

# Moorebank Precinct East - Stage 2 Proposal

## Visual Impact Assessment



**SIMTA**

SYDNEY INTERMODAL TERMINAL ALLIANCE

Part 4, Division 4.1, State Significant  
Development

**THIS REPORT HAS BEEN COMPILED BY THE FOLLOWING**

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# key terms

The following table provides a summary of the key terms which are included within this report.

Term	Definition
The Moorebank Precinct	Refers to the whole Moorebank intermodal precinct, i.e. the MPE site and the MPW site
Moorebank Precinct West (MPW) Project (formerly the MIC site)	The MPW Intermodal Terminal Facility as approved under the MPW Concept Plan Approval (SSD_5066) and the MPW EPBC Approval (No. 2011/6086).
Moorebank Precinct West (MPW) site (formerly the MIC site)	The site which is the subject of the MPW Concept Plan Approval, MPW EPBC Approval and MPW Planning Proposal. The MPW site does not include the rail link as referenced in the MPW Concept Plan Approval or MPE Concept Plan Approval.
Moorebank Precinct East (MPE) Concept Plan Approval (formerly the SIMTA Concept Plan Approval)	MPE Concept Plan Approval (SSD_0193) granted by the NSW Department of Planning and Environment on 29 September 2014 for the development of former defence land at Moorebank to be developed in three stages; a rail link connecting the site to the Southern Sydney Freight Line, an intermodal terminal, warehousing and distribution facilities and a freight village.
Moorebank Precinct East (MPE) Project (formerly the SIMTA Project)	The MPE Intermodal Terminal Facility, including a rail link and warehouse and distribution facilities at Moorebank (eastern side of Moorebank Avenue) as approved by the Concept Plan Approval (MP 10_0913) and the MPE Stage 1 Approval (14_6766).
Moorebank Precinct East (MPE) Site (formerly the SIMTA Site)	Including the former DSND site and the land owned by SIMTA which is subject to the Concept Plan Approval. The MPE site does not include the rail corridor, which relates to the land on which the rail link is to be constructed.
Statement of Commitments (SoC)	Recommendations provided in the specialist consultant reports prepared as part of the MPE Concept Plan application to mitigate environmental impacts, monitor environmental performance and/or achieve a positive environmentally sustainable outcome in respect of the MPE Project. The Statement of Commitments have been proposed by SIMTA as the Proponent of the MPE Concept Plan Approval.
<b>MPE Stage 1 Project-specific terms</b>	
Rail Corridor	Area defined as the 'Rail Corridor' within the MPE Concept Plan Approval.
Rail Link	The rail link from the South Sydney Freight Line to the MPE IMEX Terminal, including the area on either side to be impacted by the construction works included in MPE Stage 1.
MPE Stage 1	Stage 1 (14-6766) of the MPE Concept Plan Approval for the development of the MPE Intermodal Terminal Facility, including the rail link at Moorebank. This reference also includes associated conditions of approval and environmental management measures which form part of the documentation for the approval.
MPE Stage 1 site	Includes the MPE Stage 1 site and the Rail Corridor, i.e. the area for which approval (construction and operation) was sought within the MPE Stage 1 Proposal EIS.

Term	Definitions
<b>MPE Stage 2 specific terms</b>	
MPE Stage 2 Proposal/ the Proposal	The subject of this EIS; being Stage 2 of the MPE Concept Plan Approval including the construction and operation of 300,000m <sup>2</sup> of warehousing and distribution facilities on the MPE site and the Moorebank Avenue upgrade within the Moorebank Precinct.
MPE Stage 2 site	The area within the MPE site which would be disturbed by the MPE Stage 2 Proposal (including the operational area and construction area). The MPE Stage 2 site includes the former DSND site and the land owned by SIMTA which is subject to the MPE Concept Plan Approval. The MPE site does not include the rail corridor, which relates to the land on which the rail link is to be constructed.
The Moorebank Avenue site	The extent of construction works to facilitate the construction of the Moorebank Avenue upgrade.
The Moorebank Avenue upgrade	Raising of the vertical alignment of Moorebank Avenue for 1.5 kilometres of its length by about two metres, from the northern boundary of the MPE site to approximately 120 metres south of the MPE site. The Moorebank Avenue upgrade also includes upgrades to intersections, ancillary works and the construction of an on-site detention basin to the west of Moorebank Avenue within the MPW site.
Construction area	Extent of construction works, namely areas to be disturbed during the construction of the MPE Stage 2 Proposal (the Proposal).
Operational area	Extent of operational activities for the operation of the MPE Stage 2 Proposal (the Proposal).

Table 1 - Key Terms

# executive summary

Reid Campbell in conjunction with Arcadis were appointed by SIMTA (Sydney Intermodal Terminal Alliance) to undertake a Visual Impact Assessment, including a Light Spill Study of MPE Stage 2 Proposal (hereinafter referred to as the Proposal) which forms the second stage of the MPE Concept Plan Approval (MP10\_0193) granted by the Planning Assessment Commission (PAC) on 29 September 2014 under Part 3A of the EP&A Act.

This report has been compiled in accordance with the Secretary's Environmental Assessment Requirements (SEARS) issued under Section 78A(8A) of the Environmental Planning and Assessment Act 1979 dated 27 May 2016 (SSD 16-7628), specifically responding to Item Item 10, Visual Amenity, Urban Design and Landscaping under Key Issues of the Proposal.

This report seeks to identify and evaluate the visual impacts of the Proposal including an analysis of views from key vantage points and proposes management/mitigation measures to address the visual impact of the Proposal.

It should also be read in conjunction with the *MPE Stage 2 Landscape Documentation* by *Ground Ink Landscape Consultants*, which provides a design analysis and justification of the key built form elements of the Proposal.

This Visual Impact Assessment and Light Spill modelling are based on the MPE Stage 2 site (hereinafter referred to as the Proposal site) as shown in Figure 1, which describes the maximum development envelope of built-form typologies within each land use zone on the site.

Adopting the siting, setback, height, landscaping and general design principles outlined in the MPE Concept Plan, for all built form, structure, urban and operating elements, a 3D massing model was generated to inform the likely maximum and realistic visual impact at key points identified through a digital desktop viewshed analysis.

The Light Spill Study undertaken by Arcadis examines the potential lighting requirements for the operation of the Proposal site and investigates through the modelling of a concept lighting design, its compliance with the Australian Standard AS4282 - 1997 Control of Obtrusive Effects of Outdoor Lighting.

The light spill modelling shows that the luminous intensity from lighting within the Proposal site can be designed to be below the prescribed maximum value of 4 lux (for curfew hours: 11.00pm to 6.00am) at the windows of the nearest residential properties.

