Homebush BESS

Visual Impact Assessment

Ausgrid Australia

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Glossary and definitions

Term	Definition
AGL	Above Ground Level
AHIMS	Aboriginal Heritage Information Management System
BESS	Battery Energy Storage System
DCP	Development Control Plan
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
Km	kilometre
kW	Kilowatt (measure of energy)
Landscape	Its constituent elements, its character and the way this varies spatially, its geographic extent, its condition, the way the landscape is experienced, and the value attached to it.
VIA	Visual Impact Assessment
LEP	*Local Environmental Plan*
MW	Mega Watt
Magnitude of change	The level of modification that a proposed development has to the existing setting
NEM	National Electricity Market
PCT	Plant Community Type
SEARs	the Secretary's Environmental Assessment Requirements
the Project	The proposed grid-scale battery energy storage system (BESS), along with associated infrastructure, at Lot 1 Deposited Plan 218218, 10 Homebush Bay Road, Homebush
SEPP	State Environmental Planning Policy
STSS	Sub-transmission Switching Station
SSD	State Significant Development
the site	Proposed location for the Project - to the southeast of the existing Sub-transmission Switching Station at Lot 1 Deposited Plan 218218, 10 Homebush Bay Drive, Homebush
Study Area	The Projects' Study Area includes a 500m buffer from the perimeter of the site, where the Project has the potential to be most visible based on height of components.
Viewpoint (VP)	Moderate or high sensitivity location from which views to the construction process or components of the project may be possible.
Visual envelope	Or Viewshed - the area visible from a particular viewing location.
Visual amenity	The qualities of a landscape setting that are appreciated and valued by a viewer.
Visual catchment	The area over which an object can be seen within the landscape based on the line of sight.
Visual impact	The result of assessing the sensitivity level of a viewer and the modification level of a development.
Visual sensitivity	The degree to which various user groups would respond to change based on their expectation of a particular experience in a given setting; for example, the expectation of a high level of visual amenity in a national park.
ZTV	Zone of Theoretical Visibility

Executive Summary

Project overview

This Visual Impact Assessment (VIA) for the Homebush Battery Energy Storage System has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs). The Project will be a grid-scale battery energy storage system (BESS) and associated infrastructure (the Project). The Project is located to the southeast of the existing sub-transmission switching station (STSS) located at Lot 1 Deposited Plan 218218, 10 Homebush Bay Drive, Homebush (the site).

The landscape and visual baseline

The VIA Study Area has been defined within a radius of 500 metres from the location of the site. This area captures locations from which the Project will be observable, based upon the height of Project elements at up to 7 metres in height, topographical characteristics and intervening elements in the surrounding area.

Relevant planning policies and legislation have been reviewed to understand any specific landscape or visual designations relating to the Study Area, as well as a desktop study to understand the various physical elements that combine to create landscape and visual character.

The Project is located in an area subject to the Local Environmental Plan (LEP) of City of Strathfield, in land zoned 'Special Purpose 2 Infrastructure – Electricity Supply'. The Project Area is a highly modified urban environment that is not of any visual, heritage or architectural significance

Visual assessment findings

Four representative public viewpoints were identified within the Study Area that as being representative of residential dwellings and road corridors, of differing viewing distance and aspect.

As the Project is adjacent the STSS, the addition of electrical infrastructure is a low magnitude of change and appears to be co-located. Views of the Project would be experienced only by those in close proximity due to surrounding built form and with BESS and ancillary components being up to 7 meters in height.. The assessment found the following impacts on visual receivers during construction and in the first year of operation:

- **Low visual impacts** would occur at the DFO carpark (VP2), adjacent and overlooking the Project area.
- **Very Low visual impacts** are experienced temporarily by passing motorists or cyclists (VP1), and apartment residents (VP3) with partial views towards the Project.
- **Negligible visual impacts** would occur within Sydney Olympic Park (VP4), with the Project Area screened from view.

Mitigation

Whilst mitigation is not required based on the low visual impacts, design recommendations have been provided which would limit impacts and provide some beneficial visual impacts. The key beneficial recommendations include:

- Provide a vegetation buffer between the Project Area and the DFO ground-level carpark to soften appearance of electrical infrastructure
- There is an opportunity to for noise walls to be coloured/finished to provide a softer appearance, including an illustrative mural conveying a positive message, for public interface.

1 Introduction

1.1 Overview

Ausgrid is seeking development consent to construct, operate and maintain a Battery Energy Storage System (BESS) with a capacity of 200 MW at the Mason Park sub-transmission switching station at Homebush, NSW (the Project).

Key features of the Project include:

- A BESS with a 200 MW maximum power output capacity with 2-hour duration (i.e. 400 MWh)
- Containerised battery units (112 Megapacks) and associated infrastructure, including inverters and 56 medium voltage transformers
- 33 kV underground cable connection from the battery units to the STSS
- Combined switch room and control room building
- Eight ring main units (RMU)
- Onsite workshop facility
- Two auxiliary transformers
- Noise attenuation walls between megapacks and to the south side of the BESS
- Ancillary features including including fire suppression, stormwater management, 2.4m high boundary security chain wire fencing, lighting and CCTV.

The preliminary Project layout is shown in Figure 1-1. This assessment has assessed a worst-case visual scenario so as to provide a conservative assessment of the Project's potential impacts. This allows for flexibility in the design and construction methodology, where Project changes do not increase the visual impact. Note that 'worst-case' in the context of visual impacts refers to construction of all planned components in one stage.

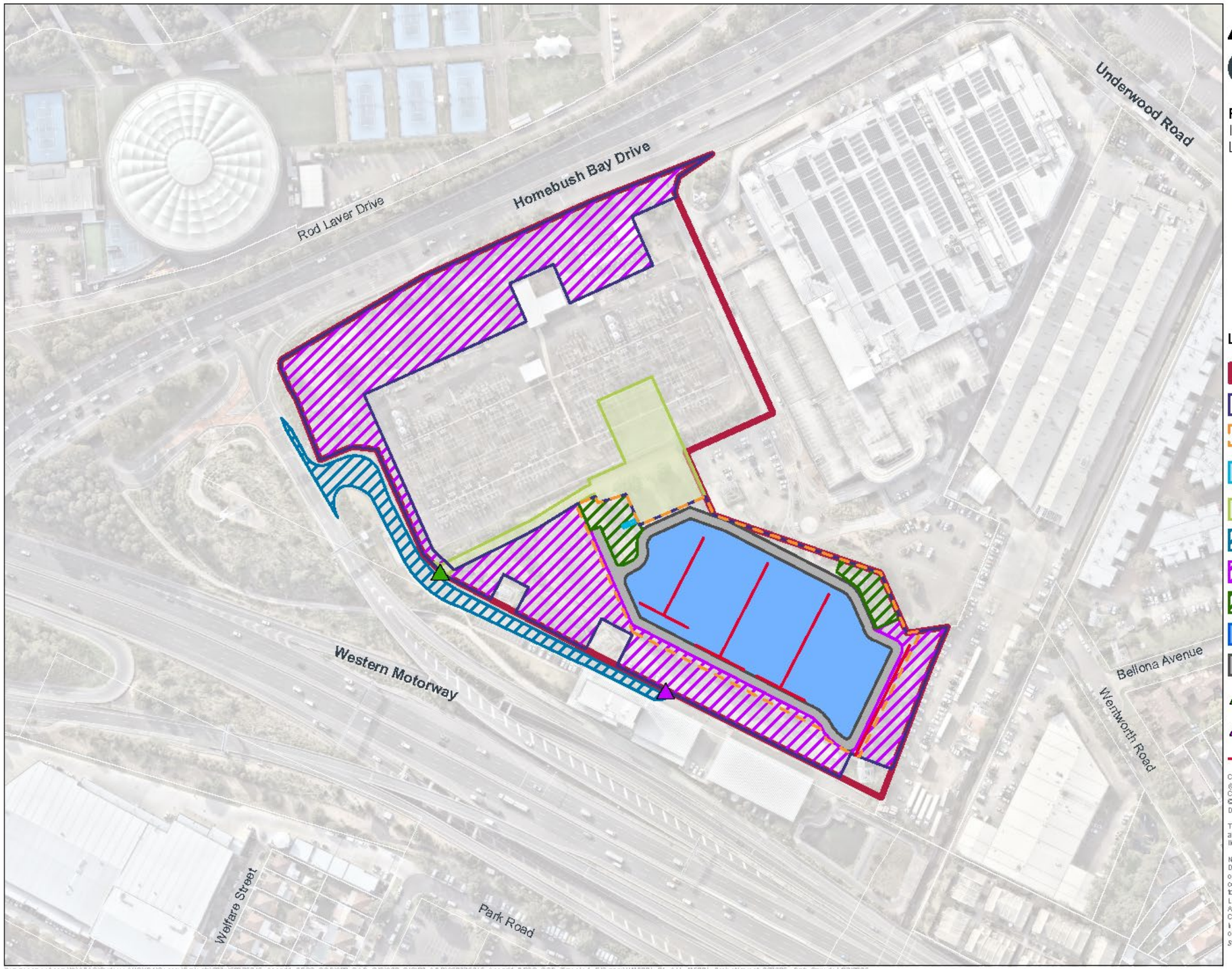

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Figure 1-1 Preliminary Project layout

1.2 Purpose of this report

This visual impact assessment (VIA) responds to the Project's Secretary's Environmental Assessment Requirements (SEARs) and supports the application for development consent. The VIA documents the potential impacts of the Project's construction and operation. The scope of the assessment includes:

- Establishing the methodology for assessing potential visual impacts.
- Describing the contextual analysis for the existing environment.
- Qualitative assessment of the potential visual impacts of the Project on surrounding locations and receivers.
- Identification of mitigation measures, as required.

1.2.1 Project SEARs

This VIA has been prepared in accordance with the NSW Department of Planning, Housing and Infrastructure (DPHI) SEARs for the Project, issued on 20 November 2024 (Table 1-1).

Table 1-1 VIA SEARs

SEARs	Where addressed
Visual – including: ■ a detailed assessment of the likely visual impacts of all components of the project on surrounding residences (including approved developments, lodged development applications and dwelling entitlements), and key locations, scenic of significant vistas and road corridors in the public domain; and	**Chapter 6** provides an assessment of likely visual impacts at residences, key locations, or significant vistas.
■ details of measures to mitigate and/or manage potential impacts (including a draft landscaping plan for on-site perimeter planting, with evidence it has been developed in consultation with affected landowners).	**Chapter 7** provides recommendations for the mitigation and management of visual impacts.

2 Project overview

2.1 Site context

The proposed location of the Project is Lot 1 Deposited Plan 218218, also known as 10 Homebush Bay Road, Homebush. The Project is location within the Strathfield Council local government area (LGA), approximately 14 km north-west of Sydney's CBD (refer Figure 2-1).

The Project is located on land zoned 'Special Purpose 2 Infrastructure – Electricity Supply' under the Strathfield Local Environmental Plan (LEP).

The Project is located southeast of the existing Ausgrid STSS, in an area previously used as the construction compound and laydown area during STSS construction. The area is within Ausgrid's existing landholdings, separate to the operational area of the STSS. The site has large areas of broken hardstand, as well as planted and naturally seeded native trees and grasses. High voltage overhead transmission line are present in the southwest corner.

