Clarke Road BESS

Landscape and Visual Impact Assessment

December 2025

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Clarke Road Pty Ltd

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1. Introduction

Progress Power (the Proponent) propose to construct a new Utility-scale Battery Energy Storage System (BESS), with an indicative capacity of 460MWh (megawatt hour), near Springvale in Melbourne's southeast.

Permanent Project features will include:

- BESS units, inverters and transformers;
- Civil and structural works, including laying of crushed rock;
- Construction of internal access roads and access (and egress) points;
- Connection cabling comprising 66kV overhead and underground power lines between the battery units , inverters and an onsite substation;
- Onsite substation, including transformers to step up from 66 kV to the connection voltage and reactive power equipment;
- Control Building and Switchroom;
- Water storage (including firefighting water supply and fire water runoff containment);
- Security fencing;
- Car parking;
- Business identification signage at site entry.

Figure 1-1 shows the Sites location relative to the surrounding area.

1.1 Background and purpose of this report

A solar energy facility was previously approved for the Site, with VCAT issuing Planning Permit PLN18/0688 (the Permit). The Permit was issued following a review of landscaping conditions.

The current proposal seeks to develop a Battery Energy Storage System (BESS) within a constrained footprint roughly central to Site.

The focus of this LVIA provides a review of the visual considerations for the BESS.

Figure 1-1 Subject Site

2. Project Description

This chapter identifies the components of the Project that may influence views and local amenity, and that require a permit.

Figure 2-1 illustrates the layout and location of the key elements required to construct and operate the BESS.

The Project includes a new onsite substation located near the centre of the Site.This infrastructure is exempt from requiring a permit and is not assessed further in this chapter. A new black-coated chain-wire fence has also recently been installed along the site boundary, replacing the former galvanised fence in the same alignment.

The following section outlines the key BESS components subject to permit approval, and that may influence landscape character and visual amenity.

2.1 BESS

The BESS areas are to be constructed over two stages. Stage 1 will be roughly centrally located on the Site and have up to 230 MWh of capacity. Stage 2 will be to the east of Stage 1 and will have up to 460 MWh of capacity.

Each BESS stage will include the following:

- A fire break/access tracks (including perimeter access around BESS);
- Containerised battery units and inverters, 33kV transformers, all approximately 3.0m in height.
- Lighting, mounted on poles approximately 6.0m in height;
- Control Building - approximately 14m L x 5.0 m W x 3.5m in height,
- Switchroom – approximately 11m L x 5.0m W x 5.0m in height.

This assessment has modelled 48 individual units for Stage 1 and 96 units for Stage 2. The final number of units will depend on the final selected battery supplier and the system's final size and duration.

Underground cabling will connect the BESS to the new, onsite substation.