As such, the resultant findings of the Visual Impact Assessment and Light Spill Study are:

- the Proposal is consistent with the MPE Concept Plan Approval (MP10\_0193);
- the Proposal is consistent with general industry practice and existing development in close proximity to the site and as such the visual amenity at these locations is generally unchanged;
- modelling suggests that there is a limited visual impact to residential areas due to distance, existing visual barriers and undulating topography;
- in most instances it was found that there was either no visual impact or no change to the general overall visual amenity at simulated view locations in residential areas;
- the most prominent views of the Proposal would be at localised site boundary points, in particular on Moorebank Avenue which is characterized by surrounding industrial development. The visual amenity at these locations is likely to be improved through mitigation measures such as significant and intensive landscaping, screening and architectural elements in order to shield the site operations;
- the impact of light spill to residential properties would be within the acceptable criteria as specified in Australian Standard AS4282 -1997 Control of Obtrusive Effects of Outdoor Lighting;

Table 2 summarises the findings of the visual impacts of the various viewpoints that are assessed in this report.

View Location Name	Area	Type	Visual Impact
View 01	Casula	Residential	Negligible
View 02	Casula	Public space	Negligible
View 03	Casula	Public space	Negligible
View 04	Casula	Public space	Low/Moderate
View 05	Casula	Public space	Low/Moderate
View 06	Casula	Residential	Negligible
View 07	Casula	Road/Industrial	Negligible
View 08	Moorebank	Road/Industrial	Low/Moderate
View 09	Moorebank	Industrial	Low
View 10	Wattle Grove	Residential/Industrial	Low/Moderate
View 11	Wattle Grove	Residential	Low/Moderate
View 12	Wattle Grove	Residential	Low/Moderate
View 13	Wattle Grove	Residential	Low/Moderate
View 14	Wattle Grove	Residential	Negligible
View 15	Wattle Grove	Residential	Negligible
View 16	Wattle Grove	Residential	Negligible
View 17	Holsworthy	Road	Negligible
View 18	Moorebank	Road	Low/Moderate
View 19	Moorebank	Road	Low/Moderate
View 20	Moorebank	Road	Low/Moderate
View 21	Moorebank	Road	Low/Moderate
View 22	Moorebank	Road	Low/Moderate
View 23	Moorebank	Road	Low/Moderate

Table 2 - Viewpoint impact summary

# 01 introduction

## 1.1 background

Concept Plan Approval (MP 10\_0193) for an intermodal terminal (IMT) facility at Moorebank, NSW (the Moorebank Precinct East Project (MPE Project) (formerly the SIMTA Project)) was received on 29 September 2014 from the NSW Department of Planning and Environment (DP&E). The Concept Plan for the MPE Project involves the development of an IMT, including a rail link to the Southern Sydney Freight Line (SSFL) within the Rail Corridor, warehouse and distribution facilities with ancillary offices, a freight village (ancillary site and operational services), stormwater, landscaping, servicing, associated works on the eastern side of Moorebank Avenue, Moorebank, and construction or operation of any part of the project, which is subject to separate approval(s) under the Environmental Planning and Assessment Act 1979 (EP&A Act).

This Environmental Impact Statement (EIS) is seeking approval, under Part 4, Division 4.1 of the EP&A Act, for the construction and operation of Stage 2 of the MPE Project (herein referred to as the Proposal) under the Concept Plan Approval for the MPE Project, being the construction and operation of warehouse and distribution facilities.

This EIS has been prepared to address:

- The Secretary's Environmental Assessment Requirements (SEARs) (SSD 16-7628) for the Proposal, issued by NSW DP&E on 27 May 2016 (Appendix A).
- The relevant requirements of the Concept Plan Approval MP 10\_0913 dated 29 September 2014 (as modified) (Appendix A).
- The relevant requirements of the approval under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (No. 2011/6229, granted in March 2014 by the Commonwealth Department of the Environment (DoE)) (as relevant) (Appendix A).

This EIS also gives consideration to the MPE Stage 1 Project (SSD 14-6766) including the mitigation measures and conditions of consent as relevant to this Proposal.

This EIS has been prepared to provide a complete assessment of the potential environmental impacts associated with the construction and operation of the Proposal. This EIS proposes measures to mitigate these issues and reduce any unreasonable impacts on the environment and surrounding community.



**LEGEND:**

- - - MPE SITE BOUNDARY
- - - MPW SITE BOUNDARY
- MPE STAGE 2 OPERATIONAL BOUNDARY
- CONSTRUCTION AREA
- MPE STAGE 1 APPROVAL RAIL LINK
- EXISTING RAIL LINE

Figure 1 - MPE Stage 2 Precinct Plan

## 1.2 report purpose

This report supports the Environmental Impact Statement (EIS) for the Proposal (refer to Section 1.2 below for an overview of the Proposal) and has been prepared as part of a State Significant Development (SSD) Application for which approval is sought under Part 4, Division 4.1 of the EP&A Act.

This report has been prepared to address:

- The Secretary's Environmental Assessment Requirements (SEARs) (SSD 16-7628) for the Proposal, issued by NSW DP&E on 27 May 2016.
- The relevant requirements of Concept Plan Approval MP 10\_0913 dated 29 September 2014 (as modified).
- The relevant requirements of the approval under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (No. 2011/6229, granted in March 2014 by the Commonwealth Department of the Environment (DoE)) (as relevant).

The SEARs and the Concept Plan Conditions of Approval and Statement of Commitments relevant to this study, and the section of this report where they have been addressed are provided in Table 3.

## 1.3 SEARS

This report has been prepared in accordance with the secretary's environmental assessment requirements (SEARS) (ref: SSD 16-7628)

Section/Number	SEARS	Where addressed
10. Visual Amenity, Urban Design and Landscaping – including but not limited to: An assessment of visual impacts.	The assessment shall:	Section 07
	a) include a description of the visual significance of the affected landscape including an analysis of views from key vantage points;	
	b) include artist's impressions of the development from key vantage points;	Section 07
	c) assess the visual impact of the project on the landscape character of the area, including built form (materials and finishes) and the urban design (height, bulk and scale) of the proposal including views to and from the site;	Section 07
	d) consider lighting impacts in the local area, analyse and describe the contribution and impacts of the proposed facility on light spill at the local scale and to sensitive receivers;	Section 08
	e) include details of hard and soft landscaping treatment and design (including details of suitable landscaping incorporating endemic species );	Section 07
	f) ensure the layout and design of the development has regard to the surrounding vehicular, pedestrian and cycling networks; and	Section 06 & 07
g) propose management/mitigation measures to address the visual impact of the proposal.	Section 06	

Table 3 - SEARS (SSD 16-7628) compliance table

## 1.4 Proposal overview

The Proposal involves the construction and operation of Stage 2 of the MPE Project, comprising warehousing and distribution facilities on the MPE site and upgrades to approximately 1.4 kilometres of Moorebank Avenue between the northern MPE site boundary and 120 metres south of the southern MPE site boundary.