The immediate surrounds are a highly modified urban area with mixed land use. The Western Motorway (M4) is located to the south, with an interchange to Homebush Bay Drive to the north. The interchange comprises landscape planting and a large public sculpture (The Sprinter), approximately 160m west of the Project.

Other built form surrounding the site includes:

- a shopping centre (DFO Homebush) multi-storey car park is located to the northeast
- residential receivers include several townhouses located 130 m to the east and southeast
- industrial warehouses to the southeast
- an open channel is located southeast of the site that feeds into Powells Creek; and
- Sydney Olympic Park, to the north of Homebush Bay Road.

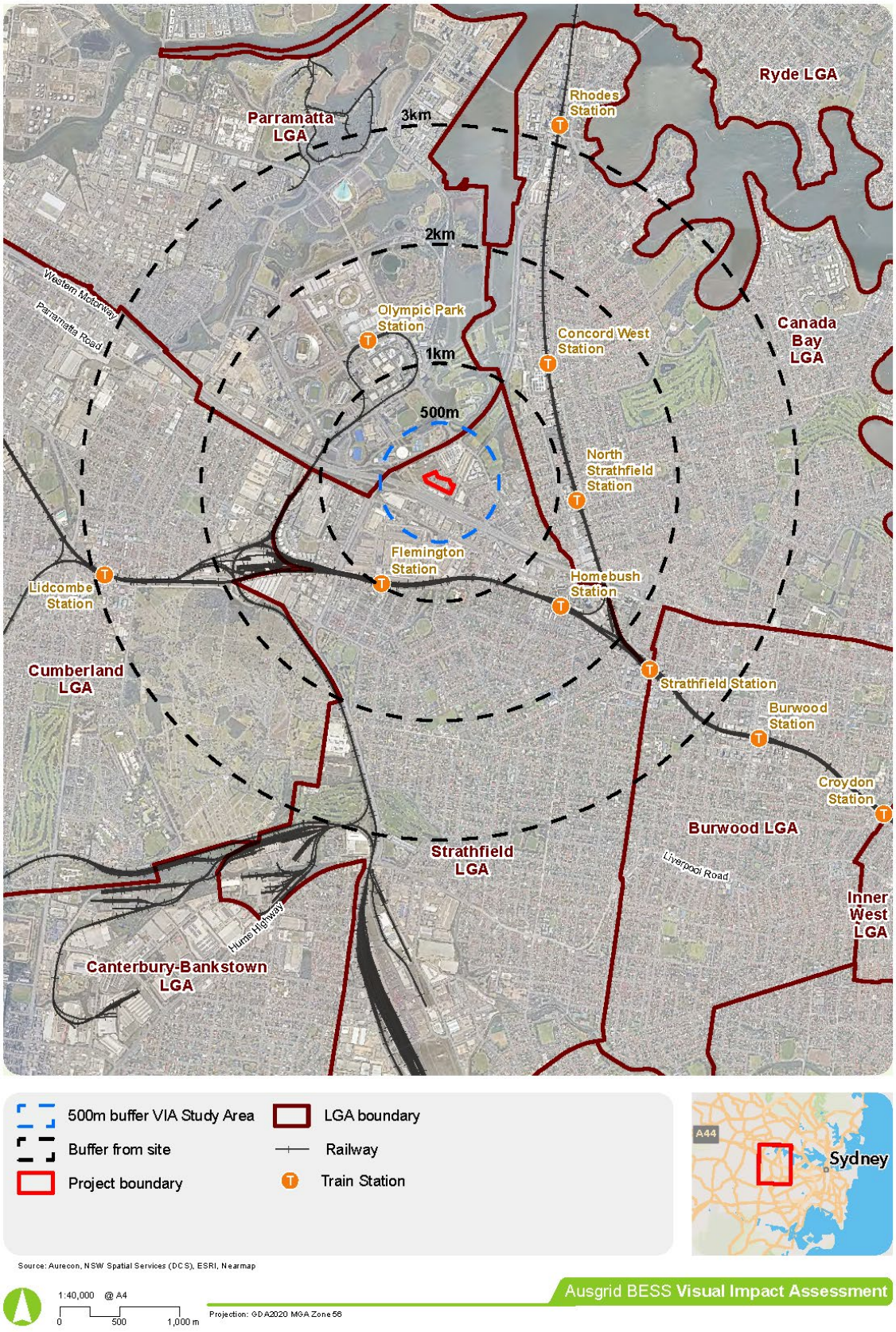


Figure 2-1 Site Context Plan

2.2 Project features

A summary of the key Project features relevant to the VIA are provided in Table 2-1, along with construction and operational factors in Table 2-2 and Table 2-3. These tables should be read in conjunction with Figure 1-1.

Table 2-1 Key features of the Project

Project	Components	Dimensions
BESS components	▪ Construction, operation, and maintenance of a BESS with a 200 MW maximum power output capacity with 2-hour duration (i.e. 400 MWh) (Indicative image shown in Figure 2-2) ▪ Containerised battery units (112 Megapacks) and associated infrastructure, including inverters and 56 medium voltage transformers	▪ Battery units approximately 2.5 m in height above ground level (AGL) and have a footprint of approximately 3.5 m x 7 m. Units arranged in a series of rows.
Ancillary components	▪ Combined switch room and control room building ▪ Eight ring main units (RMU) ▪ Onsite workshop facility ▪ Two auxiliary transformers ▪ Backup diesel generator ▪ Two spaces for onsite car parking ▪ Lightning spires (TBC with detailed design)	▪ Buildings would be a maximum of 7 m height AGL
Noise wall	▪ Concrete	▪ 5.8 m height AGL
Grid connection	Connection of the BESS Connection via a 33 kV underground (UG) cable to the STSS (refer to indicative image shown in Figure 2-3)	Trench or underground bore

The final configuration of the Project will be confirmed in the detailed design. The VIA is based on consideration of reasonable worst-case, being the maximum dimensions and/or number of key components. Potential appearance of containerised batteries the site layout with noise walls are shown in Figure 2-2and Figure 2-3 below.

Figure 2-2 Tesla Megapak units (source: Ausgrid)

Figure 2-3 Indicative render of Project with Tesla Megapak units and surrounding noise walls (source: Ausgrid)

Construction

The Project is anticipated to commence construction in late 2025 and complete in mid-late 2027. The commencement and duration of construction is dependent on a number of factors such as environmental issues, weather and staff availability.

Construction access to the site would be via an existing slip road off the eastbound onramp onto the M4 from Homebush Bay Drive, which is a public road. This access would be maintained for the Project for both construction and operational phases.

Table 2-2 provides and indicative outline of the activities that would be undertaken during the construction phase.

Table 2-2 Construction activities

Indicative Construction	
Construction hours	Construction activities would primarily be undertaken during the following hours: ■ 7:00am to 6:00pm Monday to Friday ■ 8:00am to 1:00pm Saturday ■ Sundays only as required due to electrical outage constraints.
Workforce	■ A peak workforce of up to 100 people during construction (average 50)
Parking	■ Temporary parking for the construction workforce would either be provided within the existing STSS (Ausgrid landholdings) or utilising nearby on-street parking.
Enabling works	■ Establishment of site and emergency vehicle access, laydown areas and construction amenities (including temporary offices, lunchrooms, storage areas and washrooms) ■ Installation of erosion and sediment controls and marking out of no-go areas ■ Clearing of vegetation within the site ■ Installation of temporary fencing ■ Establishment of temporary construction services including site diesel generators ■ Installation of temporary site drainage and underground services

Civil, structural, mechanical and electrical works	■ Construction of internal site roads, consisting of either compacted gravel or road base ■ Earthworks and site levelling to form a suitable pad for the battery units and ancillary infrastructure ■ Appropriate foundations for the battery enclosures, MV transformers and ring main units ■ Delivery and installation of BESS facility components ■ Internal fit out of the switch room and control room ■ Stormwater drainage ■ Underground cable connection from the BESS to the HV transformer would include: – Excavation of a cable trench – Laying of cables within trench – Connecting cable to the HV transformer – Backfilling of trench and rehabilitation of the cable easement – Soils along the route of these trenches would be excavated and stockpiled nearby, or within the designated construction laydown areas for the Project. Excavation would be completed in a progressive manner to minimise the amount of material stockpiled and to reduce the potential for erosion.

Operations

Operation of the Project would involve the following activities.

Table 2-3 Operational activities

Indicative Operations	
Operational activities	■ Recharge and discharge operations of the battery, as required over a 24-hour period, seven days a week. ■ Infrequent maintenance activities, which may include any of the following: – Replacement of BESS components – Safety and environmental audits – General ongoing maintenance and housekeeping (average four times per month) including vegetation trimming and general upkeep of facilities.
Operational life expectancy	The Project is intended to have an operational life of up to 50 years. This could lengthen should the BESS be upgraded or replaced, subject to a future planning approval.
Operational workforce	The Project would typically be unmanned and remotely monitored, with planned and unplanned maintenance visits anticipated on an infrequent basis.

3 Methodology

3.1 Assessment approach

A VIA is the analysis of the potential visual impacts resulting from a proposed development. It involves evaluating the degree of visual change from the existing or baseline environment, as experienced by visual receivers.

The following are the main tasks that were undertaken to prepare this VIA:

- Identification of the Study Area from which the Project is likely to be visible, based on the height of proposed elements on site, intervening topography and built form.
- Determine the baseline environment against which the Project is assessed, including permitted land uses, other proposed projects, existing urban form, biophysical characteristics and aesthetic value.
- Identification of likely sensitive receivers and viewpoints for assessment.
- Field visit to capture photographs from key viewpoints and ground truth desktop findings.
- Production of photomontages to illustrate the potential magnitude of visual change associated with the Project.
- Determination of the significance of visual impacts for each viewpoint, using the Visual Impact Rating Matrix described in Table 3-3 below. The consequence of the application of the matrix is that (except where the Project cannot be seen) the Project would have some adverse impact.
- Outline the mitigation measures to avoid, manage and minimise visual impacts as a result of Project.

3.2 Relevant Guidelines

This report has been prepared based on the following industry guidelines:

- Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline, NSW Department of Planning, Housing and Infrastructure (DPHI), August 2022.
- Guideline for Landscape Character and Visual Assessment - Environmental Impact Assessment Practice Note EIA-NO4, Transport for New South Wales, 2020.
- Guidance Note for Landscape and Visual Assessment, Australian Institute of Landscape Architects, June 2018.
- Guidelines for Landscape and Visual Impact Assessment (third edition), Landscape Institute of Environment Management and Assessment (IEMA), 2013.

3.2.1 VIA requirements for BESS projects

Whilst the Project is not proposing installation of solar panels, following consultation with DPHI on other BESS projects, the Project has been assessed in accordance with the general requirements of the solar guideline.

Figure 3-1 outlines the approach of the solar guideline in assessing visual impacts.

The assessment findings outlined in Section 6 illustrate how the assessment concludes at an equivalent to Stage 4 in the following figure.