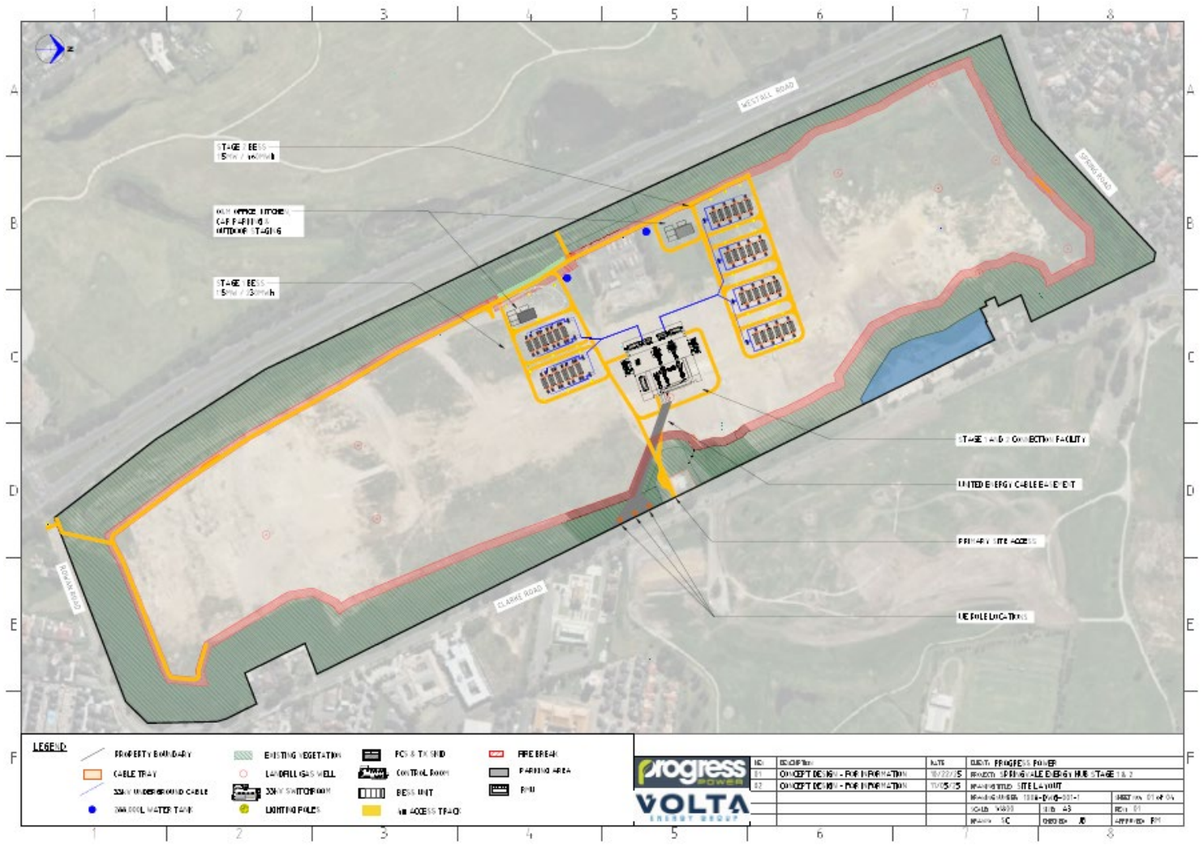

Figure 2-1 Indicative location and layout

Figure 2-2 Typical Bess Layout

3. Assessment Methodology

No Australian or Victorian government legislation, methodology or policies are specifically relevant to landscape and visual impacts. However, planning, environmental, and some heritage policies address landscape sensitivity and the management of views.

The methodology used within the LVIA for this Project is set out below. The methodology has been adapted based on previous Landscape and Visual Assessment reports for similar projects and guidelines prepared in Australia and overseas, which included:

- *Guidance Note for Landscape and Visual Assessment, AILA Queensland, June 2018* recognises that the "Landscape and Visual Assessment (LVA) should be scoped to reflect the project scale".
- *The Guidelines for Landscape and Visual Impact Assessment, Third Edition*, Landscape Institute and Institute of Environmental Management and Assessment (2013) (UK Guidelines). The UK Guidelines, widely referred to internationally, combine scale, duration and reversibility to evaluate magnitude. Viewer sensitivity and landscape character inform sensitivity. These factors are *combined* to assess the overall visual impact. The UK guidelines also discuss the benefit of theoretical mapping visibility or the area from which projects may be visible. These are referred to as the Zone of Theoretical Visibility (ZTV). The UK guidelines do not consider visual scale or prominence over distance. The UK Guidelines prefer professional judgement be employed in preference to the use of matrices.
- *New Zealand Institute of Landscape Architects, NZ (2010) Best Practice Note: Landscape Assessment and Sustainable Management 10.1.* Landscape characterisation is a process of interpreting how attributes such as geomorphology, natural ecosystems, vegetation cover and land-use history come together to distinguish landscapes. The NZ Guidelines recognise that landscapes are dynamic and *continually* changing and that landscape assessment should reflect project scale. Further, the NZ Guidelines seek to manage the direction and consequences of change, and how to sustain landscape values and attributes over time instead of 'freezing' a landscape in a particular state.
- *Environmental impact assessment practice note EIA-NO4, Roads and Maritime Services, NSW, December 2018* is an established guideline for determining landscape character and visual impact assessment for road projects in NSW. This Guideline assesses visual *sensitivity*, derived from an area's qualities, and the magnitude of the change derived from the scale or prominence of the Project, in a matrix framework to assess the level of impact.

The methodology of all these Guidelines have overlapping similarities. However, one point of divergence is using matrices as the basis for assessment. Matrices are still referred to in the NSW RMS Guidelines, but are not recommended in the more widely applied UK guidelines. The reasoning for this is set out at Section 3.34 of the UK guidelines.

3.1 Study area

The study area is the area that may be visually affected by Project features and is the area within which the proposed Development could create a recognisable impact. The vertical field of view provides a basis for calculating the extent of the viewshed. Figure 3-1 shows the principles of the vertical field of view and Parameters of the Human Vision relative to the features of this Project.

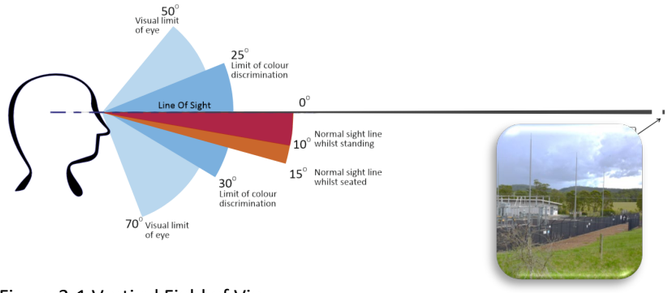

Figure 3-1 Vertical Field of View

The central field of view in human vision is approximately 10° while standing and 15° while seated. An object that takes up less than 5 per cent of this 10° cone of view may still be discernible but will not be a prominent feature in views.

Viewpoints included in this assessment have been guided by previous assessments and approvals, and site visits undertaken for this proposal.

3.2 Landscape character and viewer sensitivity

Landscape Character Units are based on physical and natural attributes within the study area. Characteristics that assist in defining the landscape units include geology, topography, vegetation, and drainage patterns as well as modifications to areas from a natural setting, land-use, and policy considerations.

Policy and guidelines within the study area provide guidance on landscape character and objectives that are sought to be encouraged or protected.

3.3 Policy Review

Government policies were reviewed to identify key objectives and considerations for the Project's landscape and visual impact assessment. A focus of this review was to objectively *Characterise the landscape, features, and values of the project area of interest and its environs.*

The review examined relevant legislation and Policy to identify landscape features, sensitive areas or locations such as key roads, tourist attractions, residential areas and communities that Policy may protect. These areas are identified in Chapter 6.