Key components of the Proposal include:

- Warehousing comprising approximately 300,000m<sup>2</sup> GFA, additional ancillary offices and the ancillary freight village
- Establishment of an internal road network, and connection of the Proposal to the surrounding public road network
- Ancillary supporting infrastructure within the Proposal site, including:
  - Stormwater, drainage and flooding infrastructure
  - Utilities relocation and installation
  - Vegetation clearing, remediation, earthworks, signage and landscaping
- Subdivision of the MPE Stage 2 site
- The Moorebank Avenue upgrade would be comprised of the following key components:
  - Modifications to the existing lane configuration, including some widening
  - Earthworks, including construction of embankments and tie-ins to existing Moorebank Avenue road level at the Proposal's southern and northern extents
  - Raking of the existing pavement and installation of new road pavement
  - Establishment of temporary drainage infrastructure, including temporary basins and / or swales
  - Raising the vertical alignment by about two metres from the existing levels, including kerbs, gutters and a sealed shoulder
  - Signalling and intersection works
- Upgrading existing intersections along Moorebank Avenue, including:
  - Moorebank Avenue / MPE Stage 2 access
  - Moorebank Avenue / MPE Stage 1 northern access
  - Moorebank Avenue / MPE Stage 2 central access
  - MPW Northern Access / MPE Stage 2 southern emergency access

The Proposal would interact with the MPE Stage 1 Project (SSD\_6766) via the transfer of containers between the MPE Stage 1 IMT and the Proposal's warehousing and distribution facilities. This transfer of freight would be via a fleet of heavy vehicles capable of being loaded with containers and owned by SIMTA. The fleet of vehicles would be stored and used on the MPE Stage 2 site, but registered and suitable for on-road use. The Proposal is expected to operate 24 hours a day, seven days per week.

An overview of the Proposal is shown in Figure 2. To facilitate operation of the Proposal, the following construction activities would be carried out across and surrounding the Proposal site (area on which the Proposal is to be developed):

- Vegetation clearance
- Remediation works
- Demolition of existing buildings and infrastructure on the Proposal site
- Earthworks and levelling of the Proposal site, including within the terminal hardstand
- Drainage and utilities installation
- Establishment of hardstand across the Proposal site, including the terminal hardstand
- Construction of a temporary diversion road to allow for traffic management along the Moorebank Avenue site during construction (including temporary signalised intersections adjacent to the existing intersections) (the Moorebank Avenue Diversion Road)
- Construction of warehouses and distribution facilities, ancillary offices and the ancillary freight village
- Construction works associated with signage, landscaping, stormwater and drainage works.

The Proposal would operate 24 hours a day, 7 days a week.

The footprint and operational layout of the Proposal are shown on Figure 2.

## 1.5 site description

### Regional context

The MPE site, including the Proposal site, is located approximately 27 km south-west of the Sydney Central Business District (CBD) and approximately 26 km west of Port Botany. The MPE site is situated within the Liverpool Local Government Area (LGA), in Sydney's South West subregion, approximately 2.5 km from the Liverpool City Centre.

The MPE site is located approximately 800 m south of the intersection of Moorebank Avenue and the M5 Motorway. The M5 Motorway provides the main road link between the MPE site, and the key employment and industrial areas within Sydney's West and South-Western subregions, the Sydney orbital network and the National Road Network. The M5 connects with the M7 Motorway to the west, providing access to the Greater Metropolitan Region and NSW road network. Similarly the M5 Motorway is the principal connection to Sydney's north and north-east via the Hume Highway. The regional context of the Proposal is shown on Figure 3.

## Local context

The Proposal site is located approximately 2.5 km south of the Liverpool City Centre, 800 m south of the Moorebank Avenue/M5 Motorway interchange and one kilometre to the east of the SSFL providing convenient access to and from the site for rail freight (via a dedicated freight rail line) and for trucks via the Sydney Motorway Network.

The land surrounding the Proposal site comprises:

- The MPW site, formerly the School of Military Engineering (SME), on the western side of Moorebank Avenue directly adjacent to the MPE site (subject to the MPW Concept Plan Approval), which is owned by the Commonwealth;
- The East Hills Rail Corridor to the south of the MPE site, which is owned and operated by Sydney Trains;
- The Holsworthy Military Reserve, to the south of the East Hills Rail Corridor, which is owned by the Commonwealth; The Boot Land, to the immediate east of the MPE site between the eastern site boundary and the Wattle Grove residential area, which is owned by the Commonwealth.
- The southern Boot Land, to the immediate south of the MPE site between the southern site boundary and the East Hills Rail Corridor, which is owned by the Commonwealth.

Glenfield Waste Services, south-west of the Proposal is proposing to develop a Materials Recycling Facility on land owned by the Glenfield Waste Services Group within the boundary of the current landfill site at Glenfield. The facility is proposed to recycle a maximum of 450,000 tonnes of material per year. The Glenfield Waste Services Proposal is the subject of a DA (SSD\_6249) under Part 4, Division 4.1 of the EP&A Act.

A number of residential suburbs are located in proximity to the Proposal site. The approximate distances of these suburbs to the MPE Stage 2 site and the Moorebank Avenue site are provided in Table 4 below.

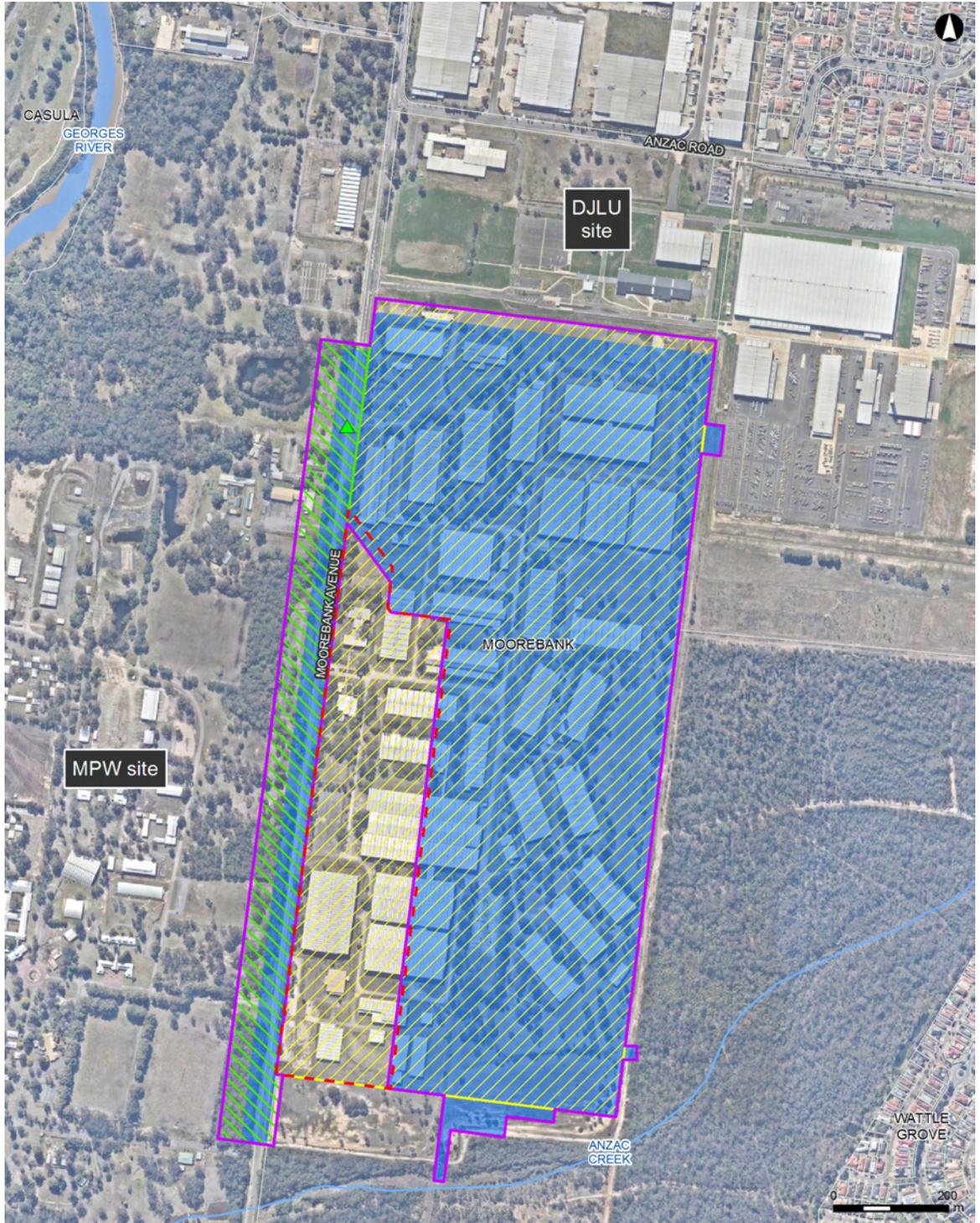
Suburb	Distance to MPE Stage 2 site	Distance to Moorebank Avenue site
Wattle Grove	360 m to the north-east	865 m to the north-east
Moorebank	1300 m to the north	1430 m to the north
Casula	820 m to the west	760 m to the west
Glenfield	1830 m to the south-west	1540 m to the south-west

