environmental assessment

LOGOS Kemps Creek Logistics Project

September 2010

Prepared for:

LOGOS

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striving for balance between economic, social and environmental ideals…

PJEP Ref: Environmental Assessment_Sep10

DISCLAIMER

CERTIFICATION BY AUTHOR

Part 3A Environmental Assessment

Prepared under the *Environmental Planning and Assessment Act 1979*

Environmental Assessment prepared by

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Project to which Part 3A applies

Application number	Concept Plan: 10_0061 Project Application: 10_0062
Project	Proposed LOGOS Kemps Creek Logistics Campus Project, comprising development of warehouse and distribution centres on site as well as a range of associated infrastructure
Proponent name	Mamre Road Developments Pty Limited (trading as LOGOS Property)
Proponent address	LOGOS Property Suite 3, Level 15 25 Bligh Street SYDNEY NSW 2000
Land to be developed	Lot 1 in DP 104958

Certificate

I certify that I have prepared the contents of this document, and to the best of my knowledge the assessment:

- has been prepared in accordance with the requirements of Part 3A and the Regulations; and
- does not contain false or misleading information.

Signature

Name Phillip Jones
Date 29 September 2010

EXECUTIVE SUMMARY

LOGOS Property (LOGOS) is proposing to develop a campus-style industrial estate on a 52 hectare site on Mamre Road, Kemps Creek, immediately adjacent to the Western Sydney Employment Area.

The project, known as the LOGOS Kemps Creek Logistics Project, involves the development of the estate comprising 10 warehouse and distribution centres, including 8 on behalf of DHL and 2 on behalf of Metcash. Specifically, the project involves:

- subdivision of the site;
- demolition of existing structures;
- bulk and detailed earthworks;
- construction of internal estate roads and site services;
- construction and use of the 10 warehouse and distribution centres; and
- ancillary infrastructure and services, including upgrade of Bakers Lane and Mamre Road to accommodate the project and deliver an important component of the regional road network to facilitate the growth of the Western Sydney Employment Area.

The project would develop the entirety of the *LOGOS Estate*. LOGOS' objective is to construct a world-class and distinctive campus-style industrial park that maximises the opportunities of the site, is compatible with adjoining land uses including schools and retirement village and is aligned with the envisaged growth of the Western Sydney Employment Area.

The project has a capital investment value of approximately $235 million, and is expected to generate 800 full-time equivalent jobs during the 5 year construction period, and 1,580 jobs during operation.

The project constitutes a 'major project' under Part 3A of the *Environmental Planning and Assessment Act 1979*, and consequently the Minister is the approval authority.

The key environmental issues identified for assessment in this Environmental Assessment include:

- strategic land use planning;
- infrastructure and services;
- traffic and transport;
- layout and design, including landscaping and visual amenity;
- noise;
- flora and fauna;
- Aboriginal heritage;
- soil and water; and
- sustainability (particularly energy and water conservation).

Assessment of these and other environmental issues indicates that the project is able to be conducted in a manner that would not result in any significant environmental impacts, or impacts on the amenity of surrounding land users, subject to certain mitigation measures. LOGOS has committed to a range of measures to ensure that the project is undertaken in an environmentally responsible manner.

Importantly, environmental assessment demonstrates that the project is able to be undertaken in a manner that is broadly consistent with the strategic planning for the Western Sydney Employment Area and the wider Sydney metropolitan area.

In this regard, the project provides an opportunity to increase Sydney's employment land supply – a key government priority – in a responsible and orderly manner, and at no cost to government. It is also noted that:

- the site is immediately adjacent to, and is a logical extension of, the existing Western Sydney Employment Area;
- the site is within the Western Sydney Employment Lands Investigation Area and is part of an area that has been earmarked for potential employment land use for more than 20 years;
- the site has extended frontage to a planned major arterial road for the Western Sydney Employment Area (ie. the 'Southern Link Road'), and the project would deliver a key component of this link road in the short term; and
- the project can be readily serviced through relatively simple extension of existing infrastructure, at no cost to government/taxpayers.

The project would have significant social and economic benefits for the people of Penrith through the creation of considerable local employment opportunities, and through a significant capital investment in the Western Sydney Employment Area.

On balance, it is considered that the project represents orderly development of the land. It is respectfully requested that the Minister, having due regard for the information submitted in this Environmental Assessment, grant approval to the project.

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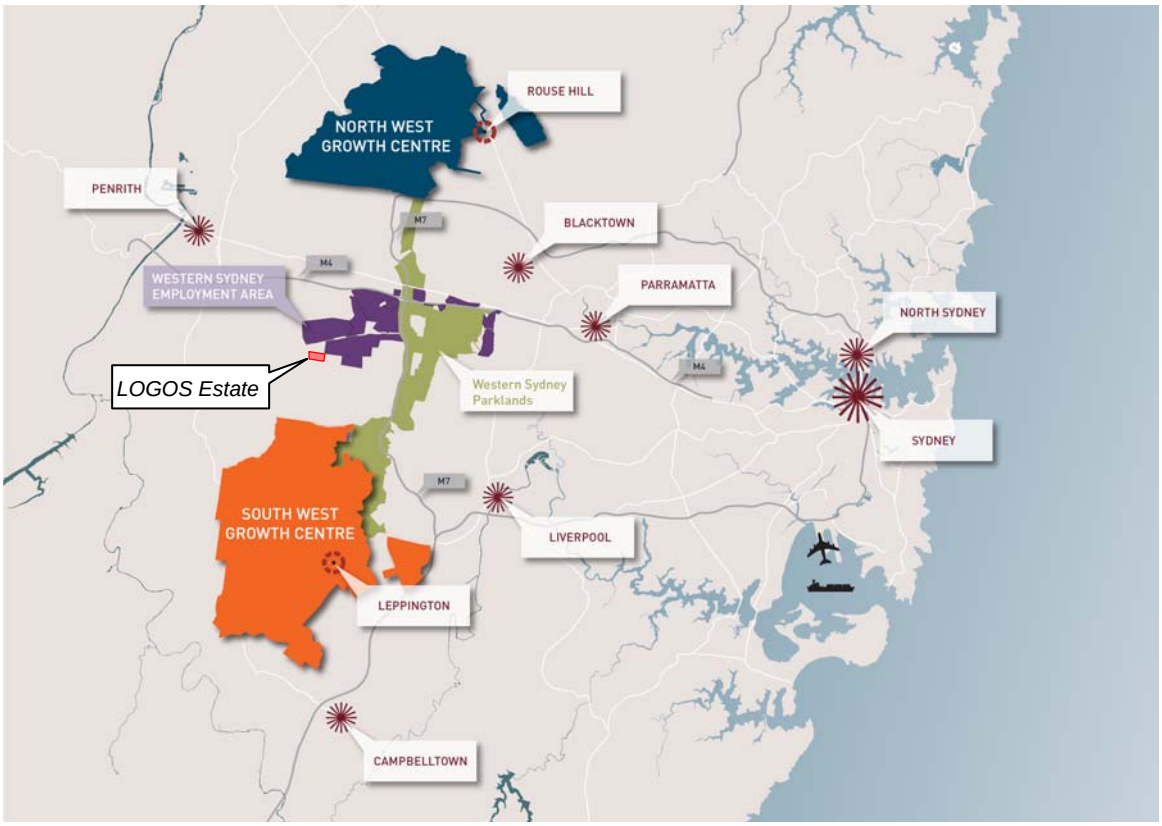
1 INTRODUCTION

1.1 Overview

LOGOS Property (LOGOS) is proposing to develop a campus-style industrial estate on a 52 hectare site on the corner of Mamre Road and Bakers Lane, Kemps Creek, immediately adjacent to the Western Sydney Employment Area (WSEA) (see **Figure 1.1**).

This Environmental Assessment has been prepared by PJEP Environmental Planning on behalf of LOGOS to assist the Minister's and the Department of Planning's consideration of the project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).



LOGOS Estate

Figure 1.1: *Regional Context (Source: Department of Planning Guide to WSEA)*

1.2 Background

The NSW Government's long term planning blueprint for Sydney, the *Sydney Metropolitan Strategy* (the Metro Strategy) identifies the need to create 500,000 extra jobs over the period to 2030 to meet the needs of the projected population increase of 1.1 million people over this time. Approximately half of these jobs are planned to be created in Western Sydney, as part of the Government's key priority of providing 'new jobs closer to home'.

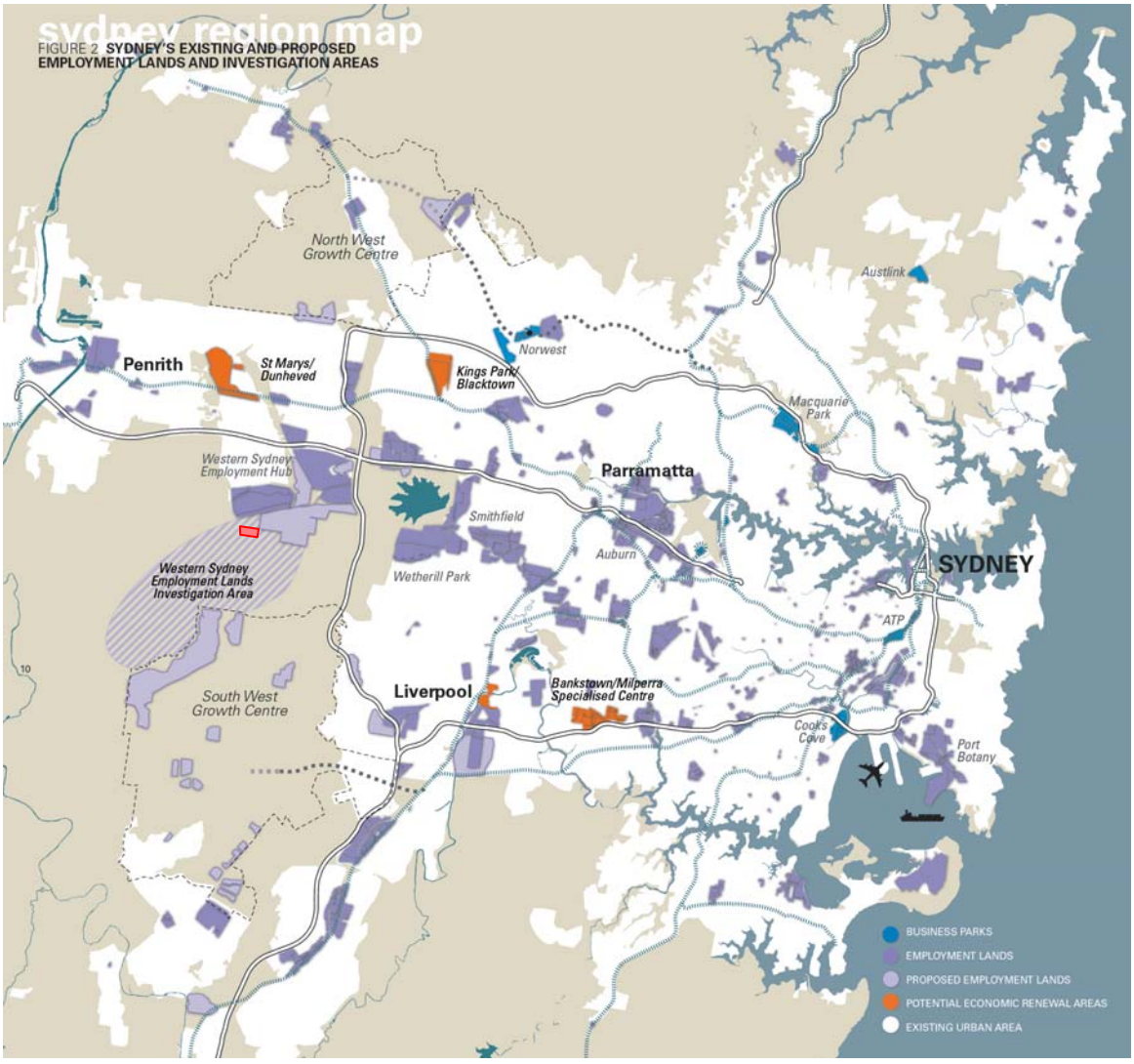
To meet these employment needs, the Metro Strategy estimates that Sydney's stock of employment land will need to increase by up to 7,500 hectares, to a total of 22,000 hectares, by 2031. The strategy notes that:

> *"Without additions to the stock of employment lands, there will be a significant shortfall in supply over the coming 20 years. Additional sources of land must be identified if Sydney is to remain competitive."*

Illustrating this supply shortage, it is noted that Melbourne has a current supply of 22,000 hectares of employment land, with a population 25% smaller than Sydney[1].

In March 2007, the Department of Planning (the Department) released the *Employment Lands for Sydney – Action Plan* as part of the implementation of the Metro Strategy's economic and employment strategy. One of the key actions in the plan is to *'release more employment lands'*, to overcome the supply shortage. The plan notes that approximately 2,900 hectares of new employment lands have been created or proposed since the release of the Metro Strategy, including land in the WSEA and in the North West and South West Growth Centres.

This still leaves a considerable shortfall (some 4,600 hectares) in the supply of employment land needed for Sydney's projected growth, particularly considering the ongoing loss of employment lands closer to the city for residential and commercial redevelopment. The Metro Strategy and the Employment Lands Action Plan recognise this supply gap. To address this issue, the Action Plan identifies a potential new employment area between Badgery's Creek and the WSEA, known as the Western Sydney Employment Lands Investigation Area (WSELIA) (see **Figure 1.2**).



LOGOS Estate

Figure 1.2: *Sydney's Employment Lands (Source: Employment Lands for Sydney Action Plan)*

[1] Department of Planning Submission to the General Purpose Standing Committee No.4, September 2009.

This area has been earmarked as a potential employment area in Sydney's strategic plans for more than 20 years, including the Metro Strategy which identifies *'Badgerys Creek and its environs'* as a key potential area to accommodate employment lands growth.

In 2008, during preparation of a new State Environmental Planning Policy for the WSEA, the Department undertook a detailed strategic investigation of the WSELIA to assess its employment potential.

The investigation found that there was around 4,000 hectares of potential employment land, including land within the WSEA and the WSELIA. The investigation also found that there were infrastructure constraints particularly around sewer, potable water and roads, especially for the southern area of the investigation area.

To manage the orderly delivery of employment land given these constraints, the Department developed a staging program for release of employment land, with timing for release based on the ability to satisfy infrastructure requirements.

Stages 1 and 2 comprised the land that makes up the existing WSEA, which has now been consolidated and rezoned for employment purposes under the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP).

Stage 3 comprises the WSELIA. The Government decided not to release this area immediately (under the WSEA SEPP), and resolved to undertake further work on funding and delivery of essential infrastructure for the area.

However, in recognition of the strategic value of the WSELIA to meet the growing employment needs of Western Sydney, and the need to address Sydney's shortage of employment land, the Department's *Guide to the Western Sydney Employment Area* identifies the opportunity for landowners to fast-track development in areas adjacent to the zoned employment area. The guide notes that a case would need to be demonstrated that such development represents no cost to government in regard to infrastructure requirements and meets all relevant environmental tests.

The *LOGOS Estate* site is located immediately adjacent to the existing employment-zoned WSEA. That is, it is located within the Stage 3 area but immediately adjacent to the Stage 2 area. Essentially, the site can be seen as being contiguous with, and a logical extension to, the existing WSEA area, particularly as it ties the south-western section of the WSEA to the arterial road network (ie. Mamre Road).

On 31 March 2010, the Minister for Planning authorised the submission of a concept plan and project application for the LOGOS Kemps Creek Logistics Project, in recognition of the strategic potential of the site to increase Sydney's employment land stock, and based on preliminary information that indicates that the project could be undertaken not just at no cost to government, but indeed in a manner that would facilitate the early delivery of key infrastructure required for the WSEA.

The strategic planning context of the project is discussed in more detail in Section 4.

1.3 The Project

The project, known as the LOGOS Kemps Creek Logistics Project, involves the development of a campus-style industrial estate comprising 10 warehouse and distribution centres, including 8 on behalf of DHL Logistics and 2 on behalf of Metcash, as well as ancillary offices. Specifically, the project involves:

- subdivision of the site;
- demolition of existing structures;
- bulk and detailed earthworks;
- construction of internal estate roads and site services;
- construction and use of 8 warehouse and distribution centres for DHL and 2 warehouse and distribution centres for Metcash, along with ancillary offices and an estate café; and
- ancillary infrastructure and services, including upgrade of Bakers Lane and Mamre Road to accommodate the project and deliver an important component of the regional road network for the WSEA (ie. part of the 'Southern Link Road').

The project would develop the entirety of the *LOGOS Estate*. LOGOS' objective is to construct a world-class and distinctive campus-style industrial park that maximises the opportunities of the site, is compatible with adjoining land uses including schools and retirement village and is aligned with the envisaged growth of the WSEA.

The project has a capital investment value of approximately $235 million, and is expected to generate 800 full-time equivalent jobs during the 5 year construction period, and 1,580 jobs during operation.

The project is discussed in detail in Section 3.

1.4 The Proponent and End Users

LOGOS Property (LOGOS) is the proponent of the project, and is developing the land on behalf of the end users of the facilities.

Lot 1 is proposed to be developed on behalf of DHL, one of the world's largest logistics and supply chain management companies. DHL is the global logistics arm of Deutsche Post World Net, with 76 existing facilities across Australia employing 3,500 staff. In NSW, DHL's supply chain division has 1,300 employees operating from 21 facilities. Sydney is one of six DHL Asia Pacific Hubs. Globally, DHL operates in 220 countries and the Deutsche Post group employs 500,000 staff, generating AUD$78 billion in revenue in 2008.

DHL proposes to use the project facilities for warehousing and distribution of consumer goods, in a campus-style environment.

Lot 2 is proposed to be developed for Metcash, a leading Australian marketing and distribution company operating in the food and other fast moving consumer goods categories. The company has three main business pillars: IGA Distribution; Campbell's Cash and Carry; and Australian Liquor Marketers, and employs over 6,000 people across 80 sites in Australia and New Zealand.

Metcash proposes to use the project facilities for warehousing and distribution of food and consumer goods.

1.5 Environmental Assessment Team

This Environmental Assessment has been prepared by PJEP Environmental Planning in conjunction with a range of specialist consultants as listed in the following table.

Table 1.1: *Environmental Assessment Project Team*

Discipline	***Organisation***	***Study/Deliverable***
Project Management	LOGOS Property, assisted by Octavius Consulting	Project Management
Environmental Planning	PJEP Environmental Planning	Environmental Assessment
Architecture	Mackenzie Pronk Architects Axis Architectural	Urban Design Architectural Plans
Landscape Design	Habitation	Landscape Plans
Infrastructure and Services	Buckton Lysenko	Infrastructure Assessment
Soil and Water		
– Geotech	Pells Sullivan Meynink	Geotechnical Assessment
– Salinity	Pells Sullivan Meynink	Salinity Assessment
– Site Contamination	Urban Environmental Services	Phase 1 Contamination Assessment
– Stormwater	Buckton Lysenko	Stormwater Management Concept Plan
– Flooding	Buckton Lysenko	Flood Review
Noise	Wilkinson Murray	Noise Assessment
Energy and Greenhouse	NDY Management	Energy and Greenhouse Gas Assessment
Flora and Fauna	Cumberland Ecology	Flora and Fauna Assessment
Aboriginal and Historical Heritage	Dominic Steele Consulting Archaeology	Aboriginal and Historical Heritage Assessment
Arborist	The Arborist Network	Arborist Assessment (of suggested scarred tree)
Traffic and Parking	Thompson Stanbury Associates	Traffic Assessment
Wastes and Hazards	PJEP Environmental Planning	Waste Management Plan, SEPP 33 Analysis

2 THE SITE

2.1 Location and Context

The site is located on the corner of Mamre Road and Bakers Lane, Kemps Creek, immediately to the south-west of the Western Sydney Employment Area (WSEA)[2], and 500 metres south of the existing developed areas of the Erskine Park Employment Area, which forms part of the WSEA (see **Figures 1.2** and **2.1**).

The site is approximately 12 kilometres south-east of the Penrith CBD, and is located in the Penrith local government area.

Figure 2.1: *Western Sydney Employment Area (Source: Metro Strategy)*

2.2 Site Analysis

The following provides a brief analysis of the site. Detailed information on environmental features of the site is provided in Section 6.

2.2.1 Site Description and Ownership

The address of the site is 708 Mamre Road, Kemps Creek, and the real property description is Lot 1 in DP 104958. The site is roughly rectangular in shape and has an area of approximately 52 hectares.

The site is owned by the Camelleri family (full details are provided on the project application form), although LOGOS has an option to purchase the site.

[2] Formerly known as the Western Sydney Employment Hub.

2.2.2 Land Use

The site is currently predominantly cleared and is used for broad acre agricultural purposes (cattle grazing). There is a small amount of scattered vegetation across the site.

Improvements on the site include farm dams, a single vacant and dilapidated dwelling, and stock fencing and yards.

The site has historically been used for agricultural purposes (grazing), in a similar manner to the current land use.

2.2.3 Surrounding Land Use

Land use in the locality surrounding the site reflects the changing urban landscape associated with the development of the Western Sydney Employment Area. In particular, historic rural and extractive industry land use to the north (beyond the Sydney Water pipeline) and east of the site is rapidly undergoing transformation to employment (industrial) land uses. Areas to the south and west generally comprise rural and rural-residential land use.