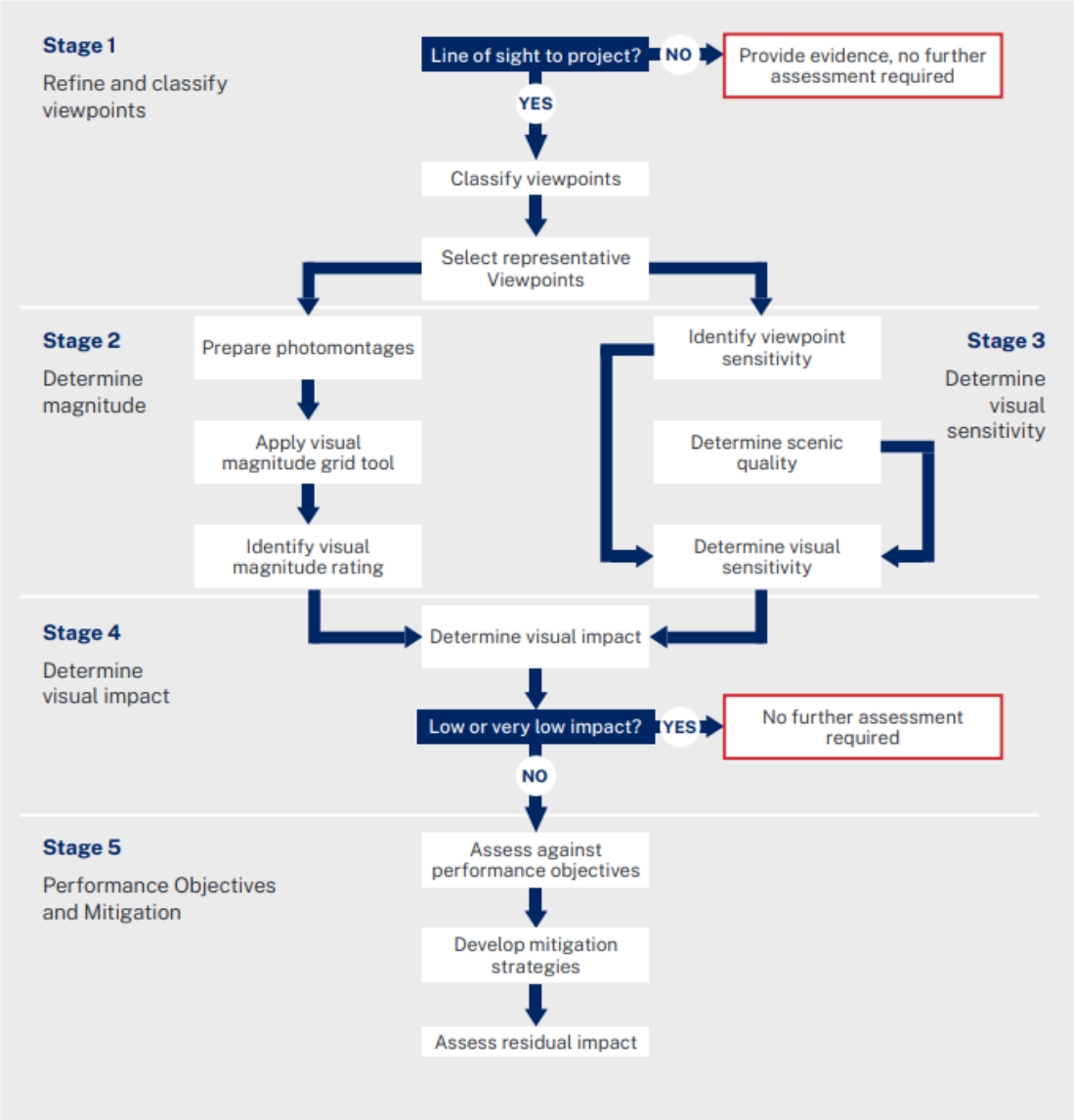


Figure 3-1 Detailed Visual Impact Assessment Process (source: NSW Department of Planning and Environment, Technical Supplement – Landscape and Visual Impact Assessment)

3.3 Study Area

The Study Area is determined by the distance at which it is considered that Project components will become either indiscernible to the human eye or will occupy a small proportion of the visual field of view that impacts could be considered negligible. This distance is directly related to the scale and height of the Project components and the viewing properties of the typical human eye. Appendix B: Visual Prominence Rationale defines this rationale.

An analysis of the zone of theoretical visibility (ZTV) for the Project was undertaken based on topographical data and the height of key Project components. Intervening vegetation and built structures are not included in the ZTV mapping. As such the ZTV represents a feasible 'worst case' visual envelope of the Project.

Based on topography alone, the ZTV extends beyond 3 km from the Project (refer Figure 5-1). However, in practice, surrounding large industrial buildings and vegetation limit these views in most directions. During the field visit, views towards the site were investigated and determined to be noticeable only within a distance of 500 m or less. The Project was not visible from further away, due to intervening built form and vegetation.

For the purposes of this assessment, the Study Area includes a 500-metre radius from the site (refer to Figure 2-1). This area includes the closest sensitive receivers within the ZTV and where visual changes are likely to be noticeable.

The key viewpoints captured during the field visit, are from locations where the site is most visible. This accounts for the screening and filtering effect on views from existing topography, existing vegetation and built form.

3.4 Visual Impact Assessment

The level of visual impact resulting from the Project has been assessed against the following components:

- **Viewer sensitivity:** the sensitivity of the viewer to the development / change and distance from the viewpoint. This is discussed further in section3.4.1 below.
- **Magnitude of change**: how well the development / change contrasts or blends with the surrounding land use based on varying levels of visual prominence. This is discussed further in section 3.4.2 below.

Establishing the level of visual impact involves assigning levels of visual sensitivity and magnitude on a scale from high to negligible. A determination matrix is then used to assign an overall level of visual impact (see section 3.4.3).

Based on the desktop study, viewpoints have been selected to represent the views of key sensitive receivers in the vicinity of the Project. These viewpoints were selected to consider:

- A range of:
  - Visual receiver-types including public and private domain views.
  - View-types including elevated, panoramic and filtered views.
  - Viewing distances from the Project.
- Valued or protected views in the Study Area (where relevant).

Some viewpoints proposed during the desktop study were ruled out during the field visit as intervening vegetation, topography or buildings would fully screen the view of the Project from those locations.

3.4.1 Viewer sensitivity

Viewer sensitivity is a measure of how a person would perceive a change to their view. This depends on the nature of the land use in which the viewer is positioned, as well as their expectations of the view from that location. This approach is consistent with the visual management system (*Landscape Aesthetics – A Handbook for Scenery Management*, United States Department of Agriculture& Forest Service, 1995).

Various landscape settings influence the relative importance the viewer places on them. For example, individuals would view changes to the visual setting from their residence more critically than changes to the visual setting in which they travel or work.

As such, levels of viewer sensitivity are generally based on land use because this largely defines a viewer's expectation of what they would typically expect within a particular setting.

The next critical component to rating the viewer sensitivity is the distance of the Project from the identified land use area. As illustrated in Table 3-1, there are three viewing distances to consider:

- foreground (0 – 500 metres)
- middleground (501 – 2,000 metres)
- background (> 2,000 metres).

As the distance increases from the land use area, the field of view decreases causing the visibility of Project components to diminish or be absorbed in the landscape setting. Consequently, as distance from the viewer to the Project increases, the level of viewer sensitivity reduces.

Table 3-1 Viewer sensitivity determination matrix[1]

LAND USE (Sensitivity of the viewing location)	DISTANCE FROM THE PROPOSAL				
	FOREGROUND		MIDDLEGROUND		BACKGROUND
	0 – 200 m	201 – 500 m	501 – 1000 m	1001 – 2000 m	> 2000 m
Residential / Accommodation	H	H	H	M	L
Parks and reserves	H	H	H	M	L
Health care facilities	H	H	M	M	L
Educational facilities	H	M	M	L	L
Community facilities	H	M	M	L	L
Shared use paths	M	M	M	L	VL
Commercial	M	M	L	L	VL
Arterial road	L	L	L	VL	VL
Local road	L	L	VL	VL	VL
Industrial areas	VL	VL	VL	VL	VL
Legend - H = High, M = Medium, L = Low, VL – Very Low					

3.4.2 Magnitude of change

When considering magnitude, all elements of the Project must be considered, including changes to landform, urban structure, vegetation patterns, as well as the nature, scale and density of the Project within the landscape.

Magnitude is dependent on:

- Scale, regarding the loss or addition of features in the view and changes in its composition.
- Degree of contrast or integration based on scale and form, height, colour, and texture.
- Nature of view in relation to the project accounting for angle, distance, and extent.
- Mitigation, accounting for its effectiveness at reducing impacts over time.

Table 3-2 below describes the ratings of magnitude for the purposes of this assessment.

Table 3-2 Viewpoint magnitude ratings[2]

Magnitude	Description
High	The Project, or part of it, would become the dominant feature or focal point of the view.
Moderate	The Project, or part of it, would form a noticeable feature or element of the view which is readily apparent to the receiver
Low	The Project, or part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Very Low	The Project, or part of it, would be perceptible, but the introduction of elements is commensurate with surrounding elements and/or is partially screened.
Negligible	Only a very small part of the project would be discernible, or it is at such a distance that it would form a barely noticeable feature or element of the view.

[1] Adapted from US Department of Agriculture Forestry Service (1995)
[2] Adapted from US Department of Agriculture Forestry Service (1995), IEMA (2013)

3.4.3 Assigning a level of impact

The significance of the visual impact is determined by combining the sensitivity with the magnitude, using the matrix illustrated in Table 3-3.

The consequence of the application of the matrix is that (except where the Project cannot be seen) the Project would always have some level of adverse impact.

Table 3-3 Impact determination matrix (TfNSW, 2020)

		MAGNITUDE			
		HIGH	MODERATE	LOW	NEGLIGIBLE
SENSITIVITY	HIGH	HIGH	HIGH-MODERATE	MODERATE	NEGLIBIBLE
	MODERATE	HIGH-MODERATE	MODERATE	MODERATE-LOW	NEGLIBIBLE
	LOW	MODERATE	MODERATE-LOW	LOW	NEGLIBIBLE
	NEGLIGIBLE	NEGLIBIBLE	NEGLIBIBLE	NEGLIBIBLE	NEGLIBIBLE

3.5 Assumptions and limitations

3.5.1 Key Assumptions

This report has been developed based on the following assumptions:

- The assessment has been based on the information provided for the Preliminary Design layout (refer to Figure 1-1 Preliminary Project layout, provided by Ausgrid 11/12/2024) and assumes that all vegetation within the site will be removed. Further changes to the detailed design will not be captured in this assessment.
- Viewpoints on private properties were not considered within this VIA due to land access issues. However, representative viewpoints taken adjacent to private properties have been used as a proxy for these locations.
- Observations made during a field study on 14/11/2024 have been applied to ground truth the baseline analysis. The assessment does not include any changes to the environment that may have occurred since.
- For the purpose of the assessment, an unobstructed viewpoint from a publicly accessible location has been used as a worst-case scenario of potential visual impacts. This is applied to apartments at 9 Verley Drive, where the viewpoint has been captured from the ground floor common area.
- Rendered photomontages are indicative of the Project at day 1 of operation based on the preliminary design layout and do not indicate any potential changes through detailed design or design mitigation measures.