3.4 Visual impact assessment

The potential visual impacts of the Project was assessed through views selected from locations within the public domain.

3.5 Publicly accessible locations

Viewpoints have been from locations that are either representative of key views from roadways or intersections and where it was apparent that the Project have the potential to be visible. From each location, the assessment of the overall visual impact is based on several criteria. Their relevance to the assessment of the overall visual impact from the public domain is set out below:

- **Landscape Change:** The physical change or alteration to a landscape will depend on the nature of the Project. For example, a development such as a residential sub-division, industrial estate or mining Project may alter features such as topography, vegetation and use of an area, causing a transformational change to the landscape. In comparison, a development such as a wind farm or transmission line may be inserted into a landscape without fundamentally altering underlying features such as topography, vegetation, land-use or policy, all of which define landscape character.
- **Visibility:** If a project is not visible, there cannot be a visual impact.
- **Distance:** Infrastructure visibility and dominance will decrease with distance. The ZVI indicates visual dominance and potential impact based on distance.
- **Duration:** The duration of a view is also relevant and must be considered in assessing the overall visual impact. Duration is not necessarily time bound i.e. 10 mins for short or 2 hours for long, rather it is associated with the location or use where people may see the Project. Examples from public areas, include reserves, roadside stops or lookouts. Examples in the private domain may include patios, living rooms or private open space areas. These types of views are given greater weight than views that may be transient or fleeting along roadways or occasional views in the public domain, and service or working areas in the private domain.
- **Landscape character and sensitivity:** The landscape character of an area, which is based upon visual features such as topography, vegetation and the use of the land, the naturalness of the area and planning provisions. Sensitivity may also be influenced by specific landscape studies and assessments within the study area. Typically, a modified landscape prevalent within the study area or the region is less sensitive than one that is ostensibly natural.
- **Viewer numbers:** The overall visual impact level will decrease when there are fewer people who can view the Project. Conversely, the level of visual impact may increase where the viewing location is a recognised key vantage point or tourist route where a greater number of people may view the change.

Viewer sensitivity is based on the nature or purpose of the viewing location. For example, the sensitivity of a person viewing a project from a recreation reserve, public lookout or trail will be higher than the same viewer travelling the local road network or from a town.

The overall visual impact is not assessed numerically or through a matrix, rather, it is the examination of the qualitative aspects observed at each selected viewpoint, which is supported by the criteria listed above. This method is supported by the *UK Guidelines for Landscape and Visual Impact Assessment, Third Edition published by the* Landscape *Institute, Institute of Environmental Management and Assessment 2013 (GLVIA3)*.

The overall visual impact at each viewpoint will range from Nil to High. The definition for each scale is discussed in Section 4.6 below.

3.6 Scale of effects

The following table outlines the scale of effects used to assess the overall visual impact for each viewpoint from Nil, where the Project is not visible, to High.

Table 1 Scale of effects

Overall visual impact	Definition
Nil visual impact	An overall assessment of **Nil** will be arrived at, where the Project will be screened by topography, vegetation, buildings, and other structures or project features that are at such a distance that they will no longer be readily discernible in views.
Negligible visual impact	An overall assessment of **Negligible** is a minute effect barely discernible over ordinary day-to-day views. A 'negligible' level of visual impact would typically occur where the Project is at a distance that makes it a minute element in views, or where it is filtered by vegetation or partially screened by features such as topography or buildings.
Low visual impact	An overall assessment of **Low** will be arrived at where the Project is noticeable but will not cause significant adverse impacts. For example, a "low" level of visual impact will be assessed if the rating of several, but not all, assessment criteria (visibility, distance, viewer numbers and landscape sensitivity) is assessed as low. Examples of a low level of visual impact are where the Project is visible in a highly modified landscape, few people will see the Project, or where views are transient rather than stationary.
Moderate visual impact	An overall assessment of **Moderate** may occur where several criteria are higher than "low", or the visual effects would be mitigated/remedied from an initial rating of High.
High visual impact	An overall assessment of **High** will be arrived at where significant adverse effects cannot be avoided, remedied, or mitigated. For example, a highly sensitive landscape, viewed by many people, with the Project in close proximity and largely visible, will lead to an assessment of a high level of visual impact.

3.7 Mitigation options

Mitigation measures can reduce high visual impact at sensitive locations and visual receptors. Landscape screening is the primary mitigation measure for the visual impacts of BESS facilities from static vantage points, such as dwellings, reserves, and recreation areas.

3.8 Photographs

A 60mm lens on a Nikon Z9 digital camera has a field of view of 33 ° and a horizontal angle of view of approximately 22°.1

3.8.1 Lens size and photos used within the photomontages

Photomontages typically show the changes in a 60° horizontal field of view. The 60° horizontal field of view represents the central cone of view in which symbol recognition and colour discrimination can occur. When defining a vertical field of view, either 10° or 15° can represent the central field of view of human vision as shown in Figure 3-2.

