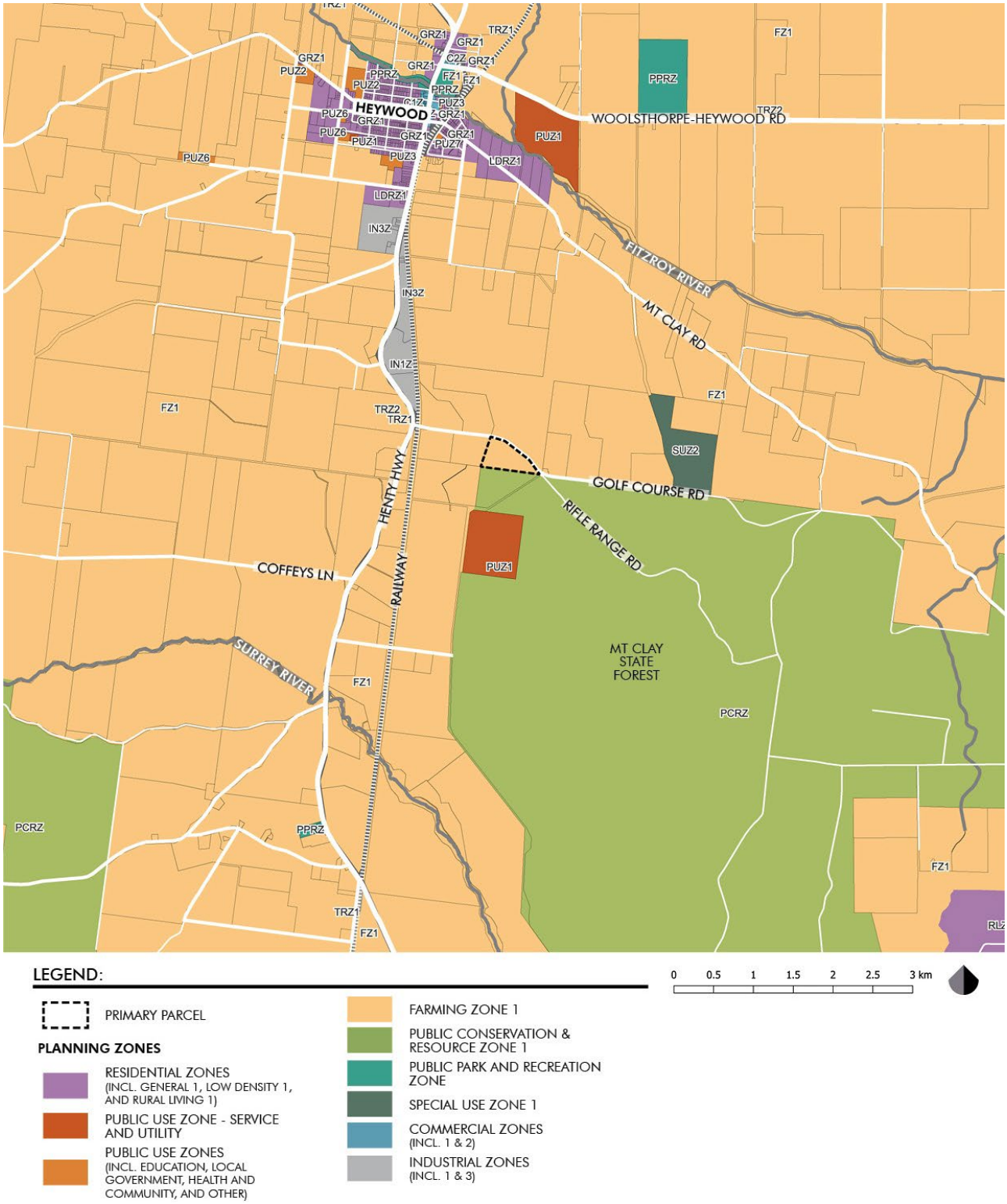

Figure 17 – Generalised map of planning zones (Source: data.vic.gov.au).

4.2 Vegetation and landscape form

4.2.1 Landscape form

The Primary Parcel is located on the Western Volcanic Plains, at the foot of Mount Clay. It slopes gently down from the high point on its eastern corner (51.8m AHD) towards its western boundary (29.2m AHD) at the southwest corner (refer to Figure 18). The topography is steeper on the Primary Parcel's eastern half with a slope of approximately 4%. Its western half has a gentler average slope of approximately 2%.

Much of the landscape surrounding the Primary Parcel is relatively flat, with minor local undulations and lightly incised waterways to the northeast (Fitzroy River) and southwest (Surrey River) of the Primary Parcel. These waterways are approximately 3km away from the Primary Parcel at their closest points (refer to **Figure 19**). The only elevated land in proximity to the Primary Parcel is Mount Clay which is mostly covered by forest. Its highest point is approximately 7km southeast of the Primary Parcel, rising to 185m AHD.

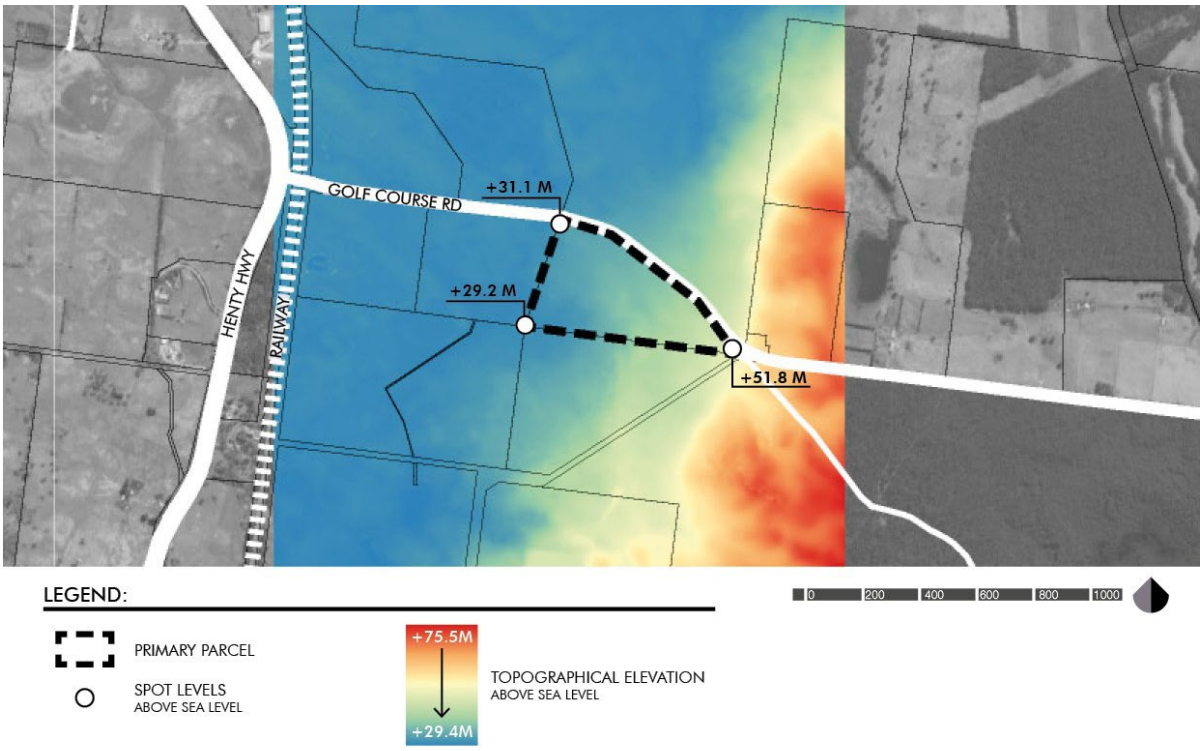

Figure 18 - Topographical elevation of the Primary Parcel and immediate surrounds (Source: Digital Twin Victoria LiDAR – Portland, 2021-22).