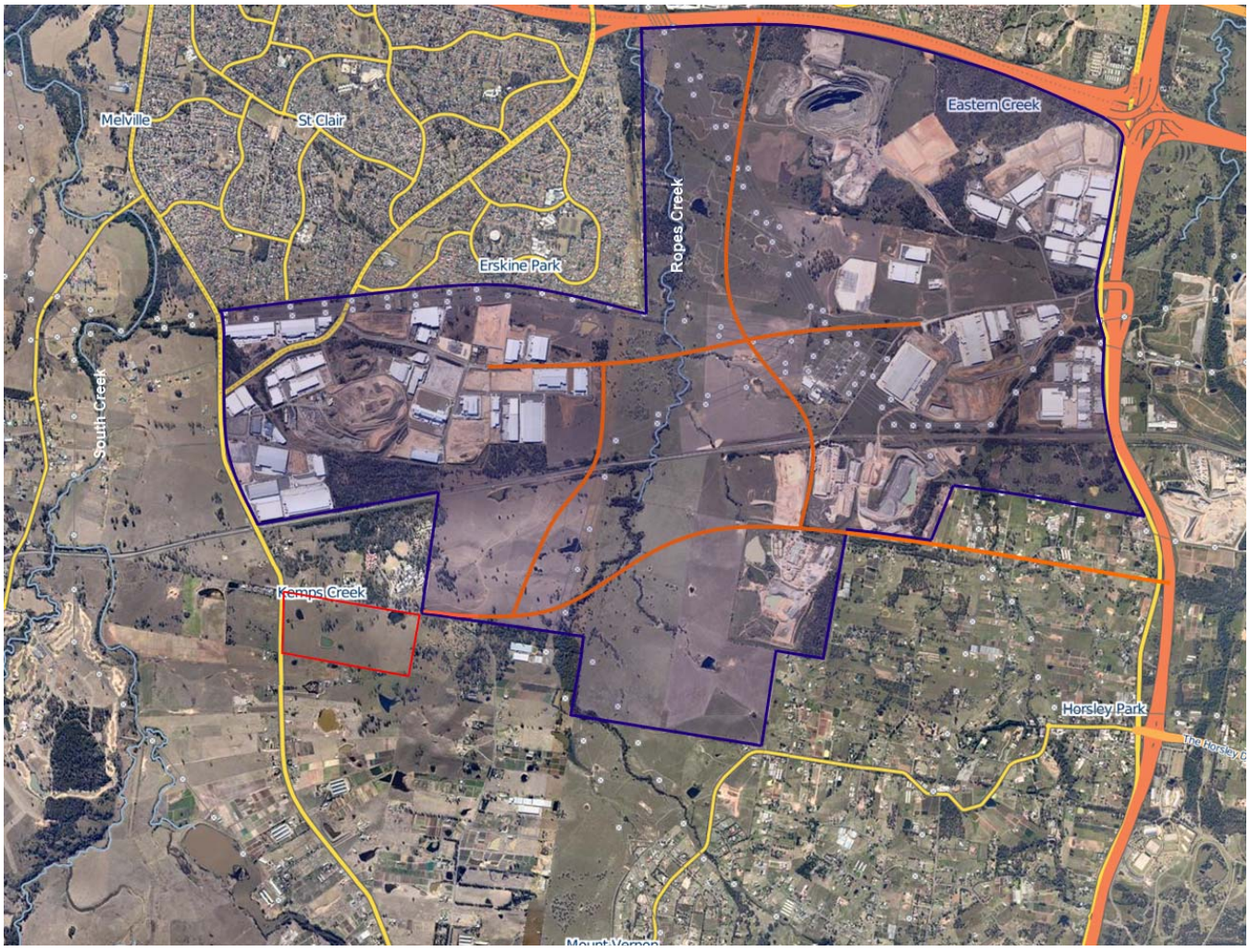


Figure 2.2: *Location Plan, showing proposed WSEA road network (Source: Nearmap)(Nb. Boundaries and road network approx.)*

Figure 2.3: *Site Aerial Photograph (Source: Department of Lands)*

Land use immediately surrounding the site includes:

- North – Bakers Lane with rural-residential (2 dwellings), Mamre Anglican School (including Child Care Centre), Trinity Catholic Primary School, Emmaus Catholic Secondary College and Emmaus Retirement Village beyond;
- East – rural-residential, with the WSEA beyond;
- South – rural-residential, including construction-related businesses (inc. PG Murina Excavations and Kinlake Building Constructions); and
- West – rural, including a Pet and Farm supplies business.

Existing employment-zoned (but as yet undeveloped) areas of the WSEA are located immediately to the north-west of the site, while the existing developed areas of the Erskine Park Employment Area (which forms part of the WSEA) are located approximately 500 metres north on Mamre Road.

2.2.4 Topography

The site has an undulating topography, defined by a central ridge extending generally through the middle of the site and toward the south-eastern corner of the site (see **Figure 2.3**). The ridge has an elevation of up to about 80-83 metres AHD. From this ridge, the land slopes down generally to the south west and north east, with elevations of approximately 42 metres AHD in the south-western corner and 55 metres AHD in the north-eastern area of the site.

2.2.5 Geology and Soils

The underlying geology of the site comprises Bringelly Shale, which typically consists of shale, carbonaceous claystone, laminate, sandstone, rare coal and tuff.

Soils are representative of the Blacktown Soil Landscape Group and the Luddenham Erosional Soil Landscape Group. The Blacktown soils are characterised as being moderately reactive, highly plastic (subsoil), low soil fertility with poor drainage. The Luddenham soils have a high soil erosion hazard, localised impermeable highly plastic subsoil and are moderately reactive.

Site contamination assessment indicates that the land has a low risk of contamination, and is suitable for commercial/industrial development.

Geology and soil aspects of the project are discussed further in Section 6.2.

2.2.6 Water and Flooding

There are no defined natural watercourses on the site, with the site draining generally from the central ridge to the south-west toward Mamre Road and to the north-east toward Bakers Lane, in accordance with the site topography. There are 3 main farm dams on the site (plus a number of small dams), with 2 in the western area and the other in the north-eastern area of the site.

A depression in the north-eastern corner of the site (feeding the north-eastern dam) forms the headwaters of a small creek that flows northward through the schools and the Erskine Park Employment Area, ultimately discharging to South in St Clair.

Stormwater runoff on the western side of the site also flows to South Creek via low lying rural land on the western side of Mamre Road.

The site is located above the 1 in 100 year flood level.

Water and flooding aspects of the project are discussed further in Section 6.2.

2.2.7 Noise and Air Quality

The acoustic environment of the site reflects its predominantly rural setting, although road traffic noise on Mamre Road directly to the west, and the three schools and retirement village directly to the north, influence the background noise levels.

Air quality is considered to be typical of the Western Sydney airshed.

The nearest sensitive receivers to the site are the rural residences to the north, east and south, and the schools and retirement village to the north.

Noise and air quality aspects of the project are discussed further in Sections 6.3 and 6.4, respectively.

2.2.8 Flora and Fauna

The site is predominantly cleared for existing grazing purposes, however there are mature trees scattered across the site (see **Figure 2.3**).

Some small patches of scattered treed vegetation on site constitutes a degraded form of Cumberland Plain Woodland, which is a critically endangered ecological community listed under the *Threatened Species Conservation Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The site vegetation is not considered to provide significant habitat for native fauna, given its generally small, fragmented and predominantly poor condition. However, at least some of the vegetation does provide habitat for birds and possums, with some including tree hollows. The farm dams on the site provide some habitat for aquatic flora and fauna.

Ecological aspects of the project are discussed in detail in Section 6.6.

2.2.9 Heritage

Aboriginal archaeological assessment undertaken for the project indicates that the project area has low archaeological potential given its previous disturbance and predicted low intensity of indigenous use. However, a small number of Aboriginal sites/objects have been identified on the site.

Non-Aboriginal heritage assessment undertaken for the project indicates that the single vacant and dilapidated homestead on the site was constructed around c.1912/1913, and has some heritage significance.

Heritage aspects of the project are discussed further in Section 6.7.

2.2.10 Visual Context

The current visual setting of the site and surrounds is that of a rural landscape, however areas to the north and east (beyond existing rural-residential and school use) are in the process of being transformed into an employment/industrial landscape with the development of the employment lands in the WSEA. The schools and retirement village directly to the north of the site also act to 'urbanise' the rural setting.

Key visual receivers include:

- residents on rural-residential properties to the north, east, south and west;
- Mamre Anglican School, Trinity Catholic Primary School, Emmaus Catholic Secondary College and Emmaus Retirement Village to the north;
- commuters on Mamre Road and Bakers Lane.

Visual amenity aspects of the project are discussed further in Section 6.1.

2.2.11 Infrastructure and Services

Access and Road Network

The site has direct and extended frontage to Mamre Road (approximately 500 metres frontage) Bakers Lane (approximately 1,100 metres frontage).

Mamre Road is a State Road under the care and control of the RTA. It provides direct access from the site to Erskine Park Road, the M4 Motorway and the Great Western Highway (see **Figure 2.4**). The road primarily forms a two lane undivided carriageway providing one through lane of traffic in each direction. Traffic flow is governed by a sign posted speed limit of 80km/h. Pavement widening is provided on approach to major junctions to accommodate exclusive turning lanes.

Bakers Lane is currently a local road providing access to the schools and retirement village to the north of the site, and the rural-residential properties in the area. In the vicinity of the site Bakers Lane comprises a two lane road undivided carriageway within a 20 metre road reserve. Traffic flow is governed by a signposted speed limit of 60km/h, however a 40km/h school zone speed limit applies for a majority of the site frontage associated with the schools to the north.

Bakers Lane provides direct access to Mamre Road via a signalised intersection.

Stormwater Drainage

Existing stormwater infrastructure in the vicinity of the site is minimal. There are three culvert road crossings, one in Bakers Lane and two in Mamre Road, located in the local sag points. The culverts are inadequately sized by current standards.

Potable Water

The site does not currently have access to a suitable reticulated water supply. Water of sufficient capacity is available near the intersection of Mamre Road and James Erskine Drive, approximately 1 kilometre north of the site.

Sewer

The site does not currently have direct access to the reticulated sewerage system. The closest substantial sewer with the necessary capacity is located in the Council Reserve in Erskine Park Road, approximately 1.5 kilometres north of the site.

Electricity

Electrical supplies of sufficient capacity are available to the site via the Mamre Zone Substation off John Morphett Place and Lenore Lane, within the Erskine Park Employment Area, about 2 kilometres north of the site.

Gas

Existing high pressure gas supplies are available near the intersection of Mamre Road and James Erskine Drive, approximately 1 kilometre north of the site.

Telecommunications

Existing telecommunications are available in Mamre Road and Bakers Lane, but are not adequate to service the project.

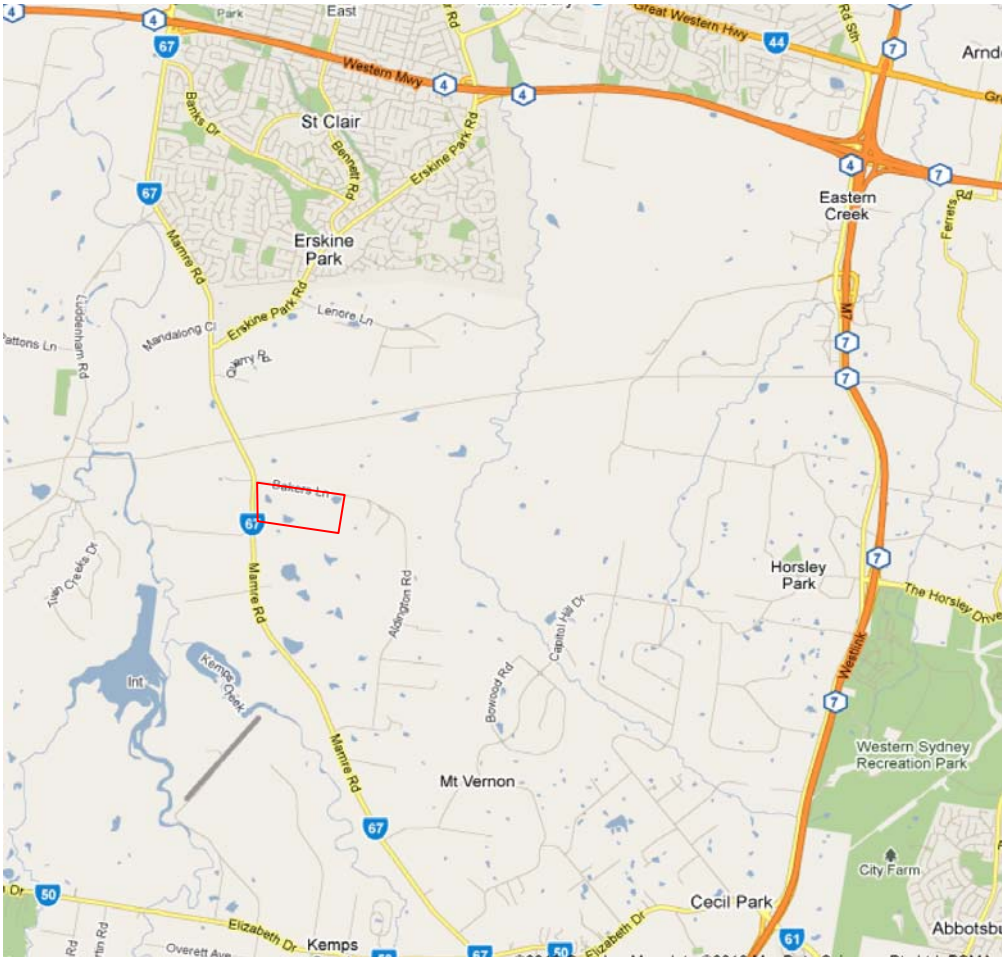


Figure 2.4: *Existing Road Network (Source: Google maps)*

3 THE PROJECT

3.1 Project Summary

LOGOS is proposing to develop a world-class, campus-style industrial estate on the site, on behalf of DHL and Metcash. The project, known as the LOGOS Kemps Creek Logistics Project, would develop the entirety of the *LOGOS Estate*.

The estate masterplan is shown on **Figure 3.1**, and the main components of the project are outlined in the following table. The full set of architectural design plans is attached at **Appendix D**. An urban design package – which has informed the architectural plans – is attached at **Appendix C**.

Table 3.1: *Project Summary*

Project Summary	**Construction and use of the LOGOS Kemps Creek Logistics Project, including:** • **subdivision;** • **demolition;** • **bulk and detailed earthworks;** • **construction of internal estate roads and site services;** • **construction and use of 8 warehouse and distribution centres for DHL and 2 warehouse and distribution centres for Metcash, along with ancillary offices and an estate cafe; and** • **ancillary infrastructure and services, including upgrade of Bakers Lane (to form part of the WSEA 'Southern Link Road') and Mamre Road.**
Proposed Use	Warehousing and distribution, with ancillary office and cafe
Subdivision	Subdivision of the site to create 2 development lots and an estate road
Demolition	Demolition of the existing dwelling and farm improvements (fences and cattle yard)
Earthworks	Bulk and detailed earthworks across the site to create level building pads and install services. Approximately 50,000m^3 of excess topsoil to be exported from the site.
Facility Description	The estate masterplan comprises a total gross floor area (GFA) of approximately 250,535 m^2, including: • 8 warehouse and distribution centres for DHL, ranging in size from 16,580 m^2 to 21,400 m^2 GFA, including attached ancillary offices and an attached café (to Building 5); and • 2 warehouse and distribution centres for Metcash, including one ambient-temperature facility with a GFA of 68,185m^2, and one chilled-temperature facility with a GFA of 18,235m^2 (including expansion areas); and • a detached 2 level ancillary office building for Metcash with a GFA of 6,470m^2.
Staging	Construction of the facilities would be staged over a period of approximately 5 years.
Capital Investment Value	$235 million
Employees	Construction – Approximately 800 full time equivalents Operation – Approximately 1,580 full time equivalents
Infrastructure and Services:	
Access and Roads	Construction of internal road network, comprising 2 main estate access roads and a central roundabout. Main access provided via a signalised intersection on Bakers Lane, with a secondary left-in left-out access via Mamre Road. External roadworks include upgrade of: • Bakers Lane adjacent site to 4-lane dual carriageway, to form part of the WSEA 'Southern Link Road'; • Bakers Lane/Mamre Road intersection; and • Mamre Road to provide localised acceleration and deceleration lanes adjacent the site.

Stormwater Drainage	On-site stormwater harvesting, detention and treatment, with discharge to Mamre Road and Bakers Lane consistent with existing flows. Construction of stormwater infrastructure associated with upgrade of Bakers Lane.
Potable Water	The site would be connected to existing Sydney Water mains supply north of the site at Erskine Park Road via a new watermain down Mamre Road. The proposal includes a number of water savings measures, including water efficient (4-star minimum) fixtures and harvesting of roof rainwater for toilet flushing, irrigation and cooling tower make-up.
Sewer	The site would be connected to existing Sydney Water reticulated sewer north of the site at Erskine Park Road via a new sewer main down Mamre Road. Two sewage pumping stations would be installed in site.
Electricity	The site would be connected via a new 11kV distribution feeder to the existing Mamre Road zone sub-station off Lenore Lane. The project includes a number of passive and active energy savings measures to minimise energy use.
Telecommunications	The site would be connected to telecommunications infrastructure in Mamre Road.
Gas	The project is not proposed to be connected to a reticulated gas supply, although existing gas supplies are available north of the site at Erskine Park Road, if required in the future.

Figure 3.1: *LOGOS Estate Masterplan (Source: AXIS Architectural)*

3.2 Subdivision

The project involves the subdivision of the site to create:

- an expanded road reserve for Bakers Lane along the site frontage, through dedication of the northern 10 metres of the site;
- a north-south estate road corridor, with a nominal width of 20 metres, expanding at intersections and for the estate roundabout; and
- 2 development lots, including:
  - 1 for the DHL campus, with an area of 300,235m^2; and
  - 1 for the Metcash campus, with an area of 193,815m^2; and

At this stage, it is intended to maintain the internal estate road in private ownership.

The proposed subdivision is shown on **Figure 3.2**. A final subdivision plan would be prepared, to the satisfaction to the Director-General of the Department of Planning, prior to obtaining a subdivision certificate for the subdivision.

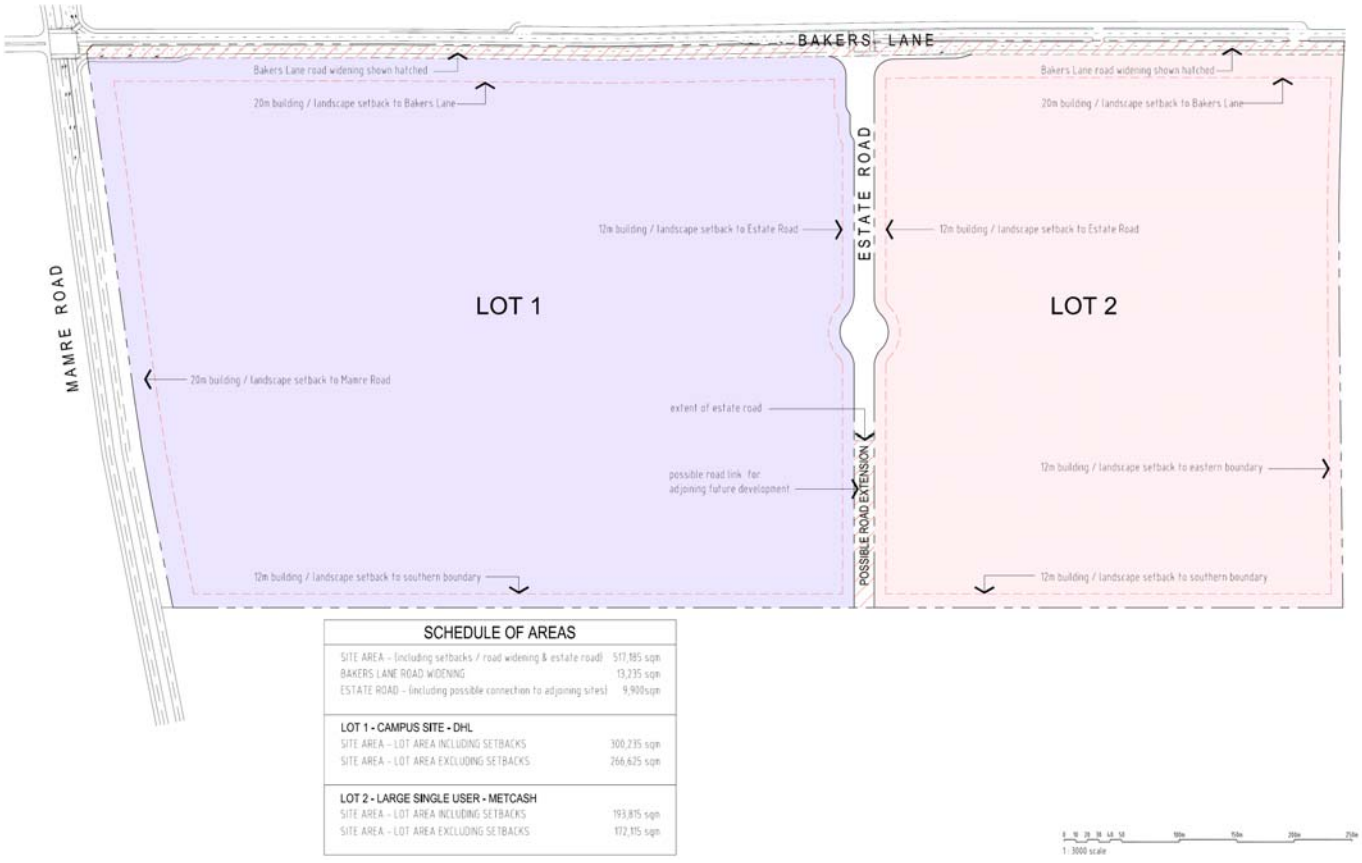


Figure 3.2: *Concept Subdivision Plan (Source: AXIS Architectural)*

3.3 Demolition

The project requires the demolition of the existing dwelling on the site, as well as the ancillary farm fences and other minor structures. The existing dwelling contains some asbestos cement sheeting.

Demolition would be undertaken in accordance with the Waste Management Plan for the project (see **Appendix O**). All demolition would be undertaken in accordance with applicable standards

and guidelines, including *Australian Standard AS 2601-2001: The Demolition of Structures* and the *Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (2005)].*

The dwelling also has some heritage value. See Section 6.7 for further detail.

3.4 Earthworks and Construction

Bulk earthworks works would be undertaken across the site to create level building pads for development of the estate.

The earthworks would be undertaken on a balanced cut to fill basis, although cut and fill calculations indicate that approximately 50,000m^3 of excess topsoil would need to be exported from the site. The earthworks would create a series of building pads at finished floor levels of between approximately 53 metres (for DHL Building 1 in the north-western area of the site near Mamre Road) and approximately 66 metres AHD (for the Metcash warehouses in the eastern area of the site) (see **Figure 3.1**).

Batters with slopes of generally up to 4(H):1(V) would be created around the northern and western perimeters of the site fronting Bakers Lane and Mamre Road. Although not required from an engineering perspective, the landscaping plan for the project has incorporated decorative stone walls along these key frontages (see **Figure 3.3** and Section 3.11).

The bulk earthworks have been designed to restrict engineered retaining walls to the southern and eastern boundaries of the site, in areas that would not generally be visible from public areas (see **Figure 3.3**). The engineered retaining walls would vary in height, up to a maximum of approximately 17 metres in a relatively small area of the south-eastern boundary.

The engineered retaining walls would be constructed of masonry (crib-lock), and would be terraced with lifts of up to about 3 metres each. The terracing would help to soften the appearance of the engineered retaining walls, and would permit landscaping on the terraces.