3.5.2 Limitations and uncertainty

There are the following limitations associated with this assessment:

- 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.
- The impact assessment is focused on the current land uses and zoning and does not capture planned or provisional changes.

- The Project is subject to future detailed design and construction methods, staging, quantities and measurements may vary following design refinement or following award of the construction contract. This assessment is based on the current known details.

3.6 Photomontages

A photomontage is a technique whereby an image of the Project is produced using an existing photograph, overlayed with a render of proposed Project elements, to provide an indicative visual representation.

The development of a photomontage involves inserting a computer–generated model of the Project into a photograph taken from a geographically referenced viewpoint, using existing landscape elements of a known size, location, and scale to suitably locate the digital elements within the photograph. Existing elements, such as buildings, have been modelled to create a reference point to match in the photos.

The methodology used to produce the photomontages included:

- Undertake site photography including overlapping photo to create a 180-degree panoramic image to depict the existing scene, with the proposed facility to the centre of that image.
    - The location of each viewpoint was recorded on site to accurately depict the location of the photo and match to the 3D digital model of the key design components.
    - Existing site elements were measured to match with the scale of elements within the model.
- Model the facility in 3D max applying known dimensions and material finishes. Render of the model, matching with the photograph.
- Adobe Photoshop was used to produce photomontages of the Project including addition of people and vegetation.

The photomontages are indicative of the Preliminary Project layout (Figure 1-1) and are subject to detailed design. As such, there may be minor changes which are not captured within the photomontages. It is assumed that minor changes will not have any bearing on the level of visual modification presented by the Project.

Project photomontages

Photomontages were produced for two of the four viewpoints (see Section 6), being:

- VP1 – Motorway on-ramp
- VP2 - DFO multi-storey carpark rooftop

The photomontages are representative of day 1 of operation and depict the current design of key elements available at the time of preparing this report, as represented in Appendix A: Visualisations.

4 Regulatory framework

4.1 State Environmental Planning Policies

The relevant State Environmental Planning Policies (SEPPs) and their application in regard to the VIA are:

- Transport and Infrastructure, 2021
  - The proposed land use (electricity generation) is reflective of the existing landscape characteristic and is permissible with consent.
- Planning Systems, 2021
  - This policy designates the Project as state significant development which requires an EIS. This VIA comprises part of the EIS.

4.2 Regional and Local Plans

The relevant regional and local key documents reviewed which identified relevant landscape and scenic considerations within the Study Area, include:

- Strathfield LEP 2012
  - The Project meets the definition of 'electricity generating works' under the LEP
  - Any landscape mitigation planting will need to consider the flood and soil conditions
  - There are no defined landscape or visual characteristics or scenic view corridors identified within the Study Area.
- Strathfield Development Control Plan (DCP) 2005
  - DCPs do not need to be considered for State Significant Developments.

4.3 Land Use Zoning

The Project is within the 'Special Purpose 2 Infrastructure – Electricity Generating Work' land use zone. The Study Area has a variety of land uses including transport, industrial, commercial and residential, as shown in Table 4-1 and mapped in Figure 4-1.

Table 4-1 Land uses

Land use zone	Land use features and location	Relevance to the study
B4: Mixed Use	Sydney Olympic Park, including the Tennis Centre, 200m to the north side of Homebush Bay Drive.	Some tourists and recreational visitors of higher visual sensitivity. Representative viewpoint assessment in Section 6.
C2: Environmental Conservation/Management	Mason Park Wetland, 500 m northeast of site	Public areas of higher visual sensitivity. Project is screened by intervening buildings (DFO).
C3: Environmental Management	Lake Belvedere, 500 m to the northwest	
E3: Productivity Support	DFO and car servicing warehouses, adjacent site.	Representative viewpoint assessment in Section 6, for higher number of shoppers with Project views.
E4: General Industrial	Shopping centre and car parking	
MU1: Mixed Use	Residential and warehousing, to the south of the Western motorway	Receivers of higher visual sensitivity.

Land use zone	Land use features and location	Relevance to the study
RE1: Public Recreation	Bressington Park and Mason Park located between industrial warehousing and residential area, 150 m and 300 m (respectively) to the east of the site.	Recreational use increased sensitivity to views. Project is screened by intervening buildings.
R3: Medium Density Residential	Residential apartments 90 m to the west of the site	Sensitive receivers who are likely to experience views for long period. Representative viewpoint assessed in Section 6.
R4: High Density Residential	Residential area 100 m to the northeast of the Project area	Sensitive receivers who are likely to experience views for long period.
SP1: Special Activities	Sydney Wholesale and Retail Markets, 450m to the south.	Low sensitivity and views towards site unlikely due to highway.
SP2: Electricity Supply	Project footprint and electricity generating works, including the adjoining Ausgrid STSS.	Adjoining electrical infrastructure.
SP2: Classified Road	The Western Motorway to the south of the site and Homebush Bay Drive.	Representative viewpoint assessed in Section 6.

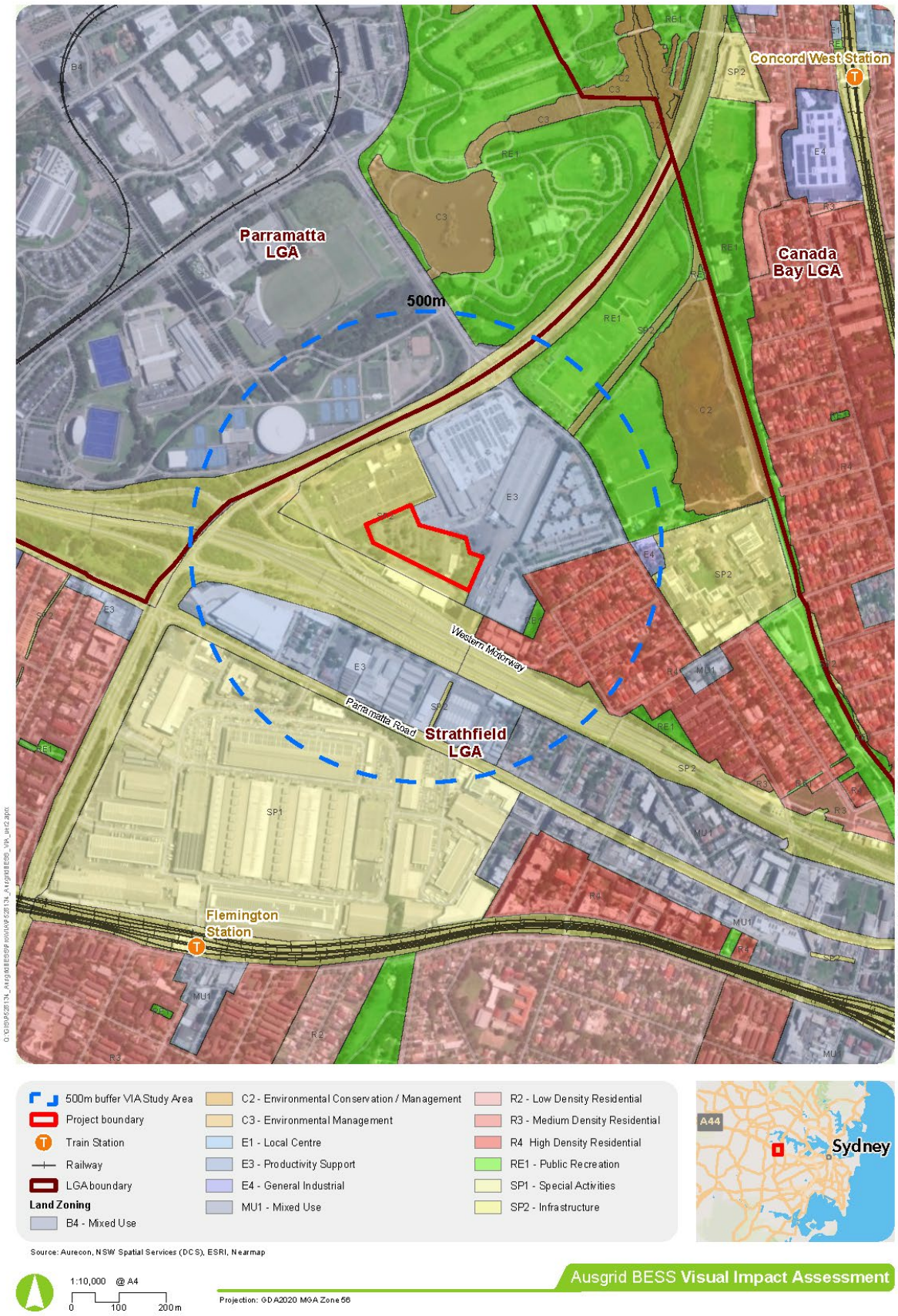


Figure 4-1 Land Use zones

5 Existing environment

The Project is located within the Strathfield LGA, 14 km from Sydney's CBD. The Study Area is highly modified, comprising the Western Motorway, commercial and light industrial buildings, and the existing Ausgrid STSS. It is located south of the Sydney Olympic Park Tennis Centre and south-west of the Homebush Direct Factory Outlet (DFO).

5.1 Land Use

Land use in the surrounding area predominantly consists of commercial, industrial, residential and recreational areas. The Project site is currently vacant industrial land, within Ausgrid's landholdings.

Other land uses within the Study Area include:

- Motorway and arterial roads
- Sydney Olympic Park Tennis Centre (Tennis World)
- DFO shopping centre
- Warehousing and engineering workshops
- Sydney Markets
- Bressington and Mason Parks
- Medium density residential townhouses and low-density dwellings

The area surrounding the site has a high degree of built form, however it is also within close proximity to some natural features, with wetlands and parks to the northeast. Medium to high density residential housing and key road transport networks are also present nearby.

5.2 Topography, landform and waterways

As shown in Figure 5-3, the Project is at an elevation of approximately 10 m AHD and is relatively flat. The variation of topographic levels within the Study Area is low, with the motorway surrounded by built mounds and retaining walls. Motorway noise attenuation walls are located adjacent to residential apartments.

The Study Area is located within the wider Parramatta River catchment, within the Powells Creek sub-catchment. Powells Creek is approximately 1 km east of the Project Area and is the closest named watercourse. Parramatta River is approximately 3 km north of the site.

5.3 Vegetation

As shown in Figure 5-3, there are no identified Plant Community Types (PCTs) within the Study Area. The closest mapped PCT is within Mason Park Wetlands to the east (see Figure 5-2), which may indicate the type of vegetation prior to urban modification.

A summary of the PCT extents and non-native vegetation extents are provided in the Biodiversity Development Assessment Report which has also been prepared to accompany the Project's EIS.

The Ecological Assessment found the site is highly disturbed with a lack of structured vegetation and primarily weed species. There is native vegetation present, however given the absence of *Casuarina glauca*, it suggests that this vegetation is planted and not remnant. It was also established that the existing vegetation is not commensurate with any Threatened Ecological Communities.