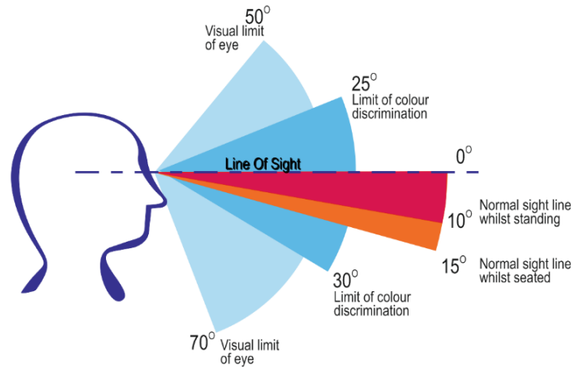

Figure 3-2: Horizontal and Vertical field of view (Human Dimension and Interior Space, Julius Panero & Martin Zellnik, Witney Library of Design, 1979)

Similar data can be found in the recent publication, 'The Measure of Man and Woman, Revised Edition', Henry Dreyfuss Associates, John Whiley & Sons, 2012.

[1] https://shotkit.com/field-of-view.

4. Review of policy

The Site and Project are within the Greater Dandenong Planning Scheme. The Kingston City municipality applies to the area west of Westall Road.

This section will briefly examine the provisions of the local planning schemes relevant to assessing Landscape and Visual Impacts of a BESS.

4.1 Zoning

Figure 4-1 shows the existing land use zones that apply to the Site and the surrounding area.

The Site, is east of Westall Road and is zoned Green Wedge Zone (GWZ).

Spring Valley Park to the Site's northeast is zoned PPRZ within the Greater Dandenong municipality. The subject site's northern, southern, and southeastern boundaries are shared residentially zoned areas (GRZ1). Residential Land along the north of Spring Road includes a small reserve, which is called Effie Reserve. It is noted that only the southern residential properties on Clarke Road are zoned GRZ1.

Spring Road Reserve on the opposite side of Westall Road is zoned Public Park & Recreation Zone (PPRZ) within the Kingston City municipality.

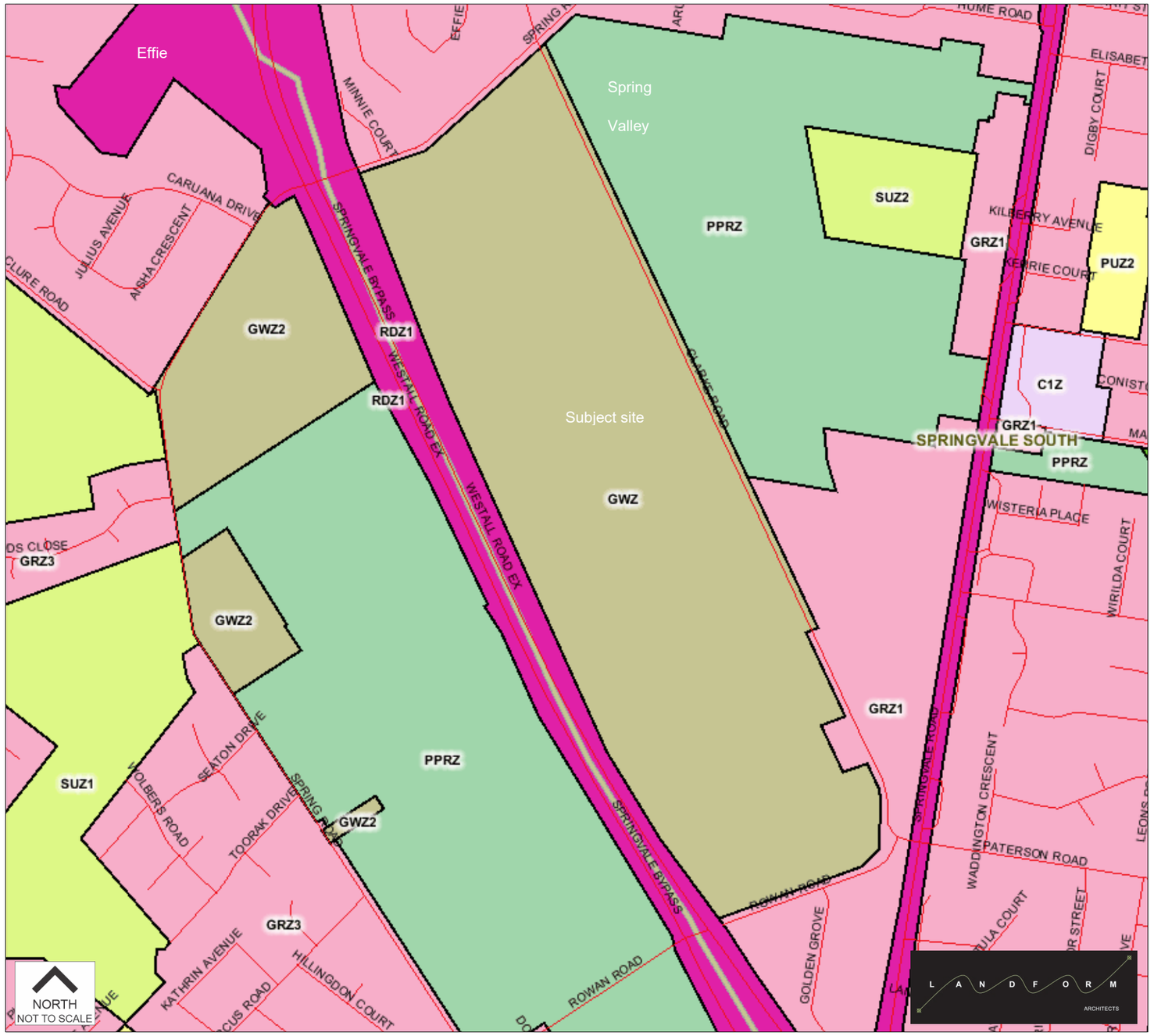

Figure 4-1 Zoning (Map source – Planning Maps Victoria)

4.2 Overlays

Figure 4-2 shows the overlays that apply to the Site and on adjacent Land.