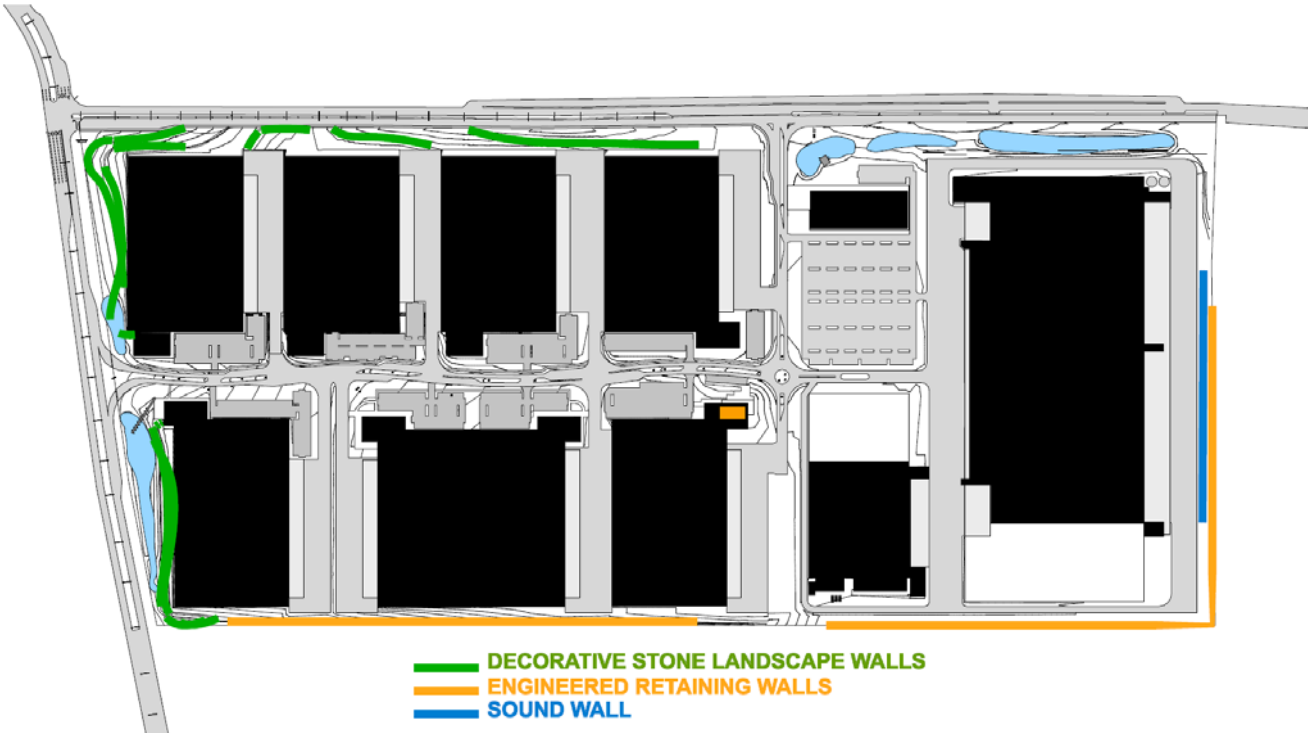


Figure 3.3: *Walls and (Noise) Barriers (Source: Mackenzie Pronk)*

Once the bulk earthworks are complete, construction works associated with the project would involve:

- detailed earthworks, including stormwater drainage and bulk landscaping works;
- infrastructure and site servicing;
- facility construction; and
- site landscaping.

Construction works would be undertaken in accordance with a detailed Environmental Management Strategy, prepared to the satisfaction of the Department of Planning.

Construction of the project would be undertaken on a staged basis over a period of approximately 5 years. The anticipated staging is shown on **Figure 3.4**. As indicated on the figure, the 2 Metcash warehouses would be developed in 2 stages each.

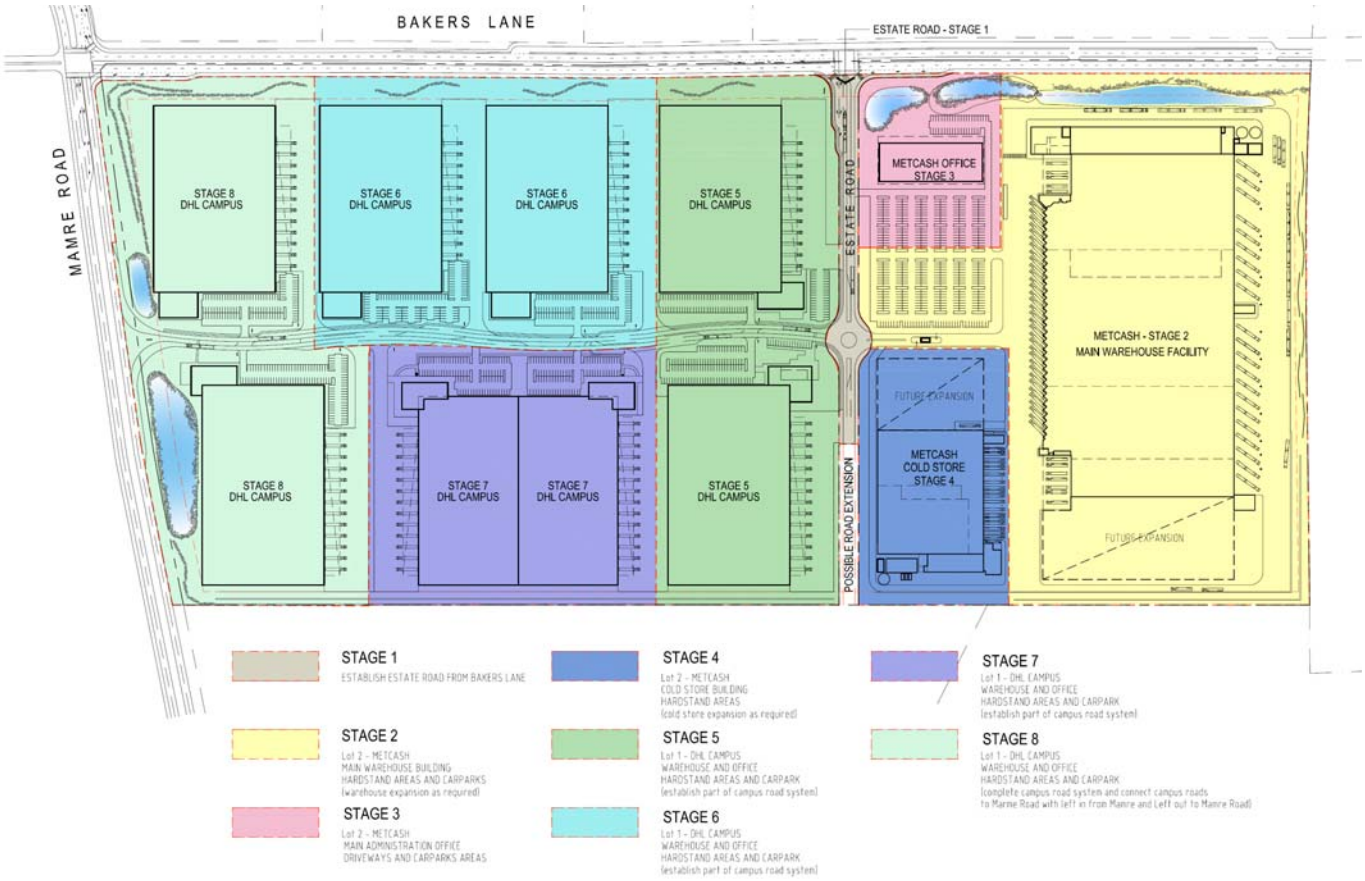


Figure 3.4: *Indicative Staging Plan (Source: AXIS Architectural)*

3.5 Description of the Facilities

3.5.1 Masterplan Layout

The estate masterplan comprises:

- a DHL Campus, comprising 8 ambient-temperature warehouse and distribution centres ranging in size from 16,580 m^2 to 21,400 m^2 GFA, including attached ancillary offices and an attached café (to Building 5); and
- a Metcash Campus, comprising:
  - 2 warehouse and distribution centres, including one ambient-temperature facility with a GFA of 68,185m^2, and one chilled-temperature facility with a GFA of 18,235m^2; and

- a detached 2 level ancillary office building with a GFA of 6,470m^2.

The masterplan layout is shown on **Figure 3.1**. A development summary of the masterplan is presented in the following table. Floor areas for individual buildings are shown on the architectural plans in **Appendix D**.

Table 3.2: *Masterplan Development Summary*

	DHL Campus	***Metcash Campus***	***LOGOS Estate Total***
Areas (m^2)			
- Site Area	300,235	193,815	494,050[1]
- Warehouse Area	144,360	86,420	230,780
- Office Area	12,400 (8%)	6,470 (7%)	18,870 (8%)
- Café Area	360	-	360
- Ancillary Building Area	-	525	525
- Total Building Area	157,120	93,415	250,535
- Awning Area	15,000	10,580	25,580
- Hardstand Area	80,595	68,900	149,495
- Landscaping Area	51,300 (17%)	38,950 (20%)	90,250 (18%)
Site Cover (exc. awning)	52%	48%	50%
No. office levels (each bld)	2	2	2
Building Height (m)	14	14	14
Car Parking Spaces	808	485	1,293
Employees	980	600	1,580
Hours of Operation	24 hours, 7 days	24 hours, 7 days	24 hours, 7 days

1 Excludes internal estate road, which has an area of 9,900m^2

3.5.2 Building Appearance and Finishes

The architectural design of the proposed facilities is shown on the attached elevations and finishes plans, and perspectives (see **Appendices C** and **D**). As the individual DHL buildings would be similar in terms of design, the architectural drawings include representative elevations for these buildings only.

The buildings have been designed to achieve a modern, high quality and distinctive architectural theme for the estate. The basis for the architectural design is discussed in detail in Section 6.1, but essentially the warehouse building design has been inspired by the subtle shading of tree trunks of Cumberland Plain Woodland.

In this regard, the main facades of the warehouses would comprise a mix of alternating colorbond wall cladding (colours 'shale grey' and 'woodland grey', with some translucent sheeting), above a pre-cast concrete base (painted with dark pigment, Taubmans 'Billy Goat'). Roofing would comprise colorbond roof sheeting with 10% translucent roof sheeting. **Figure 3.5** shows representative DHL and Metcash elevations.

The office façades would comprise a mix of Alucobond cladding and generous aluminium framed glazing to maximise natural lighting, coupled with aluminium sun shading louvres to control heat entry. The DHL building offices would feature a distinctive criss-cross patterning to the office facades, while the Metcash office adopts a more vertical patterning.

The design intent for the *LOGOS Estate* and the estate buildings is further addressed in Section 6.1.

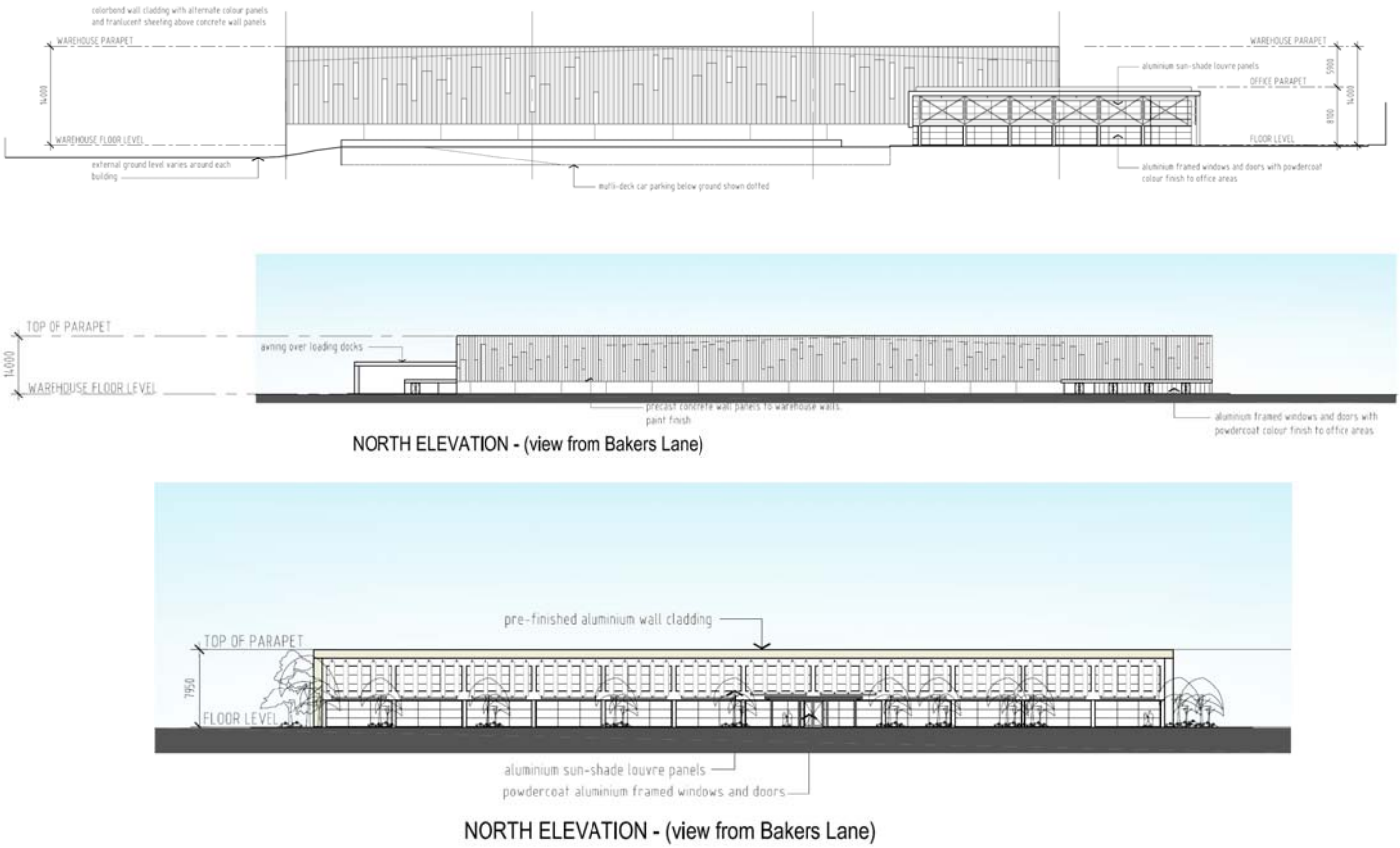


Figure 3.5: *Representative Elevations (Source: AXIS Architectural)*
(From top: Typical DHL Building Elevation; Metcash Main Warehouse North Elevation; Metcash Office North Elevation)

3.6 Hours of Operation

The proposed warehouse and distribution facilities would operate up to 24 hours a day, 7 seven days a week, 365 days a year.

Construction works for the project would be undertaken in accordance with the hours as stipulated in DECCW's *Interim Construction Noise Guideline*, namely:

- 7:00am to 6:00pm Monday to Friday;
- 8:00am to 1:00pm Saturdays; and
- no work on Sundays or public holidays.

Construction works that are inaudible at surrounding receivers may be undertaken outside these times.

3.7 Capital Investment

The project has a total capital investment value of approximately $235 million.

3.8 Employment

The project would generate about 800 jobs (full-time equivalents) during the construction phase of the project, which is expected to extend over a period of about 5 years.

Once the *LOGOS Estate* is fully developed, the project is expected to generate about 1,580 full-time jobs, including 980 in the DHL Campus and 600 in the Metcash Campus.

3.9 Infrastructure and Services

The infrastructure and servicing strategy for the project is detailed in the Traffic Assessment and Infrastructure Assessment for the project, attached as **Appendix N** and **Appendix G**, respectively. A summary of the strategy is provided below. It is noted that the services would be installed on the *LOGOS Estate* site or on publicly-owned land (mainly road reservations), with no reliance on privately-owned land.

3.9.1 Access and Road Network

Site Access and Internal Roads

The main access to the *LOGOS Estate* is proposed to be via a signalised intersection on Bakers Lane, approximately 650 metres to the east of Mamre Road. This intersection would provide access to the north-south internal estate access road, which would provide the key access to the DHL and Metcash campuses.

The estate access road would be constructed as a 2 lane divided carriageway (within a nominal 20 metre reservation) widening on approach to Bakers Lane to accommodate suitable exclusive turning lanes. **Figure 3.6** provides a typical cross section of the estate road. The access road is proposed to connect with a centrally located four-way single lane circulating roundabout, providing direct access to the Metcash and DHL campuses.

The Metcash site would be accessed directly off the estate access road, with separate accesses for cars (via driveways) and trucks (via the roundabout). The truck access driveway would provide a pavement width of 11 metres, with a security gatehouse set back approximately 50 metres from the site boundary to ensure that queuing from the gatehouse does not influence the operation of the estate access road.

The DHL Campus would be accessed primarily via an east-west access road from the internal roundabout, which would provide separated car and truck access to each DHL building. This access road would also provide a left-in, left-out access driveway to/from Mamre Road.

The internal road system has been designed to accommodate vehicles up to and including B-Doubles. All access roads would be constructed in accordance with applicable Australian Standards and AUSTROADS.

At this stage it is intended to maintain the estate access road, and other internal access roads, in private ownership.

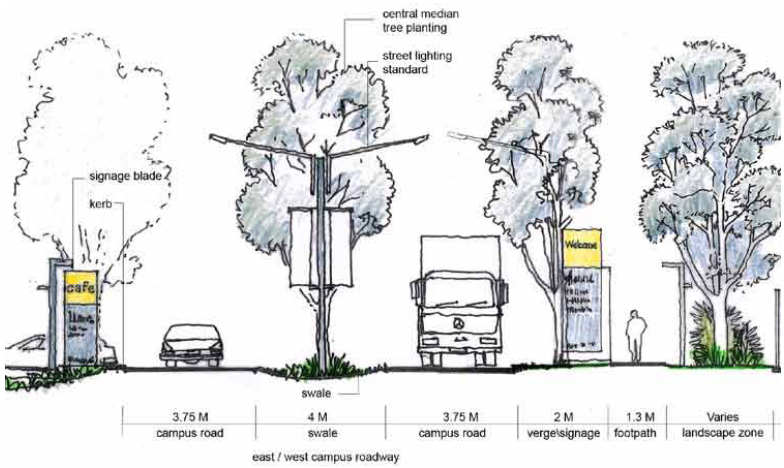


Figure 3.6: *Typical Internal Estate Road Cross Section (Source: Mackenzie Pronk)*

External Roadworks

Proposed external roadworks include:

- upgrade of Bakers Lane to a 4 lane dual carriageway for the full frontage to the site; and
- upgrade of the intersection of Bakers Lane and Mamre Road, and localised upgrade of Mamre Road in the vicinity of the site, including deceleration and acceleration lanes associated with the proposed left-in, left-out access driveway.

The proposed upgrade works are shown on the civil design drawings in **Appendix F**.

The proposed upgrade of Bakers Lane would be consistent with, and is expected to ultimately form an integral component of, the 'Southern Link Road', which forms an important part of the planned regional road network for the WSEA (see Section 4.1 and 6.8 for further details). The upgrade would include:

- widening the 20 metre road reserve to 30 metres, through dedication of the northern 10 metre frontage of the site[3];
- construction of a 4 lane dual carriageway for the full site frontage (ie. approximately 1 kilometre), and regrading (ie. lowering) the crest of Bakers Lane to provide a more amenable grade for the roads' envisaged future arterial status;
- construction of a 5.5 metre service road to the north of the dual carriageway (but within the existing road reserve) in order to provide safe and efficient access to the upgraded Bakers Lane for the existing community and educational establishments located to the north; and
- construction of the signalised site access intersection.

The existing signalised intersection of Bakers Lane and Mamre Road would be amplified to accommodate the upgraded Bakers Lane.

The proposed road upgrades have been formulated based on detailed intersection modelling and route analysis with respect to the traffic generating capacity of the project. Traffic impacts are discussed in more detail in Section 6.8.

LOGOS has committed to completing the Bakers Lane and Mamre Road upgrade works, to the satisfaction of the applicable roads authority, prior to the commencement of warehousing operations on the site, unless otherwise agreed by the Department of Planning in consultation with the applicable roads authority. In this regard, traffic assessment indicates that the signalisation of the site access intersection with Bakers Lane would not be required until the Southern Link Road is extended to the east.

All external road works would be undertaken in accordance with the RTA's *Road Design Guide* and applicable standards, and to the satisfaction of the applicable roads authority.

Parking and Loading

Car parking provision for the project has been based on the following minimum rates:

- 1 space per 300m^2 of warehouse gross floor area;
- 1 space per 40m^2 of office gross floor area; and
- 1 space per 26m^2 of café gross floor area.

The warehouse and office parking provision is consistent with contemporary industrial estates in the WSEA (eg. Greystanes Southern Employment Lanes), and is also consistent with DHL's and Metcash's specified parking requirements. The café parking provision is based on Council's minimum parking requirements for shops in the *Penrith Development Control Plan 2006*.

[3] It is anticipated that the reserve will ultimately be expanded to 40 metres, through dedication of land on the northern side of Bakers Lane. However, this land is not required for the proposed road upgrade works.

Each DHL building, and the total Metcash site, has been designed to comply with this parking provision. Parking compliance for each building is presented in Section 6.8.

In total, the *LOGOS Estate* would provide 1,293 car parking spaces. All parking spaces would be appropriately sealed and linemarked.

The masterplan has also been designed in accordance with the other best practice parking and loading standards, including:

- provision of tree bays within car parking areas;
- design of parking areas to minimise conflicts with pedestrians and trucks;
- ensuring cars and trucks are able to enter and exit lots in a forward direction; and
- providing adequate loading docks for facilities and designing them to minimise conflicts with cars and pedestrians as far as practicable.

3.9.2 Stormwater Drainage

Stormwater management for the project has been designed in a manner that is consistent with Penrith Council's standards. Stormwater infrastructure would include (generally from upstream to downstream):

- roof rainwater harvesting tanks, servicing each building;
- grass swales in localised areas draining some carparking and hardstand areas, coupled with a traditional pit and pipe internal stormwater network;
- on-site detention servicing the western (ie. Mamre Road or DHL Campus) catchment and the eastern (ie. Bakers Lane or Metcash) catchment;
- 2 proprietary (Ecosol RSF 4000) gross pollutant traps, servicing each catchment; and
- 2 bio-retention basins in the western and north-eastern areas of the site, servicing each catchment.

In addition, upstream flows entering the site along the eastern boundary would be diverted around the Metcash Campus via a combination of a pipe and open channel system, designed to convey flows up to and including the 1 in 100 year storm event.

The stormwater system has been designed to ensure that post-development flows do not exceed pre-development flows (for storm events up to and including the 1 in 100 year event) and that stormwater quality meets or exceeds Council's minimum standards.

As part of the proposed road upgrades, the existing sub-standard culverts in Bakers Lane and Mamre Road would be upgraded to modern standards.

Stormwater management is discussed further in Section 6.2.7.

3.9.3 Potable Water

The site is proposed to be serviced via an extension of the existing water main near the intersection of Mamre Road and James Erskine Drive approximately 1 kilometre north of the site (see **Figure 3.7**). Water in this main is sourced from the Orchard Hill Reservoir. It is proposed to extend a 200mm water main from the existing main to the intersection of Mamre Road and Bakers Lane, and then along Bakers Lane.