The prominent vegetation within the site consists of numerous native trees (C*asuarina ssp.*), with the majority of trees concentrated along the perimeter of the lot (see Figure 5-1).

Figure 5-1 Planted native trees within Project area (image: O. Grasso 11/11/2024)

Figure 5-2 Mason Park wetlands with HV towers to the background (image: Strathfield-Homebush District Historical Society, 10/09/2021)

5.4 Cultural Heritage

The Project is located within Gadigal Country, where the Wangal clan of the Dharug Aboriginal people are the traditional custodians.

An Aboriginal Due Diligence Assessment was prepared by Apex Archaeology in August 2024 (Scoping Report, Appendix C), as well as an Aboriginal Cultural Heritage Assessment Report (ACHAR, Ausgrid March 2025). These reports concluded that there are no sites of Aboriginal significance located within the site.

There are no state significant heritage items identified under the NSW State Heritage Register or Strathfield LEP within the Study Area. However, general heritage items of local significance listed in the Study Area include:

- Conservation area C6: Inter War Bungalow Style Group (housing), to the south of the motorway
- I38 Weatherboard cottage and garden, located to the south of the motorway
- I49 Mason Park Wetlands, located 500m northwest of the site
- I50 Pumping Station
- I51 19502 garden, carport and fence located to the south of the motorway
- I62 Wentworth Hotel, located to the south of the motorway

The Project has no direct impact to these items and there is a high degree of intervening built form between the items and the Project,

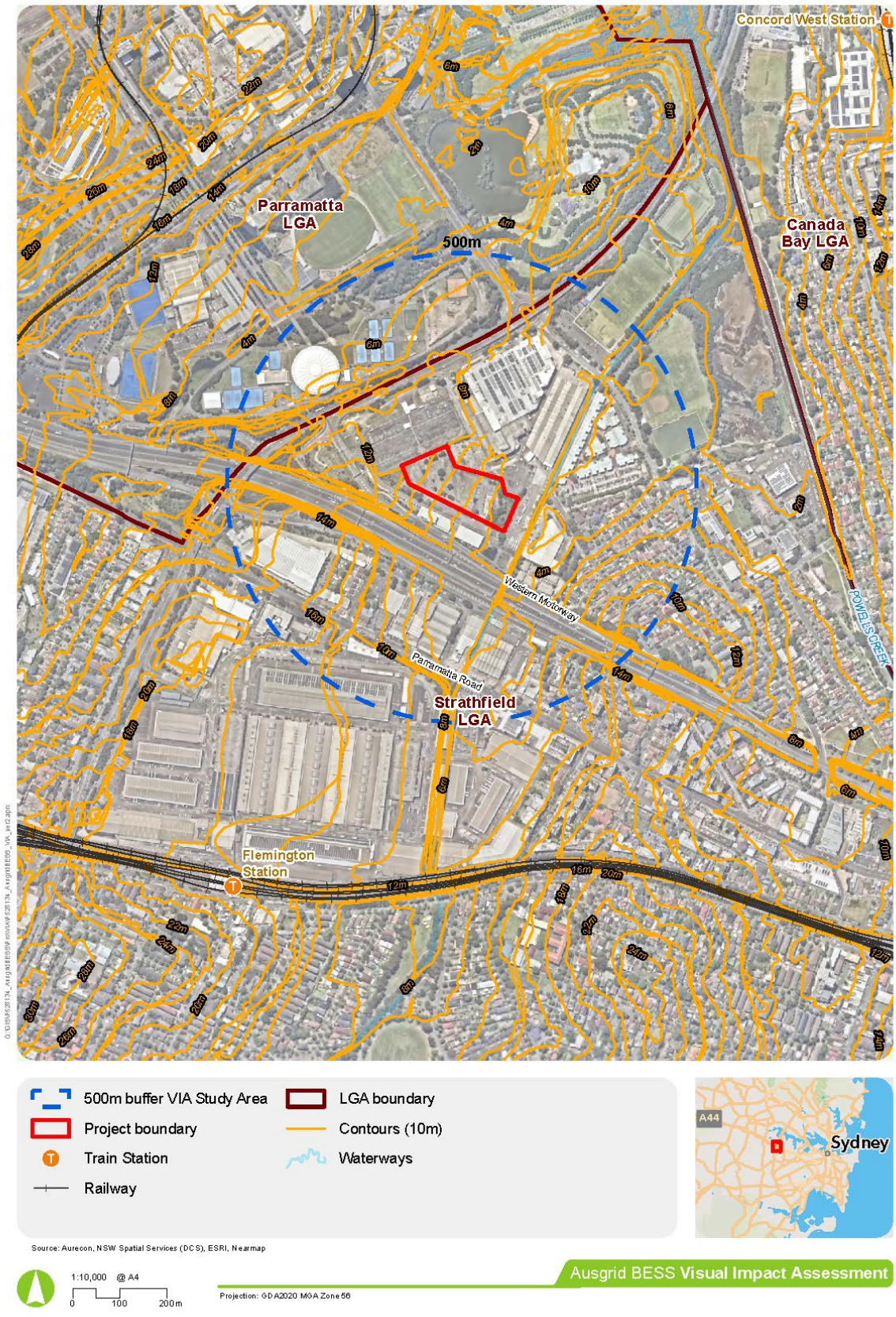


Figure 5-3 Topography and Hydrology within the Study Area

Figure 5-4 Plant Community Type mapping

5.5 Visual context

The viewing points within the Study Area that have the clearest views of the site include the DFO Homebush (Figure 5-5) to the northeast; and an access road off the Western Motorway (Figure 5-6), which has immediate views of the adjacent STSS.

Substantial electrical infrastructure is already visually prominent at the site, with the presence of the Ausgrid STSS, four communication towers and connecting transmission lines. The Ausgrid STSS is not visible from the residential area to the south due to intervening vegetation. However, the tall transmission towers on the western edge of the Project area are visible above trees (Figure 5-8).

Recreational areas within Olympic Park Tennis Centre to the north of the site (Figure 5-9) are situated on relatively flat terrain, with dense perimeter vegetation screening views outside of the park (Figure 5-10).

The Homebush Bay Drive/Western Motorway interchange is located to the southwest of the Project area, with the WestConnex Fulton Hogan Egis Motorway MCC Office & Warehouse located adjacent the Project Area. A large sculpture 'the Sprinter' is a notable feature of the interchange, places at the top of a landscaped mound (see Figure 5-11Figure 5-12). This sculpture was relocated to this location from its original position in Olympic Park during the Sydney 2000 Olympic Games.

The residential block to the southeast of the site is bordered by the Western Motorway to the south, creating a distinct separation from the commercial and industrial areas nearby. The dwellings in this area (Figure 5-7) are one and two storey in height, with landscaped perimeters that contribute to the low-density residential character of the neighbourhood.

In summary, the visual environment near to the Ausgrid Mason Park STSS contains a substantial amount of existing electrical and built infrastructure. Some of this is screened by existing vegetation along the perimeter with the industrial lots. The Project Area is generally highly modified and is not of any visual, heritage or architectural significance.

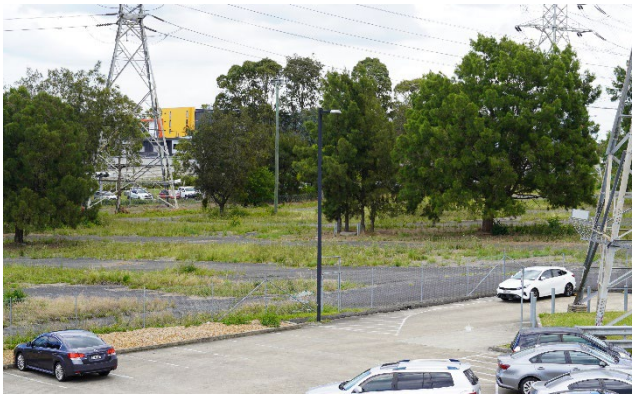


Figure 5-5 View west towards the site from the Homebush DFO

Figure 5-6 View east towards the site from access road off the Western Motorway

Figure 5-7 Low density residential properties south of the site

Figure 5-8 View north towards site from residential properties

Figure 5-9 Tennis Courts north of the Project site across Homebush Bay Drive

Figure 5-10 Vegetation providing natural screen towards the site from the north

Figure 5-11 'The Sprinter' sculpture at night (image: https://we-ef-live.com.au/project/sprinter-sydney/)

Figure 5-12 'The Sprinter' sculpture on the landscape mound (image: https://www.westconnex.com.au/community/community-benefits/)

6 Potential visual impacts

In accordance with the DPHI guidelines discussed in Section 3.2.1, viewpoints with a potential line of sight have been identified and assessed in the following section. This has included consideration of representative public and private viewpoints. This assessment considers the Project during construction and at year 1 of operation.

6.1 Identification of representative viewpoints

Viewpoint selection is based on where the Project is likely to be visible by sensitive public and private receivers which are publicly accessible. In the case of private receivers (residential dwellings), representative views are captured from publicly accessible, adjacent viewpoints, to determine comparable views.

The closest residential receivers with potential views of the site include:

- Apartments to the west side of 9 Verley Drive:
  - Including approximately eight 2nd-storey apartments (with balconies), with foreground brick walls and tall vegetation partially screening views of the site (as assessed in representative viewpoint VP3).

There were no viewpoints identified within the Study Area that are designated or significant viewpoints.

The ZTV (refer Figure 6-1) indicates that the visibility of the Project extends beyond 3 km, based on the relatively flat topography. However, the field visit determined that that site is only visible within a much closer proximity due to intervening buildings and vegetation.

A total of four representative viewpoints were selected. The selected locations are all publicly accessible and differ in viewing distance and aspect. These viewpoints are deemed to be representative of particular nearby visual receivers (Table 6-1 and Figure 6-1).