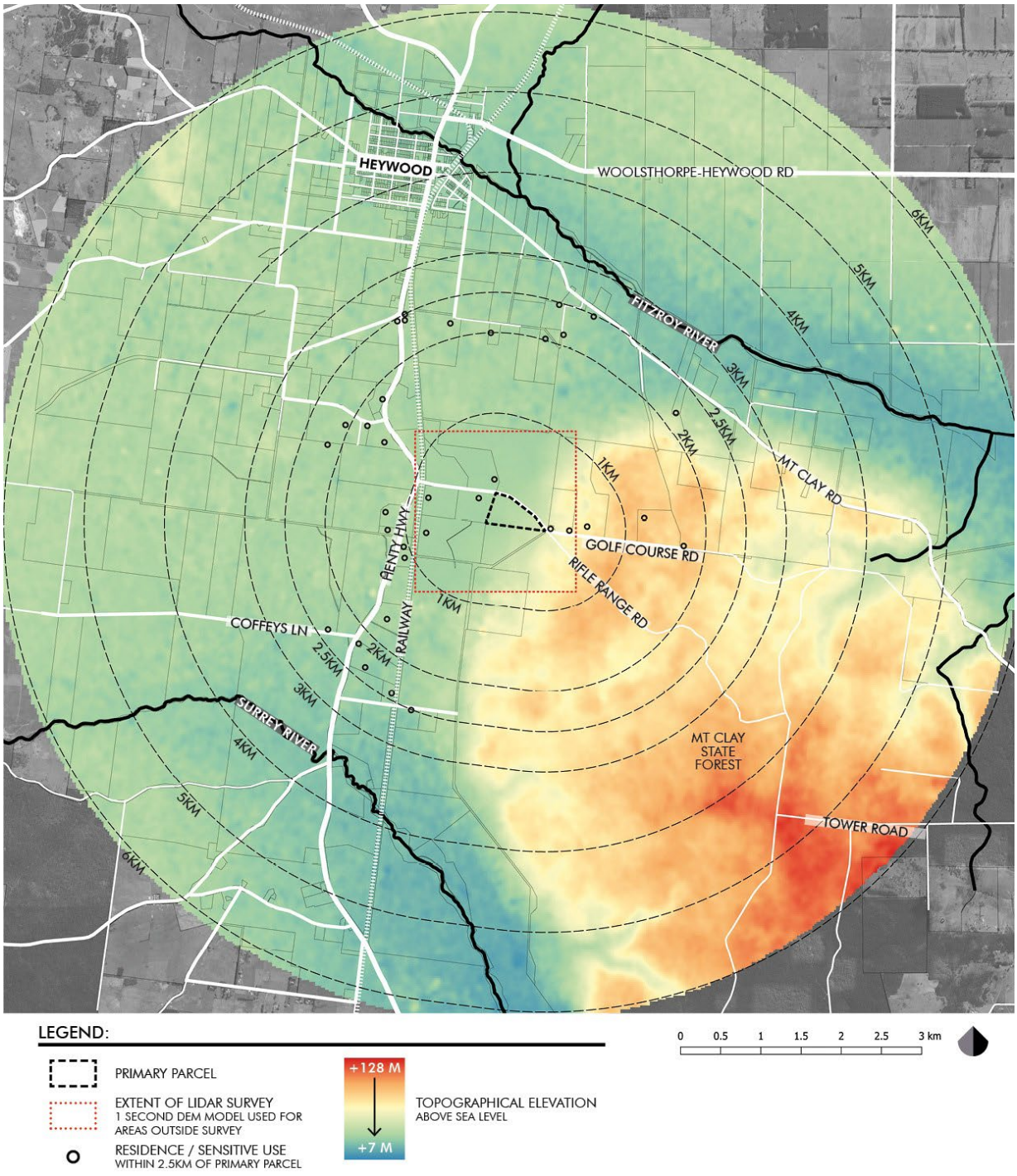

Figure 19 - Topographical elevation of the broader surrounds of the Primary Parcel (Source: Composite of Digital Twin Victoria LiDAR – Portland, 2021-22, and SRTM-derived 1 Second Digital Elevation Models, Version 1.0).

4.2.2 Vegetation

The Primary Parcel is almost entirely cleared of vegetation. However, it is bordered along its northeast and western boundaries by loose rows of primarily native canopy species up to approximately 15m in height. This vegetation is primarily located just outside of the property boundary within the in the Golf Course Road reservation, and the property immediately to the west. The only vegetation of the Primary Parcel comprises a limited number of scattered trees in the vicinity of the residence of the involved landowner in the northwest corner, and in the southwest corner.

Immediately to the south of the Primary Parcel is the Mount Clay State Forest – a densely vegetated area extending southeast for around 6-10km. It is comprised of native remnant vegetation including understorey, shrubs and canopy trees which are typically around 20 to 30m in height. This vegetation is mostly continuous apart from the Heywood Terminal Station clearing, transmission line easements and some minor roads.

Aside from the Mount Clay State Forest, the other surrounding areas are primarily comprised of open pasture, occasionally visually compartmentalised by rows of trees and tall shrubs along roadways and paddock boundaries (refer to ***Figure 20***). Vegetation is comprised of mostly native species, predominantly Eucalyptus species. There are also some larger blocks of continuous, dense vegetation including the Heywood Bushland Reserve to the west and around the Heywood Golf Club to the east. This is mostly native remnant vegetation, similar to Mount Clay State Forest.

Rural residences in the area surrounding the Primary Parcel are typically set within a well treed setting, that often contains shrubs in the "home yard" adjacent to the residence itself.

Figure 20 – Vegetation patterns of the Primary Parcel and surrounds (Source: Google Earth/Airbus [2025]).

Figure 21 – View into the Primary Parcel from its southeast corner. Mount Clay State Forest on the left and vegetation along Golf Course Road on the right.

Figure 22 – View from Golf Course Road of the property north of the Primary Parcel, below transmission lines. Gently undulating topography with open pasture, scattered trees with a dense block of remnant vegetation on the horizon in the background.

Figure 23 – Dense vegetation along the railway line, near Heywood Bushland Reserve, screens views of the Project from residences located to the west.

Figure 24 – Typical vegetation along Golf Course Road.

4.3 Landscape character type

The landscape character types of the Primary Parcel and surrounding areas has been identified using the classification system set out in the Coastal Spaces Landscape Assessment Study – State Overview Report, published by the Victorian Government Department of Sustainability and Environment (DSE) in 2006 [2]. There are two landscape character types that are applicable to the Project as shown in **Figure 25** and described below:

Western Volcanic Plains - Landscape Character Area 5.1: Eumarella Coast and Hinterland

The landscape type applies to the Primary Parcel and much of the surrounding area. According to the Coastal Spaces Landscape Assessment Study

"This large Character Area is dominated by flat coastal plains west of Port Fairy and east of Portland, and extending for several kilometres inland. Long distance views across open plains are available throughout the area, terminating at coastal dunes which are the only notable topographic feature. Behind the dunes several water features occur, including Lake Yambuk and Fitzroy outlet, which are scenic recreation locations. To the west, adjacent Character Areas contain steep and often vegetated landforms that provide a sense of containment of the plains. The Codrington wind farm dominates the skyline for part of the coastal length of this Character Area." (p.13)

Vegetated Rises - Landscape Character Area 4.1: Wooded Hinterland and Mount Clay

The landscape type applies to the area immediately south of the Primary Parcel, including the Mount Clay State Forest. According to the Coastal Spaces Landscape Assessment Study

"With gently rolling topography incorporating the peaks of Mount Kincaid and Mount Clay, the densely forested land in this Character Area is cleared in parts to accommodate hobby farms and pastures. Residential dwellings spreading from the eastern edge of the Portland township also enter into the Character Area, however no major towns exist within its boundaries. Some residential dwellings are set within often highly vegetated relict dunes that roll down towards the ocean. Significant vegetation along roadsides and property boundaries filters views that mostly lead to the low rises in the area, including the inland escarpment, an important feature of the landscape that is dominated in height by powerlines towards the north." (p.12)

[2] Victorian Government Department of Sustainability and Environment (2006). Coastal Spaces Landscape Assessment Study – State Overview Report.