It is also proposed to construct a cross-connection to the existing main from Cecil Park Reservoir at Mamre Road. This would improve the security of water supply for the Erskine Park Employment Area which currently has only one existing feed from the Orchard Hill Reservoir.

The proposed water main extension along Bakers Lane would have excess capacity to supply the properties that front it, including the three schools and retirement village.

Preliminary design indicates that the total demand created by the project would only impact the existing service by 1.2%, leaving 55% capacity.

In this regard, the Infrastructure Assessment notes that Sydney Water designed the potable water network for the Erskine Park Employment Area with an allowance of 45kL/net developable hectare, whereas current consumption figures indicate that actual consumption is less than 30kL/ha. The reasons for the lower consumption include:

- lower employee densities than originally estimated;
- lower water-intensive industries being developed (ie. warehousing and distribution, which generally do not use much water);
- introduction of water harvesting and recycling requirements on developments; and
- adoption of water-efficient appliances and fittings.

Accordingly, it is considered that the project can be readily serviced without affecting the capacity of the existing potable water network.

As discussed in Section 3.10.1 below, the project includes a number of water savings measures which would significantly reduce potable water use on the site.

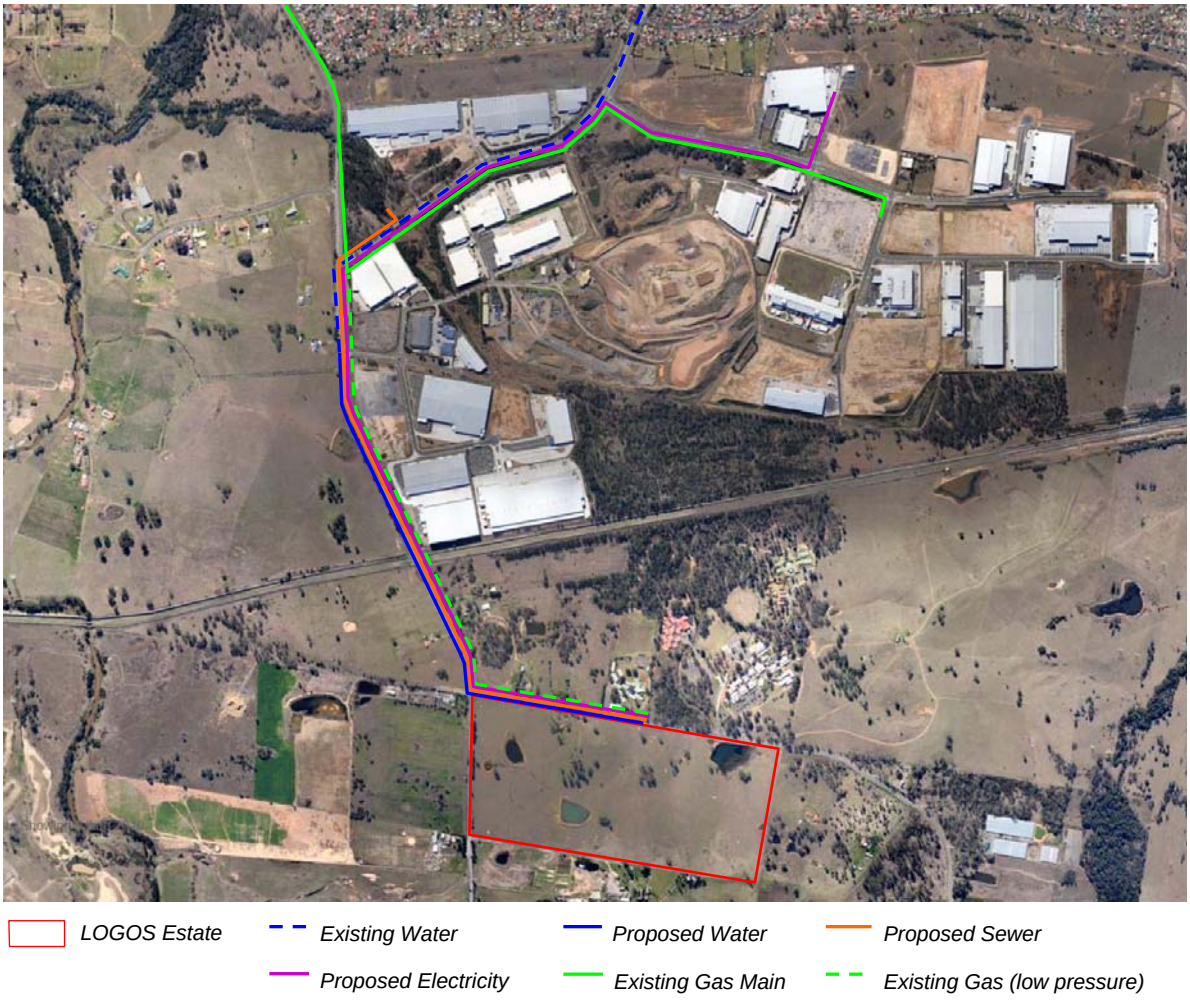


Figure 3.7: *Concept Servicing Plan (Source: Adapted from Buckton Lysenko)*

3.9.4 Sewer

The site is proposed to be serviced via an extension of the existing reticulated sewerage infrastructure in the Council Reserve on Erskine Park Road, approximately 1.5 kilometres north of the site (see **Figure 3.7**). It is proposed to extend the 150mm sewer rising main from the Mamre Road Carrier to service the site. The extension would also be able to service the 3 schools and retirement village to the north of Bakers Lane.

The Infrastructure Assessment notes that the capacity of the local infrastructure is at least 1,314L/s, and that Sydney Water designed the system in 2002 at a design load of 75 equivalent persons per developable hectare (EP/ha), and a design wet weather flow of 426L/s.

Recent experience indicates that these design flows are overestimated for the employment area, for reasons including:

- lower employee densities than originally estimated;
- lower water-intensive industries being developed (ie. warehousing and distribution, which generally do not use much water);
- adoption of water-efficient appliances and fittings; and
- implementation of initiatives to provide leak proof sewers further reducing the infiltration of wet weather ingress to the sewerage system.

The current design load for light industrial facilities is 40 EP/ha. At this rate, the design wet weather flow for the Erskine Park Employment Area has been reduced by some 199L/s. The Infrastructure Assessment calculates that the project would generate a wet weather flow of 10.9L/s, which represents only 5% of this spare capacity.

Accordingly, it is considered that the project can be readily serviced without affecting the capacity of the existing sewerage system.

Two internal sewage pumping stations would be constructed to service the site – SPS No. 1 located near the north-western corner near the intersection of Mamre Road and Bakers Lane, and SPS No. 2 located near the north-eastern corner of the site. These pumping stations would be owned and maintained by LOGOS. The two pumping stations will be of equal capacity, able to deliver 6L/s each. Gravity drainage would be reticulated within the site to the pumping stations.

The proposed reticulated sewer extension along Bakers Lane would have excess capacity to supply the properties that front it, including the three schools and retirement village.

3.9.5 Electricity

The site is proposed to be serviced from the Mamre Zone Substation off John Morphett Place and Lenore Lane, Erskine Park, approximately 2 kilometres to the north of the site. The site would be connected via an additional 11kV distribution feeder to the substation, run underground along Lenore Lane, Mamre Road and Bakers Lane.

Integral Energy has advised that the Mamre Zone Substation has adequate capacity to service the project, which requires approximately 8 MVA. Based on Integral Energy's advice, it is anticipated that a suitable permanent supply could be made available in the short term.

It is noted that Integral Energy anticipate further development in the Erskine Park Employment Area and surrounding area, and have contingency plans for zone substation upgrading in the area over the next five to ten years as required to meet the growth in demand. In this regard, an additional transformer could be added to the zone substation, which would boost the existing capacity (ie. approximately 50 MVA) by approximately 40 MVA, providing a total of 90 MVA. The

project demand (ie. 8 MVA) represents only 20% of this additional capacity. Accordingly, it is considered that the project is able to be serviced without adversely affecting power supplies to adjacent areas.

As discussed in Section 3.10.2 below, the project includes considerable passive and active energy savings measures to reduce energy use associated with the project, which would help to reduce demand on existing electricity supplies.

3.9.6 Gas

At present, it is not proposed to extend the gas main in Erskine Park Road to the site, as the project would not generate sufficient demand to warrant servicing the site. However, there is available capacity within the gas main to meet any future requirements of the project, if required.

3.9.7 Telecommunications

Telstra has confirmed that it can provide fibre and copper services as required to the site, which would be run underground to and within the *LOGOS Estate*. Telstra would provide both broadband and standard telephonic services from their local telephone exchanges to service the project.

3.10 Resource Use Management

3.10.1 Water Conservation

The project includes a number of water savings measures, including:

- roof rainwater harvesting tanks servicing each building, for use in toilet flushing, cooling tower make-up and irrigation (providing 1,100m^3 of storage for the Metcash Campus and 600m^3 for the DHL Campus);
- installation for water efficient (4-star) fixtures to all sanitary fixtures; and
- adoption of water efficient landscaping techniques, including:
  - draining hardstand areas to soft landscaping areas where feasible and practical;
  - incorporating water efficient native landscaping species and mulched beds; and
  - installation of water efficient irrigation systems.

These water savings measures would significantly reduce potable water use associated with the project.

3.10.2 Energy Conservation

The project includes a number of energy savings measures, including:

Passive measures:

- orienting buildings to minimise energy as far as practicable;
- maximising natural lighting, including 10% translucent roof sheeting to ambient-temperature warehouses (unless stock precludes), and extensive glazing to offices;
- maximising natural cross ventilation;
- use of performance glazing, eves or shading to protect windows from summer sun;
- insulation of office walls and roofs;

Active measures:

- use of low energy and automated lighting wherever possible;
- use of solar hot water systems;
- use of energy efficient plant, equipment and appliances; and
- use of energy efficient cooling systems, and fast acting and well sealed doors, for the Metcash temperature-controlled warehouse.

These energy savings measures are outlined in the attached Energy and Greenhouse Gas Assessment (see **Appendix K**), and discussed further in Section 6.5.

3.11 Landscaping

Landscaping would be undertaken in accordance with the landscape masterplan prepared for the project by Habitation (see **Figure 3.8** and **Appendix E**).

Refer to Section 6.1 for detail on the landscaping principles.

Figure 3.8: *Landscape Masterplan (Source: Habitation)*

3.12 Fencing, Lighting and Security

Security fencing would be provided in a manner that is generally consistent with the fencing concept provided in the Urban Design Report (see **Appendix C**), and reproduced on **Figure 3.9**. In this regard, 3 main fencing types would be installed, including:

- palisade fencing to street frontages and key internal frontages, with the fencing generally set behind the landscape setback;
- black vinyl coated chainwire fencing to other boundaries; and
- masonry fencing in key estate marker areas.

All fencing would be sited so it does not impede sight lines for drivers, and would be co-ordinated with the landscape, signage and lighting design.

To ensure that fencing is designed and installed in a consistent and unobtrusive manner, LOGOS has committed to the preparation of a more detailed Fencing Strategy for the site, to be prepared in consultation with Council and to the satisfaction of the Department of Planning.

Lighting would also be provided in a manner that is generally consistent with the lighting concept provided in the Urban Design Report (see **Appendix C**). All external lighting would be installed in compliance with *AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting*.

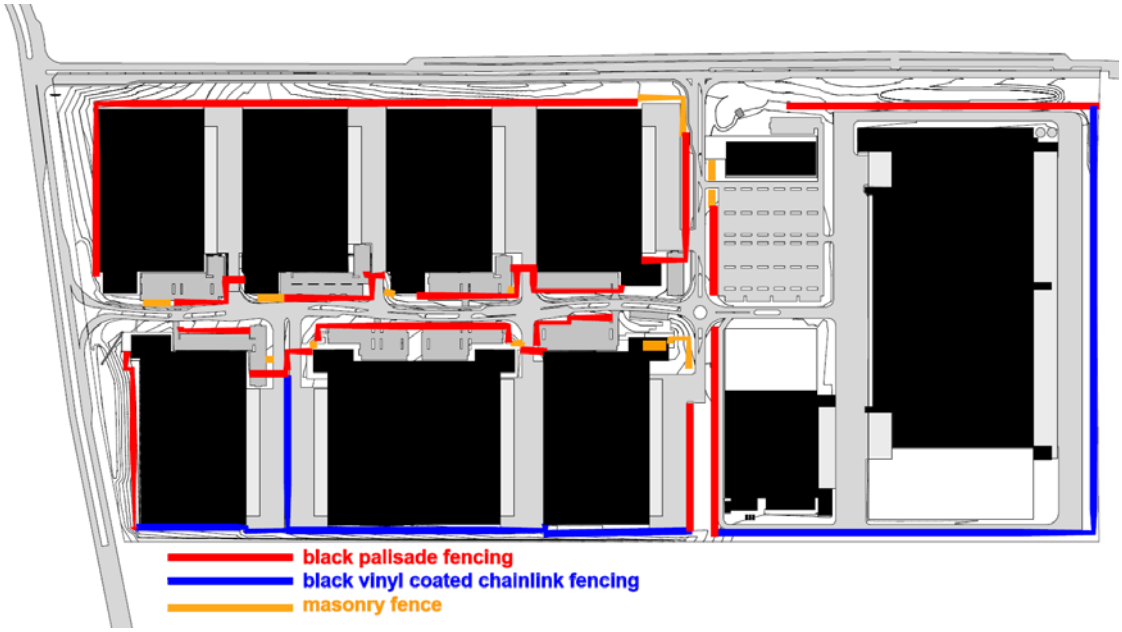


Figure 3.9: *Concept Fencing Plan (Source: Mackenzie Pronk)*

3.13 Signage

Business identification and directional signage would be installed on the DHL and Metcash building facades and site entries, however detailed plans of the proposed signage are not known at this time.

Estate signage would also be installed, in particular a corner marker near the corner of Mamre Road and Bakers Lane and estate entry markers at the access points on Bakers Lane and Mamre Road (see **Figure 3.10**).

Signage concept designs are provided in the Urban Design Report (see **Appendix C**). To ensure that signage is designed and installed in an orderly and high quality manner, LOGOS has committed to the preparation of a Signage Strategy for the site, to be prepared in consultation with Council and to the satisfaction of the Department of Planning.

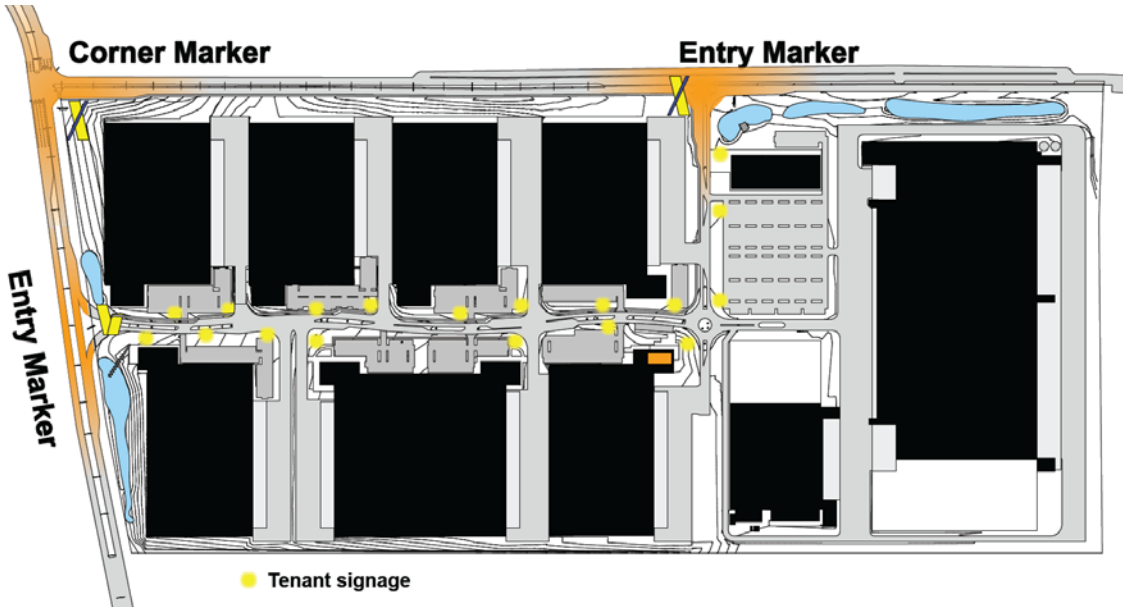


Figure 3.10: *Concept Signage Plan (Source: Mackenzie Pronk)*

4 PLANNING CONTEXT

4.1 Strategic Context

4.1.1 Metro Strategy

The *Sydney Metropolitan Strategy* (the Metro Strategy) released in December 2005, is the State Government's long term planning blueprint for the Sydney Metropolitan Area for the next 20 years. It caters for the creation of 500,000 extra jobs over the period to 2030 to meet the needs of the projected population increase of 1.1 million people over this time.

Approximately half of these jobs are planned to be created in Western Sydney, as part of the Government's key priority of providing 'new jobs closer to home'.

As detailed in Section 1.2, to meet these employment needs the Metro Strategy estimates that Sydney's stock of employment land needs to increase by up to 7,500 hectares, to a total of 22,000 hectares, by 2031. The strategy notes that:

> *"Without additions to the stock of employment lands, there will be a significant shortfall in supply over the coming 20 years. Additional sources of land must be identified if Sydney is to remain competitive."*

Illustrating this shortage, the Department of Planning has noted that Melbourne, with a population 25% smaller than Sydney, has a current supply of 22,000 hectares of employment land (ie. equal to Sydney's target for 2031).

The Department also notes that a number of studies undertaken by respectable research organisations – including BIS Shrapnel, Macro Plan Australia and SGS – are generally consistent and reflect a supply shortage of around 7,500 hectares of employment land, which is further exacerbated by the fragmented nature of Sydney's existing supply.

The Metro Strategy identifies the Western Sydney Employment Area (WSEA) as one of a small number of areas[4] in Sydney with key strategic importance for provision of Sydney's required employment land, and creating job opportunities in Western Sydney.

In this regard, the Strategy includes a key action to *'Protect and enhance employment lands in the M7 Motorway Corridor'* (Action A1.5.2).

The Strategy notes that the WSEA contains around 2,500 hectares of zoned and potential employment land (now all zoned for employment under the WSEA SEPP, as shown on **Figure 2.1**), plus an additional 2,200 hectares of land that could be used for industrial purposes, subject to suitable delivery and servicing.

The project is considered to be broadly consistent with the Metro Strategy, as it would enhance the employment lands in the WSEA (Action A1.5.2), can be serviced in an efficient and orderly manner at no cost to government, and would deliver key infrastructure required for the development of the WSEA, in particular a component of the 'Southern Link Road' which forms part of the regional road network for the WSEA.

[4] The other key areas being Port Botany/Mascot and the M5 Motorway corridor.

4.1.2 Employment Lands for Sydney Action Plan

In March 2007, the Department released the *Employment Lands for Sydney – Action Plan* as part of the implementation of the Metro Strategy's economic and employment strategy. One of the key actions in the plan is to *'Release more greenfield land to overcome a shortage of supply'* (Action 2).

The plan notes that approximately 2,900 hectares of new employment lands have been created or proposed since the release of the Metro Strategy, including a 900 hectare extension to the Western Sydney Employment Area (WSEA), and 2,000 hectares in the North West and South West growth centres and Central Coast structure planning work.

This still leaves a considerable shortfall (some 4,600 hectares) in the supply of employment land needed for Sydney's projected growth, particularly considering the ongoing loss of employment lands closer to the city for residential and commercial redevelopment. The Metro Strategy and the Employment Lands Action Plan recognise this supply gap. To address the issue, the Action Plan identifies a potential new employment area between Badgery's Creek and the WSEA, known as the Western Sydney Employment Lands Investigation Area (WSELIA), as shown on **Figure 1.2**.

This area has been earmarked as a potential employment area in Sydney's strategic plans for more than 20 years, including the Metro Strategy which identifies *'Badgerys Creek and its environs'* as a key potential area to accommodate employment lands growth. (The strategic planning history of the area is discussed further in the following section).

The Action Plan commits the Department (together with the Employment Lands Development Program) to investigating the WSELIA to assess its employment potential, with a view to integrating the area into the development of both the WSEA and the South West Growth Centre. The plan notes that *'the investigation process will assess the potential of this area for employment lands based on principles of ecologically sustainable development and taking into consideration the staged release of employment lands in surrounding areas. It will identify up front constraints and access issues to be resolved prior to rezoning including cost and feasibility of servicing the site'*.

Discussion on this investigation process is provided in Section 4.1.4 below.

4.1.3 North West Subregional Strategy

The draft *North West Subregional Strategy* builds on the strategic planning framework established under the Metro Strategy and the Employment Lands Action Plan, and acts as a broad framework for the long term development of Sydney's North West subregion.

The strategy reinforces the commitments made in the Employment Lands Action Plan. In this regard, under the action titled *'Protect and Enhance Employment Lands in the M7 Motorway Corridor'* (Action NW A1.5.2), the strategy states that *'the WSELIA will be subject to investigation so that the land can be released to meet medium to long term needs and integrate this into the development of both the Western Sydney Employment Area and the South West Growth Centre'*.

4.1.4 WSELIA Investigations and the WSEA SEPP

In 2008, during preparation of the new State Environmental Planning Policy for the WSEA (see Section 4.2.3), the Department undertook a detailed strategic investigation of the WSELIA to assess its employment potential, in accordance with the commitments under the Employment Lands Action Plan and the North West Subregional Strategy. Although not separately published

to date, the findings of the investigation have been documented in the Department's *Submission to the General Purpose Standing Committee No. 4* (September 2009).

The investigations detail the history of the NSW Government's strategic planning for the area, noting that the WESLIA has been earmarked as a potential employment area in Sydney's strategic plans for more than 20 years. These include:

- ***1988 Sydney into its Third Century & 1989 Metropolitan Update for the Sydney Region***
  These strategies identify the South Creek Valley corridor as an area for investigation to accommodate future urban growth in Sydney, including affordable land for housing and to create local job opportunities. The strategy also notes that the corridor could provide an opportunity to create an integrated city, associated with the proposed Badgery's Creek airport;
- ***1991 South Creek Valley Regional Environmental Study & draft Regional Environmental Plan***
  This study identifies significant future employment areas in the locality around the proposed Badgery's Creek airport. The *LOGOS Estate* site is identified as part of a future employment area on the land use plan (see Figure 4.1);
- ***1995 Cities for the 21st Century: Integrated Urban Management for Sydney, Newcastle, the Central Coast and Wollongong***
  This strategy retains the South Creek Valley area as a future option for investigation to meet Sydney's future growth needs; and
- ***2005 Sydney Metropolitan Strategy***
  As discussed above, the Metro Strategy includes a key action to protect and enhance employment lands in the M7 Motorway corridor.