Table 6-1 Representative viewpoints

Viewpoint	Location	Representative visual receiver
VP1	Motorway on-ramp – 90 m west of Project	Motorists and cyclists on/parallel to Western Motorway
VP2	DFO multi-storey carpark rooftop – 70 m northeast of Project	Local shoppers/motorists at the DFO carpark
VP3	9 Verley Drive – 90 m southeast of Project	Residential apartments
VP4	Sydney Olympic Park Tennis Centre, Shirley Strickland Avenue – 330 m north of Project	Recreational users at Sydney Olympic Park Tennis Centre

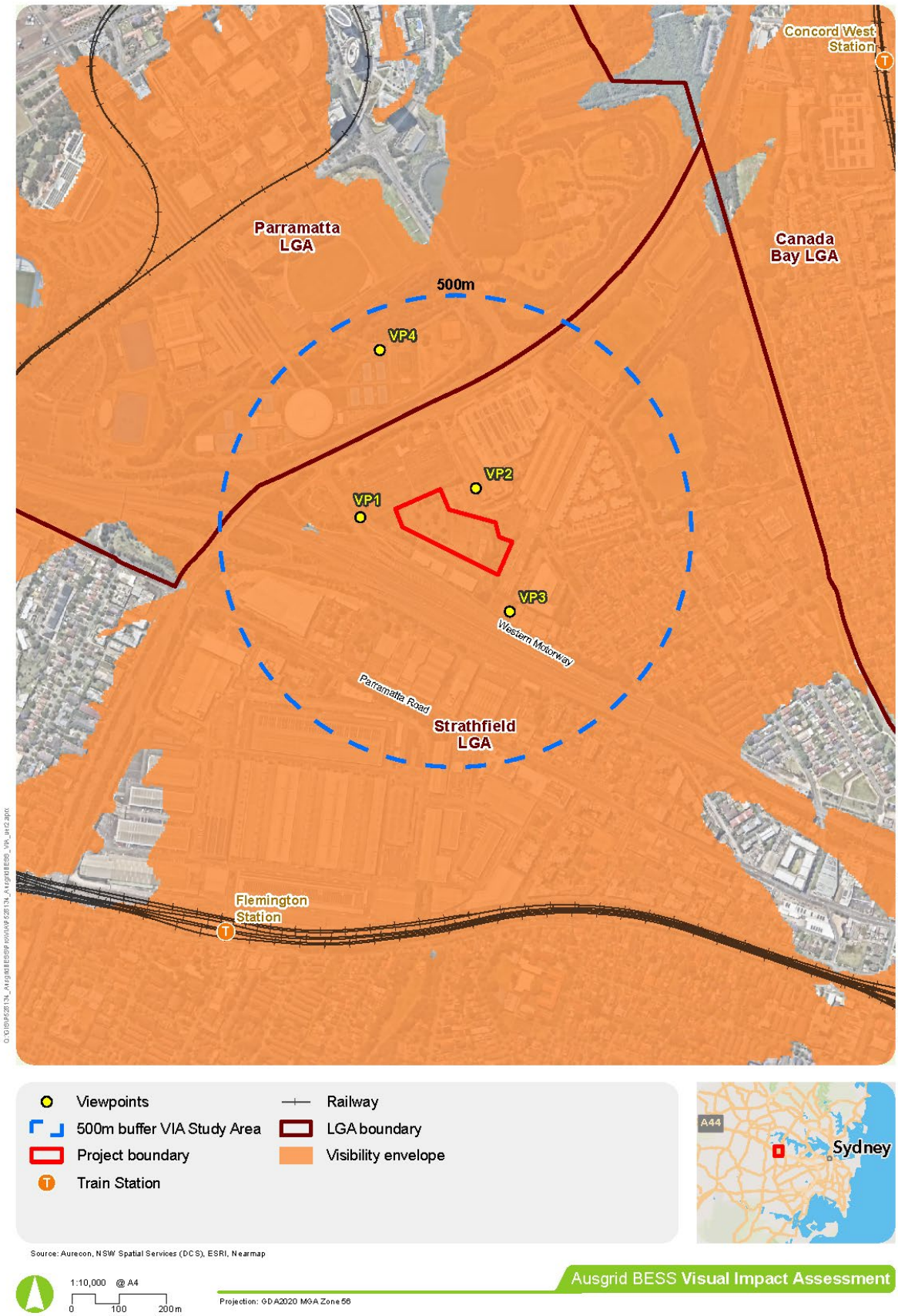


Figure 6-1 Visual envelope and viewpoint locations

VIEWPOINT 01

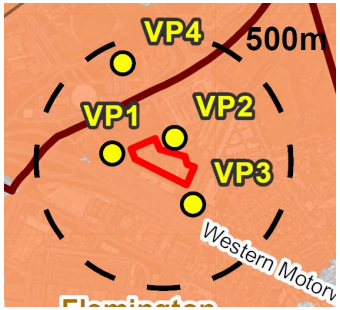


Figure 6-2 View looking east towards the proposed BESS site

Viewing location	From an access road off the Western Motorway on-ramp, looking east towards the Project.			
Visual receivers	The viewpoint is representative of the view experienced by motorists on the Western Motorway and cyclists on the shared user path parallel to the motorway.			
Existing setting	In the foreground, the Mason Park STSS is located at a lower level than the two-lane on-ramp and motorway interchange. The STSS comprises electrical infrastructure on a hardstand, with towers and multiple overhead lines. Views towards the Project area from the motorway are screened by a landscaped mound, featuring the 'The Sprinter' sculpture (refer Figure 5-11 and Figure 5-12), the elevated on-ramp and the WestConnex Fulton Hogan Egis Motorway MCC Office & Warehouse (seen far right of Figure 6-2). The cycleway is 50 m to the left of this viewpoint and cyclists will experience similar views as they pass by. Tall native trees are located to the right of the STSS, contributing to the greenery in a highly modified scene.			
Viewing context	Dynamic - viewed temporarily by receivers		**Viewing angle**	Parallel – viewed in peripheral vision
Land use zone	SP2 Infrastructure: Transport – motorway and cycleway		**Viewing distance**	Foreground (approx. 90 m to closest Project component)
	SENSITIVITY	**MAGNITUDE OF CHANGE**		**VISUAL IMPACT**
Construction	Low Motorists on a motorway and cyclists parallel to motorway.	During construction, trees within the Project Area will be removed, with those on the boundary of the STSS and access road being retained. This will provide some screening of works. There is a Very Low magnitude of change with a partial view experienced whilst moving.		**Very Low**
Year 1 of operation		Once built, Project elements including the Control Room to the foreground, noise walls and battery packs will be partially visible to cyclists and motorists behind retained trees. There is a Very Low magnitude of change with a partial view experienced whilst moving. See Figure 0-2 for indicative visualisation of Project at year 1		**Very Low**

VIEWPOINT 02

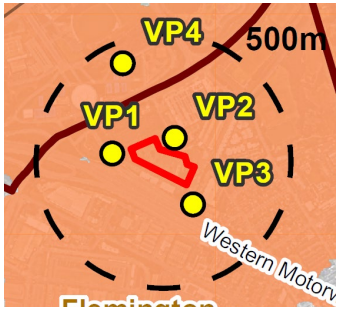
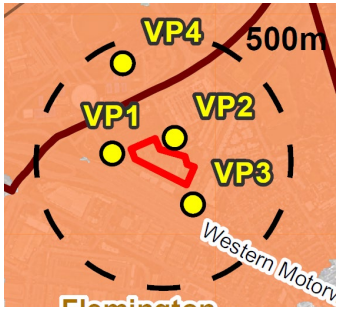
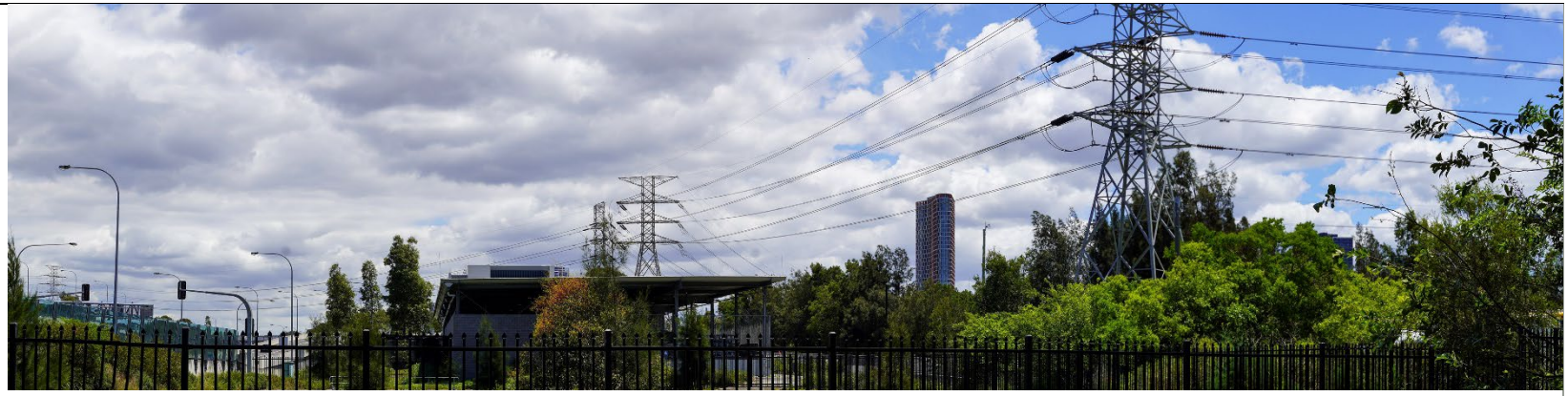


Figure 6-3 View looking south towards the proposed BESS site

Viewing location	View from DFO carpark rooftop, looking south towards the Project.			
Visual receivers	The viewpoint is representative of view experienced by motorists and visitors to the shopping centre.			
Existing setting	A ground level carpark is located to the foreground of the Project Area, surrounding a HV tower. Trees to the far right partially screen the Ausgrid STSS. However, electrical infrastructure is prominent in foreground views including, the STSS, several HV towers and overhead lines and carpark light poles. The Project Area is surrounded by security fencing and comprises degraded hardstand with grass/weedy species and planted trees. Partial views of background elements include an existing shed within the Project Area (far left) and commercial buildings to the far side of the WestConnex Fulton Hogan Egis Motorway MCC Office & Warehouse.			
Viewing context	Dynamic – temporary view when shoppers are parking		**Viewing angle**	Perpendicular – Project visible to front of viewpoint
Land use zone	E3 Productivity Support: Commercial – shopping centre carpark		**Viewing distance**	Foreground (approx. 70 m from closest Project component)

	SENSITIVITY	**MAGNITUDE OF CHANGE**	**VISUAL IMPACT**
Construction	Low Shopping centre motorists in carpark	Construction of the Project would occupy foreground views and would be clearly visible from the carpark. Works including tree removal, earthworks for underground cabling, construction of hardstand areas and installation of BESS elements would be of low contrast to adjacent land uses The magnitude of change is Moderate.	**Low**
Year 1 of operation		The Project elements, including battery packs separated by 5.8 m high noise walls and a maintenance shed, will be visible in the foreground. Views of the surrounding built environment will be visible due to the removal of trees. The Project infrastructure would be commensurate with the surrounding electrical infrastructure and industrial uses, resulting in a Moderate magnitude of change See Figure 0-4 for indicative visualisation of Project at year 1	**Low**

VIEWPOINT 03 	 **Figure 6-4 View looking northwest towards the proposed BESS site**			
Viewing location	From residential block at 9 Verley Drive, looking northwest.			
Visual receivers	Viewpoint is representative of view by residential receivers in two-storey apartments.			
Existing setting	In the foreground, security fencing surrounds a stormwater treatment pond associated with the motorway and WestConnex Fulton Hogan Egis Motorway MCC Office & Warehouse visible in the middleground. The fence is parallel to a drainage channel which is immediately adjacent to the boundary of the residential apartments. There are partial views of the Western Motorway, including road lighting and gantries to the far left of the viewpoint. Additionally, two transmission towers and various powerlines are visible. Trees and shrubs to the centre-right of the viewpoint are located to the foreground to middleground, screening views. A high-rise building is visible in the background, located approximately 900 m away. The view towards the building is the direction of the Project area.			
Viewing context	Static – residents potentially experience views for longer periods		**Viewing angle**	Perpendicular – Project is right-centre of viewpoint as viewed from apartment balcony
Land use zone	R4 High density residential		**Viewing distance**	Foreground (approx. 90 m to closest Project component)
	SENSITIVITY	**MAGNITUDE OF CHANGE**		**VISUAL IMPACT**
Construction	Moderate Residential apartments	There are potential views of tree removal during the construction phase, in the middleground of the view. Other works will not be visible due to intervening vegetation. The magnitude of change is Very Low		**Very Low**
Year 1 of operation		There is potential for partial views of Project elements including the 5.8 m high noise walls and the Control Room, which would be up to 7 m in height. Retained perimeter trees and vegetation in the foreground will partially screen views. The introduction of the BESS is of low contrast to existing electrical infrastructure and the existing building in the middleground, therefore not altering the overall balance of features. The magnitude of change is Very Low		**Very Low**