An Environmental Audit Overlay (EAO) applies to the whole of the Site, including the residential properties at the northern end of Clarke Road (sites 90 & 94 Figure 4-2).

The properties at lots 224 and 226 are not affected.

The purpose of the EAO is *To ensure that potentially contaminated Land is suitable for a use which could be significantly adversely affected by any contamination.*

The following section will briefly re-examine features of the Site and the nearby surrounding area that may be sensitive to a change in use or views.

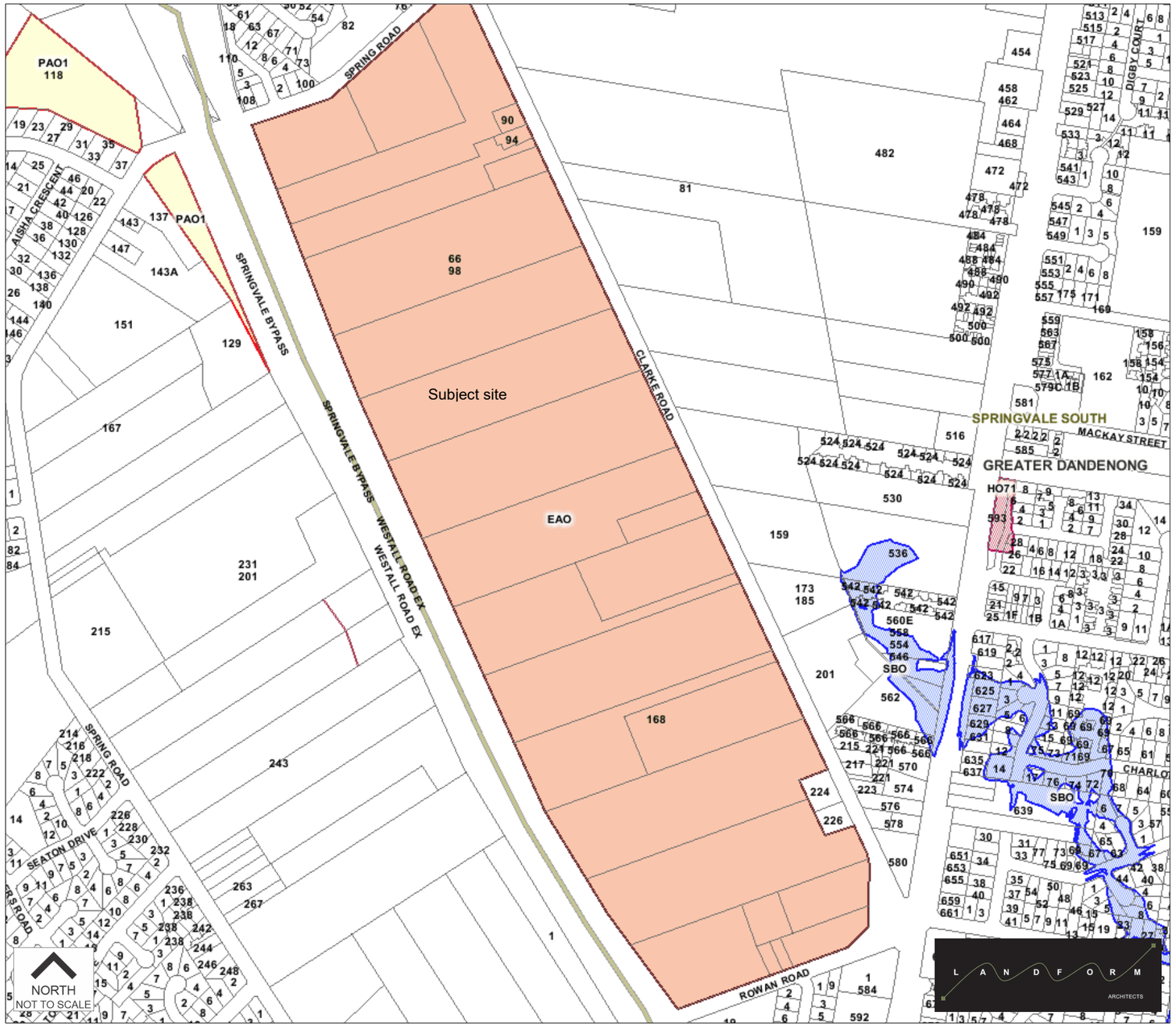

Figure 4-2 Overlays (Map source – Planning Maps Victoria)

5. The Site & environs

The Site is bordered by open space, residential properties, and uses such as the Bright Moon Buddhist Society and aged care.

5.1 Existing land uses

Figure 5-1 illustrates the current land uses of the Site and its surrounding area. Clarke Road bounds the Site to the east, Rowan Road to the south, Westall Road to the west, and Spring Road to the north. Along the eastern boundary of Clarke Road, there are two residential enclaves excluded from the landfill site boundary. These allotments are not part of the Site.