The WSELIA investigations found that there is around 4,000 hectares of potential employment land in the locality, including land within the WSEA and the WSELIA. The investigation also found that there were infrastructure constraints particularly around sewer, potable water and roads, especially for the southern area of the investigation area.

To manage the orderly delivery of employment land given these constraints, the Department developed a staging program for release of employment land, with timing for release based on the ability to satisfy infrastructure requirements.

Stages 1 and 2 comprised the land that makes up the existing WSEA, which has now been consolidated and rezoned for employment purposes under the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP).

Stage 3 comprises the WSELIA. The Government decided not to release this area immediately (under the WSEA SEPP), and resolved to undertake further work on funding and delivery of essential infrastructure for the area.

However, in recognition of the strategic value of the WSELIA for employment purposes to meet the growing employment needs of Western Sydney, and the need to address Sydney's shortage of employment land, the Department's *Guide to the Western Sydney Employment Area* identifies the opportunity for landowners to fast-track development in areas adjacent to the zoned employment area. The guide notes that a case would need to be demonstrated that such development represents no cost to government in regard to infrastructure requirements and meets all relevant environmental tests.

The *LOGOS Estate* site is located immediately adjacent to the existing employment-zoned WSEA areas (see **Figure 2.1**). That is, it is located within the Stage 3 area but immediately adjacent to the Stage 2 area. Essentially, the site can be seen as being contiguous with, and a logical extension to, the existing WSEA, particularly as it ties the south-western section of the WSEA to the arterial road network (ie. Mamre Road).

This is particularly important in relation to the planned regional road network for the WSEA, which is indicated on the 'Transport and Arterial Road Infrastructure Plan Map' in the WSEA SEPP (see **Figure 4.4**). As indicated on the plan, the site is located directly to the south of the planned 'Southern Link Road', an arterial road linking Mamre Road in the west to the M7 Motorway and Wallgrove Road in the east.

LOGOS has committed to providing the land required to widen Bakers Lane so that it can accommodate the 'Southern Link Road', as well as constructing the link road (4-lane dual carriageway) over the full length of the site's frontage to Bakers Lane (approximately 1.1 kilometres).

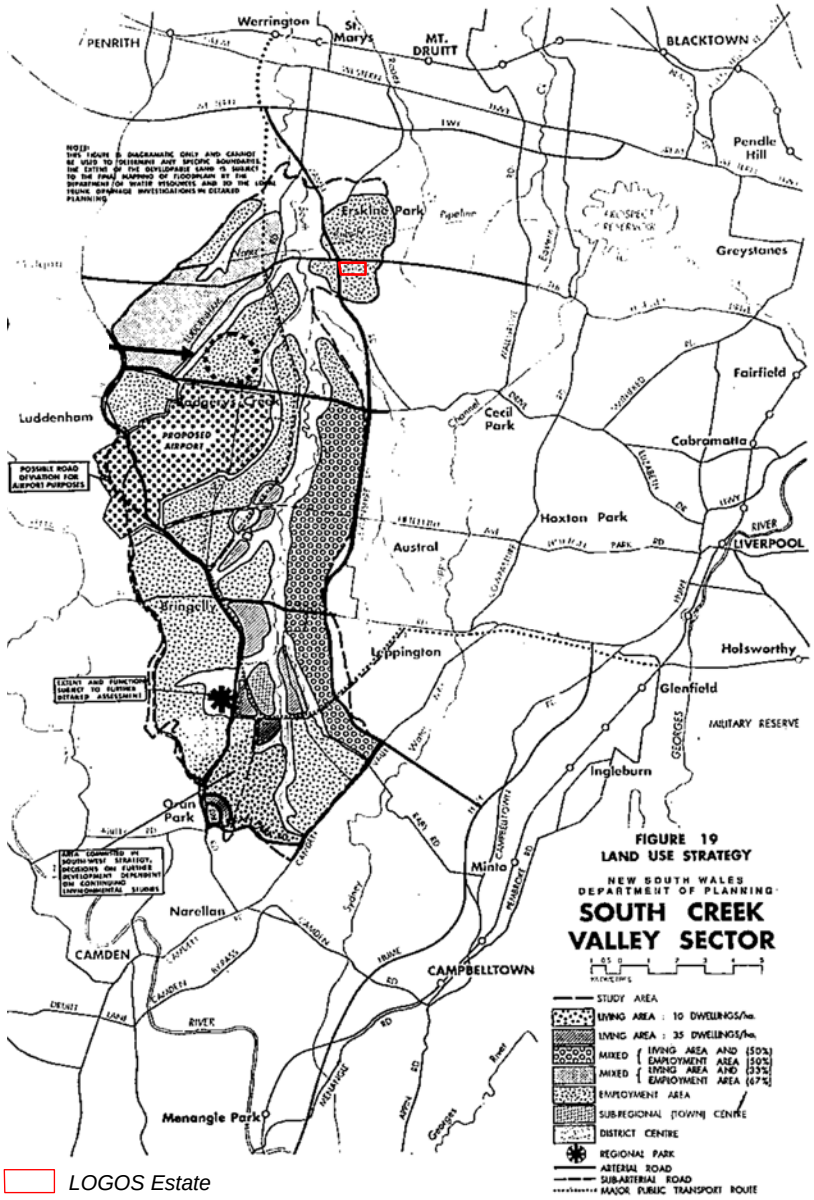


Figure 4.1: *Draft South Creek Valley Land Use Strategy 1991 (Source: Dept. of Planning)*

In this regard, the project would not only be consistent with the strategic planning for the WSEA, but would deliver a key component of the infrastructure required for the employment area, in the short term.

4.1.5 State Plan

The *State Plan: A New Direction for NSW*, released in November 2006, sets out the priorities for NSW State Government action over the next 10 years. The Plan includes 34 priorities and 60 targets designed to deliver better services and improve accountability across the public sector.

The project would directly contribute to a number of the plan's important priorities and targets, including the following priorities:

- P1 – Increased business investment; and
- E5 – Jobs closer to home.

4.2 Statutory Context

4.2.1 Major Project

The proposal is classified as a major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), because it involves development for the purpose of storage or distribution centres with a capital investment value of more than $30 million, and therefore triggers the criteria in Clause 12 of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005*.

Section 75M of the EP&A Act allows the Minister for Planning to authorise a proponent to apply for approval of a concept plan for a major project. On 31 March 2010, the Minister authorised the submission of a concept plan (and project application) for the project, in recognition of the strategic potential of the site to increase Sydney's employment land stock, and based on preliminary information that indicated that the project could be undertaken not just at no cost to government, but indeed in a manner that would facilitate the early delivery of key infrastructure required for the WSEA.

The Minister is the approval authority for the project.

In accordance with Section 75M of the EP&A Act, a single application has been made for approval of the concept plan and project application. Given that the project application seeks to develop the entire *LOGOS Estate*, the concept plan has no additional work to do (other than resolving the permissibility issue as discussed below), and as such the concept plan and project application are considered synonymously in this Environmental Assessment (as 'the project').

4.2.2 Permissibility

The site is zoned RU2 Rural Landscape under the recently-commenced *Penrith Local Environmental Plan 2010*, and development for the purposes of industry or warehouse and distribution centres is nominally prohibited in this zone.

However, the site is located immediately adjacent (across Bakers Lane) to land zoned for employment purposes under the *State Environmental Planning Policy (Western Sydney Employment Area) 2009*.

In recognition of the location of the site and its strategic potential to increase Sydney's employment land stock in an orderly manner, the Minister for Planning has authorised the preparation of a concept plan for the project.

As a consequence, the Minister is able to approve both the concept plan and project application.

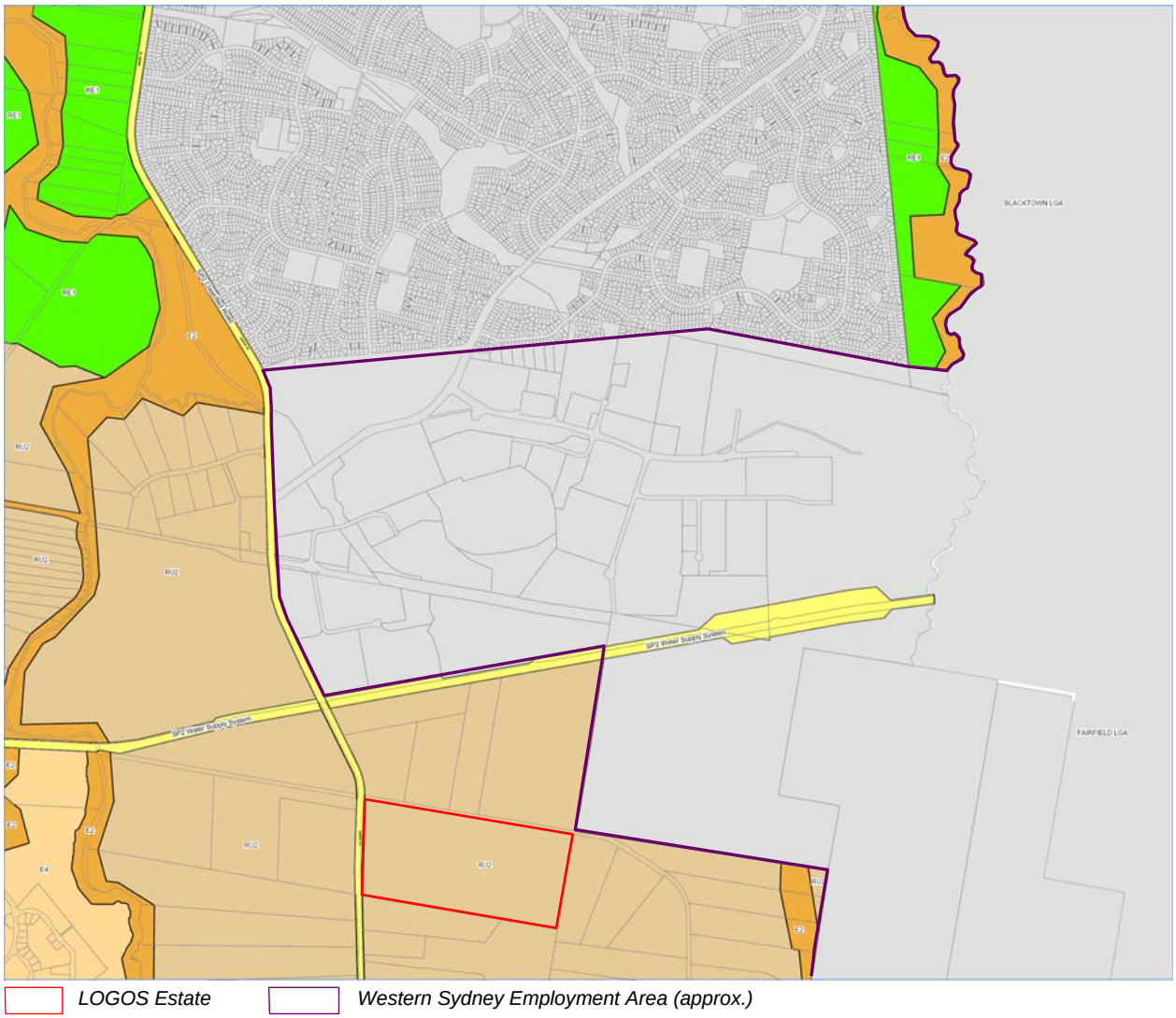


Figure 4.2: *Penrith LEP Zoning Plan (Source: Penrith LEP 2010)*

4.2.3 Environmental Planning Instruments

The following environmental planning instruments have been considered during the preparation of the Environmental Assessment:

- *SEPP No.33 – Hazardous and Offensive Development;*
- *SEPP No.55 – Remediation of Land;*
- *SEPP No.64 – Advertising and Signage;*
- *SEPP (Major Development) 2005;*
- *SEPP (Infrastructure) 2007;*
- *SEPP (Western Sydney Employment Area) 2009*; and
- *Penrith Local Environmental Plan (LEP) 2010.*

Consideration of these instruments is provided below. It is considered that none of these instruments, with the exception of the Major Development SEPP and perhaps the WSEA SEPP, substantially govern the carrying out of the project.

Further, it is considered that the project is able to be conducted in a manner that is consistent with the aims, objectives and provisions of the applicable instruments, apart from the obvious inconsistency with the current rural zoning under the Penrith LEP 2010.

SEPP No.33 – Hazardous and Offensive Development

SEPP 33 provides definitions for hazardous and offensive industry to enable decisions on developments to be made on the basis of merit, rather than on industry type per se.

An analysis of the project with regard to SEPP 33, and the Department of Planning's *Applying SEPP 33* guidelines, is provided in Section 6.9. As discussed, the proposed buildings are unlikely to store significant quantities of dangerous goods, with the exception of the Metcash ambient temperature warehouse which would store a range of consumer goods classified as dangerous goods (eg. aerosols, cleaners, etc.), with such storage in domestic sized packaging.

The precise details of this storage (including quantities and arrangements) have not been resolved at this stage. However, based on similar developments for fast moving consumer goods warehouses in Sydney and NSW, it is considered unlikely that the proposed Metcash facility would be classed as 'hazardous' under SEPP 33.

To ensure that all dangerous goods storage is effectively planned, LOGOS has committed to providing a hazards review (and additional hazards studies if required, such as a Preliminary Hazard Analysis), prior to construction of any building involving storage of hazardous materials or dangerous goods (apart from minor storage). The review would be undertaken in accordance with the Department of Planning's *Applying SEPP 33* guidelines, to the satisfaction of the Director-General of the Department of Planning.

With this commitment, the project is able to be conducted in a manner that is consistent with the aims, objectives and provisions of SEPP 33.

SEPP No.55 – Remediation of Land

SEPP 55 aims to provide for a statewide planning approach to the remediation of contaminated land, and in particular, to promote the remediation of contaminated land for the purpose of reducing risk of harm to human health or any other aspect of the environment.

Clause 7 of the SEPP requires a consent authority to consider whether the land to which a project/development application relates is contaminated, and if the land is contaminated, to be satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation), prior to granting consent.

The potential for site contamination on the subject land has been assessed, which found that the land is not contaminated and is fit for the intended industrial use (see Section 6.2 for detail). As such, the project is able to be conducted in a manner that is consistent with the aims, objectives and provisions of SEPP 55.

SEPP No.64 – Advertising and Signage

SEPP 64 aims to ensure that any signage associated with a development, including any advertisement, that is visible form a public place is compatible with the desired amenity and visual character of an area, is suitably located and is of a high quality and finish.

The project involves building identification signs and business identification signs as defined in the policy, as well as estate directory signage. Clause 9 of the SEPP provides that an assessment of matters identified in Schedule 1 is not required for building identification signs and business identification signs.

The proposed signage is considered to be consistent with the aims and objectives of SEPP 64. As discussed in Section 6.1, LOGOS has committed to the preparation of a detailed signage strategy for the project.

With this commitment, the project is able to be conducted in a manner that is consistent with the aims, objectives and provisions of SEPP 64.

SEPP (Major Development) 2005
SEPP (Major Development) 2005 aims to identify projects of State or regional planning significance to which the approval and assessment process under Part 3A of the EP&A Act should apply.

As stated in Section 4.2.1 above, the project constitutes a class of development in Schedule 1 of the SEPP. Consequently, the Minister is the approval authority for the project.

SEPP (Infrastructure) 2007
SEPP (Infrastructure) 2007 aims to facilitate the effective delivery of infrastructure across the State.

Clause 104 of the SEPP applies to traffic generating development and ensures that the RTA is given the opportunity to make representations on certain traffic generating development applications before a consent authority makes a determination on the proposal.

The project meets the thresholds in schedule 3 of the SEPP (as industry with an area of over 20,000m^2), and is therefore considered to be traffic generating development for the purposes of the SEPP. Consequently, the application will need to be referred to the RTA for comment.

The RTA has been consulted during preparation of the Environment Assessment (see Section 5), and traffic assessment indicates that the project is unlikely to result in any significant traffic impacts (see Section 6.8).

SEPP (Western Sydney Employment Area) 2009
The WSEA SEPP aims to provide a consistent and coordinated planning framework for the Western Sydney Employment Area, and to promote economic development and the creation of employment in the area.

As the site does not yet form part of the WSEA, the SEPP does not strictly apply to the site. However, the site is adjacent the WSEA and forms part of the WSELIA which, as detailed in Section 4.1.4, has been earmarked for inclusion in the WSEA in the future. As such, consideration of the project against the WSEA SEPP is warranted.

Based on the land zoning map in the SEPP (see **Figure 4.3**), it is likely that the site would be wholly zoned IN1 General Industrial under the SEPP. The project, as development for the purpose of warehouses or distribution centres, would be permissible with consent in this zone.

The objectives of the IN1 zone are:

- *To facilitate a wide range of employment-generating development including industrial, manufacturing, warehousing, storage and research uses and ancillary office space.*
- *To encourage employment opportunities along motorway corridors, including the M7 and M4.*
- *To minimise any adverse effect of industry on other land uses.*
- *To facilitate road network links to the M7 and M4 Motorways.*
- *To encourage a high standard of development that does not prejudice the sustainability of other enterprises or the environment.*
- *To provide for small-scale local services such as commercial, retail and community facilities (including child care facilities) that service or support the needs of employment-generating uses in the zone.*

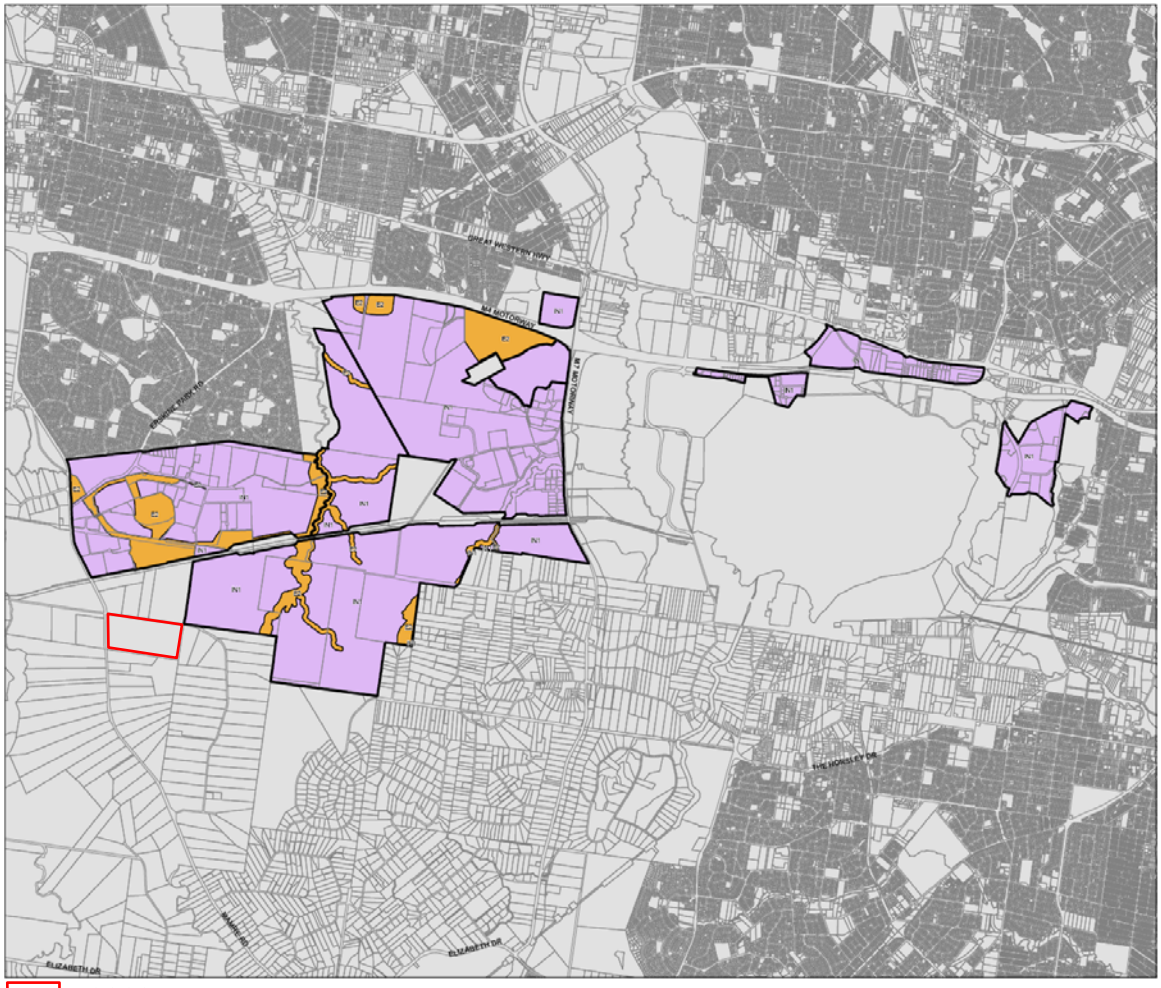


Figure 4.3: *WSEA SEPP Zoning Plan (Source: WSEA SEPP)*

It is considered that the project is consistent with the zone objectives, in that it would:

- facilitate employment generating warehousing development;
- facilitate road network links to the M7 through the early delivery of part of the road network identified in the SEPP (ie. the 'Southern Link Road', as indicated on **Figure 4.4**), and encourage employment opportunities along this future arterial road; and
- deliver a high quality, campus-style industrial estate that does not prejudice other enterprises or the environment.

Parts 5 and 6 of the SEPP detail a number of principal development standards and other provisions for development within the WSEA. Consideration of these standards and provisions is provided in Section 4.3 below.

In summary, it is considered that the project is able to be conducted in a manner that is consistent with these provisions.