VIEWPOINT 04

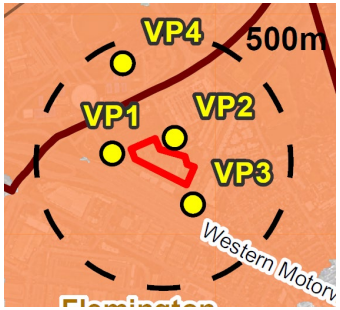


Figure 6-5 View looking south-east towards the Project

Viewing location	From Sydney Olympic Park Tennis Centre along Shirley Strickland Avenue, looking southeast. The viewpoint location is within the ZTV, indicating the Project is visible based on height of elements and topographic conditions.			
Visual receivers	The viewpoint is representative of views experienced by recreational visitors of Olympic Park.			
Existing setting	The foreground comprises fencing around the Tennis Centre tennis courts with perimeter hedging, lighting poles, scattered trees and lawn areas. The facility is a maintained landscape, providing a functional park setting. The arena is located to the right of the viewpoint. In the background, tall trees along Homebush Bay Drive screen background views.			
Viewing context	Static – park users within defined perimeter, playing or spectating		**Viewing angle**	Perpendicular – Project is potentially to the front of viewpoint
Land use zone	B4 Mixed Use: Sydney Olympic Park sports facilities		**Viewing distance**	Far foreground (approx. 330 m to closest Project component)
	SENSITIVITY	**MAGNITUDE OF CHANGE**		**VISUAL IMPACT**
Construction	Moderate Recreational visitors of Sydney Olympic Park Tennis Centre	Between this viewpoint and the Project is the STSS, Homebush Bay Drive and evergreen trees. Views toward the site are screened. The Project would not be visible. The magnitude of change is Negligible		Negligible
Year 1 of operation		There are no views of the Project from the viewpoint due to intervening vegetation. The magnitude of change is Negligible		Negligible

6.1.1 Summary of findings

The identified visual receivers for the Project include motorists using the DFO carpark, Western Motorway on-ramp motorists, cycle path users, workers in or visitors to adjacent businesses and some apartment residents south of the Project area. There are limited views from adjoining land uses towards the site, due to intervening topography, built form and vegetation.

The scale of BESS components, including ancillary structures, from 2.5 m to 7 m in height (refer Section 2), are smaller than the shopping centre carpark building, industrial warehouses and the Mason Park STSS.

Table 6-2 provides a summary of the visual impact assessment at construction and year 1 of operation. Decommissioning impacts will be commensurate with construction impacts.

Table 6-2 Summary of visual impacts

Viewpoint no.	Description	Sensitivity	Magnitude	Construction impacts	Year 1 Operation impacts
Viewpoint 01 (VP1)	Motorists and cyclists on/parallel to Western Motorway	Low	Very Low	Very Low	Very Low
Viewpoint 02 (VP2)	Local shoppers/motorists at the DFO carpark	Low	Moderate	Low	Low
Viewpoint 03 (VP3)	Residents within apartments at 9 Verley Drive	Moderate	Very Low	Very Low	Very Low
Viewpoint 04 (VP4)	Recreational users at Sydney Olympic Park Tennis Centre	Moderate	Negligible	Negligible	Negligible

7 Management of impacts

7.1 Recommendations

The following recommendations are included as a guide to assist the development of the detailed design of the Project and during construction. These are not intended as compulsory mitigation measures due to the absence of significant adverse impacts, however, would contribute to minimise adverse visual impacts.

In accordance with the SEARs, a Landscape Plan is recommended prior to construction including vegetation removal, planting areas and planting list. The below landscape recommendations are to be captured in the landscape plan.

Site design

- Provide a vegetation buffer between the Project and the ground level of the DFO carpark to soften appearance of electrical infrastructure. This would require realignment of the perimeter access road to allow minimum 1.0 m garden bed along the perimeter fence.
- Limit use of impervious surfaces to minimise run-off and maximise permeability for health of surrounding soil and vegetation.

Construction impact guiding principles

- Limit the area of disturbance during construction where possible.
- All areas disturbed by construction not required for operation of the Project are to be rehabilitated to soften appearance of the Project and provide permeable surface.
- Any stockpiles should be placed in areas not visible to public viewpoints where possible. If this is unavoidable planted embankments for additional visual screening of the Project should be considered subject to operational requirements and fire hazard management.
- Storage areas and associated construction support equipment are to be located in cleared or otherwise disturbed areas away from public interfaces, where possible.

Operational phase guiding principles

- Site lighting is to be designed to minimise glare issues and light spillage into adjacent areas and should be generally consistent with the requirements of Australian Standard 4282-1997 *Control of the obtrusive effects of outdoor lighting*.
- Where bespoke equipment or buildings are selected (e.g. control room) materials, colour and finishes should mitigate the appearance of bulky structures and minimise glare through use of matt or low-sheen finishes. It is noted that all other equipment will be as per the manufacturer's default colour specifications.
- Reduce the 'industrial' aesthetic through the colour and/or finish of noise walls including:
  - colour in mid-green to recede the appearance of structures by blending it with vegetation; and/or
  - apply artistic murals with positive messaging where noise walls are public facing.

8 Conclusion

The Project would be constructed within a highly modified urban environment, adjacent to the existing Mason Park STSS, HV towers, a shopping centre carpark and a motorway interchange.

The Project introduces battery packs, noise walls and ancillary shed-type structures that are of a smaller scale than the surrounding built from. Views of the Project will be experienced temporarily by those in close proximity to the Project, as they drive/cycle past, as well as by people with partial views from nearby apartments.

Four viewpoints were assessed that were representative of the visual receivers. Assessment of the visual impact of these viewpoints indicates low to negligible visual impacts during construction and at year 1 of operation, including:

- **Low visual impacts**: Local shoppers from the adjacent DFO carpark
- **Very Low visual impacts**: Western Highway motorists and cyclists (VP1) and residents within apartments at 9 Verley Drive (VP3)
- **Negligible visual impacts**: Recreational users of Sydney Park Tennis Centre (VP4)

The removal of trees within the site will be the most noticeable visual change, experienced within the foreground of views from the DFO carpark and motorway on-ramp. The Project elements would introduce a low to very low visual modification to the existing setting from this viewpoint.

The assessment concludes that there are no sensitive public or private viewpoints that are likely to be subject to moderate or higher visual impacts.

The recommended design and mitigation measures provide an opportunity to minimise adverse visual impacts. Screen planting or suitable finishes of external facing walls have the potential to provide some beneficial impacts for visual receivers.

9 References

AECOM for Ausgrid, Scoping Report: Homebush Battery Energy Storage System, 4/11/2024

AHIMS Web Service search, https://www.environment.nsw.gov.au/awssapp/Login.aspx?ReturnUrl=%2fawssapp, viewed on 6th July 2023

Ausgrid, Managing Sydney East substation's asset risks, 2019 - **https://www.Ausgrid.com.au/media/n4ufmdi3/Ausgrid-pacr-managing-sydney-east-substation-s-asset-risks.pdf**

Australian Institute of Landscape Architects (AILA), Guidance Note for Landscape and Visual Assessment, June 2018

Landscape Institute and Institute of Environmental Management & Assessment (IEMA, UK), The Guidance for Landscape and Visual Impact Assessment (GLVIA), Third Edition 2013

NSW Department of Planning and Environment, Cumulative Impact Assessment Guidelines for State Significant Projects, October 2022

NSW Department of Planning and Environment, State significant development guidelines – preparing an environmental impact statement; Appendix B to the state significant development guidelines, July 2022

NSW Department of Planning and Environment, Technical Supplement – Landscape and Visual Impact Assessment – Large-Scale Solar Energy Guideline, August 2022

NSW National Parks and Wildlife Service, The bioregions of New South Wales: their biodiversity, conservation and history, NSW National Parks and Wildlife Service, viewed 5 October 2021, <http://www.environment.nsw.gov.au/resources/nature/BioregionsContentsIntro.pdf.>.

Strathfield Planning Scheme Ordinance, NSW OpenGov

Strathfield Council Development Control Plan, 2005

Transport for New South Wales, Guideline for Landscape Character and Visual Assessment - Environmental Impact Assessment Practice Note EIA-NO4 (p. 9), 2020

Transgid n.d. Easement Guidelines Living and working with electricity transmission lines - **https://www.Ausgrid.com.au/media/3tkdd5lr/easement-guidelines.pdf**

United States Department of Agriculture& Forest Service, Landscape Aesthetics – A Handbook for Scenery Management, 1995

Appendix A: Visualisations

The following photomontages are indicative of selected viewpoints based on the Preliminary Design layout. Refer to Section 3.6 Photomontages for a description of the methodology.

Figure 0-1 Viewpoint 1: Existing view

Figure 0-2 Viewpoint 1: Indicative view of Project at year 1

Figure 0-3 Viewpoint 2: Existing view

Figure 0-4 Viewpoint 2: Indicative view of Project at year 1

Appendix B: Visual Prominence Rationale

The visual prominence of a development can be determined by understanding the extent to which an object is part of a viewer's static field of view.

The measurement of the field of view is based upon the parameters of human vision outlined below. These provide a basis for assessing and interpreting the visual prominence of a development by comparing the extent to which the development will intrude into the central field of vision (both horizontally and vertically).

These horizontal and vertical fields of view are also interlinked to the viewing distance from the development. The methodology is based on the reduction of the visibility of a development in the distance as the field of view reduces (i.e. the increase in distance between a given viewpoint and the development).

Horizontal line of sight

It is generally accepted that the central field of vision for the human eye covers a horizontal angle of approximately 50 degrees to 60 degrees. Within this angle, both eyes observe an object simultaneously creating a degree of overlap, which is the central field of view (refer to Figure A.1). Within the central field of vision, the viewed image is sharp, colours are separately defined and depth perception occurs.

The visual prominence of a development will vary according to the proportion a development occupies the central field of vision.