Table 4 - Distance to residential suburbs from the Proposal site

The closest industrial precinct to the Proposal is at Moorebank, comprising around 200 hectares of industrial development. This area includes (but is not limited to) the Yulong and ABB sites to the south of the M5 Motorway and the Goodman MFive Business Park and Miscellaneous industrial and commercial development to the north of the M5 Motorway. The majority of this development is located to the north of the M5 Motorway between Newbridge Road, the Georges River and Anzac Creek. The Moorebank Industrial Area supports a range of industrial and commercial uses, including freight and logistics, heavy and light manufacturing, offices and business park developments.

There are other areas of industrial development near the Proposal at Warwick Farm to the north, Chipping Norton to the north-east, Prestons to the west and Glenfield and Ingleburn to the south-west.

The local context of the Proposal is shown on Figure 4.



**LEGEND**

- MPE site
- MPE Stage 1 operational area
- MPE Stage 2 operational area
- MPE Stage 2 construction area
- Moorebank Avenue Upgrade
- Site access
- Lot boundary
- Watercourse

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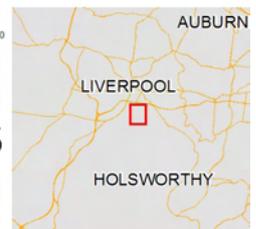


Figure 2 - Overview of the Proposal

## 02 assessment methods

### 2.1 visual impact assessment

The following section describes the approach for the assessment of the visual impact of the Proposal. The assessment adopts a methodology for the selection of Viewpoints similar to that utilised in both the MPE Concept Plan Approval (MP10\_0193) and the Stage 1 State Significant Development (SSD) Application (SSD 6766) to ensure consistency.

Selected Viewpoints include:

View Number	View Location
1	West of site, Corner of Casula Rd. and Canberra Avenue, Casula
2	West of site, Rushton Place, Casula
3	West of site, adjacent to Casula Powerhouse
4	West of site, Carroll Park, Casula
5	West of site, Carroll Park, Casula
6	West of site, Buckland Road, Casula
7	North-west of site, adjacent to St. Andrews Boulevard, Casula
8	North of site, Corner of Yulong Close and Anzac Road
9	North of site, Corner of Greenhills Road and Anzac Road
10	North-East of site, Anzac Road
11	North-East of site, Castlerock Court, Wattle Grove
12	East of site, Martindale Court, Wattle Grove
13	East of site, Martindale Court, Wattle Grove
14	East of site, Gracemere Court, Wattle Grove
15	East of site, adjacent to Corryton Court, Wattle Grove
16	South-East of site, Somercots Court, Wattle Grove
17	South of site, Moorebank Avenue
18	South of site, Moorebank Avenue
19	South of site, Moorebank Avenue
20	West of site, Moorebank Avenue
21	North-West of site, Moorebank Avenue
22	North of site, Corner of Moorebank Avenue and Anzac Road
23	Corner of Moorebank Av. and Road marked as DS NNSW LMA

Table 5 - Selected Viewpoints

### site inspection

Through site inspection and desktop review, Reid Campbell has visually evaluated the existing character of the area and specifically confirmed the relevance of locations that would potentially be subject to visual impacts from the Proposal. Photographs were taken by Reid Campbell from key viewpoints using a GPS Camera for later use in visual simulations of the development.

## **visualisation of the development**

Based on the built form and urban design principles outlined in the MPE Concept Plan (MP10\_0193) (in particular maximum height and scale) , Reid Campbell created a digital 3D model using Autodesk REVIT which included the components of the development that would potentially be visible beyond the site. Computer generated views of the model matching the camera positions of photographs taken from the key viewpoints were created and combined with the photographs to create simulated massing montages of the Proposal from each of these key locations.

## **assessment of visual impact**

The visual impact from the key viewpoints was then assessed qualitatively on the basis of the criteria described in Section 3. Views at a variety of distances from the site were considered, however it is noted that the MPE site is primarily surrounded by vast amounts of vegetation to the east and the MPW site to the west (see Figure 2 & 6) providing an extensive buffer to local residential areas and other existing developments. Furthermore, view locations were selected based on those with the level of visual sensitivity and greatest potential to view the development. Viewpoints R01-R09 were not included in this assessment as they relate to the development of the Rail link which does not form part of this development. Views of the Proposal would not be perceived from these locations.

## **cumulative assessment**

Photographs and previously prepared visual analysis/modelling was utilized to determine the impacts of the Proposal in consideration of key surrounding developments including MPE Stage 1 Proposal (SSD 6766) and MPW Stage 2 Proposal (16-7709). Surrounding developments have been shown on visualizations with greater transparency to confirm their location and shielding potential however to also adequately identify the key built-form features for the Proposal.

## **2.2 light spill assessment**

A lighting concept for the Proposal was prepared by Arcadis, based on the operational requirements of SIMTA to be compliant with Australian Standard AS4282- 1997, 'Control of Obtrusive Effects of Outdoor Lighting' for the floodlighting system. The light spill was then modelled using agi32: version 2.02 and Visual lighting design software, provided by light lab international software.