The southern parcels are zoned residential and fall outside the previously discussed Environmental Audit Overlay.

Green areas of open space located to the east, and west of Westall Road are also former landfill areas that have since been rehabilitated. These areas are used as open space reserves that also serve as gas collection areas.

Figure 5-1 Subjet site

5.2 Vegetation

The approximate extent of vegetation within or adjacent to the Site is shown in Figure 5-2 below. The red outline shows the Site's boundary.

Existing vegetation across much of the subject site is limited to grass due to the Site being a reclaimed landfill area. Taller vegetation of trees and shrubs are confined to the site boundaries adjoining roads.

Figure 5-3 - Figure 5-5 shows examples of existing vegetation along the sites boundaries.

Existing vegetation, which assists in managing visual impacts, is discussed in detail in the individual viewpoint assessments provided later in this report.

Figure 5-2 Existing vegetation

Figure 5-3 Existing Vegetation - Clarke Road frontage

Figure 5-4 Existing Vegetation - Spring Road frontage

Figure 5-5 Existing Vegetation - Westall Road frontage

5.3 Topography

The landfill has created a low rise which gently rises from the berms around the Site's perimeter to a low ridge running through the centre of the Site.

The perimeter's berms' profile limits views of most of the Site's interior from nearby areas.

The effect is demonstrated in Figure 5-8 opposite Rowan Road along the Sites southern boundary, and Figure 5-8 which is taken from the western end of Spring Road along the Site's northern edge.

Figure 5-6 2019 Contours; Source – Symal 2025

Figure 5-7 Rowan Road frontage

Figure 5-8 Spring Road frontage north

6. Assessment

This chapter will assess the visual impacts of the Project summarised in Chapter 2 of this report. The assessment will be undertaken by analysing representative views from seven locations surrounding the Site. The seven viewpoints are summarised below and shown in Figure 6-2 opposite.

- VP1 Rowan Road
- VP2 Clarkes Road
- VP3 Spring Road (Effie Reserve)
- VP4 Westall Road, Southern end
- VP5 Westall Road, Northern end
- VP6 Spring Road Reserve
- VP7 Spring Valley Park

The overall visual impact from each viewpoint has been assessed based on the five criteria described in Section 3.4, which include visibility, distance, duration, viewer numbers and the qualitative aspects of the view. A summary table (visibility, landscape change, duration, distance, viewer numbers, and landscape sensitivity) is provided at the conclusion of each viewpoint. As stated in the introduction to Chapter 3, the summary table is to be read in conjunction with the qualitative analysis to consider factors such as modifications to a view, the nature of the viewing location, and mutable factors such as screening provided by local topography, vegetation, and buildings. These aspects cannot be captured or summarised in a table format or assessed through metrics.

The levels of assessed impact from each viewpoint will be rated in accordance with the scale of visual effects defined in Section 3.4 and shown repeated in Figure 6-1.