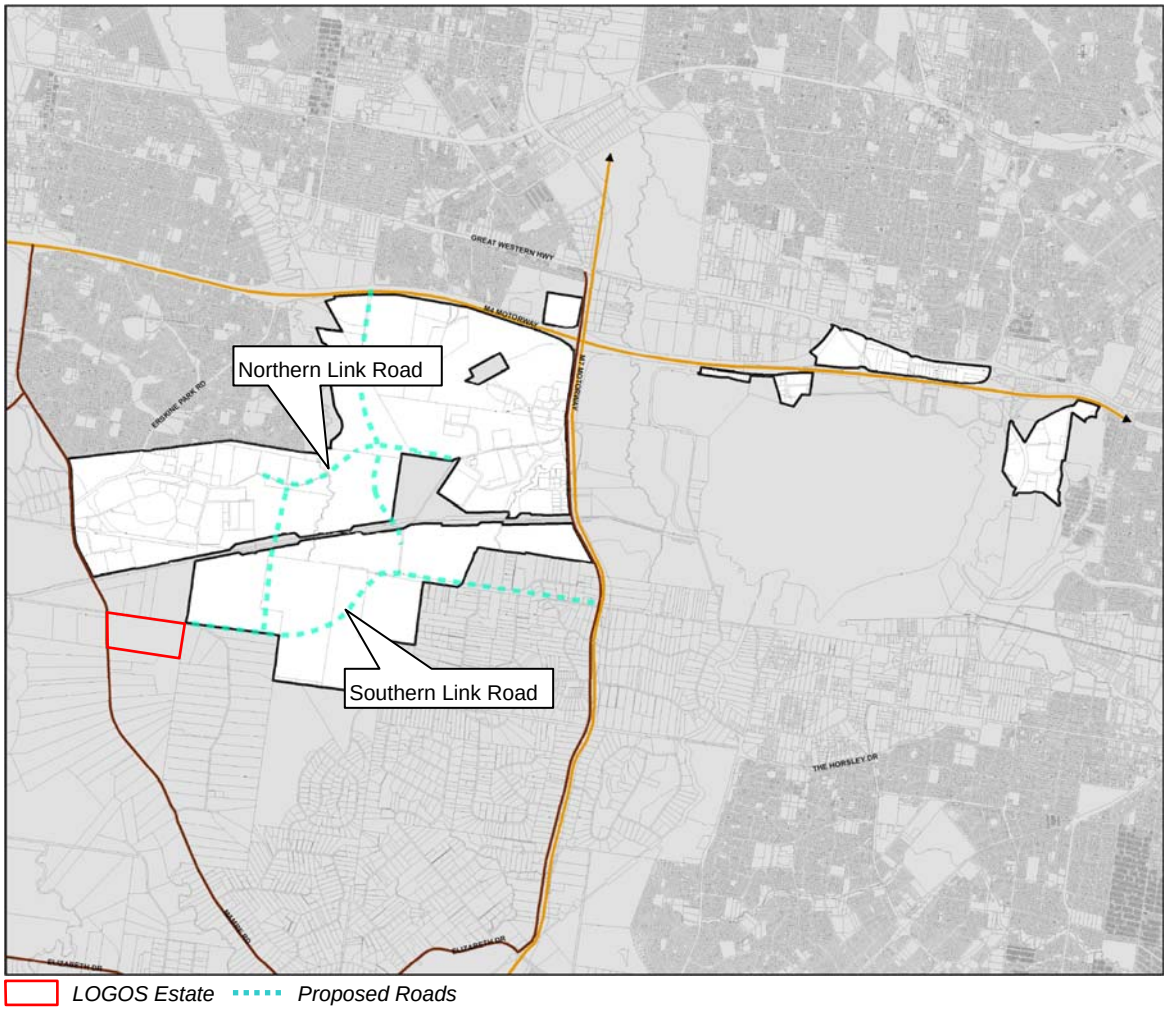


Figure 4.4: *WSEA Proposed Road Network (Source: WSEA SEPP)*

Penrith Local Environmental Plan (LEP) 2010

As stated in Section 4.2.2 above, the site is currently zoned for rural purposes under the LEP and the project is prohibited in this zone, and is therefore not consistent with the rural-based objectives of this traditional site zoning. However, as detailed in Section 4.1 the site has been identified as potential employment land and the Minister has authorised the preparation of a concept plan (and project application) for the project.

Although not strictly applicable (as Section 75R of the EP&A Act provides that LEPs do not apply to approved projects), consideration of the principal development standards and other provisions of the LEP is provided in Section 4.3 below.

4.2.4 Objects of the EP&A Act

Section 5 of the EP&A Act sets out the objects of the Act. It is considered that the objects of most relevance to the project are those found in Section 5(a)(i)-(vii). These objects are reproduced below:

The objects of this Act are:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals,

water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities,

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development.

It is considered that the project is able to be carried out in a manner that is consistent with these objects. In particular, it is noted that the project:

- would not sterilise or adversely affect any known natural resources of significance, and would not significantly impact agricultural resources given the small size of the site and the envisaged urbanisation of the surrounding area (Object 5(a)(i));
- provides for the orderly and economic use of the land (Object 5(a)(ii)), as:
  - the site is immediately adjacent to the WSEA and has been identified as potential employment land for many years;
  - the project provides for the economic use of marginal agricultural land in the short term; and
  - the project contributes to satisfying Sydney's need for additional employment land;
- is able to be readily serviced by existing and planned utility services in the locality at no cost to government, and indeed in a manner that would facilitate the early delivery of key infrastructure required for the WSEA (Object 5(a)(iii));
- provides land required for public purposes and community facilities (ie. through dedication of part of the site to facilitate development of the 'Southern Link Road') (Objects 5(a)(iv) and (v));
- is able to be carried out without any significant environmental impacts (Object 5(a)(vi)); and
- is able to be undertaken in a manner that is consistent with the principles of ecologically sustainable development (Object 5(a)(vii)), including:
  - the precautionary principle – the project does not entail a threat of serious or irreversible environmental damage;
  - inter-generational equity – the project would not adversely affect future generations;
  - conservation of biological diversity and ecological integrity – the project would not adversely affect biodiversity values of the site; and
  - improved valuation, pricing and incentive mechanisms.

4.3 Compliance with Development Controls

Although none is strictly applicable to the project, the project has been designed in a manner that is consistent with the development controls in contemporary planning instruments, including the WSEA SEPP, Penrith LEP 2010 and the Penrith DCP 2006 (EPEA). Consideration of the applicable controls in each instrument is presented below.

4.3.1 SEPP (Western Sydney Employment Area) 2009

Part 5 of the WSEA SEPP provides a number of principal development standards for development in the employment area, and Part 6 provides a number of additional applicable provisions. An assessment of the project against these standards and provisions is provided in the following table.

Table 4.1: *WSEA SEPP Compliance*

Clause	*Issue*	*Key Controls Summary*	*Complies*	*Comments*
20	Ecologically Sustainable Development	• Water use efficiency; • Energy efficiency	Yes	• See Sections 3.10 and 6.5
21	Height of Buildings	• Consider amenity of adjacent residential areas; • Consider site topography	Yes	• Site excavation would assist in lowering the relative height of buildings; • See Section 6.1
22	Rainwater Harvesting	• Rainwater harvesting infrastructure to be provided	Yes	• See Sections 3.10 and 6.2
23	Development Adjoining Residential Land	• Development within 250m of residential zoned area to consider impacts	Yes	• Closest residential zoned area is >250m from site; • See Section 6 for consideration of impacts on nearby residents.
24	Development involving Subdivision	• Land fragmentation; • Employment land supply impacts; • Access to roads and services	Yes	• The project involves relatively simple site subdivision, which would not result in land fragmentation issues, would not affect supply of employment land in the area, and would not compromise reasonable access to roads and services for other development; • See Section 3
25	Public Utility Infrastructure	• Required infrastructure to be provided, including potable water, electricity, gas and sewerage	Yes	• See Section 3.9
26	Proposed Transport Infrastructure Routes	• Consider compatibility of development with proposed transport infrastructure routes	Yes	• The site is adjacent to a proposed transport infrastructure route, as identified on the applicable SEPP map (see Figure 4.4); • The project has been designed in a manner that is consistent with, and delivers an important part of, the proposed transport route; • See Section 6.8.

4.3.2 Penrith Local Environmental Plan 2010

Part 4 of the Penrith LEP 2010 provides principal development standards for development in the local government area, and Parts 5 and 6 provide a number of additional applicable provisions. An assessment of the project against these standards and provisions is provided in the following table.

Table 4.2: *Penrith LEP 2010 Compliance*

Clause	*Issue*	*Key Controls Summary*	*Complies*	*Comments*
4.1	Minimum Subdivision Lot Size	• Minimum lot size of 40 ha on the site	No	• This provision is not considered relevant given the employment-generating nature of the project.

Clause	*Issue*	*Key Controls Summary*	*Complies*	*Comments*
4.2	Rural Subdivision	• Allows smaller lots in the RU2 zone for primary production purposes	Yes	• Not applicable to project
4.3	Height of Buildings	• Provides height limits in some zones	Yes	• Not applicable to site
4.4	Floor Space Ratio	• Provides FSR limits in some zones	Yes	• Not applicable to site
5.10	Heritage Conservation	• Provides controls for heritage protection and conservation	Yes	• The site is not in proximity to any heritage items listed under the LEP; • See Section 6.7
6.1	Earthworks	• Requires development consent for certain earthworks; • Requires consideration of associated impacts	Yes	• See Sections 3.4 and 6
6.2	Salinity	• Requires consideration of salinity and associated impacts	Yes	• See Section 6.2
6.3	Flood Planning	• Requires development consent for all development on flood prone land; • Requires consideration of associated impacts	Yes	• Not applicable to site (ie. site and surrounds not flood prone); • See Section 6.2.
6.4	Natural Resources	• Requires development consent for certain development on natural resources sensitive land; • Requires consideration of associated impacts	Yes	• The site is not in proximity to any natural resources sensitive land identified in the LEP
6.5	Scenic Character	• Requires consideration of visual impacts (from roads, heritage items or other public places) for development on 'land with scenic and landscape values'	Yes	• The western part of the site (ie. west from the central ridgeline) is identified as 'land with scenic and landscape values'; • The project has been designed to minimise adverse visual impacts; • See Section 6.1
6.6	Servicing	• Requires consideration of servicing	Yes	• The project is able to be appropriately serviced; • See Section 3.9.

4.3.3 Penrith Development Control Plan 2006 (EPEA)

Penrith Development Control Plan (DCP) 2006 provides detailed guidance for development within the Penrith LGA. Section 6.14 of the DCP applies to development within the Erskine Park Employment Area (EPEA). Although the site is not within the EPEA, it is only 500 metres from it and the provisions of the EPEA DCP are the most relevant Penrith DCP to the site and the project. Accordingly, consideration of DCP is provided below.

The DCP has the following objectives:

(a) Provide a framework that will lead to a high standard of development in the Erskine Park Employment Area encouraging local employment and creating an area which is pleasant, safe and efficient to work in;

(b) Ensure that development takes account of the physical nature of the local environment, particularly Ropes Creek, ridgelines and the natural landscape;

(c) Ensure that development does not result in pollution of waterways and in particular of Ropes Creek and South Creek;

(d) Promote the development of a visually attractive physical environment where the form, scale, colour, shape and texture of urban elements are managed in a way which will achieve an aesthetically pleasing balance which does not adversely affect the amenity of the existing residential areas;

(e) Identify and provide for public amenities and service infrastructure to accommodate development in the Erskine Park Employment Area;

(f) Promote the creation of a landscaped area within the electricity transmission easement to act as a buffer between the employment zones and the residential communities;

(g) Establish environmental criteria and controls for development within the area to ensure that the environmental quality of adjoining areas is not compromised;

(h) Ensure that development is consistent with the objectives of the Threatened Species Conservation Act with particular regard to the endangered ecological communities, flora and fauna present on the site;

(i) Facilitate conservation of urban bushland; and

(j) Protect, restore and enhance riparian corridors within the Erskine Park Employment Area.

An assessment of project against the provisions of the EPEA DCP is provided in the following table.

Table 4.3: *Erskine Park Employment Area DCP Compliance*

DCP Section	***Issue***	***Key Applicable Development Controls***	***Complies***	***Comments***
2.0	Drainage	• Development to comply with Council's preferred drainage/flooding/water quality system.	Yes	• See Section 6.2.7.
3.0	Subdivision	• Minimum allotment size is 10,000sqm or 20,000sqm (depending on zone); • Minimum frontage is 60m.	Yes	• Project complies with minimum lot size and frontage length; • See Section 03.2.
4.0	Transport and Carparking	• Access roads to be generally in accordance with Council's traffic strategy, inc. a 4 lane link road on Lenore Lane in a 35m reservation; • All parking to be provided on site; • Details off-street parking requirements.	No	• Project's proposed Bakers Lane upgrade is consistent with the Lenore Lane link road; • Project does not comply with carparking rates; • See Section 6.8.
5.1	Height	• Maximum height for buildings in most of the area to be determined on merits, although a height limit of 12m applies near the northern transmission line easement; • Buildings should be designed to step up on sloping sites, and be sited generally mid-slope.	Yes	• Maximum building height is 14m, and is considered to meet the height objectives; • The buildings have been designed in a manner that step up the slope, with retaining walls hidden at the back of the site; • See Section 6.1.

DCP Section	*Issue*	*Key Applicable Development Controls*	*Complies*	*Comments*
5.2	Site Coverage	• Site coverage shall not exceed 50%.	No	• Project site cover (ie. 50%) complies, but DHL Campus site cover marginally exceeds (ie. 52%); • See below.
5.3	Setbacks	• Applicable building setbacks are: o Mamre Road, 20m o Lenore Lane, 20m; o 'Other' Roads, 15m; o Rear and Side Bdy's, 5m; • Where the property has frontage to more than one road, a variation to setbacks on the secondary road frontage may be considered.	Yes	• Minimum setbacks to (approx.): o Mamre Road (to hardstand) – >20m; o Mamre Road (to building) – min. 20m; o Bakers Lane[5] (to hardstand) – 20m; o Bakers Lane (to building) – min. 22m; o Internal Estate Roads (to building) – min. 17m; o Eastern and southern boundaries (to building/hardstand) – min. 12m.
5.4.2	Architectural/ Design	• Merit issue. Urban Design matters identified include: - Quality of building design and materials; - Single construction materials may be limited to 50% of wall surface area; - External materials to have a reflectivity index <20%; - Application of energy efficient design principles; - Articulation of walls to provided variation in streetscapes; - External material colours.	Yes	• See Sections 3 and 6.1.
5.4.3	Siting/ Building Orientation	• Buildings not to intrude into skyline when viewed from adjoining residential areas; • Elevations oriented to residential areas to be minimised; • Design and layout of buildings to consider local climatic considerations; • Avoid overshadowing of adjoining areas.	Yes	• See Sections 3 and 6.1.
5.5	Signage and Estate Entrance Walls	• Signage to be high quality; • Estate entrance walls to be provided in strategic locations.	Yes	• See Sections 3 and 6.1.
5.6	Lighting	• Lighting effects to be contained within the property.	Yes	• See Sections 3 and 6.1.

[5] The identified setbacks to Bakers Lane are to the expanded road reservation as proposed by the project.

DCP Section	*Issue*	*Key Applicable Development Controls*	*Complies*	*Comments*
5.7	Fencing	• Security fencing on front boundary to be located either behind the landscape setback or midway between the setback and the boundary. • Fencing to be of open nature, with consideration to dark coloured plastic coated chain wire.	Yes	• Fencing on the boundaries to Mamre Road and Bakers Lane located generally behind the setback line; • To mitigate visual impacts, palisade and/or black coated chain-wire fencing is proposed; • See Sections 3 and 6.1.
5.8	Services	• Satisfactory arrangements to be made for all services.	Yes	• See Section 3.9
6.0	Environment Quality	• Details standards for Noise pollution, waste management, soil erosion and sediment control, air pollution, storage and handling of chemical substances, stormwater pollution control, energy conservation, contaminated land, and trading/operating hours.	Yes	• See Section 6
7.0	Biodiversity	• Details flora and fauna assessment standards.	Yes	• See Section 6.6
8.0	Landscaping	• Details development standards for site landscaping.	Yes	• See Section 3.11 and 6.1.

As illustrated in the table, the project is consistent with the development controls of the DCP, with the exception of the car parking provision controls and site coverage.

The car parking non-compliance is discussed in Section 6.8. With regard to site cover, it is considered that the non-compliance is minor, and would not adversely affect the visual amenity, bulk or scale of the project. It is noted that the proposed site cover is well below that adopted in some other precincts within the WSEA. For example, the Greystanes Southern Employment Lands has an allowable site cover of 70% (inc. awnings).

In summary it is considered that the non-compliances are minor, justified by the specifics of the project, and would not result in any adverse environmental impacts.

4.4 Development Contributions

4.4.1 Penrith Development Contributions Plans

There are no specific local contributions plans that apply to the site, however consideration of contributions plans that apply to the Erskine Park Employment Area is warranted given the similarity of the site and project to this area.

Penrith City Council's *Erskine Business Park – Development Contributions Plan 2008*, prepared under Section 94 of the EP&A Act, was adopted by Council in April 2008. The contributions plan amends the former *Erskine Park Employment Area Development Contributions Plan*, adopted by Council in March 2005.

Developer contributions for this area under the plans are levied on a per developable hectare basis for the following services and facilities:

- drainage/water quality;
- roads and traffic management; and
- plan administration.

The stormwater drainage scheme for the project is discussed in Sections 3.9 and 6.1. As discussed, the project involves all works necessary to manage stormwater on the site, as well as the upgrade of existing sub-standard culverts under Bakers Lane and Mamre Road. Accordingly, it is considered that no further contributions to drainage/water quality infrastructure is required or warranted.

The proposed road works and traffic impacts associated with the project are discussed in Sections 3.9 and 6.8. As discussed, the project involves the construction of all external roadworks required for the project, including the upgrade of Bakers Lane to a dual carriageway, and localised upgrade works to Mamre Road. Accordingly, it is considered that no further contributions to local road infrastructure is required or warranted.

4.4.2 WSEA State Infrastructure Contribution

Clause 29 of the WSEA SEPP requires a consent authority to ensure that satisfactory arrangements have been made for applicable development to contribute to provision of regional transport infrastructure and services for the WSEA.

The NSW Government's *Guide to the WSEA* states that the required contribution will be via a proposed State Infrastructure Contribution (SIC) of $180,000 per net developable hectare, to be applied to all industrial development in the WSEA. The Guide notes that the SIC will provide the certainty needed to encourage investment in the area, and ensure that the provision of infrastructure is shared by all beneficiaries and government.

Although not strictly within the WSEA, LOGOS has committed to paying the SIC, subject to being credited for the proposed applicable works-in-kind, namely the upgrading of Bakers Lane adjacent the site to a dual carriageway (including necessary acoustic treatments to residences affected by traffic noise), related upgrades to Mamre Road and related land dedication. As discussed in Section 6.8, this upgrade would deliver an important component of the 'Southern Link Road', which in turn forms a component of the regional road network required for the WSEA and proposed to be funded through the SIC.

In addition, it is considered that the project would assist in the economics of the delivery of the regional transport infrastructure required for the WSEA, given that the site is outside the WSEA and therefore the project effectively increases the pool of developable land contributing to the SIC. As such, the project reduces the amount that the government (ie. taxpayers) may be required to contribute to the regional road infrastructure.

5 CONSULTATION AND IDENTIFICATION OF KEY ISSUES

Planning for the project has involved consultation with relevant government authorities, service providers and project stakeholders including surrounding landowners.

Based on the consultation undertaken, it is considered that LOGOS, the project team and the relevant stakeholders have gained a good appreciation of the key issues relevant to the project and development of the site. Stakeholders consulted, and the key issues raised by or considered to be of relevance to these stakeholders, are listed in the following table.

Table 5.1: *Stakeholder Consultation and Issues Raised*

Stakeholder	***Main Consultation Forum/s***	***Key Issues***
Government Authorities		
Department of Planning	• Pre-lodgement meeting; • Director-General's Requirements	• Strategic land use planning; • Infrastructure and services; • Design and visual amenity; • Transport, access and parking; • Soil and water; • Noise; • Air quality; and • General planning and environmental issues.
Penrith City Council	• Pre-lodgement meetings • Director-General's Requirements	• Strategic land use planning, including suitability of the site and availability of existing employment land in the WSEA; • Topography, and compatibility with adjoining rural land use; • Infrastructure and services; • Transport and traffic; and • General planning and environmental issues.
Fairfield City Council	• Pre-lodgement meeting	• Transport and traffic; and • General planning and environmental issues.
Roads and Traffic Authority	• Meeting and/or telephone (for traffic assessment) • Director-General's Requirements	• Traffic and transport, including sustainable transport modes, traffic volumes, intersection performance, access and parking, and construction traffic management.
Service Providers		
Integral Energy	• Meeting and/or telephone (for infrastructure assessment)	• Electrical servicing and capacity issues
Sydney Water	• As above	• Water and sewer servicing
Telstra	• As above	• Telecommunications servicing
AGL	• As above	• Gas servicing
Surrounding Landowners		
Adjacent rural landowners to east, south and north	• Meetings	• The owners of the properties immediately to the south of the site, 754 and 784 Mamre Road, have provided letters of support for the project (see **Appendix Q**). • Other landowners generally expressed an interest in

Stakeholder	*Main Consultation Forum/s*	*Key Issues*
		the project and development of the area for employment purposes; • Transport and access; • General amenity issues (eg. noise).
Mamre Anglican School, Trinity Catholic Primary School, Emmaus Catholic Secondary School, Emmaus Retirement Village	• Meetings	• Strategic planning for the wider area; • Transport and access (inc. access to Bakers Lane, and general traffic); • General amenity issues (eg. noise).

The Director-General of the Department of Planning has provided his environmental assessment requirements for the project. These requirements are reproduced in **Appendix B**.

Based on the key issues identified for assessment in the Director-General's environmental assessment requirements, LOGOS' consultation undertaken to date, and risk assessment associated with the environmental assessment undertaken for the project to date, it is considered that the key issues for the project include:

- strategic land use planning, including suitability of the site for employment purposes;
- infrastructure and services;
- traffic and transport;
- layout and design, including landscaping and visual amenity;
- noise;
- flora and fauna;
- Aboriginal heritage;
- soil and water; and
- sustainability (particularly energy and water conservation).

These issues, along with other environmental issues of relevance to the project, are addressed in Sections 3, 4 and 6 of this Environmental Assessment.

6 ENVIRONMENTAL IMPACTS

6.1 Design and Visual

6.1.1 Estate Design

LOGOS' objective for the project is to provide a world-class, 'campus-like' estate that is more akin to a modern business park than a traditional industrial estate. To help realise this design intent, LOGOS engaged respected architects Mackenzie Pronk, together with Axis Architectural and Habitation, to develop a high quality urban, architectural and landscape design for the *LOGOS Estate*.

The Urban Design Report is attached as **Appendix C**, and this package has guided the development of the proposed architectural and landscape design packages for the estate, which are attached as **Appendix D** and **E**, respectively.

The urban, architectural and landscape design for the estate has been prepared in a manner that:

- respects and is consistent with the development controls for the Erskine Park Employment Area (and other employment areas in the WSEA);
- maximises the realistic development potential of the site, in accordance with current and foreseeable market demand; and
- respects and highlights the natural attributes of the site, including topography, vegetation and habitat.

The consistency of the project with the Erskine Park Employment Area DCP is addressed in Section 4.3 of this report. In summary, the proposed masterplan is generally consistent with the applicable controls of the DCP, with the exception of car parking rates and a minor exceedance of the site coverage standard. These issues are discussed in Sections 4.3 and 6.8.

Urban Design

The urban design of the *LOGOS Estate* is based on a simple, rational estate layout with restrained, well proportioned and consistent buildings set within a considered urban domain.