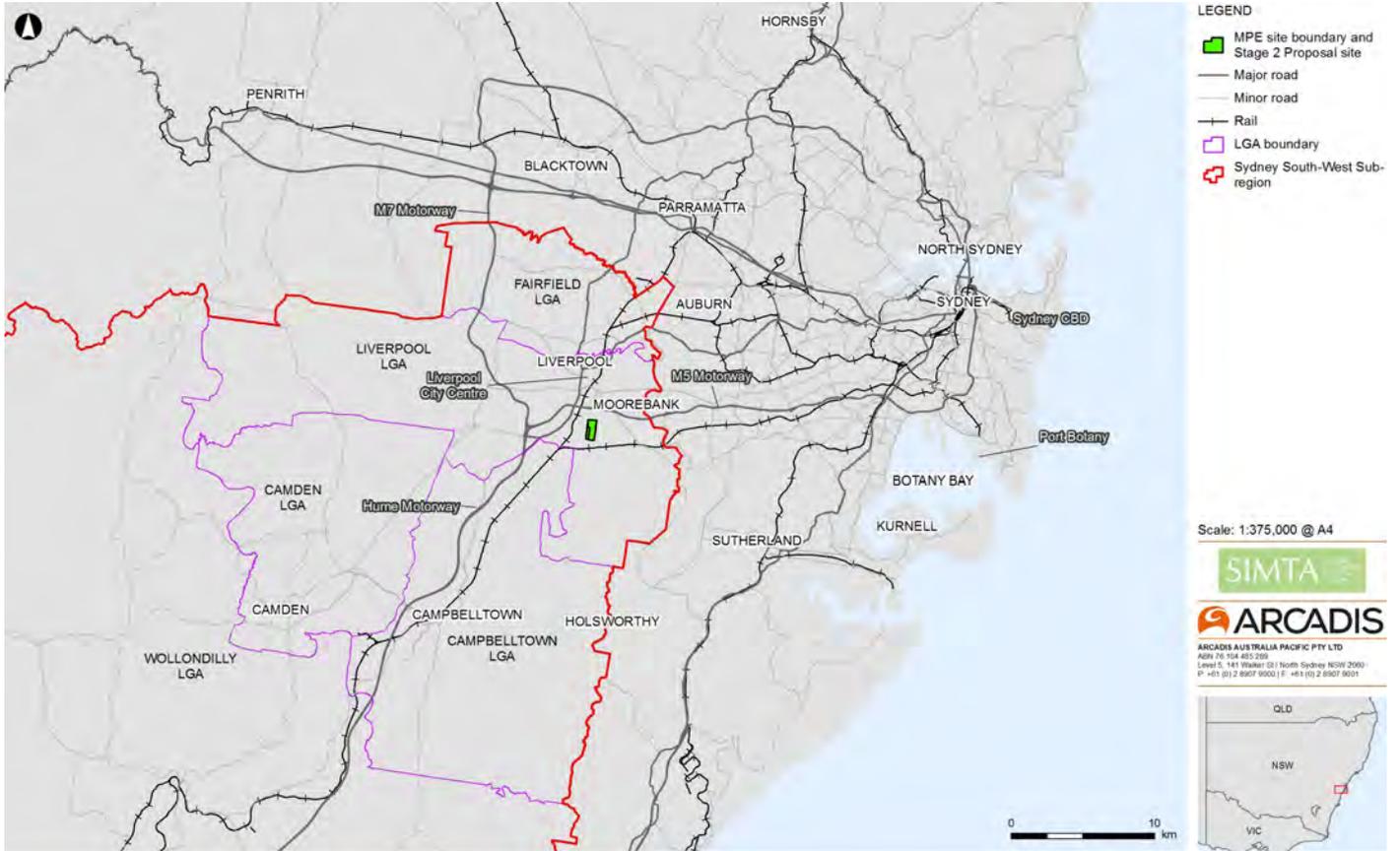
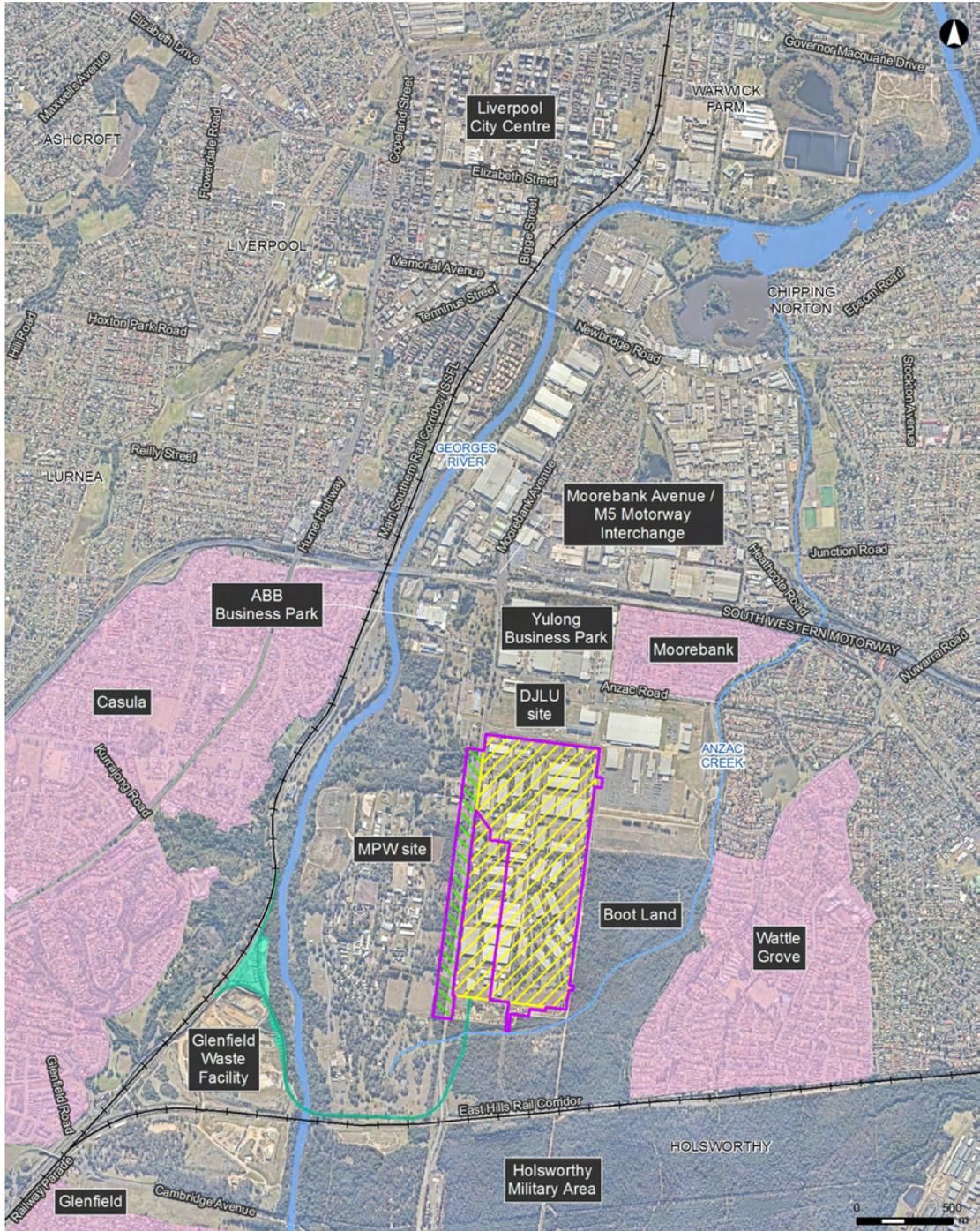