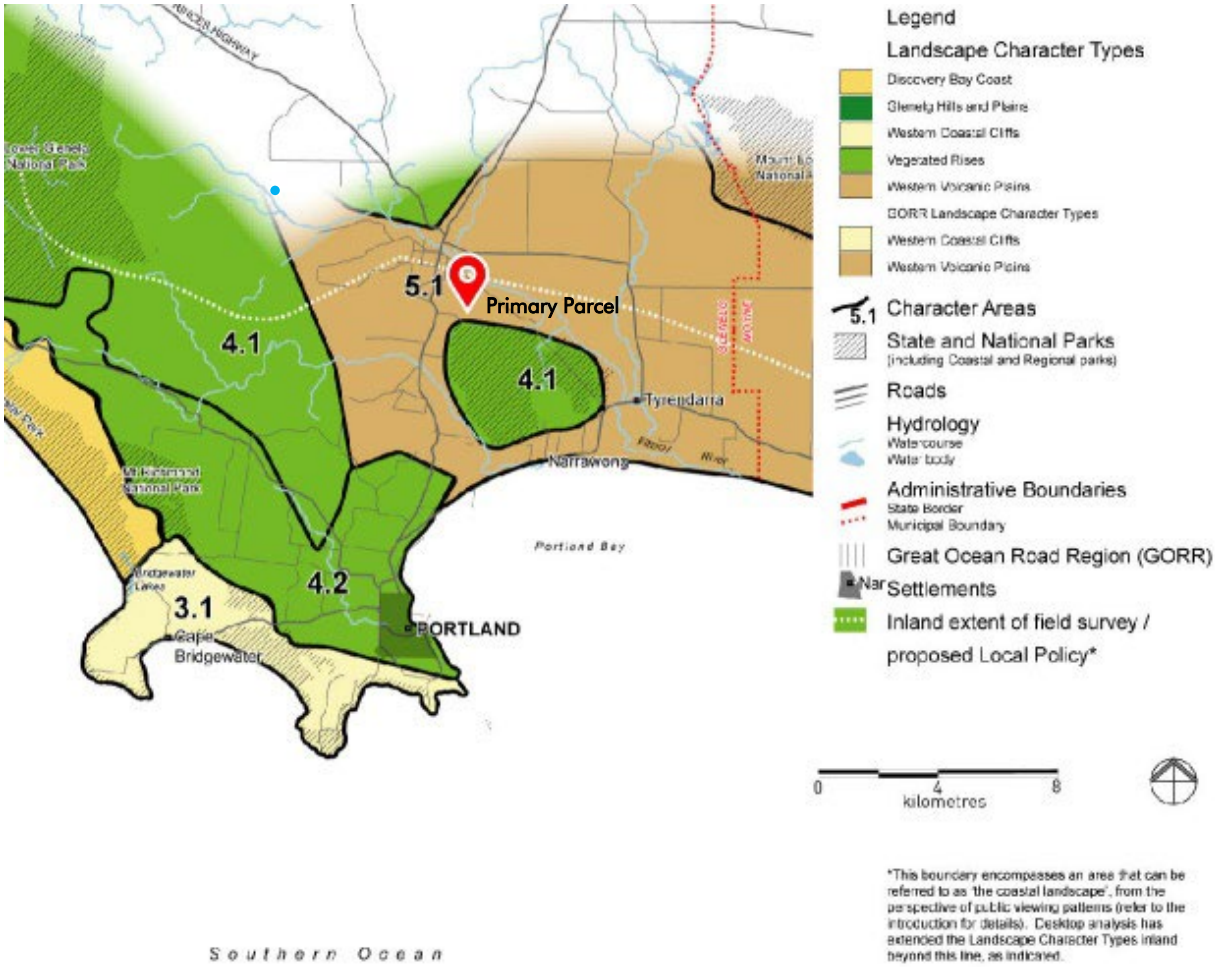

Figure 25 – Map of Landscape Character Types and Areas – Southwest Victoria. Primary Parcel identified with red pin. (Source: Coastal Spaces Landscape Assessment Study, 2006, p.10).

4.4 Scenic Quality

Scenic quality is somewhat subjective but typically is a combination of a range of factors that have been found to contribute to the human appreciation of landscape. These factors are:

- Topographic variation and ruggedness;
- Strong patterning of vegetation; and
- The presence of water.

Agricultural landscapes are particularly subject to divergent opinions as to what constitutes scenic values. However, basic principles relating to diversity of topography, patterning of vegetation and the presence of water remain contributing factors to a higher level of scenic quality.

Leonard and Hammond[3] describe the scenic quality of the Western Plains landscape character type, as found on the Primary Parcel and its immediate surrounds, as outlined below in *Table 6*.

[3] Leonard and Hammond (1984). Landscape Character Types of Victoria. Forests Commission of Victoria.

Description	Low to Moderate Scenic Quality
Landforms	Occasional rounded hills and ridges. Large expanses of unbroken landform.
Vegetation	Extensive areas of grassland that offers limited variation in texture and colour. Areas of forest with patterns that offer some visual diversity.
Waterforms	Intermittent streams and rivers.

Table 6 – Scenic quality of the Primary Parcel and surrounds to the north, west and east (Source: Leonard and Hammond).

The Coastal Spaces Landscape Assessment Study identified the Mount Clay area as of regional significance, primarily for the contrasting of the forest vegetation with the coastal dune landscape (refer to ***Figure* 26 – Attributes contributing *to the regional significance* of *Mount* Clay**. (Source: Coastal Spaces Landscape Assessment Study, 2006, p.56). This convergence of characters is not found at the northern extent of Mount Clay.

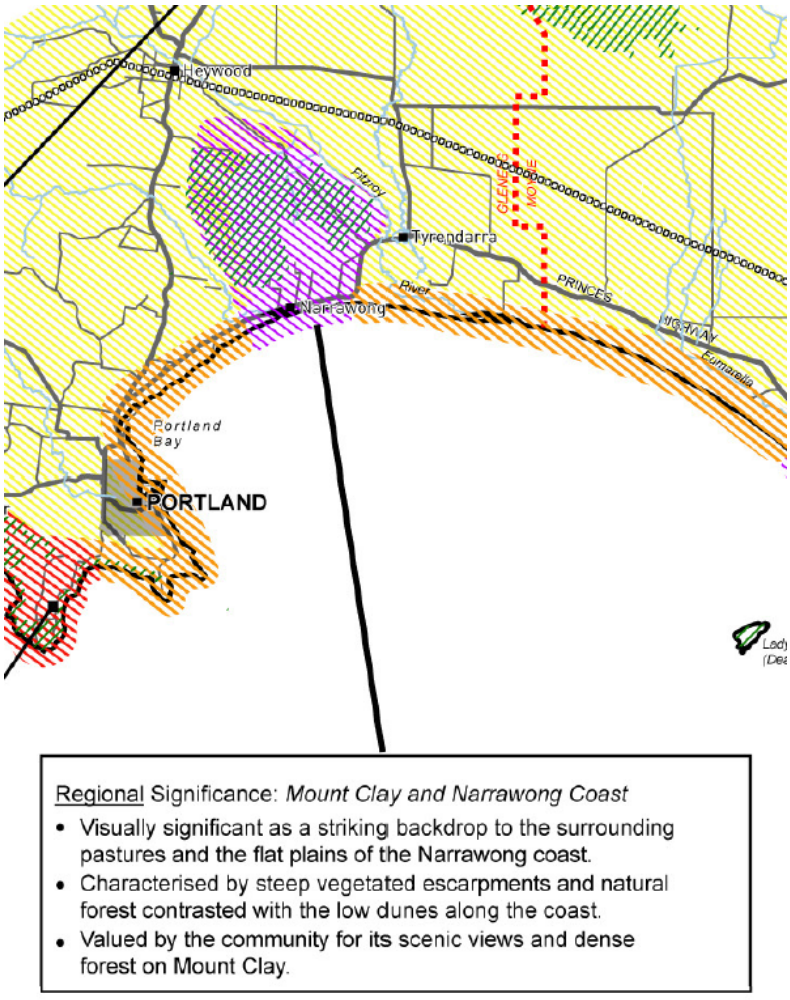

Figure 26 – Attributes contributing to the regional significance of Mount Clay. (Source: Coastal Spaces Landscape Assessment Study, 2006, p.56).