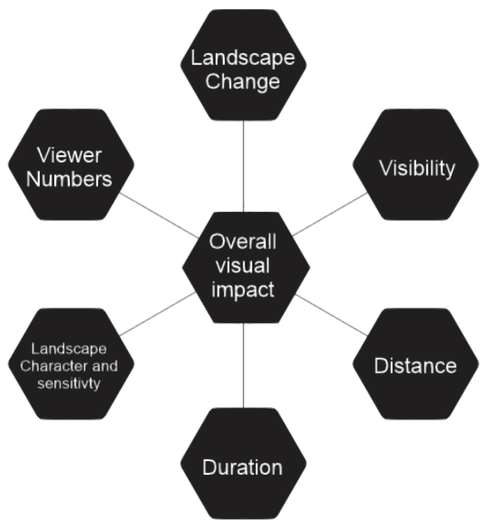

Figure 6-1 Visual impact – public realm

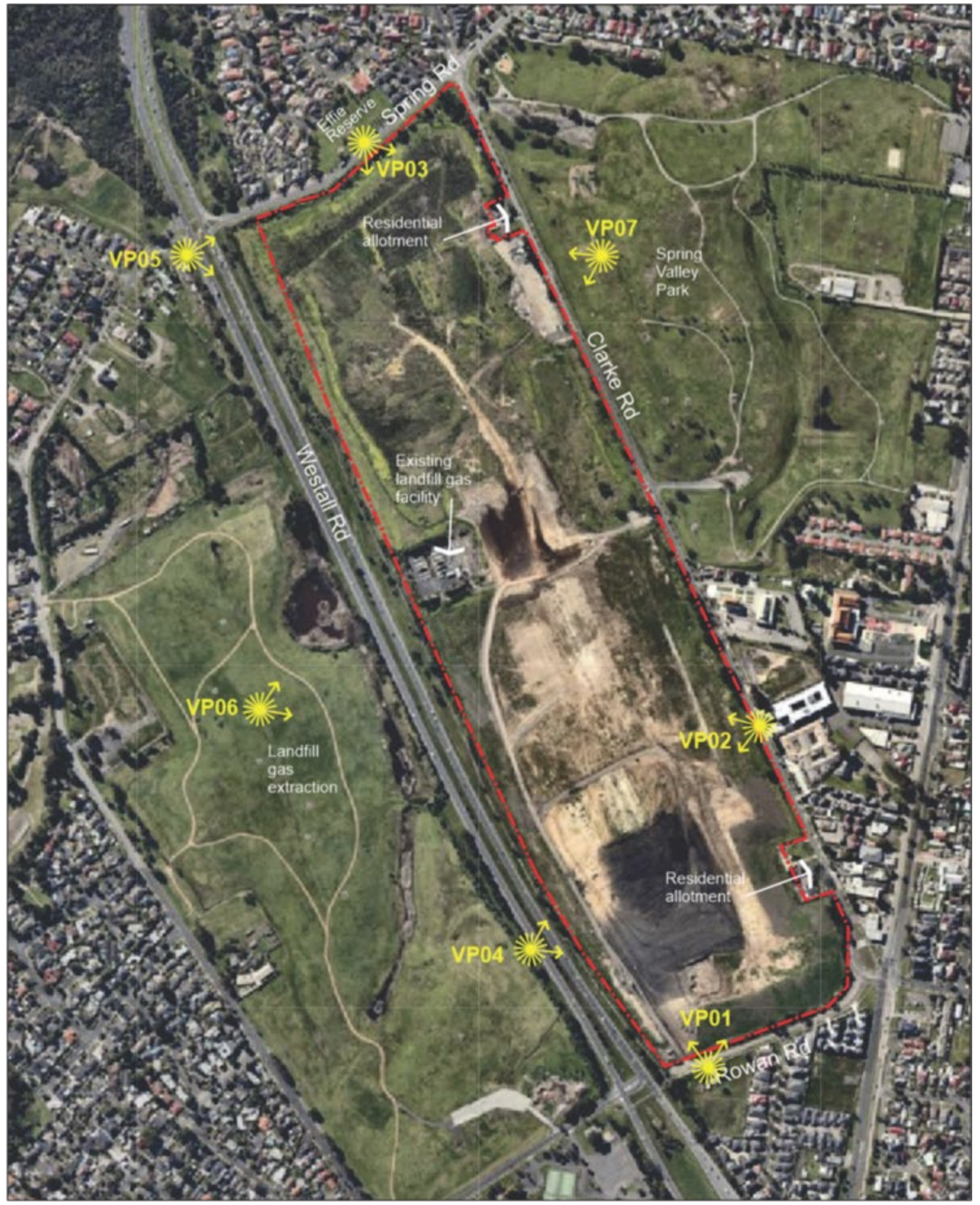

Figure 6-2 Viewpoint Locations

6.1 Viewpoint 1 – Rowan Road

Figure 6-3 Rowan Road – Existing View

Summary of "Scale of Effects" Criteria		Location and Setting / LVIA
Coordinates	55H 336981.26 m E 5794820.77 m S	Viewpoint 1 is approximately 45 m south of the nearest site boundary and 450m south of the nearest BESS. Dwellings in residential allotments 19-31 Rowan Road are to the east.
Distance to Site boundary	45m N	Figure 6-3 (Above) shows the existing view taken looking north from Rowan Road. The existing galvanised fencing along the boundary has been replaced with a new black-coated chainwire fence. The replacement fencing has also led to the removal of the grass entwined within it, improving the Site's appearance along this edge.
Distance to the nearest BESS	450m N	
Duration	Short	Figure 6-4 shows the existing dwelling and the aspect which is oriented towards the Proposed BESS. Dwellings are set within established plantings in the frontages of allotments which will filter views to the embankment and the proposed BESS.
Viewer numbers	Low	The BESS will not be visible from any location along this edge. This is due partly to the overall distance to the BESS units, the low profile and the profile and height of the batter, which screens views to the Site's interior and the location of the BESS.
Overall Visual Impact	Nil	

Figure 6-4 Existing dwelling

6.2 Viewpoint 2 – Clarkes Road

Figure 6-5 Clarke Road – Existing View

Summary of "Scale of Effects" Criteria		Location and Setting / LVIA
Coordinates	55H 337075.22 m E 5795292.68 m S	Viewpoint 2 is located on Clarke Road, adjacent to the existing Calvary Gardens Aged Care facility. Figure 6-5 (Above) shows the existing view looking west from the facilities driveway. This viewpoint also looks along the southern end of the BESS. The existing galvanised boundary fencing has been replaced with a new black-coated chainwire fence. The replacement fencing has also led to the removal of the grass entwined within it, improving the Site's appearance along this edge. Figure 6-6 (below) shows landscaping the western elevation of the aged facility that is oriented towards the Site, and landscaping also within the frontage of the facility. The proposed BESS would be to the northwest of the aged care facility and not within any viewlines. Existing vegetation along the facility's frontage will screen or filter any oblique views from first-floor locations. The visual impact of the BESS from this location will be Negligible to Nil. This assessment is based on the above observations, in concert with the previous commitments for further landscaping within the Site, which will further assist in managing any visual impacts of the BESS.
Distance to the nearest Site boundary	45m S	
Distance to the nearest BESS	300m NW	
Duration	Short / Long	
Viewer numbers	Low	
Overall Visual Impact	Negligible - Nil	

Figure 6-6 Existing Landscaping within the frontage of the aged care facility.