Figure 3 - Regional context of the Proposal



**LEGEND**

- MPE site
- MPE Stage 2 construction area
- Residential area
- MPE Stage 1 Rail Link (including 20m width and variable buffer)
- Moorebank Avenue Upgrade
- Rail link (Stage 1 Proposal)
- Watercourse
- + Existing Railway

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Figure 4 - Local context of the Proposal

## 03 assessment criteria

### 3.1 visual impact assessment criteria

The visual impact of the selected viewpoints in this study have been evaluated on a qualitative basis. The visual impact of the Proposal has been assessed using a range of criteria against which the relative importance of each observer location can be described, including: context, setting, site elements, site character, adjacent development, distance to view (foreground, middle ground and background), land use, visual prominence of the development, and potential changes to the view setting.

For each observer location, these criteria have been addressed under three category headings: 'visual adaptation', 'visual sensitivity' and the resulting 'visual impact'.

A comparative description of each category used in the visual impact evaluation process is summarised below:

#### **visual adaptation**

Visual adaptation describes any significant changes to the landscape and visual amenity that is likely to occur as a result of the Proposal from a particular view point, including:

- the prominence of the Proposal and its individual components with regard to scale, form, colour and texture in contrast with the surrounding landscape; and
- the compatibility of the development within the context of the particular landscape zoning/primary use (such as residential, parklands and other non-industrial related uses) on the basis that integration of the Proposed is likely to incur a higher visual impact in those zones which are inhabited by non-industrial related activity. To this extent, 'compatibility' relates only to the specific viewpoint locations and not the degree to which the development can be seen as described under 'prominence' above.

#### **visual sensitivity**

Visual sensitivity refers to the likely duration of views and number of observers from a given viewpoint and is independent of the 'prominence' of the Proposal. In locations where visual amenity has a higher perceived importance, and the duration of views and number of observers is greater than surrounding areas, the resulting visual sensitivity is regarded as being higher.

Visual sensitivity is expressed in relative terms in this study with residential areas being of higher visual sensitivity and industrial areas having a lower sensitivity. Other areas of higher sensitivity include roads where, despite a short duration of views, there are large numbers of potential viewers and parks where the duration of views is not particularly long, but where a high degree of importance is placed on visual amenity.

## visual impact

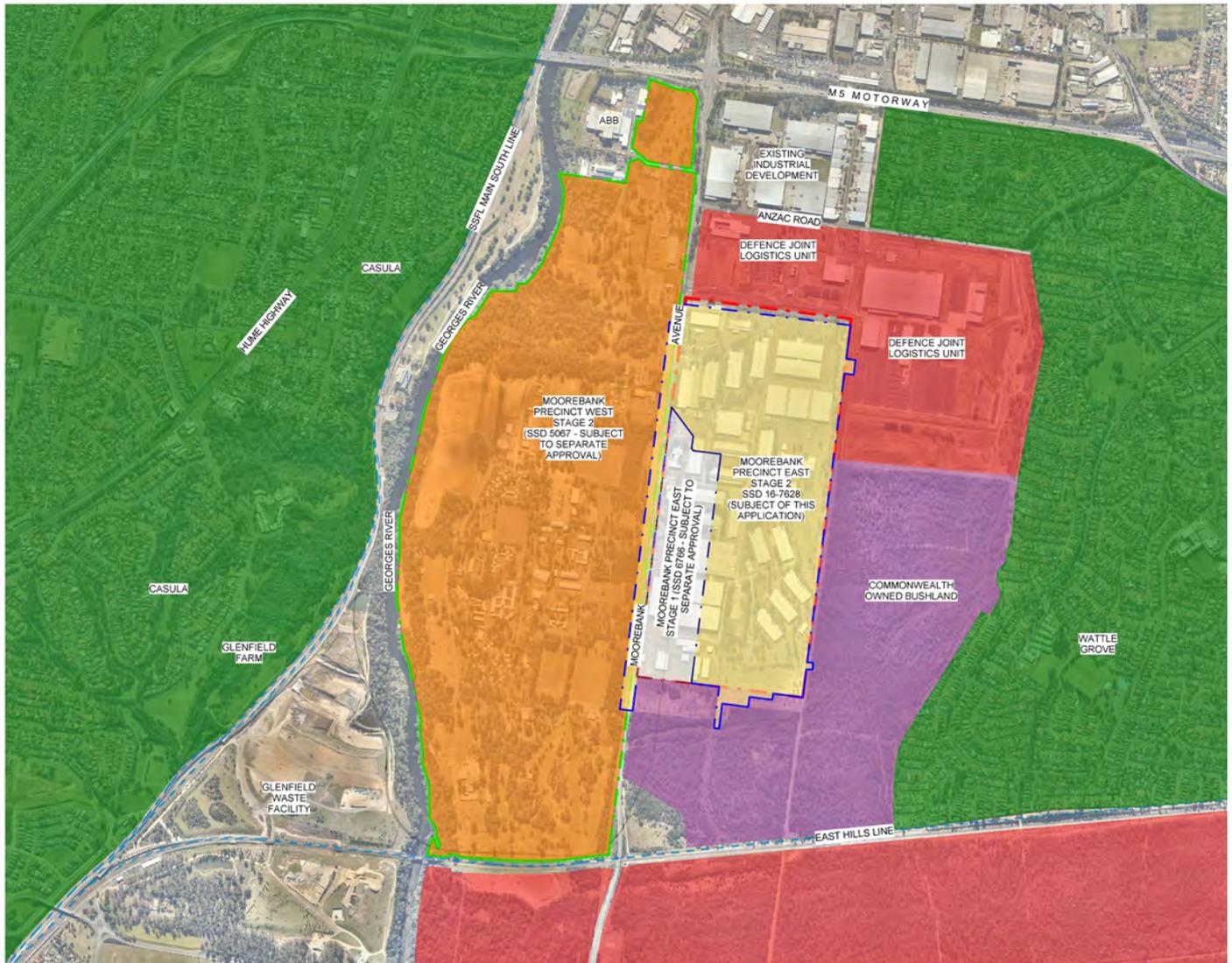
The resulting visual impact is summarised on a qualitative basis against the above criteria. Table 6 that follows provides a matrix that breaks down visually how impact ratings are achieved.