At the macro level, the estate layout is organised around 2 main axes, following the internal estate roads. The north-south axis provides the key access to the site, establishing a structured urban character for the estate. The east-west axis establishes a campus setting for the DHL Campus, with a 'wiggle' incorporated into the road to aid in visual relief and break down formality.

The estate design has paid particular attention to the site's topography and its key frontages, including providing reasonable batters to Mamre Road and Bakers Lane, and restricting engineered retaining walls to the rear of the site where they would be largely hidden from public view. (Although not required from an engineering perspective, the landscaping plan for the project has incorporated decorative stone walls along the Bakers Lane and Mamre Road frontages). The building pads have been designed to 'step up' the site in accordance with the site's topography (with pad levels ranging from approximately 53 to 66 metres AHD), thus ensuring that the project respects the topography of the locality.

At a more detailed level, the estate would be developed with a unified suite of urban elements, providing consistent building architecture, signage, lighting, paving, fencing and street furniture. These elements would reinforce the intent of the estate masterplan: simplicity and clarity.

Conceptual designs for key urban design elements, including estate signage, fencing and lighting, are provided in **Appendix C**.

To ensure that all estate signage, fencing and lighting is designed and installed in a consistent and high quality manner, LOGOS has committed to the preparation of a detailed signage, fencing and lighting strategies for the estate, to be prepared to the satisfaction of the Director-General of the Department of Planning.

Architectural Design

The project provides an opportunity to develop a consistent and high quality architectural theme across the entire *LOGOS Estate* site.

The proposed external appearance of the buildings is shown on **Figures 3.5**, **6.1**, **6.3** and the plans in **Appendices C** and **D**. In general, the warehouse building design has been inspired by the subtle shading of tree trunks of Cumberland Plain Woodland, or an Arthur Boyd painting of the natural Australian bush (see **Figure 6.1**).

Figure 6.1: *Warehouse Architecture Concepts (Source: Mackenzie Pronk)*

The design statement from the project architect is presented below:

> *"The design of buildings across the site has been informed by a precedent study that has identified a range of industrial building typologies and their suitability for end users and the specifics of the Kemps Creek Site.*
>
> *The architectural language utilises a simple and restricted palette. The functional elements of Office, Dock, and Entry have been exaggerated and celebrated whilst the structure and skin have been manipulated to achieve an appropriate recessive functional architecture for the estate.*

The Kemps Creek Logistics Project will be characterised by an architecture that utilises a restrained colour palette, has simple elemental forms and has a high architectural quality to the offices and public domain treatments.

The Kemps Creek estate building facades have been designed to work in sympathy with the landscaped frontages vertically accented metal cladding in 3 colour tones will subtly emboss a variegated landscape pattern across the facades. The metal cladding will be predominately colorbond finish with both translucent sheeting and dark grey vertical stripes - a subtle abstraction of the Cumberland Plain forests.

The awnings and office sunshading will be braced with diagonals creating a quality architectonic accent to these primary building elements."

It is considered that the architectural design represents a high quality and cohesive design for the *LOGOS Estate*, befitting LOGOS' objective of providing a world-class campus-like industrial estate for Western Sydney.

Landscape Design

Landscaping would be undertaken in accordance with the landscape masterplan (and detailed landscape plans) for the project, prepared by Habitation (see **Appendix E**).

One of the key objectives of the landscape plan is to compensate (or offset) the removal of 1.12 hectares of degraded Cumberland Plain Woodland that is required to be removed for the project. In this regard, the landscape plan seeks to recreate the Cumberland Plain Woodland community in the large setback areas to Bakers Lane and Mamre Road. This would be achieved through generous Cumberland Plain Woodland plantings (4.48 hectares) as well as creation of faunal habitat, including aquatic habitat and terrestrial habitat (placement of logs and tree hollows, and provision of rock habitat). Section 6.6 provides further detail on flora and fauna aspects of the project.

A summary of the design statement from the project landscape architect is presented below:

"The landscape concept for the project aims to create a setting of high aesthetic value whilst being sympathetic to the area's local character and environment. The landscape concept will create two types of landscape character - vegetated buffer zones of high ecological value incorporating habitat creation and Cumberland Plain Woodland replacement, and a 'campus style' internal environment consisting of a mixture of formal and informal planting, avenues and recreation areas for staff.

Cumberland Plain Woodland Recreation

Landscaped setbacks will be revegetated with Cumberland Plain Woodland species comprising a mixture of large and small canopy trees with understorey plantings of endemic shrubs and groundcovers. Existing landscape features of the site, such as local stone and existing tree hollows are to be incorporated in these landscape setbacks to provide faunal habitat and visual interest. Local stone is to be used in feature retaining walls along the Bakers Lane and Mamre Road frontages. At site corners ,the stone boulder walls will be more incorporated into formalized gabion walls to highlight key entry points. Plantings have been positioned in clumps to provide canopy framing and visual softening of the project, and to provide canopy breaks as recommended by the bushfire assessment.

Engineered retaining walls will be terraced and covered with planting to soften their impact on the project and surrounding properties.

Site Entry
The main entry from Bakers Lane comprises feature shrub and tree plantings and a permanent landscaped waterbody, with a widened turf verge. Cumberland Plain Woodland species will be positioned in a formal planting layout to create a visual link between the Cumberland Plain Woodland setbacks and the formal planting to the main estate road.

Estate Landscaping
The main estate road is to be planted with a dense avenue of trees to create a formal landscape setting with generous canopy coverage. Water sensitive urban design principles have been employed with the use of flush kerbs to the estate roads. These beds will be planted with native grasses and groundcovers creating a continuous green border to the estate's roads.

The landscaped areas to the building surroundings shall comprise turf and low-maintenance native shrub and groundcover plantings. The planting layout is to be informal, utilising clumps of trees to mimic and provide a visual continuation with the surrounding Cumberland Plain Woodland setbacks. Grassed open space areas with shade tree plantings have been positioned to create a 'campus-like' environment, with areas for employee recreation. Where possible, hard surface lunch areas will form a transition between the office and the informal landscaped grassed areas.

Carparks
Carparks have been designed to facilitate canopy shade tree planting and mass planting beds. Feature trees and planting will be used to highlight gateways and dominant corners.

Summary
The landscape concept seeks to employ a design synergy between architecture and landscape. Feature planting will be positioned to reflect building forms, screen undesirable views, and highlight key architectural elements and outlook points. Landscape buffers and screening have been implemented around the site to create a landscape setting sympathetic to the locality's existing environmental character and create a valuable continuous ecological buffer zone to the project."

It is considered that the landscape design for the project would provide valuable Cumberland Plain Woodland, as well as ensuring a high quality aesthetic appeal for the *LOGOS Estate*.

6.1.2 Visual Amenity

Key vistas to and from the *LOGOS Estate* site are shown on **Figure 6.2**, and include:

- approaches to the site on Mamre Road;
- approaches to the site on Bakers Lane;
- the main estate entry off Bakers Lane; and
- views from the site west to the Blue Mountains.

The rural-residential properties and educational establishments immediately surrounding the site have direct views to the site. Wider views to the site are largely mitigated by intervening topography, vegetation and/or distance.

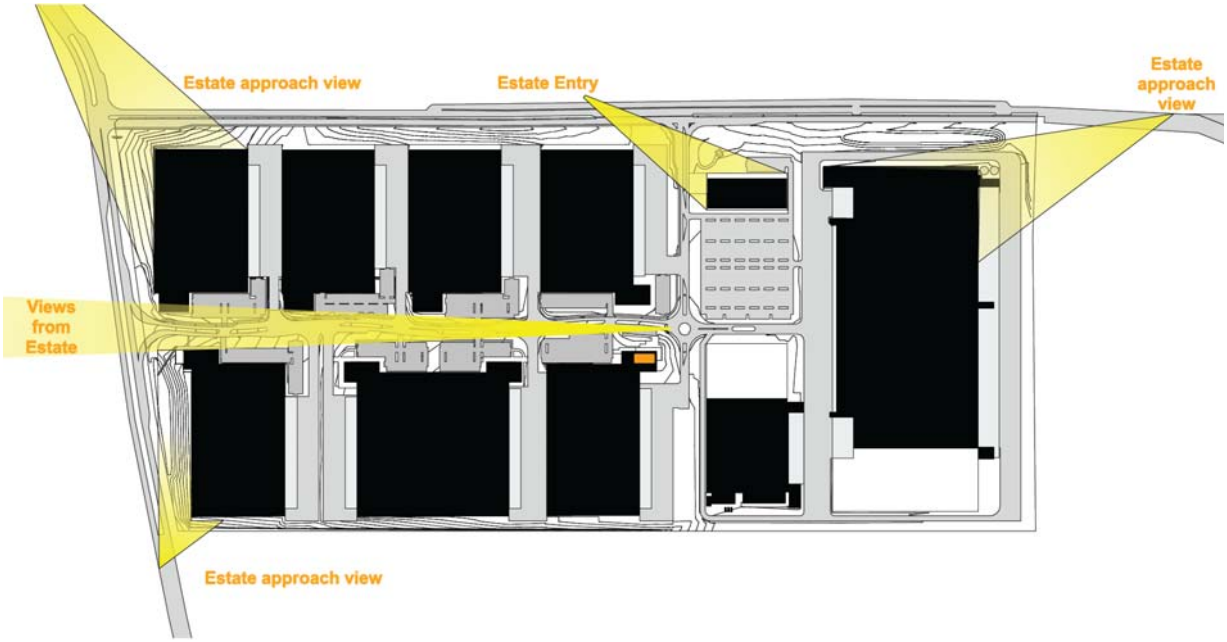


Figure 6.2: *Key Vistas to and from the LOGOS Estate (Source: Mackenzie Pronk)*

The urban design, architectural design and landscape design for the project have paid particular attention to these key vistas and sensitive receivers. Measures to mitigate potential visual impacts, and ensure a high quality design, include:

- earthworks have been designed so that the buildings 'step up' the slope in accordance with the site's topography;
- earthworks have been designed to reduce the high points of the site so that the buildings sit into the site and do not dominate the landscape;
- earthworks have been designed to provide reasonably low batter slopes to key frontages (ie. Bakers Lane and Mamre Road), with engineered retaining walls restricted to the rear of the site where they would be hidden from public view, and built in a terraced manner to provide visual relief and support plantings;
- generous setbacks have been provided to Bakers Lane and Mamre Road;
- building facades have been designed to a high standard, providing good articulation and visual relief;
- the Metcash office building has been located adjacent the main estate entrance, to assist in promoting a campus-like business park setting for the project;
- generous landscaping would be provided in the key frontages, in a manner that is consistent with the local bushland (ie. Cumberland Plain Woodland);
- substantial water features have been incorporated into the landscape design to further improve landscape quality; and
- key estate markers have been designed to be placed at the key vista points, to help define the estate.

With the implementation of these measures, it is considered that the project would not result in any significant adverse impacts on the visual amenity of the locality.

Representative perspectives from the key vistas are shown in **Figure 6.3**, with a full set provided in **Appendix C**.

Figure 6.3: *Key Perspectives (Source: Mackenzie Pronk)*

(From Top: View from Mamre Road/Bakers Lane Intersection; View from Mamre Road South; View from Bakers Lane to Main Site Access)

6.2 Soil and Water

6.2.1 Erosion and Sedimentation

The project involves earthworks across the site to create level building pads for construction of the warehouses. As discussed above, the buildings would be stepped up the slope of the site so as to be compatible as far as practicable with the natural topography of the site, and to minimise visual impacts.

As discussed in Section 2.2.5, the site occurs near a boundary between the Blacktown Residual Soil Landscape and Luddenham Erosional Soil Landscape. These soils are developed on Wianamatta Shale and Minchinbury Sandstone. The Luddenham soils can exhibit a high erosivity, however there are no signs of existing significant erosion on the site.

Given the natural soils, and the relatively significant excavation required for the project (ie. approximately 1.5 million cubic metres), there is the potential for erosion and sedimentation associated with the project.

However, erosion and sedimentation risks are able to be effectively managed using standard best practice control measures, including:

- minimising disturbance areas as far as practicable;
- diverting 'clean' run-on water around disturbance areas;
- controlling 'dirty' run-off water from within the disturbance area via various controls such as sediment basins and fencing; and
- rehabilitating disturbed areas as quickly as possible following disturbance.

To manage these erosion and sedimentation risks during construction, a Soil and Water Management Plan for the project has been prepared by Buckton Lysenko, and is attached in **Appendix F**. The plan has been prepared in accordance with the above principles and Landcom's (2004) *Managing Urban Stormwater: Soils and Construction* manual (ie. the 'Blue Book'). All ground disturbance works would be undertaken in accordance with this plan. (Separate erosion and sediment control plans would be prepared for the road upgrade works, as part of the works package for the upgrades).

6.2.2 Slope Stability

The earthworks and construction works associated with the project would create batters and retaining walls around the perimeter of the site. These earthworks would be undertaken in accordance with the civil works plan prepared for the project by Buckton Lysenko (see **Appendix F**).

As indicated on the plan, batters would be provided along the key frontages to Mamre Road and Bakers Lane, which would assist in minimising the visual impacts of the project by avoiding retaining walls along these frontages. Batters would be generally restricted to a maximum slope of 4(H):1(V), although small localised sections associated with site drainage works would have greater slopes up to approximately 2(H):1(V).

Engineered retaining walls (crib-lock) would be constructed along parts of the southern and eastern perimeters and between buildings, with variable heights up to approximately 17 metres (this highest area occurs over a relatively short section in the south-eastern corner of the site). These retaining walls (particularly the higher parts) would largely be hidden from public view behind the proposed buildings. Further, the retaining walls would be terraced to break up the visual mass of the walls and to allow planting on the terraces (see **Figure 6.4**).

All batters and retaining walls would be constructed to engineers specifications. Subject to appropriate construction, the batters and retaining walls are unlikely to result in any long term stability or erosion risks.

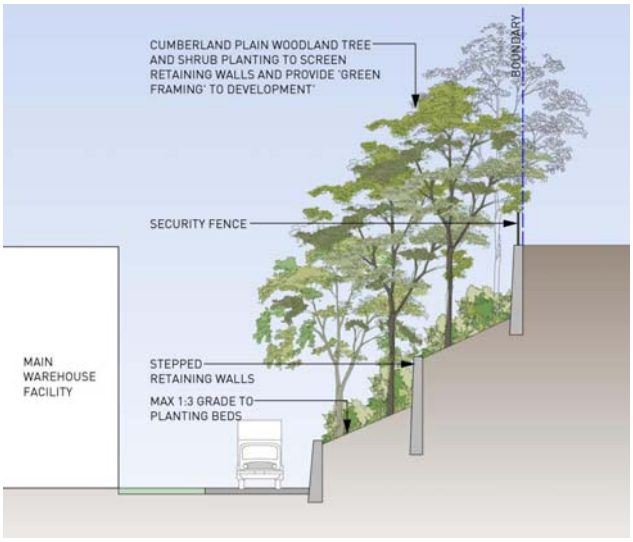


Figure 6.4: *Cross Section of Terraced Retaining Walls (in worst case south east corner)*

6.2.3 Site Contamination

A Phase 1 Contaminated Site Assessment has been undertaken for the project by Urban Environmental Services (on behalf of Pells Sullivan Meynink), and is attached in **Appendix H**.

The assessment was undertaken in accordance with applicable guidelines, including DECCW's *Guidelines for Consultants Reporting on Contaminated Sites (1997)* and the *National Environment Protection Measure – Assessment of Site Contamination (1999)*, and included:

- site history review;
- geological and hydrogeological review; and
- site inspection.

The assessment indicates that the site has been used for broad acre agricultural (grazing) land use in the past, with no evidence of potentially-contaminating land uses such as market gardens or orchards. No evidence of contamination was identified during the site inspection, and the assessment concludes that the site is not contaminated and that no further contamination investigation is warranted.

Given the findings of the Phase 1 assessment, it is considered that the site is suitable for the proposed industrial land use.

6.2.4 Salinity

A Salinity Assessment has been undertaken for the project by Pells Sullivan Meynink together with Urban Environmental Services, and is attached in **Appendix H**.

The assessment was undertaken in accordance with applicable guidelines, including DECCW's *Site Investigations for Urban Salinity (2002)*, and included:

- site history review;
- geological and hydrogeological review;
- site inspection;
- soil sampling; and
- groundwater sampling.

The assessment found that soil salinity on the site ranges from approximately 0.2dS/m to 4.4dS/m, or non-saline to slightly saline. Salinity was found to generally increase with depth. No evidence of salinity issues was identified during site investigations.

Groundwater, with a varying standing water level from 2.8 metres below ground level (in lower areas) and 18.2 metres (in higher areas), was found to be moderately to highly saline with electrical conductivity (EC) values of between 1,960 μS/cm (moderately saline) and 19,400 μS/cm.

Based on these findings, the salinity assessment concludes that the site has a low risk of salinity and that no special consideration of salinity issues is required for the project. Groundwater issues are discussed separately below.

In addition the assessment found that the site soils are:

- non-aggressive and non-corrosive; and
- sodic.

Soil sodicity can contribute to soil erosion and can inhibit good root growth, although no evidence of significant erosion or plant degradation was identified on site. The assessment concludes that the impact of sodic soils on site landscaping would be minimal, and that no special requirements for site landscaping is necessary (consideration of erosion is presented above in Section 6.2.1).

6.2.5 Acid Sulfate Soils

The site does not contain the potential for acid sulfate soils, given its elevation (ie. 42-83 metres AHD). Acid sulfate soils are generally restricted to areas below 10 metres AHD.

6.2.6 Riparian Areas and Waterbodies

There are no natural riparian areas (ie. creeks and rivers) on or in the vicinity of the site. However, there is a depression in the north-eastern area of the site that appears as a 'blue line' on the 1:25,000 topographical map for the area (see **Figure 6.5**). This depression forms the headwaters of a small creek that flows northward through the schools and the Erskine Park Employment Area, ultimately discharging to South Creek in St Clair. The depression could be classified as a 'Category 3' stream, as characterised in accordance with Landcom's *Managing Urban Stormwater: Soils and Construction (2004)* guidelines (ie. the Blue Book).

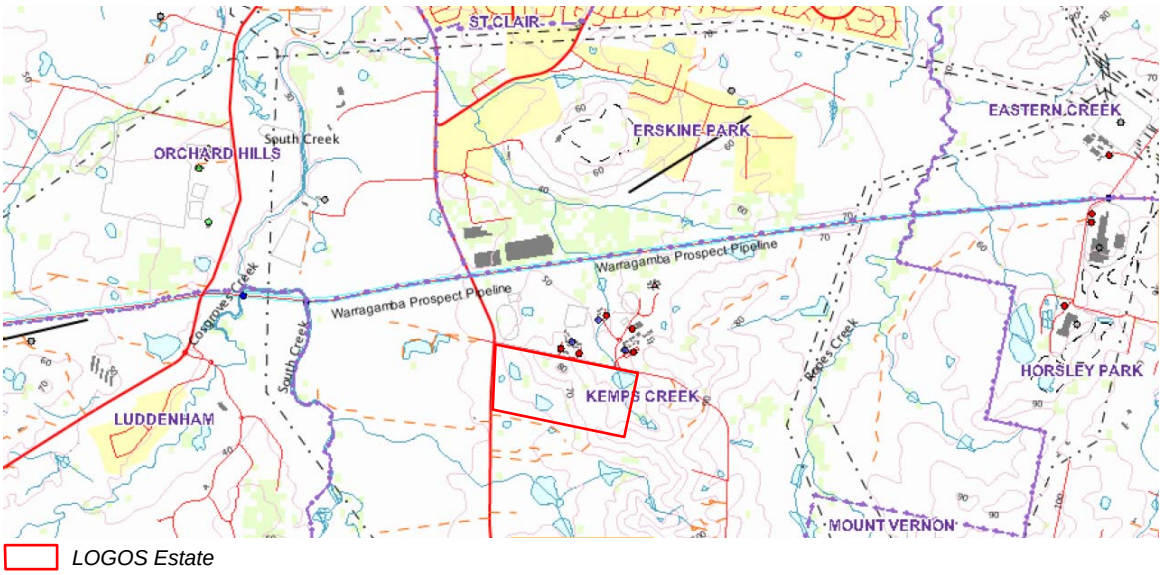


Figure 6.5: *Riparian Areas and Waterbodies (Source: Dept. of Lands)*

Figure 6.6: *Depression in North-eastern Site Area (looking from dam toward south-east)*

This 'stream' is not proposed to be retained on the site given its minor nature, lack of any existing riparian features or habitat (apart from the man-made farm dam on the northern boundary), and because retaining the depression would sterilise a considerable portion of the site. The Blue Book does not require the retention of Category 3 streams.

However, the stream would be incorporated into the stormwater scheme for the site, which has been designed based on water sensitive urban design (WSUD) principles, and is described in the following section.

In accordance with the stormwater scheme, the intermittent flows in the north-eastern stream would be collected as they enter the site and piped to the north-eastern corner. From here, the flows would be allowed to drain in a re-constructed open stream westward to the existing discharge point on Bakers Lane. An alternative scheme involving diverting the flows via a fully open channel was assessed during project design, but found not to be reasonable and feasible. It is considered that the proposed diversion provides a balanced and reasonable solution for the minor stream.

It is noted that the stormwater scheme also includes the construction of a number of considerable detention basins/water features in the western and on north-eastern areas of the site, which would provide aquatic habitat to compensate for the removal of the existing farm dams on the site.

6.2.7 Stormwater Management

As discussed in Section 2.2.6, the site generally drains from the central ridge to the south-west toward Mamre Road and to the north-east toward Bakers Lane, in accordance with the site topography. There are 3 main farm dams on the site (plus a number of small dams), with 2 in the western area and the other in the north eastern area of the site.

There are three culvert road crossings in the vicinity of the site, including one in Bakers Lane and two in Mamre Road. All are located in the sag points, and are inadequately sized by current standards. All stormwater ultimately drains to South Creek, via small ephemeral tributaries.

A detailed Stormwater Management Plan has been prepared for the project by Buckton Lysenko, and is attached in **Appendix I**. The plan has been designed in accordance with integrated water cycle management (IWCM) and water sensitive urban design (WSUD) principles, and following the principles in Penrith City Council's *Erskine Park Employment Area DCP*.

The key elements of the plan are shown on **Figure 6.7**, and include (generally from 'upstream' to 'downstream'):

- roof rainwater harvesting tanks, servicing each building (providing 1,100m^3 of storage for the Metcash Campus and 600m^3 for the DHL Campus);
- grass swales in localised areas draining some carparking and hardstand areas, coupled with a traditional pit and pipe internal stormwater network;
- on-site detention servicing the western (ie. Mamre Road or DHL Campus) catchment and the eastern (ie. Bakers Lane or Metcash Campus) catchment;
- 2 proprietary (Ecosol RSF 4000) gross pollutant traps, servicing each catchment; and
- 2 bio-retention basins in the western and north-eastern areas of the site, servicing each catchment.