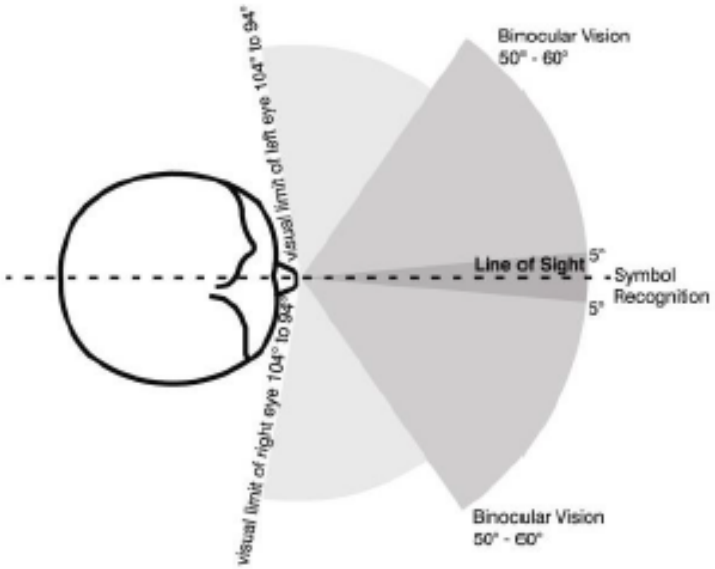


Figure A.1 Horizontal line of sight

Table A.1 outlines the potential visual prominence of a development, dependant upon on how much of the horizontal central field of vision that it occupies.

Degrees of Field of View occupied	Potential visual prominence – horizontal field of view
Less than 5°	**Insignificant - Low visual prominence** The development would 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 would be dependent on how well it integrates with the landscape setting.
Greater than 30°	**Potentially Dominant - High visual prominence** The development would be highly noticeable.

Table A.1 Potential visual prominence based on degrees of horizontal field of view occupied

Vertical line of sight

As for the horizontal line of sight, there is also a vertical central field of view. If we assume that the horizon is 0° then the eye clearly defines colour, field of view and has image sharpness for an angle of approximately 25° upwards and 30° downwards. However, in reality, the typical line of sight for a standing person at ground level is approximately 10° below the horizon line (Refer to Figure A.2).

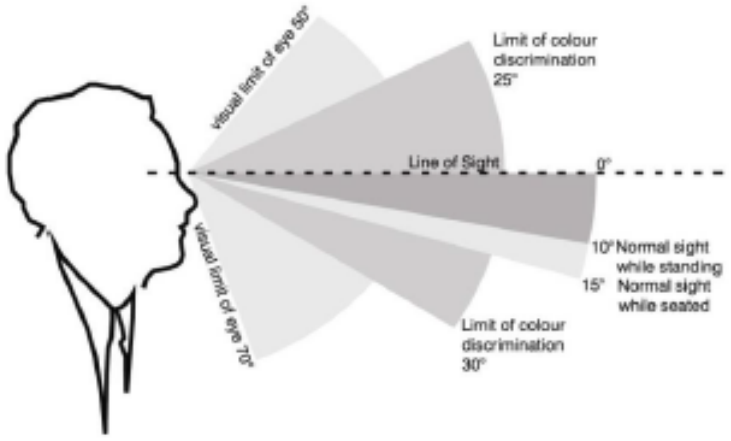


Figure A.2 Vertical line of sight

Objects that occupy a small proportion of the vertical field of view (less than 5°) are visible but not dominant, particularly when they occur within landscapes that have been modified by human activity.

Table A.2 demonstrates the potential visual prominence of a development, dependant upon on how much of the vertical central field of vision that it occupies.

Degrees of Field of View occupied	Potential visual prominence – vertical field of view
Less than 0.5°	**Insignificant - Low visual prominence** A small thin line in the landscape and is no longer an easily recognisable element.
0.5° – 2.5°	**Potentially Noticeable - Moderate visual prominence** The development may be noticeable. The degree that it intrudes on the view would increase as distance reduces and be dependent on how well it integrates with the landscape setting.
Greater than 2.5°	**Potentially Dominant - High visual prominence** The development would be highly noticeable, although the degree of visual intrusion would depend on the landscape setting and the width / thickness of the object.

Table A.2 Potential visual prominence based on degrees of vertical field of view occupied

Visual prominence in relation to distance and field of view

These horizontal and vertical fields of view are also interlinked to the viewing distance from the development. The viewing distances, foreground, middleground and background, (refer to Table A.3) have been established based on previous field studies undertaken by Aurecon. The distances also relate to the distances for the land use types in the viewer sensitivity assessment methodology.

Distance from a viewer	Potential visual prominence
> 2.0km (background)	**Insignificant** The visibility of the development would progressively diminish over greater distances of 2km with no visibility beyond 5km due to atmospheric conditions.
Between 0.5km & 2.0km (middleground)	**Potentially Noticeable** The development would be noticeable, reducing with distance. The degree that it intrudes on the view would be dependent on topography and the vegetation within the landscape setting and how well it integrates with the surrounding land-uses.
< 0.5km (foreground)	**Potentially Dominant** The development would be highly noticeable, although the degree of visual intrusion would depend on the landscape setting (where not screened by vegetation or buildings) and the width / thickness of the object.

Table A.3 Potential visual prominence based on distance from a viewer

Figure A.3 illustratively demonstrates how the viewshed of a horizontal object is determined by its height and not so much by its width based on the viewing distance from a development. As a viewer moves further away from a horizontal object the width may still be apparent, however the vertical dimension reduces to insignificance.

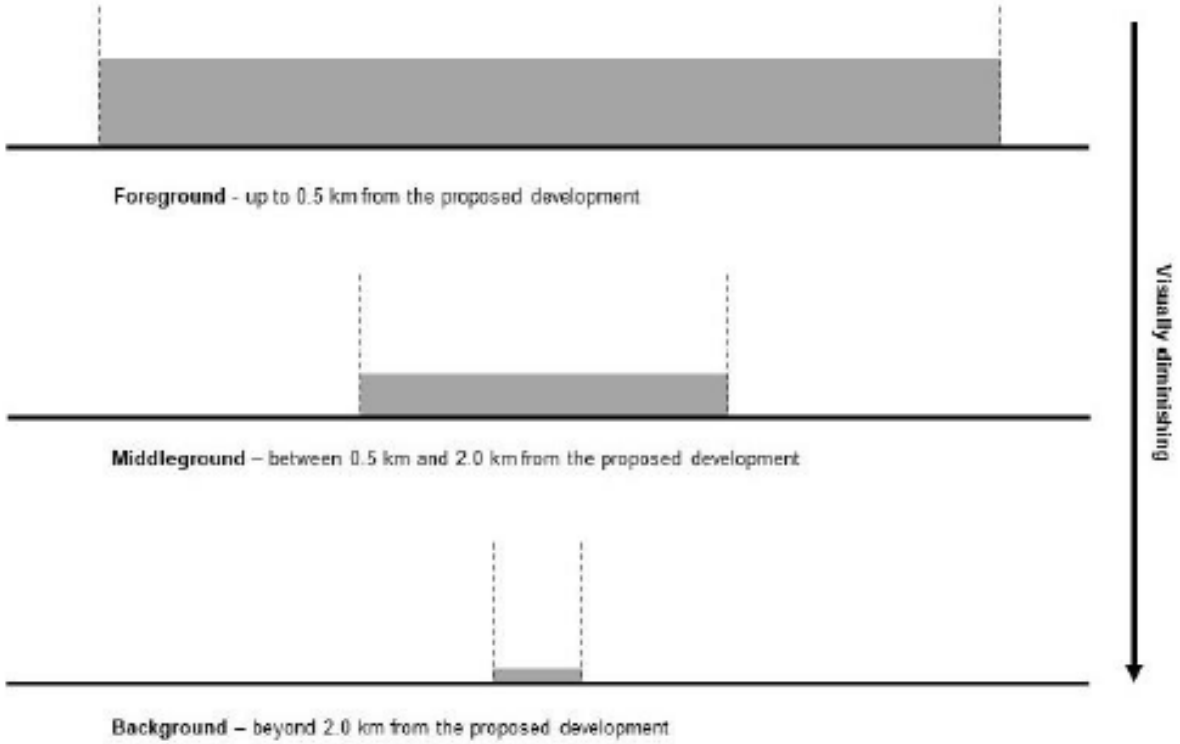


Figure A.3 The reduction in visibility of the horizontal line of sight based on increase in distance from a viewpoint

The same approach can be applied to the vertical field of view. As a viewer moves further away from a vertical object the height may still be apparent, however the vertical dimension reduces to insignificance (refer to Figure A.4).

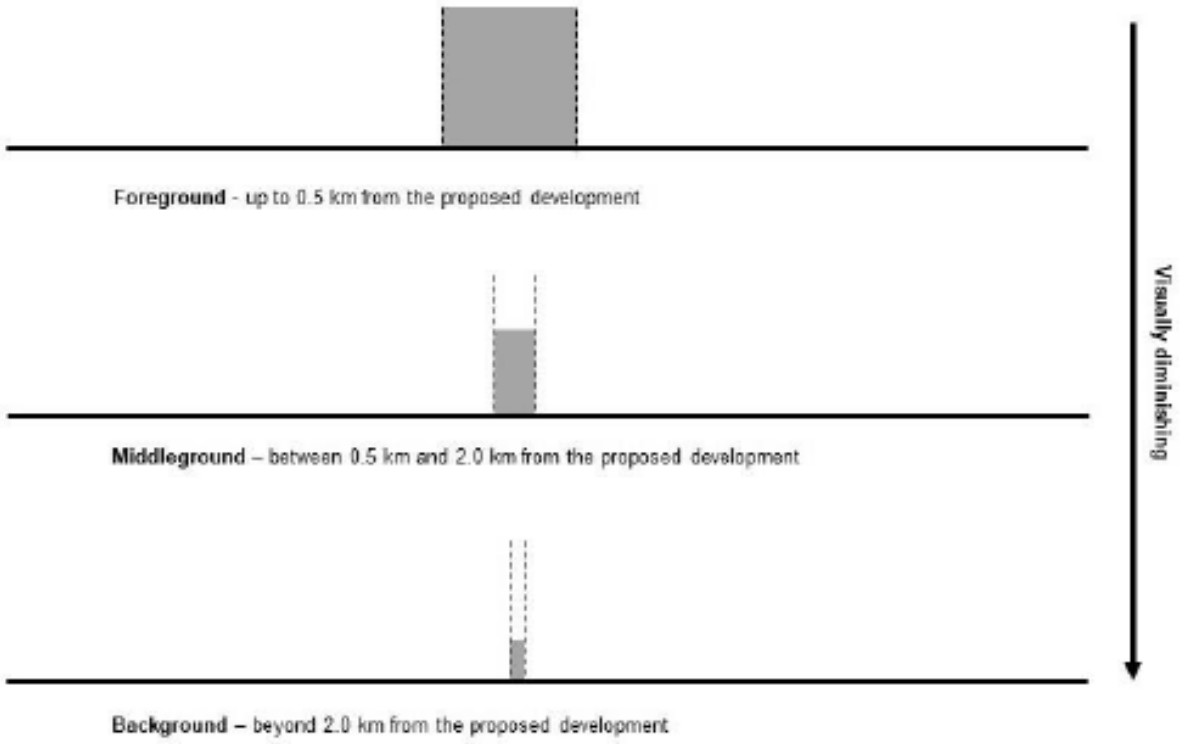


Figure A.4 The reduction in visibility of the vertical line of sight based on increase in distance from a viewpoint

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