		Visual adaptation					Negligible
		High	Moderate/High	Moderate	Low/Moderate	Low	
Visual sensitivity	High	High	High	Moderate/High	Moderate/High	Moderate	Negligible
	Moderate/High	High	Moderate/High	Moderate/High	Moderate	Moderate	Negligible
	Moderate	Moderate/High	Moderate/High	Moderate	Moderate	Low/Moderate	Negligible
	Low/Moderate	Moderate/High	Moderate	Moderate	Low/Moderate	Low/Moderate	Negligible
	Low	Moderate	Moderate	Low/Moderate	Low/Moderate	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

Table 6 - Overall Impact Rating as a combination of Visual Sensitivity and Visual Adaptation

### 3.2 light spill assessment criteria

Light spill at the edge of the Proposal has been digitally modelled by Arcadis and is expressed quantitatively in terms of light intensity.



**LEGEND:**

- |   |                                  |   |                             |
|---|----------------------------------|---|-----------------------------|
|  | MPE SITE BOUNDARY                |  | MPW SITE BOUNDARY           |
|  | MPE STAGE 2 OPERATIONAL BOUNDARY |  | MPW SITE                    |
|  | MPE STAGE 1 APPROVAL RAIL LINK   |  | RESIDENTIAL AREA            |
|  | EXISTING RAIL LINE               |  | DEPARTMENT OF DEFENCE       |
|   |                                  |  | COMMONWEALTH OWNED BUSHLAND |

Figure 5 - Visual Character of the Surrounding Area

## 04 visual character of the surrounding area

The MPE site surrounded by land owned by the Department of Defence, the Commonwealth and other industrial users. The outer area to the east and north of the site includes the Wattle Grove residential area (primarily low density), extensive commercial and industrial developments and major motorways. The area to the south and west of the site includes passenger and freight rail lines (East Hills Passenger Line and Southern Sydney Freight line respectively), Glenfield Waste Facility and the Casula residential area (primarily low density).

Surrounding natural visual elements include:

- Georges River which runs along the western boundary of the MPW site;
- Anzac Creek which runs along the eastern boundary of the Commonwealth owned land, linking to Chipping Norton Lake and Georges River to the north; and
- Existing landscape and vegetation known as the 'Bootland' running along approximately one half of the eastern boundary and full length of southern boundary of the site, forming a physical barrier to surrounding areas. This bushland is primarily regenerated vegetation and includes Anzac Creek. The density of the bushland provides significant screening to much of the south and east of the site from surrounding areas.

The existing visual character of the Proposal and surrounding area is shown in Figure 5.

The impact of the Proposal on visual character varies over different character zones, depending on the landscape's sensitivity and the impact of the Proposal within the landscape.

## 05 visual character of the development

The Proposal involves the construction and operation of Stage 2 of the MPE Project, comprising warehousing and distribution facilities on the MPE site and upgrades to approximately 1.4 kilometres of Moorebank Avenue between the northern MPE site boundary and 120 metres south of the southern MPE site boundary.

Key components of the Proposal include:

- Warehousing comprising approximately 300,000m<sup>2</sup> GFA, additional ancillary offices and the ancillary freight village
- Establishment of an internal road network, and connection of the Proposal to the surrounding public road network
- Ancillary supporting infrastructure within the Proposal site, including:
  - Stormwater, drainage and flooding infrastructure
  - Utilities relocation and installation
  - Vegetation clearing, remediation, earthworks, signage and landscaping
- Subdivision of the MPE Stage 2 site
- The Moorebank Avenue upgrade would be comprised of the following key components:
  - Modifications to the existing lane configuration, including some widening
  - Earthworks, including construction of embankments and tie-ins to existing Moorebank Avenue road level at the Proposal's southern and northern extents
  - Raking of the existing pavement and installation of new road pavement
  - Establishment of temporary drainage infrastructure, including temporary basins and / or swales
  - Raising the vertical alignment by about two metres from the existing levels, including kerbs, gutters and a sealed shoulder
  - Signalling and intersection works
- Upgrading existing intersections along Moorebank Avenue, including:
  - Moorebank Avenue / MPE Stage 2 access
  - Moorebank Avenue / MPE Stage 1 northern access
  - Moorebank Avenue / MPE Stage 2 central access
  - MPW Northern Access / MPE Stage 2 southern emergency access

The Proposal would interact with the MPE Stage 1 Project (SSD\_6766) via the transfer of containers between the MPE Stage 1 IMT and the Proposal's warehousing and distribution facilities. This transfer of freight would be via a fleet of heavy vehicles capable of being loaded with containers and owned by SIMTA. The fleet of vehicles would be stored and used on the MPE Stage 2 site, but registered and suitable for on-road use. The Proposal is expected to operate 24 hours a day, seven days per week.

**Major visual elements of the Proposal:**

**Lighting:** The visualisation carried out for this assessment assumes light pole heights varying between 13.5 to 21m. Poles would be galvanized steel.

Further information regarding heights, colours and material finishes of the Proposal are available in the Plans and Documents under EIS Sections - Section 15 Appendix D.

**Warehouse and Distribution Facilities:** The Proposal would provide up to 300,000m<sup>2</sup> of warehousing across the MPE Stage 2 site, with ancillary offices attached. The Proposal would include eight warehouses, which would be up to 21 metres in height and would range in size from 20,350m<sup>2</sup> to 61,500m<sup>2</sup>. The Proposal would also include some internal fitout of the warehouses, namely the installation of racking and associated services. The Proposal would seek approval for the construction of these warehouses and also the operation of these warehouses by future tenants.

**Freight Village:** A freight village including amenities would be provided on the MPE site as part of the Proposal. The ancillary freight village would be located in the north-west of the Proposal site, directly north of Warehouse 1 and east of Moorebank Avenue. The freight village would include five buildings which would provide for a mixture of retail, commercial and light industrial land uses, with a combined GFA of approximately 8,000m<sup>2</sup>.

Buildings and structures within the freight village would be up to 15m in height and of varying size and design, as detailed in Section 15 of the EIS (visual amenity, landscape and urban design). The Proposal would also include the internal fitout of these buildings, including utilities and services. The Proposal would seek approval for the construction of this freight village and also the operation of these premises by future tenants.

Associated with this built form is a number of ancillary works, which include materials and finishes, signage, lighting, vegetation removal and landscaping, water management works and utilities, which have been discussed throughout this section of the EIS.

**Topography:** The surface of the site is generally flat, undulating and sloping down towards the Georges River. The sites existing elevation sits between 14.0m and 22.0m above the Australian Height Datum (AHD). Figure 6 provides a visual of the greater topography. The proposed topography would have the site sitting approximately between 17m and 18m ( $\pm 500$ mm), raising the majority of the site.

**Vegetation:** Dense vegetation is located along the eastern and southern boundary known as the 'Bootland'. This serves as a visual buffer of the Proposal site to the surrounding area. Dense bushland is also located to the west of the Proposal site along the western bank of the Georges River, adjacent to the MPW site. This vegetation also provides some visual screening to the Proposal site.

This surrounding vegetation ranges from endemic stands of mature native vegetation (15-25m tall) to mature introduced species.