4.5 Absorptive Capability

The definition of landscape absorptive quality is closely related to that of visual modification levels. It is generally applied at a broader scale than visual modification and is an assessment of how well a landscape setting can accommodate change or a development.

The key factors considered in determining absorptive capability are topography and vegetation. In areas of flatter topography, overlooking is not possible and even a low and thin band of vegetation is able to screen views to a development from a given viewpoint. In areas of undulating or elevated topography, overlooking can occur and vegetation needs to be higher and denser to achieve effective screening. Intervening undulating topography also has the potential to block views in certain landscapes.

The landscape setting of the Primary Parcel is mostly flat to very slightly sloping. The topography to the west and northwest is also generally flat. However, the topography to the northeast rises to a gentle hill, from which slightly elevated views are possible from a number of residences.

The topography to the southeast rises to the summit of Mount Clay but overlooking is not possible due to the dense vegetation cover.

The areas of flatter topography are mostly comprised of sparse vegetation, typically confined to a rectilinear pattern reflecting property boundaries and roads. Within this landscape, overlooking is generally not possible from most sensitive viewpoints, and even relatively low vegetation (up to eye-height) is effective at screening views.

Topography – Generally high capability in most areas due to flat to slightly undulating topography, with minimal potential for overlooking. Moderate to low capability on the more elevated land associated with Mount Clay.

Existing Vegetation – Generally low for highly cleared agricultural areas. Moderate to high capability where vegetation exists, particularly roadside plantings, paddock boundary plantings. High capability in and behind the densely forested areas.

The overall absorptive capability is low to moderate given the limited vertical scale of the Project.

5 VISUAL IMPACT ASSESSMENT

5.1 Visibility of the Project

5.1.1 Theoretical zone of visual influence (TZVI)

The visual catchment or viewshed is the area from which a proposed development may theoretically be visible. **Figure 27** indicates the theoretical visual catchment of the Project, or theoretical zone of visual influence (TZVI).

It should be noted that the TZVI is based on topography only and does not consider the screening effects of vegetation or built form throughout the landscape. As a result, it is essentially demonstrating a theoretical or worst-case scenario.

The TZVI has been generated based on composite topographic data - Digital Twin Victoria LiDAR – Portland, 2021-22 for the immediate surrounds approximately 1km from the Primary Parcel and beyond this, SRTM-derived 1 Second Digital Elevation Models, Version 1.0 was used.

The following component heights were used to generate the TZVI, assuming no change in natural ground level:

- BESS units and water tanks at an average of 3m;
- Substation at an average of 8m; and
- Operations and maintenance facilities and radiant heat wall at an average of 6m.

Given the relatively low profile of the majority of the components of the Project above ground level, the actual visual catchment will be limited, as vegetation throughout the landscape and built form in residential areas will contribute to the screening of views towards the Project from most viewpoints.

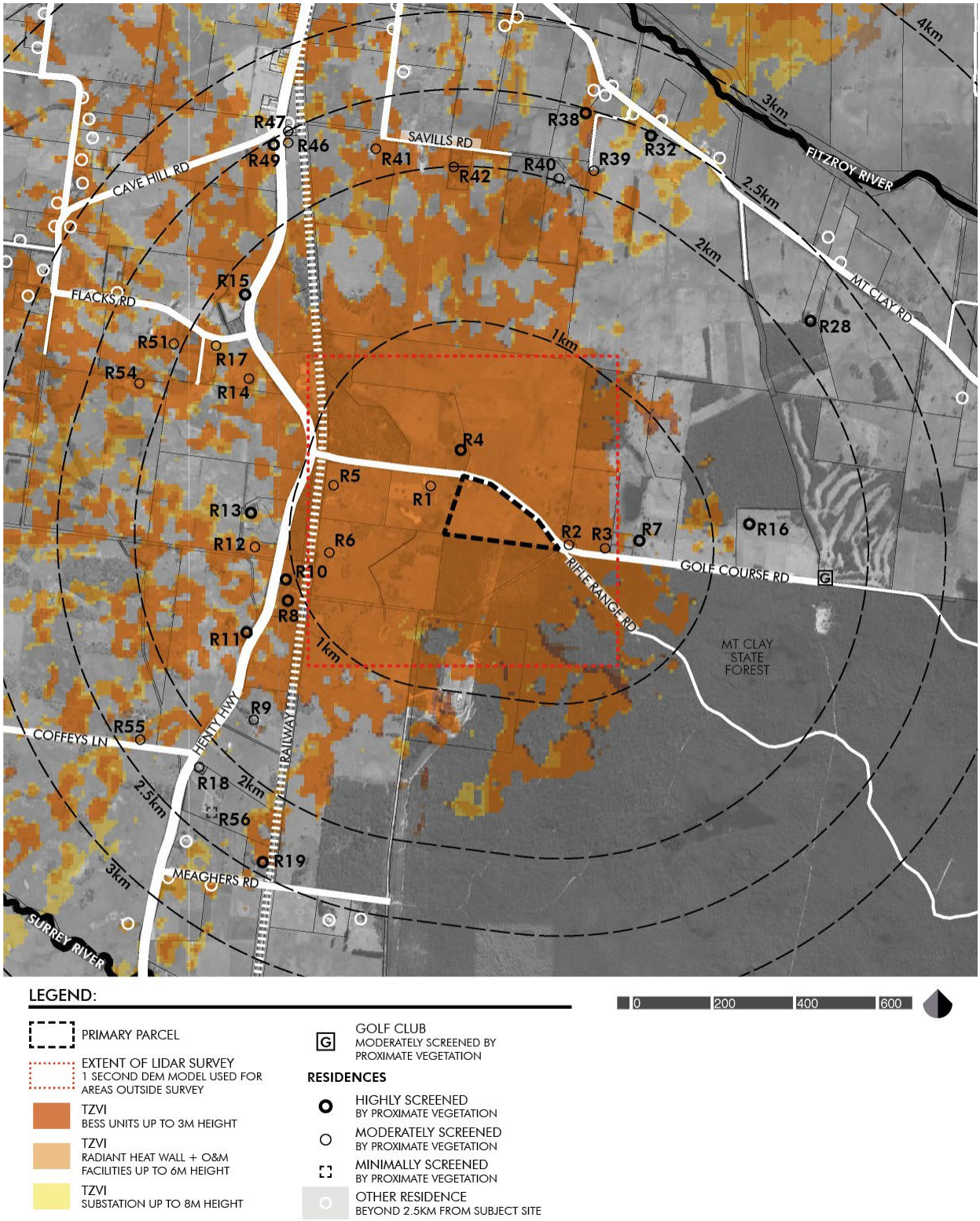

Figure 27 – TZVI with residences rated according to the level of visual screening provided by existing vegetation in close proximity to each (Source: Topography data from Digital Twin Victoria LiDAR – Portland, 2021-22 and SRTM-derived 1 Second Digital Elevation Models, Version 1.0, residences manually mapped from Google Earth/Airbus aerial imagery [2025]).

5.1.2 The effect of rural residential vegetation on visual screening

In order to provide protection from the influences of the environment, particularly sun and wind, Australian rural residential gardens have traditionally developed a dense band of vegetation to surround an intimate and protected home yard. The effect of this in many instances has been to effectively contain the viewshed from the house and surrounding yard itself, screening distant views. The presence of foreground vegetation has a direct impact on the visibility of the Project and the context in which it will be viewed.