6.3 Viewpoint 3 – Spring Road (Effie Reserve)

Figure 6-7 Spring Road – Effie Reserve – Existing View

Summary of "Scale of Effects" Criteria		Location and Setting / LVIA
Coordinates	55H 336981.26 m E 5794820.77 m S	Viewpoint 3 is located on Spring Road north of the Site. This viewpoint is taken from the pedestrian path inside Effie Reserve. Figure 6-7 shows the view from the southern edge of Effie Reserve opposite the Site. The closest site boundary is also approximately 45m to the south. The closest BESS will be approximately 415m further to the south. The BESS will not be visible from any location along this edge. This is due partly to the overall distance to the BESS units, the low profile and the profile and height of the batter, which screens views to the Site's interior and the location of the BESS
Distance to the nearest Site boundary	45m S	
Distance to the nearest BESS	415m S	
Duration	Short / Long	
Viewer numbers	Low	
Overall Visual Impact	Nil	

6.4 Viewpoint 4 – Westall Road Southern end

Figure 6-8 Westall Road southern end– Existing View

Summary of "Scale of Effects" Criteria		Location and Setting / LVIA
Coordinates	55H 336789.00 m E 5794925.84 m S	Viewpoint 4 is from Westall Road southwest of the Site. The closest site boundary is approximately 70m to the east. The closest BESS will be approximately 630m to the north. The BESS will not be visible from any location along this edge. This is due partly to the overall distance to the BESS units and their low profile, and to the profile and height of the batter, which together screen the location of the BESS units from views. If visible, the BESS would be in the background of views, oblique to the direction of travel, and short in duration. The effect of which would be Negligible.
Distance to the nearest Site boundary	70m NE	
Distance to the nearest BESS	630m N	
Duration	Short / Long	
Viewer numbers	Low	
Overall Visual Impact	Nil	

6.5 Viewpoint 5 – Westall Road Northern end

Figure 6-9 Westall Road northern end– Existing View

Summary of "Scale of Effects" Criteria		Location and Setting / LVIA
Coordinates	55H 336261.48 m E 5795926.96 m S	Figure 6-9 (above) shows the view from northern end of Westall Road adjacent to the Site. This viewpoint looks east to south and includes existing vegetation established along the eastern edge of Westall Road. The closest site boundary is approximately 120m directly to the east. The closest BESS would be approximately 370 m to the southeast. The overall visual impact from this location would be Nil – Negligible. This is due partly to the overall distance to the BESS units and their low profile, the profile and height of the batter and existing vegetation within the reserve along the eastern edge of Westall Road If visible, the BESS would be in the background of views, oblique to the direction of travel, and short in duration. The effect of which would be Negligible.
Distance to the nearest Site boundary	120m S	
Distance to the nearest BESS	370m SE	
Duration	Short	
Viewer numbers	Low	
Overall Visual Impact	Nil - Negligible	

6.6 Viewpoint 6 – Spring Road Reserve

Figure 6-10 Spring Road Reserve– Existing View

Summary of "Scale of Effects" Criteria		Location and Setting / LVIA
Coordinates	55H 336372.57 m E 5795291.06 m S	Figure 6-10 shows the view looking east from the highest point within the reserve west of the Site and Westall Road. The closest site boundary will be approximately 270m to the east. The closest BESS would be approximately 310m to the east. The proposed BESS would be visible in the background. Due to the low usage of the reserve, and this location, the separation between the BESS units and their low overall height, the visual impact would be Low.
Distance to the nearest Site boundary	270m E	
Distance to the nearest BESS	310m E	
Duration	Short / Long	
Viewer numbers	Low	
Overall Visual Impact	Low	

6.7 Viewpoint 7 – Spring Valley Park

Figure 6-11 Spring Valley Park – Existing View

Summary of "Scale of Effects" Criteria		Location and Setting / LVIA
Coordinates	55H 336815.00 m E 5795978.00 m S	Figure 6-11 shows the view looking west from a highpoint within Spring Valley Park opposite the Site. The view is west of the walking trail, and a location that would not be frequented by park users. The closest site boundary is approximately 170 m west. The closest BESS would be approximately 270m to the southwest. The proposed BESS would be visible in the foreground, located in discreet clusters that are separated and low in overall height. For the above reasons, the visual impact from would be assessed as Low - Negligible.
Distance to the nearest Site boundary	170m W	
Distance to the nearest BESS	270m SW	
Duration	Short / Long	
Viewer numbers	Low	
Overall Visual Impact	Low - Negligible	

7. Conclusion

The assessment demonstrates that the proposed BESS can be integrated into the rehabilitated landfill with minimal visual consequence. Across all publicly accessible viewpoints, visibility is either prevented entirely by the existing batter profiles or limited to distant, low-profile elements experienced within a modified and low-sensitivity setting. Any glimpses that may occur will be short in duration, seen by few viewers.

Views from elevated locations within Spring Road Reserve to the east and Spring Valley Park to the west, the proposed BESS would be visible in the background of views, from areasss. Due to the low usage of the reserve, and this location, the separation between the BESS units and their low overall height, the visual impact would be Low.

Accordingly, the Project will result in visual impacts ranging from Nil to Low and represents an appropriate and orderly use of the Site from a landscape and visual perspective.

The were no locations identified where landscape screening would be required to assist in managing the visual impacts of the Proposed BESS. Therefore, the landscape screening is not proposed.