**LEGEND:**

- |   |                                  |   |                    |
|---|----------------------------------|---|--------------------|
|  | MPE SITE BOUNDARY                |  | MPW SITE BOUNDARY  |
|  | MPE STAGE 2 OPERATIONAL BOUNDARY |  | EXISTING RAIL LINE |
|  | MPE STAGE 1 APPROVAL RAIL LINK   |  | SITE CONTOURS      |
|  | INDICATIVE WAREHOUSING           |   |                    |

Figure 6 - Surrounding topography

## 06 measures to reduce visual impact

Appropriate measures to reduce the visual impact of the Proposal have been identified in parallel with the MPE Concept Plan Approval (MP10\_0193) and Stage 1 Approval (SSD 6766). These measures would primarily comprise screen planting in key areas and visual buffers. A Proposal site plan is shown at Figure 7 which demonstrates potential built form and facility and operations frontages in consideration of the MPE Concept Plan Approval. Figure 7 is indicative only and provides a representation of the potential maximum built-form impact for the purposes of conducting the Visual Assessment.

To mitigate and minimise any visual impacts, proposed landscaping will reinforce and extend the surrounding natural context. This is achieved through visual and physical connection to the existing landscape and vegetation in the area.

Along the Moorebank Avenue frontage, a landscaping corridor of screening vegetation would provide an informal street character. This would be reinforced with carefully selected native tree species with a dense tree canopy and lower screen planting. Further screening would be provided by security fencing that runs along the main public interface and at the boundary.

The key nodal point along Moorebank Avenue is the primary entry point to the operational area of the Proposal at the northern extent of the site. This access point would include additional features to enhance the arrival experience through the use of a series of selected native plants (where possible) in built-form to create visual interest. This area would also include signage for the precinct to help establish a sense of arrival and coherent address. Other directional signage would be located in proximity to assist way-finding throughout the Proposal.

Along the site boundaries, a “Boundary Treatment” and “Buffer Zone” would incorporate a landscape treatment consistent with existing local species in the area and provide an essential scale of planting to complement the developments built-form.

Landscaping would consist of mixed tree planting used to create a natural feeling through landscape zones and mixed under-storey planting consisting of native shrubs and ground covers to form a screening barrier when mature. This treatment would mitigate views from surrounding areas, and the existing tree planting (where retained) along Moorebank Avenue in conjunction with proposed screening and feature walls, would screen a large proportion of potential views from the north-west.

Mitigation measures incorporated during the construction phases are discussed separately under section 7.1.

Where built form such as the warehousing and associated infrastructure presents the potential for significant visual impacts, mitigation is implemented through adaptive and considered design. Harmonious colour pallets and high quality finishes/materials allow for limited contrast, attractive design and longevity of amenity.

Overall, the proposed landscape and built form treatments would result in an improvement in the visual amenity of the entire site and would increase the current level of screening of the site. Urban design and planning principles help to breakdown the bulk and scale of the development as well as contributing to the creation of one cohesive address.



**LEGEND:**

- |   |                                  |   |                    |
|---|----------------------------------|---|--------------------|
|  | MPE SITE BOUNDARY                |  | MPW SITE BOUNDARY  |
|  | MPE STAGE 2 OPERATIONAL BOUNDARY |  | EXISTING RAIL LINE |
|  | MPE STAGE 1 APPROVAL RAIL LINK   |  | PROPOSED ROAD      |
|  | INDICATIVE WAREHOUSING           |  | FREIGHT VILLAGE    |

Figure 7 - Indicative MPE Stage 2 Proposal

## 07 visual impact of the development

The visual impact of the Proposal has been assessed by evaluating the views of the Proposal site from identified key viewpoints based on the visual impact assessment criteria described in Section 3.

The extensive native bushland areas, DJLU facilities on neighbouring lands and the general pattern of industrial type development surrounding the MPE site screen the Proposal from much of the greater sensitive surrounding areas.

Potential viewpoints do occur along viewing corridors along Moorebank Avenue, Anzac Road, and where topography provides some elevation above potential obstructions to views such as Casula area to the west.

The identified view points are all within 2km of the Proposal site. For the purpose of this report, viewpoints that analysed impacts on the 'Rail Link' component in MPE Stage 1 and the MPE Concept Plan Approval have been excluded as they are no longer relevant to the Proposal. Sensitive receivers identified within the precinct are limited and include two heritage items, Glenfield Farm and Kitchener House. Both of these however remain relatively unaffected due to the existing surrounding conditions and proximity to the Proposal, Glenfield Farm being within proximity only to views that assess the impact of rail, and Kitchener House having an existing industrial context.

This section of the report assesses the visual impact from selected key viewpoints identified as part of MPE Concept Plan Approval analysis during daylight hours at which it is assumed would be consistent with peak operations.

Night time visual impacts are discussed as part of the light spill assessment. There would also be potential visual impacts during the construction of the Proposal. These are discussed at the end of this section.

Based on the their location and the works proposed, the visual impact during operations has been assessed for the following viewpoints:

View Location Name	Area	Type	Visual Adaptation	Visual Sensitivity	Visual Impact
View 01	Casula	Residential	Negligible	Moderate	Negligible
View 02	Casula	Public space	Negligible	Low	Negligible
View 03	Casula	Public space	Negligible	Moderate	Negligible
View 04	Casula	Public space	Low	Moderate	Low/Moderate
View 05	Casula	Public space	Low	Moderate	Low/Moderate
View 06	Casula	Residential	Negligible	High	Negligible
View 07	Casula	Road/Industrial	Negligible	Moderate	Negligible
View 08	Moorebank	Road/Industrial	Low/Moderate	Low	Low/Moderate
View 09	Moorebank	Industrial	Low	Low	Low
View 10	Wattle Grove	Residential/Industrial	Low	Low/Moderate	Low/Moderate
View 11	Wattle Grove	Residential	Low	Moderate	Low/Moderate
View 12	Wattle Grove	Residential	Low	Moderate	Low/Moderate
View 13	Wattle Grove	Residential	Low	Moderate	Low/Moderate
View 14	Wattle Grove	Residential	Negligible	High	Negligible
View 15	Wattle Grove	Residential	Negligible	High	Negligible
View 16	Wattle Grove	Residential	Negligible	High	Negligible
View 17	Holsworthy	Road	Negligible	Low	Negligible
View 18	Moorebank	Road	Moderate	Low	Low/Moderate
View 19	Moorebank	Road	Moderate	Low	Low/Moderate
View 20	Moorebank	Road	Moderate	Low	Low/Moderate
View 21	Moorebank	Road	Moderate	Low	Low/Moderate
View 22	Moorebank	Road	Moderate	Low	Low/Moderate
View 23	Moorebank	Road	Moderate	Low	Low/Moderate

Table 7 - Visual Impact during Operations

# view locations



**LEGEND:**

- - - MPE SITE BOUNDARY
- - - MPW SITE BOUNDARY
- KITCHENER HOUSE
- GLENFIELD FARM
- - - MPE STAGE 1 APPROVAL RAIL LINK
- - - EXISTING RAIL LINE
- VIEWPOINT

Figure 8 - View Locations

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