Vegetation within the landscape more distant from the residence that may provide additional screening of views is not considered at this time.

5.1.2.1 Rural residential viewpoint landscape setting typologies

Throughout the visual catchment, the majority of residences sit within a landscape that is comprised of medium to tall vegetation, with varying levels of density depending on either the extent of clearing or extent of planting.

The height and density of vegetation has a direct relationship to the visual exposure of the residence to the proposed development.

The following three setting typologies have been developed to assist the understanding of the influence of vegetation on the screening of views from residences.

The assessment has considered the overall screening effect of vegetation as it relates to the direction of views towards the Project. For example, if the vegetation at the perimeter of the residence is sparse on the side away from the direction of views to the Project and dense on the side where there may be potential views, the effect of screening vegetation reflects the side with views. The same applies for the converse situation.

5.1.2.1.1 Typology 1 – Minimally screened

Views to external areas are minimally to partially filtered by scattered vegetation.

Influence on visibility and potential impact
Partial to open views of the proposed development will be possible over open pasture or below and between tall, scattered trees. The potential exists for visual impact (refer to ***Figure 28***).

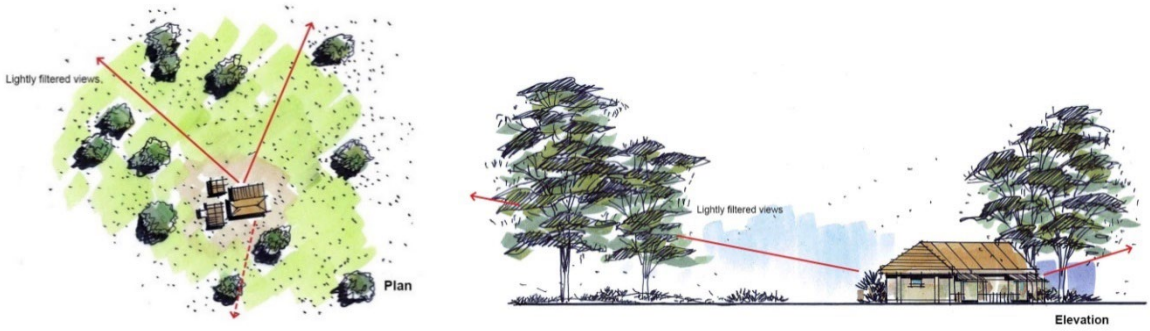

Figure 28 - Typology 1 – Minimally screened. Typical plan and elevation.

5.1.2.1.2 Typology 2 – Partially screened

Views to external areas are partially to heavily screened by vegetation.

Influence on visibility and potential impact
Partial to fully screened views of the proposed development will only be possible where limited breaks in vegetation occur. The potential for visual impact is significantly reduced (refer to ***Figure 29).***

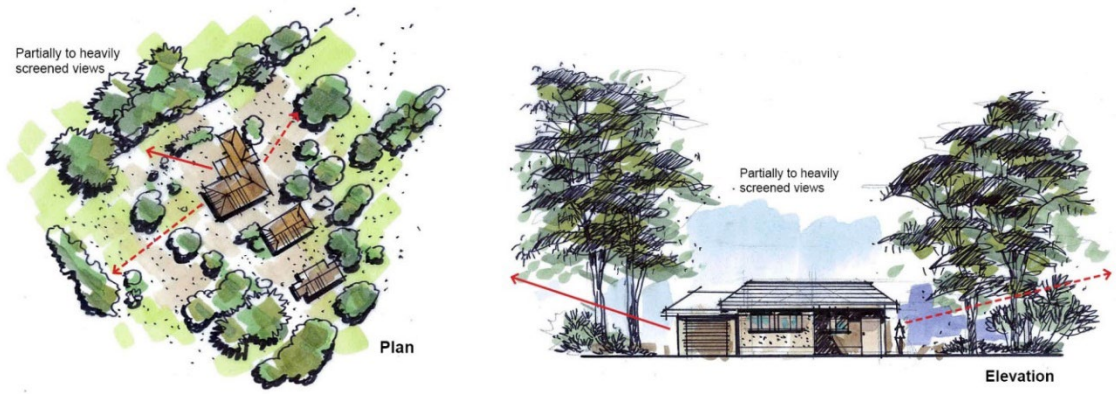

Figure 29 - Typology 2 – Partially screened. Typical plan and elevation.

5.1.2.1.3 Typology 3 – Heavily screened

Views to external areas heavily to fully screened by dense vegetation.

Influence on visibility and potential impact
Views of the proposed development will not be possible and therefore any impacts are highly unlikely (refer to ***Figure 30***).

Figure 30 - Typology 3 – Heavily screened. Typical plan and elevation.

5.1.2.2 *Overview assessment of the effects of vegetation screening on views from residences*

A desktop assessment was undertaken based on aerial photography and Google Streetview imagery (2008 or 2022 data) as well as a field survey, of the potential degree of visibility from residences surrounding the Project, considering the following factors (refer to **Figure 27**)

- Proximity to the Project:
  - Within 0-2.5 km of the subject site/Primary Parcel.
- Degree of vegetation present around the residence, either:
  - Minimally screened
  - Partially screened, or
  - Heavily screened.

The degree of visual modification to the landscape setting, resulting from the Project on surrounding residential viewpoints, is related to the degree of visibility possible from the residence through surrounding vegetation:

- Minimally screened by surrounding vegetation
  = Moderate to High visual modification level.
- Partially screened by surrounding vegetation
  = Low to Moderate visual modification level.
- Heavily screened by surrounding vegetation
  = Low to Non apparent visual modification level.

Table 7 summarises the degree of residential screening for residences within 2km in **Figure 27** and determines a potential level of visual modification as shown in the assessment matrix in *Table 1*.

Degree of visual screening by surrounding vegetation	Potential visual modification level	Number of residences
Heavily	Non-apparent to Moderate	8
Partially	Moderate to High	11
Minimally	High	None

Table 7 – Overview assessment of potential or theoretical visual modification level for residences within 2km of the Primary Parcel.

5.1.3 Visual prominence

In areas of flat topography, the vertical field of view of a 3m high BESS unit will be less than 2.5 degrees, or of moderate visual prominence in viewing distances beyond 70m, less than 0.5 degrees, or of low visual prominence in distances beyond approximately 340m, and less than 0.25 degrees, or of very low visual prominence in distances beyond 670m.

The vertical field of view of the typical components of a substation, with components being a maximum height of 10m, will be less than 2.5 degrees, or of moderate visual prominence in distances beyond 230m, will be less than 0.5 degrees, or of low visual prominence in distances

beyond 3km, and less than 0.25 degrees, or of very low visual prominence in distances beyond 2.2km

The horizontal field of view is not considered relevant given the relatively small footprint of the Project, the extent of vegetation between viewpoints and the Primary Parcel that screen views of the entire Project, and the distance from most sensitive viewpoints.

5.2 Sensitive viewpoints

Due to the typically low-profile form of the Project, the assessment is confined to sensitive locations within 2 km of the Primary Parcel, the area within which the Project will be most visible.

The land uses of relevance to this assessment are those considered to be of higher visual sensitivity, such as:

- Rural residences.
- Major highways/tourist roads.
- Recreation/sporting areas.
- State parks.

Table 2 shows the visual sensitivity levels of uses within the broader visual catchment of the Project, outside of 2 kms. Given the effect of distance, viewpoints beyond 2 km of the Project will typically have a low level of visual sensitivity and therefore have not been assessed as their resulting visual impact would be low.

5.2.1 Visual sensitivity

The visual sensitivity of residences is based on Table 2.

- Residences between 0-2 km of the Project are rated as being of High visual sensitivity.
- Residences between 2-4 km of the Project are rated as being of Moderate visual sensitivity.

5.3 Preliminary assessment of representative sensitive viewpoints

This section comprises a preliminary visual assessment of the Primary Parcel from a representative selection of higher sensitivity viewpoints with differing aspects to the Primary Parcel within 2km (refer to **Figure 31**). Photographs were taken either within the public realm and proximate to sensitive, privately owned land use areas or, if permitted by the owners, from within the private properties (R3 and R5). Photos were taken of the landscape setting of the residence as well as from a point directly, or as close as possible, between the viewpoint and the Primary Parcel.

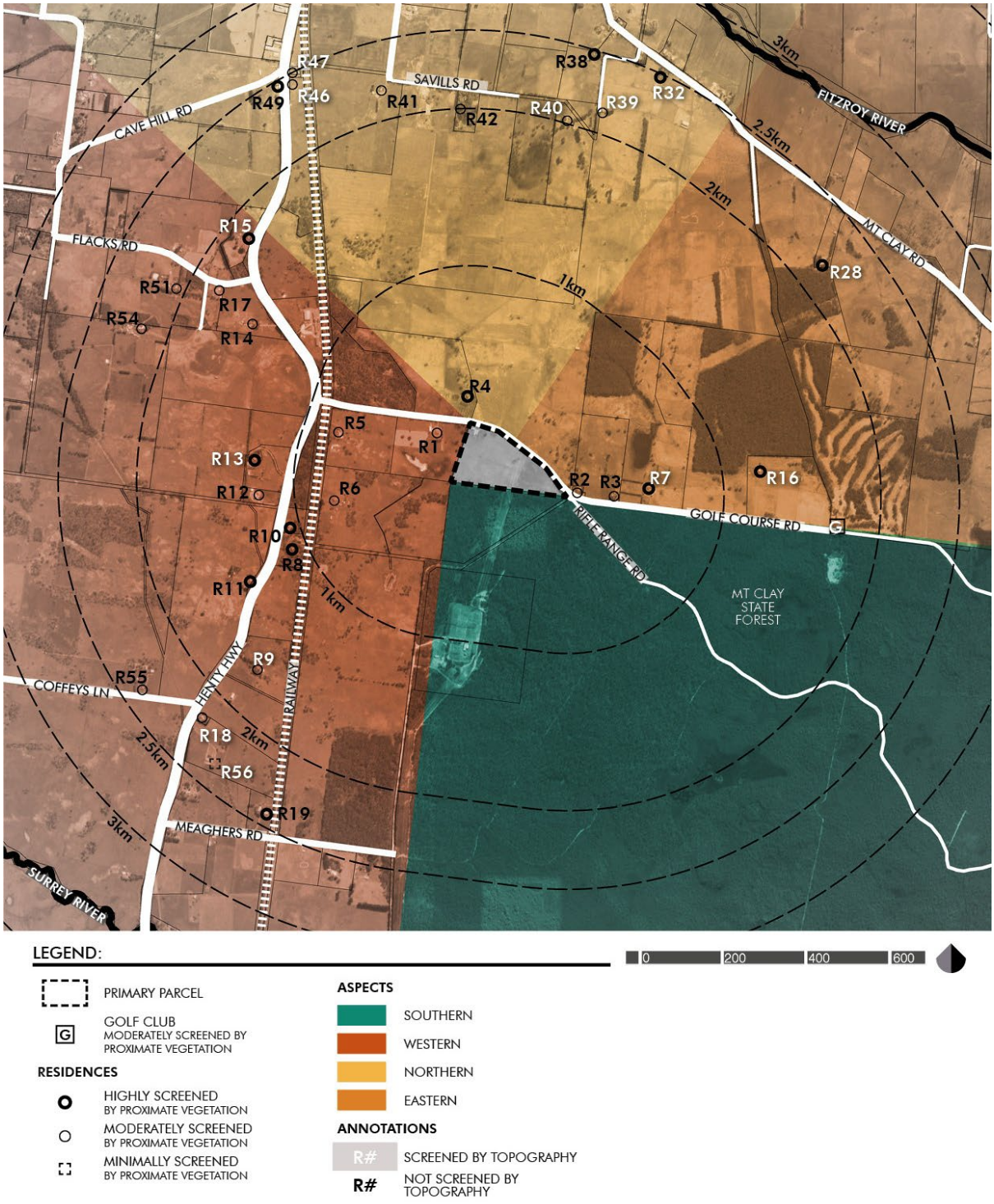

Figure 31 – Landscape setting aspects with sensitive uses

5.3.1 Southern aspect

The southern aspect extends from Golf Course Road to the western edge of the Mount Clay State Forest. It has extremely limited views to the southern boundary of the Primary Parcel due to the dense vegetation and does not contain any sensitive uses within 2km.

5.3.1.1 The landscape setting

The southeastern aspect is located within the Vegetated Rises Landscape Character Area (4.1: Wooded Hinterland and Mount Clay).

The landscape setting is comprised of topography that rises gently and progressively in a southeasterly direction to the summit of Mt Clay.

The area is densely vegetated, however the transition to heavily cleared areas is abrupt at the Primary Parcel's southern boundary and the areas western boundary (see **Figure 32**).

There are no major watercourses present in the area, however there are numerous scattered wetlands in depressed areas.

5.3.1.2 Potential visual impact

Visual sensitivity levels

Within this setting, the highest visually sensitive uses are the developed recreational facilities within the Mount Clay State Forest, including walking and mountain bike trails and picnic areas. However, these are more than 5km from the Primary Parcel and are, therefore, of a low level of visual sensitivity.

Narrawong Flora and Fauna Reserve is of a lower level of visual sensitivity due to its low level of accessibility and non-recreational use. Additionally, it is well offset from the Primary Parcel.

Visual fit and visual prominence

The Project will sit much lower than the vegetation throughout the landscape and have an insignificant level of visual prominence either vertically or horizontally due to it being fully screened from views from accessible recreation activities within this area as a result of dense intervening vegetation.

Potential visual impact

Given the absence of higher sensitivity viewpoints and the lack of visibility due to dense vegetation, the resulting level of visual impact will be negligible.

5.3.1.3 Project design amelioration considerations

No amelioration is required, other than to preserve existing bushland.

Figure 32 – View along the southern boundary between the Primary Parcel (farmland) and Mt Clay forest.

5.3.2 Western aspect

The western aspect extends from the western edge of the Mount Clay State Forest to the northern edge of the block of remnant vegetation located at the intersection of Golf Course Road and the railway line, approximately 46 degrees west of north. It has views to the shortest boundary of the Primary Parcel on the west where much of the development will be occurring.

5.3.2.1 The landscape setting

The southwestern aspect is located in the Western Volcanic Plains Landscape Character Area (5.1: Eumarella Coast and Hinterland), bounded by the Vegetated Rises Landscape Character Area to the east.

The landscape setting is comprised of mostly flat to slightly undulating topography.

Vegetation is predominately comprised of linear bands of dense trees along roadsides and the railway line. However, there are some dense angular blocks of trees in a number of locations, including Heywood Bushland Reserve which sits south of Golf Course Road, between the Henty Highway and the railway line.

Watercourses are limited to the tree-lined Surrey River, 3.4km to the southwest.

5.3.2.2 Potential visual impact

Visual sensitivity levels

Within this setting, the highest visually sensitive uses are the rural residences and users of the Henty Highway.

Heywood Bushland Reserve is of a lower level of visual sensitivity due to its low level of accessibility and non-recreational use.

Visual fit and visual prominence

Within this setting, the existing HV powerlines that traverse the Primary Parcel in a north to east direction will be visually prominent in viewpoints located to the east of the railway line, resulting in views of an already visually modified landscape.

Scattered trees provide some filtering of views from residences located between the railway line and Primary Parcel. West of the railway line, dense vegetation along the railway reservation screens views.

Potential visual impact

The residences to the west of the railway line are of a high level of visual sensitivity. However residences R9, R13 and R15, are screened by topography and the remaining residences R8, R10, R11, R12 R14, and R17 all have their views to the Project screened by the intervening dense vegetation (example shown in **Figure 34**). As a result, there will be no visual impact for these residences west of the railway line.

East of the railway line, residence R6 will have views of the Project mostly screened by intervening groups of trees. However, a narrow partially filtered view to the central western edge of the Project may be possible, resulting in a low level of visual impact (see **Figure 35**).

Residences R5 and R1will have direct views to the western edge of the Project, with minor filtering of views provided by intervening scattered trees (see **Figure 36**). As a result, it is likely that prior to amelioration, R5 will experience a moderate level of visual impact and R1 will experience a high level of visual impact.

It should also be noted that there is an agreed option to purchase the Residence R1 property, allowing it to become an associated dwelling.

5.3.2.3 Project design amelioration considerations

Positioning the tallest components of the Project centrally and away from the Primary Parcel boundaries (apart from the southern boundary) will reduce their visual prominence.

Providing an adequate western boundary setback of Project components will allow for the establishment of ameliorative landscaping.

Existing vegetation along the Primary Parcel's western boundary should be retained to assist in immediate filtering of views.

Figure 33 – Typical view of vegetation along Henty Highway. View south at intersection with Golf Course Road.

Figure 34 –View east towards the site from Residence R13. This is a typical example of screening for residences that are west of the railway line.

Figure 35 –View east towards the Primary Parcel from adjacent to Residence R6. Existing transmission lines visible and Project will be partially screened by existing vegetation.

Figure 36 –View east towards the Primary Parcel from Residence R5. Existing transmission lines visible and existing vegetation will provide minor screening to the Project.

5.3.3 Northern aspect

The northern aspect extends from the northern edge of the block of remnant vegetation located at the intersection of Golf Course Road and the railway line to the next rectangular block of dense vegetation, approximately 34 degrees east of north. It has views to the northern portion of the northeastern boundary of the Primary Parcel, close to where much of the development will be occurring.

5.3.3.1 The landscape setting

The northern aspect is located in the Western Volcanic Plains Landscape Character Area (5.1: Eumarella Coast and Hinterland).

The landscape setting is comprised of mostly flat to slightly undulating topography.

Vegetation is predominately comprised of linear bands of dense trees along roadsides and the railway line.

Watercourses are limited to the Fitzroy River, approximately 3km from the Primary Parcel at its closest point.

5.3.3.2 Potential visual impact

Visual sensitivity levels

Within this setting, the highest visually sensitive uses are the rural residences and users of the Henty Highway.

Visual fit and visual prominence

Within this setting, the existing HV powerlines that traverse the Primary Parcel are visually prominent, and the Heywood Terminal Station is also partially visible from some locations. This results in views of an already visually modified landscape.

Dense vegetation along Henty Highway provides effective screening for users of the highway.

Scattered individual trees and small groups of trees, as well as trees lining Golf Course Road, provide filtering or screening of views from residences.

Potential visual impact

Residence R2 will have views of the Project screened by an olive grove located to the south of the residence, directly between it and the Project. As a result, the level of visual impact will be negligible. (see **Figure 37**)

Further to the north, residences R39 and R40 will have their views screened by topography, while R41 and R42 may have distant views to the northern edge of the Project. However, significant filtering or screening of views will be provided by intervening vegetation (see **Figure 38**). As a result, very low to low impacts are likely prior to amelioration.

5.3.3.3 Project design amelioration considerations

Retain existing vegetation within the Primary Parcel along the Golf Course Road boundary.

Providing an adequate northern boundary setback of Project components will allow for the establishment of ameliorative landscaping.

Figure 37 –View towards Residence R4 from the northwest corner of the Primary Parcel. Dense olive grove planting provides significant visual screening.

Figure 38 –View south towards the Primary Parcel from Residence R42 with existing vegetation providing screening of views.

5.3.4 Eastern aspect

The eastern aspect extends from the rectangular block of dense vegetation approximately 34 degrees east of north, down to Golf Course Road. It has views to the southern portion of the northeastern boundary of the Primary Parcel.

5.3.4.1 The landscape setting

The eastern aspect is on the edge of the Vegetated Rises Landscape Character Area, transitioning into the Western Volcanic Plains Landscape Character Area, however it has been substantially modified.

The landscape setting is comprised of moderately undulating topography. The area between the Primary Parcel and Mount Clay Road includes part of the foot of Mount Clay. The areas of highest land in the Eastern aspect are mostly concentrated around Residence R16. The land slopes down to the north and northeast towards the Fitzroy River.

Vegetation is comprised of a mix of scattered trees, linear bands of dense trees along roadsides, bounding paddocks, and dense angular blocks of trees of highly variable sizes and shapes. These dense blocks include thick bands within Heywood Golf Course and blocks of remnant native vegetation which tend to have clearly defined edges, transitioning abruptly to open paddocks.

The only significant watercourse is the Fitzroy River, located approximately 3km northeast of the Primary Parcel at its closest point. There are also some small water bodies, including one immediately north of Residence R7 and elongated lakes which are part of the Heywood Golf Course.

5.3.4.2 Potential visual impact

Visual sensitivity levels

Within this setting, the highest visually sensitive uses are the rural residences and the Heywood Golf Club.

Visual fit and visual prominence

Within this setting, the existing HV powerlines that traverse the Primary Parcel are visually prominent, resulting in views of an already visually modified landscape.

The undulations in the topography provide effective visual screening for nearly all areas that are at least 1km from the Primary Parcel.

For the areas in closer proximity to the Primary Parcel, scattered individual trees and small groups of trees, as well as trees lining Golf Course Road, provide filtering or screening of views from residences.

Potential visual impact

The residences to the east of the Primary Parcel along Golf Course Road are of a high level of visual sensitivity, however the ZVI analysis indicates that R7 and R16 will be screened by topography.

The other residences with high visual sensitivity – R2 and R3 – will have views to the Eastern edge of the Project, with filtering of views provided by the existing vegetation along Golf Course Road (see **Figure 39**). Vegetation on private properties will also provide some degree of screening (see **Figure 40** and **Figure 41**).

Residence R3 is located approximately 31-38m higher than the ground level of the Primary Development Area. This means that views to the Project are generally at the same level as canopies of existing trees that are about halfway down the slope. This provides more substantial visual screening than the lower trunk portions of the trees would provide.

Prior to amelioration, Residence R2 is likely to experience a moderate level of visual impact and Residence R3 is likely to experience a low level of visual impact.

Heywood Golf Club has a low level of visual sensitivity since it is a sporting use located 1.7km from the Primary Parcel. It will be screened by topography and therefore there will be no visual impact.

5.3.4.3 Project design amelioration considerations

Positioning the tallest components of the Project centrally and away from the Primary Parcel boundaries (apart from the southern boundary) will reduce their visual prominence.

Providing an adequate northeastern boundary setback of Project components will allow for the establishment of ameliorative landscaping. In particular, providing some tree planting on areas of higher ground towards the eastern side of the site may be beneficial to screen views from Residence R3.

Existing vegetation along Golf Course Road should be retained to assist in immediate filtering of views.

Figure 39 –View west towards the Primary Parcel from adjacent to Residence R2 with existing vegetation along Golf Course Road filtering views of the Project.

Figure 40 –View east towards Residence R2 showing intervening vegetation in private property.

Figure 41 –View west towards the Primary Parcel from Residence R3 with existing vegetation along Golf Course Road and in private properties providing visual screening of the Project.

5.4 Underground cable connection

An underground cable is proposed to connect the Project to the main grid at the Heywood Terminal Station. The cable will be installed in a narrow trench within the existing cleared easement (refer to 'transmission line corridor' identified in **Figure 4**). This will be backfilled with the ground surface level reinstated to match the existing condition.

Due to the significant density of vegetation surrounding the transmission line corridor from all apart from the north, views of the construction process and ground remediation works will not be possible unless the viewer is standing directly in line with the easement. There are no sensitive viewpoints located in this alignment. Additionally, the works will occur over a short period of time and would be viewed as no more visually intrusive than typical road works.

As a result, landscape and visual impacts are expected to be negligible and very short term.

5.5 Lighting impacts

The applicable environmental lighting zone for the Project based on AS-NZS-4282-2019 is Category A2, which is a low district lighting area, which applies to rural residential areas and areas with secondary and local roads.

The environmental lighting zone of the existing terminal station ranges between Category A2 and Category A3, medium district lighting area.

Heywood township is also a Category A3, medium district lighting area.

It is likely that the battery units and substation will require security lighting. However, typically this will be shielded and directional. As a result, hot spots and light spill are likely to be minimised.

Within the Category A2 area, the Project will result in a localised area of increased light intensity, which will generally be confined to the same visible extent of the Project during the day. It is unlikely to result in additional upward or outward glow which would be visible from a larger area.

The establishment of perimeter landscaping will further ameliorate views to already low levels of lighting, with the most noticeable reduction in impact being from Residence R1.

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6 AMELIORATION STRATEGIES

Actions exist to potentially ameliorate the landscape and visual impacts of the Project. These are outlined in the following sections.

6.1 On-Site Actions

On-site actions relate to initiatives which can be undertaken within the boundaries of the Primary Parcel.

6.1.1 Project layout

Arranging the components of the Project so that they respond to sensitive, visually exposed interfaces, is a proactive measure to reduce visual impacts from the outset and lessen the reliance on amelioration measures.

The siting benefits from the existing vegetation bordering the Primary Parcel on all sides to ensure that initial, pre-amelioration impacts are reduced for some viewpoints. The tallest elements - the substation and radiant heat wall - have been located appropriately in the least visually prominent part of the site towards the southern boundary.

Siting the project on the western half of the Primary Parcel that has relatively lower elevation also allows for the natural topography to better provide visual screening in many areas

6.1.2 Perimeter screen planting

The most effective way to ameliorate views from high sensitivity viewpoints is to establish screen planting around the perimeter of the Primary Parcel to help fill in visual gaps in the existing vegetation. The proposed screen planting will comprise perimeters of varying densities, utilising a mixture of:

- shrubs to 2m in height;
- tall shrubs to 4m in height; and
- trees ranging in height from 6m-20m in height.

(Refer to *Appendix A – Landscape Amelioration Strategy*).

The relatively low-profile form of the BESS component of the Project will ensure that planting will be able to provide screening within a relatively short period of time.

Being a taller element, it will take longer for planting to ameliorate the impacts of the substation.

6.1.3 Material selection

The BESS units and buildings that result in an aggregated visual mass should be ameliorated through the use of a non-reflective finish of a natural or neutral colour, as found in the landscape of the setting.

The more slender and articulated form of the components of the substation do not require amelioration through the use of non-standard colours, as the standard “grey” finish is visually recessive against sky backdrops and is readily integrated though the use of only tall, sparse planting.

6.2 Off-Site Actions

These actions relate to initiatives which can be undertaken outside of the Primary Parcel and would require the consent of relevant landowners, utilities or authorities. However, given the relatively low levels of impact, and the generous size of the Primary Parcel, it is apparent that all required amelioration can be achieved on-site, and that no off-site actions will be required.

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7 CONCLUSION

7.1 Landscape character impacts

The existing agricultural landscape character of the Primary Parcel and much of the surrounds is of low to moderate scenic quality, with the Mount Clay State Forest area being of regional significance. It currently contains a number of electrical infrastructure elements such as the Heywood Terminal Station and transmission lines and towers.

The development of the Project would not constitute a large change to the existing character and in fact its proposed "co-location" near existing infrastructure is in accordance with best practice, constraining the cumulative visual impact of the infrastructure to a reasonably limited area.

The landscape of the Primary Parcel setting has a generally low to moderate landscape absorptive capacity, with most surrounding areas being relatively flat, with minor local undulations apart from the foot of Mount Clay, with a variety of vegetation, including large, dense areas of forest, linear bands of trees and loosely scattered trees in open pastures.

Within this landscape, the topography tends to screen views to the Project with minimal opportunities for overlooking from most sensitive viewpoints, and existing vegetation either fully or partially screening views from all sensitive viewpoints.

7.2 Visual impacts

Visual prominence

In areas of flat topography, the vertical field of view of a 3m high BESS unit will be less than 2.5 degrees, or of moderate visual prominence in viewing distances beyond 70m, less than 0.5 degrees, or of low visual prominence in distances beyond approximately 340m, and less than 0.25 degrees, or of very low visual prominence in distances beyond 670m.

The vertical field of view of the typical components of the substation, with components with a maximum height of 10m, will be less than 2.5 degrees, or of moderate visual prominence in distances beyond 230m, will be less than 0.5 degrees, or of low visual prominence in distances beyond 3km, and less than 0.25 degrees, or of very low visual prominence in distances beyond 2.2km

The horizontal field of view is not considered relevant given the relatively small footprint of the Project, the extent of vegetation between viewpoints and the Project that screen views of the entire Project, and the distance from most sensitive viewpoints.

Consideration of visual fit within the setting

The presence of the existing energy infrastructure and powerlines provide the Project a significant degree of visual fit within the landscape setting.

Initial visual impact

Prior to amelioration, only a limited number of sensitive uses proximate to the Project may experience initial levels of impact prior to amelioration that are moderate or above. They are as follows:

- High visual impact experienced by
    - Residence R1 at 82 Golf Course Road; and
- Moderate visual impact experienced by
    - Residence R2 at 181 Golf Course Road; and
    - Residence R5 at 11 Browns Lane.

While the Project will be visible from these viewpoints, the topography is such that planting on the Primary Parcel is likely to be effective in visually screening the Project. Furthermore, Atmos has an agreed option to purchase the Residence R1 property, allowing it to become an associated dwelling.

Apart from the above, overall, the Project is assessed as having a relatively low level of visual impact, or not being visible at all, due to being well screened by existing vegetation, particularly that located around the rural residences.

Residual impact

The residual visual impact for all viewpoints will typically reduce to a very low impact after the establishment of amelioration measures.

Cumulative impact

Given the Project's relatively small footprint and its effective collocation with the Heywood Terminal Station and associated HV powerlines, the Project does not result in a cumulative impact of any significance.

7.3 Lighting impacts

Within the Category A2 area the Project will result in a localised area of slightly increased light intensity. However, this will not result in adverse impacts to surrounding residential viewpoints as it will be of a lower level of intensity that the lighting at the existing terminal station to the south (Category A3).

The establishment of perimeter landscaping will further ameliorate views to already low levels of lighting.

7.4 Amelioration

The analysis indicates that amelioration is only required for viewpoints with an assessed moderate to high level of impact. Strategic perimeter planting around the Primary Parcel's western and northeastern boundaries would provide this amelioration. Planting located immediately adjacent to the Project's perimeter fence, along its western, northern and eastern sides, may also be effective.

Additionally, the BESS units and buildings that result in an aggregated visual mass, should be ameliorated through the use of an appropriate choice of recessive surface colour.

The more slender and highly articulated forms of the components of the substation do not require amelioration through the use of non-standard colours.

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APPENDIX A – Landscape Amelioration Strategy

LANDSCAPE AMELIORATION STRATEGY - PLAN

HEYWOOD BESS

1:2500 @ A3

0 20 40 60 80 100 120

PETER HAACK CONSULTING

DATE: 15/05/25

DWG NO: 1

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APPENDIX B – Photomontages

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RESIDENCE R2

Existing view from Residence R2

View of Project from Residence R2 without amelioration

View of Project from Residence R2 with ameliorative landscaping after 5 years

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RESIDENCE R3

Existing view from Residence R3

View of Project from Residence R3 without amelioration

View of Project from Residence R3 with ameliorative landscaping after 5 years

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RESIDENCE R5

Existing view from Residence R5

View of Project from Residence R5 without amelioration

View of Project from Residence R5 with ameliorative landscaping after 5 years

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GOLF COURSE ROAD, NEAR RESIDENCE R4

Existing view from Golf Course Road near Residence R4

View of Project from Golf Course Road near Residence R4 without amelioration

View of Project from Golf Course Road near Residence R4 with ameliorative landscaping after 5 years

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