In addition, the intermittent flows entering the site from the property to the east would be diverted around the Metcash Campus via a combined pipe and open channel system (see **Figure 6.7** and drawings in **Appendix G**).

Also, the 3 inadequately sized culverts in Mamre Road and Bakers Lane would be upgraded as part of the project.

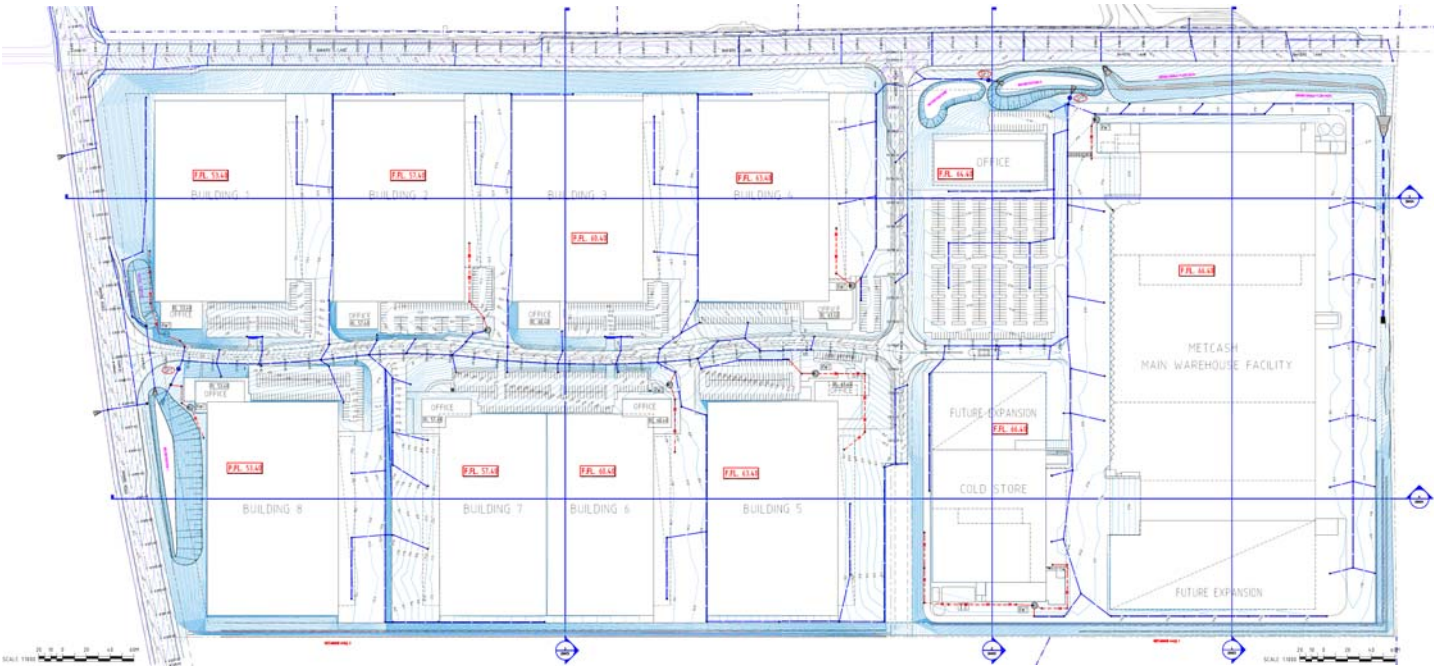


Figure 6.7: *Project Stormwater Management Plan (Source: Buckton Lysenko)*
(Note: See Civil drawings for full size version)

With regard to stormwater quality, the proposed stormwater scheme for the project has been modelled using MUSIC software. The results of the analysis are summarised in the following table, and indicate that the project would comfortably comply with the stormwater quality criteria in Council's *Erskine Park Employment Area DCP*.

Table: 6.1: *Water Quality Modelling Results*

Pollutant	*Pre-treatment (kg/yr)*	*Post-treatment (kg/yr)*	*Reduction*	*Reduction Criteria*
Bakers Lane Catchment				
Total Suspended Solids	37,830	2,870	92%	80%
Total Phosphorus	82	20	75%	45%
Total Nitrogen	703	340	52%	45%
Gross Pollutants	5,236	0	100%	90%
Free Oil and Grease	-	-	97%[1]	90%
Mamre Road Catchment				
Total Suspended Solids	59,250	3,240	95%	80%
Total Phosphorus	135	29	78%	45%
Total Nitrogen	1,089	473	57%	45%
Gross Pollutants	7,996	0	100%	90%
Free Oil and Grease	-	-	97%[1]	90%

1 Based on manufacturers specifications.

With regard to stormwater quantity, the project includes on-site detention servicing the western (DHL Campus) and eastern (Metcash Campus) catchments, which has been designed in accordance with Council's On-Site Detention DCP. Flows from the post development catchment were modelled and compared to pre development flows for all storm events up to and including the 100 year ARI storm event. In accordance with DRAINS modelling, 4,250m^3 of OSD storage would be provided in the western catchment, and 2,250m^3 of OSD storage would be provided in the eastern catchment.

Further, the pipe and open channel system in the north-eastern area of the site (to convey upstream flows from the property to the east through the site) has been designed to convey all flows up to and including the 1 in 100 year ARI storm event. The site pavement grading in this area has also been designed to cater for overland flows from the 1 in 100 year storm event, in the event that there is a total blockage of the culvert system.

To ensure that stormwater is appropriately designed and managed, LOGOS has committed to preparing specific Stormwater Management Plans for all buildings to be constructed on site. The plans would be prepared in accordance with the estate Stormwater Management Plan and applicable Council requirements, prior to the commencement of building works.

6.2.8 Groundwater

A groundwater review was undertaken as part of the Salinity Assessment, and is attached as **Appendix H**. The assessment found that the standing groundwater level varies across the site, from around 2.8 metres below ground level in lower areas and 18.2 metres below ground level in higher areas.

The review notes that the project would result in localised changes to groundwater levels, associated with site excavation and site cover (ie. increased impervious area resulting in decreased infiltration). Groundwater seepage into the excavated site is likely to be limited to near the toe of the cut in the south-east corner, during and after periods of wet weather. The volume of such inflows is likely to be low, based on the measured groundwater levels on the site, the position of the site near the top of the local catchment, and experience in similar areas.

The review considers that such inflows can be dealt with within the normal site surface drainage system without significantly affecting the capacity (or salt loading) of the system. A separate groundwater drainage system is thus unlikely to be required.

Based on the low anticipated seepage rates, the changes to groundwater are not expected to have a significant effect on any surrounding groundwater users, or the environment. The review

notes that the proposed excavation may potentially affect the yield of the adjacent farm dams to the east, however any effect is unlikely to be significant.

6.2.9 Flooding

A Flood Review has been undertaken by Buckton Lysenko as part of the Stormwater Management Plan, and is attached as **Appendix I**.

The review notes that the site is located near the top of the local catchment and is not subject to flooding. It is considered that the project is unlikely to be affected by, or adversely affect, flooding in the area.

6.2.10 Soil and Water Pollution

The project does not involve processes that entail a significant risk of soil or water pollution, however the project does include the storage and use of some dangerous goods and hazardous materials which, if not appropriately managed, could impact soil and water resources.

Storage and handling of all dangerous goods and hazardous materials would be undertaken in accordance with the Dangerous Goods Code and *AS 1940-2004: The storage and handling of flammable and combustible liquids*. In this regard, all hazardous substances would be stored internally within the building, in appropriately bunded areas with no external drainage to stormwater or to land or water resources.

6.3 Noise and Vibration

A Noise Assessment has been undertaken for the project by Wilkinson Murray, and is attached as **Appendix J**. The assessment includes consideration of construction, operational and traffic related noise (and construction vibration), and has been undertaken in accordance with applicable guidelines including DECCW's:

- *Industrial Noise Policy (INP)*;
- *Interim Construction Noise Guideline*; and
- *Environmental Criteria for Road Traffic Noise (ECRTN)*.

The assessment was undertaken with reference to representative residential and educational sensitive receivers in the vicinity of the site (see **Figure 6.8**), identified in the noise assessment as:

- Location A – 657 Mamre Road residence to the north-west, at a distance of approximately 250 metres;
- Location B – 696 Mamre Road and 25 Bakers Lane residences to the north, with the closest at a distance of approximately 30 metres;
- Location C – the Emmaus Retirement Village approximately 460 metres to the north;
- Location D – 21 Aldington Road residence, approximately 140 metres to the east;
- Location E – 32 Aldington Road residence, approximately 470 metres to the east;
- Location F – 784 Mamre Road residence, approximately 10 metres to the south;
- Location G – 754 Mamre Road residence, approximately 150 metres to the south;
- Location H – 772 Mamre Road residence, approximately 200 metres to the south;
- Location I – 757 Mamre Road residence, approximately 80 metres to the south; and
- the schools on Bakers Lane directly to the north (including Mamre Anglican School, Trinity Catholic School and Emmaus Secondary College), at a distance of approximately 110 metres.

It is noted that the owners of Location F and G have written to LOGOS supporting the project, including any noise impacts on their properties.

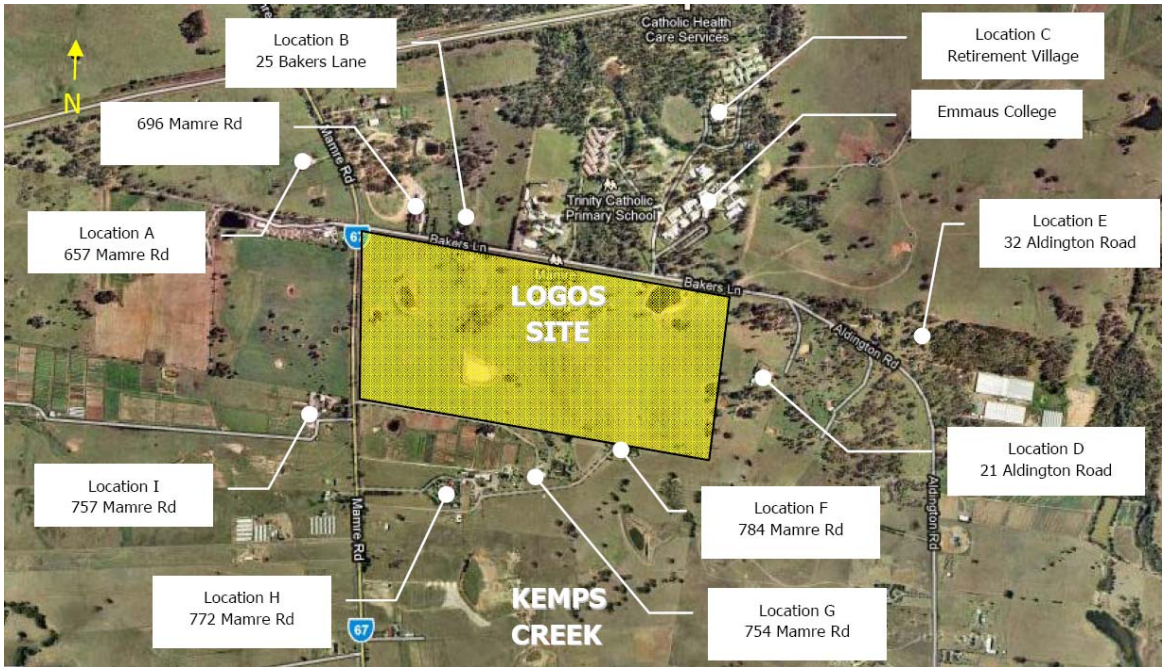


Figure 6.8: *Sensitive Receivers for Noise Assessment (Source: Wilkinson Murray)*

6.3.1 Construction Noise and Vibration

Construction Noise

The construction period for the project is expected to be staged over a period of approximately 5 years. The loudest noise-generating construction works would be the earthworks and foundations phase, and to a lesser extent building construction.

Predicted construction noise levels at the nearest sensitive receivers are provided in the following table, along with the applicable criteria. The noise levels were predicted assuming the worst case earthworks phase, with the noise sources around the centre of the warehouse site and assuming distance attenuation only.

Table 6.2: *Construction Noise Predictions dB(A) $L_{Aeq(15\ mins)}$ (exceedances in bold)*

Receiver	***Predicted Noise Level***	***Criteria***		
		Construction Noise Objective	***Saturday Objective***	***Maximum Construction Noise[1]***
A – 657 Mamre Road	44	57	57	75
B – 25 Bakers Lane	53	57	58	75
C – Emmaus Retirement Village	40	43	41	75
D – 21 Aldington Road	**56**	43	41	75
E – 32 Aldington Road	**43**	43	41	75
F – 784 Mamre Road	54	57	57	75
G – 754 Mamre Road	52	57	57	75
H – 772 Mamre Road	46	57	57	75
I – 757 Mamre Road	47	57	57	75
Schools on Bakers Lane	50	55	-	75

1 This is the level at which receivers are considered highly affected.

The assessment indicates that the project's construction (earthworks) noise emissions would exceed the applicable construction noise objectives at the 2 rural residences on Aldington Road to the east of the site. These exceedances are largely the result of the very low existing background noise levels in this area (and hence relatively low construction noise criteria), given that the area is not as affected by road traffic noise from Mamre Road than other sensitive receivers in the vicinity of the site. To illustrate, the predicted construction noise levels at these 2 residences comply with the construction noise objectives for the Mamre Road residences.

Although exceeding the construction noise objectives, it is noted that the maximum construction noise criteria (ie. the 'highly noise affected' criteria) would not be exceeded at any property (although there may be very short term exceedances during localised works at the site boundary).

DECCW's *Interim Construction Noise Guideline* states that where the construction noise objectives are exceeded, proponents should implement all reasonable and feasible work practices to minimise noise, and notify potentially affected receivers of the works.

In this regard, LOGOS has committed to preparing a detailed Construction Noise Management Plan, as part of a wider Environmental Management Strategy for the project. The noise management plan would include provisions for:

- restriction of construction hours (see below);
- scheduling noisy activities in close proximity to receivers to less sensitive periods (eg. avoiding early mornings and Saturdays), where practicable;
- managing and maintaining equipment to minimise noise; and
- keeping receivers up to date regarding the works and managing complaints.

With regard to construction hours, LOGOS has committed to restricting construction activities to the recommended standard hours in DECCW's *Interim Construction Noise Guideline*, namely 7am to 6pm Monday to Friday, 7am to 1pm on Saturdays, with no construction on Sundays or public holidays. Construction works which are inaudible at surrounding residences may be carried out outside these times.

Construction Vibration

The impulsive vibration from large rockbreakers can cause audible regenerated noise in buildings out to distances of 50 to 100 metres from an excavation site, depending on ground conditions, type of structure and on ambient noise conditions.

Accordingly, the noise assessment includes consideration of potential vibration impacts for the residence at Location F (784 Mamre Road), which is located between 5 to 10 metres from the southern boundary of the site. (As stated above, the owner of this residence has written to LOGOS supporting the project, and any related environmental impacts). All other receivers in the area are of a sufficient distance from the site that vibration associated with construction and excavation would not be significant.

The predicted ground vibration at this residence, along with the applicable amenity and structural criteria, is presented in Table 6.3 below.

As indicated in the table, the project would comfortably comply with the structural damage criteria, however the amenity (or 'comfort') criteria may be exceeded if large rock hammers were used in close proximity to the boundary.

To minimise amenity impacts on this residence, LOGOS has committed to using medium rock hammers when undertaking earthworks in the immediate vicinity of this residence, and to keeping the resident informed about the works close to this boundary. Construction vibration would be

managed as part of the Construction Noise Management Plan for the project, as discussed above.

Table 6.3: *Construction Vibration Predictions at Location F (peak particle velocity, mm/s)*

Operation	***Predicted Vibration Level***		***Amenity Criteria[1]***		***Structural Damage Criteria[2]***	
	At 5m	***At 10m***	***Preferred***	***Maximum***	***4-15Hz***	***>15Hz***
Heavy Rock Hammer (eg. 1,500kg)	4.5	1.3	0.28	0.56	15-20	20-50
Medium Rock Hammer (eg. 600kg)	0.2	0.06				

1 As per DECCWs Assessing Vibration: A Technical Guideline (2006) and British Standard 6472-1992

2 As per Australian Standard AS 2187: Part 2-2006 and BS 7385 Part 2-1993. It is noted that rockbreaking/hammering and sheet piling activities can potentially cause dynamic loading in some structures (eg. residences) and it may therefore be appropriate to reduce the transient values by 50%, however the British standard notes that 'some data suggests that the probability of damage tends towards zero at 12.5 mm/s'.

6.3.2 Operational Noise

Operational noise emissions have been modelled using SoundPlan software. The assessment modelled worst case noise emissions at surrounding receivers under calm and adverse wind conditions, as winds were found to be a feature of the area. Temperature inversions, which can also influence noise emissions, were found to not be a feature of the area (using the INP procedures).

The assessment initially found that, with no noise abatement controls, the project would significantly exceed the applicable project specific noise level criteria at the rural properties on Aldington Road to the east of the site (ie. Locations D and E).

Accordingly, the noise assessment includes further analysis and modelling of reasonable and feasible noise abatement measures. The analysis found that the main noise contributor in this area is activity associated with the loading locks on the eastern side of the Metcash facility.

To reduce noise levels from this source, a 4 metre high noise abatement wall would be installed along part of the eastern boundary, as indicated in **Figure 3.3** (analysis indicates that a higher wall would not reduce noise further by any meaningful degree). Another mitigation measure was tested during the assessment, namely eliminating reversing alarms from operating around the Metcash facility, but this measure was found to have negligible benefit and as such was not pursued.

The predicted operational noise levels at the nearest residential and educational receivers, with the adoption of the noise abatement wall, are provided in the following table.

Table 6.4: *Operational Noise Predictions dB(A) $L_{Aeq(15\ mins)}$ (exceedances in bold)*

Receiver Location	***Period***	***Predicted Noise Level***		***Intrusiveness Criteria***
		Calm Conditions	***Adverse Winds***	
A – 657 Mamre Road	Day	31	28	52
	Evening	30	28	52
	Night	30	28	48
B – 25 Bakers Lane	Day	40	40	52
	Evening	39	39	51
	Night	39	39	45

Receiver Location	*Period*	*Predicted Noise Level*		*Intrusiveness Criteria*
		Calm Conditions	*Adverse Winds*	
C – Emmaus Retirement Village	Day	34	38	38
	Evening	34	37	39
	Night	34	37	38
D – 21 Aldington Road	Day	**42**	**44**	38
	Evening	**41**	**44**	39
	Night	**41**	**44**	38
E – 32 Aldington Road	Day	**39**	**39**	38
	Evening	34	38	39
	Night	34	38	38
F – 784 Mamre Road	Day	45	46	52
	Evening	43	44	52
	Night	43	44	48
G – 754 Mamre Road	Day	43	43	52
	Evening	40	41	52
	Night	40	41	48
H – 772 Mamre Road	Day	40	40	52
	Evening	40	39	52
	Night	40	39	48
I – 757 Mamre Road	Day	34	32	52
	Evening	33	30	52
	Night	33	30	48
Schools on Bakers Lane	Day	43	43	50

Notes:
With regard to time periods:

- Day is the period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and public holidays;
- Evening is the period from 6pm to 10pm; and
- Night is the period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and public holidays.

The modelling indicates that the operation of the project – with the implementation of the proposed noise abatement wall – would comply with the applicable noise criteria during all time periods and weather conditions at all properties, with the exception of:

- a minor exceedance of 1 dBA during the day time at Location E (exceedances of 1-2 dBA are generally not perceptible by the human ear); and
- a significant exceedance of up to 6 dBA during all time periods at Location D.

As noted in the construction noise section, the noise exceedances at these 2 rural properties are largely the result of the very low existing background noise levels in this area (and hence low operational noise criteria). To illustrate, the predicted operational noise levels at these 2 residences comply with the operational noise criteria for the Mamre Road residences.

It is important to note that with the envisaged development of the WSEA to the north of the site, and the development of the planned Southern Link Road between Mamre Road and the M7 Motorway, the background noise levels in this area will increase to those more akin to an urban area in the short to medium term. As background noise increases, the noise generated by the project will become less noticeable.

Notwithstanding, to ensure that the amenity of Location D is protected in the short term, LOGOS has committed to providing this residence with architectural noise treatments (such as double glazing, insulation and/or air-conditioning), at the landowners request.

Sleep Disturbance

In addition to the above operational noise emissions, which are based on average noise levels over a 15 minute period, sudden or short-lived noise emissions at night have the potential to result in sleep disturbance. The main potential source of such noise associated with the project would be truck reversing alarms associated with night time deliveries.

The noise assessment indicates that the project would comply with applicable sleep disturbance criteria at all surrounding receivers, with the exception of Locations D and E, which would experience L_{Amax} noise levels during adverse winds of 56 dBA and 51 dBA respectively, compared to the criterion of 48 dBA. These exceedances (8 dBA and 3 dBA respectively) are largely the result of the very low background noise levels in this area, as discussed above.

The noise assessment notes that the predicted L_{Amax} noise levels are below the values of 60-65 dBA which are regarded as being "unlikely to result in awakening reactions", and hence are considered acceptable.

As discussed in the preceding section, LOGOS has committed to providing the most affected residence (Location D) with architectural noise treatments, which would mitigate the sleep disturbance impacts on this residence.

6.3.3 Traffic Noise

The noise assessment includes consideration of off-site traffic noise levels at 2016, assuming full development of the *LOGOS Estate*[6]. The assessment found that existing traffic noise levels exceed applicable criteria on both Mamre Road and at the 2 residences on Bakers Lane to the north of the site (ie. 696 Mamre Road and 25 Bakers Lane – Location B), which are affected by road noise from Mamre Road.

The project would increase traffic noise levels on Mamre Road marginally by about 1 dBA, which is below the allowable 2 dBA increase under DECCW's *Environmental Criteria for Road Traffic Noise*. However, the assessment found that traffic noise levels at the 2 residences on Bakers Lane would increase by up to about 3 dBA, as indicated in the following table.

Table 6.5: *Peak Hour Traffic Noise Predictions on Bakers Lane dB(A) $L_{Aeq(1\ hr)}$*

Receiver Location	***Traffic Noise without Project***	***Traffic Noise with Project***	***Criteria***	
			Day	***Night***
B – 25 Bakers Lane	63.7	66.7	60	55
B – 696 Mamre Road	58.9	62.1		

Notes:
With regard to time periods:

- Day is the period from 7am to 10pm; and
- Night is the period from 10pm to 7am.

It is important to note that the predicted increase in traffic noise levels at these residences is likely to occur with or without the project, given the envisaged development of the WSEA and the Southern Link Road on this alignment.

[6] The traffic noise assessment uses the 2016 scenario adopted in the Traffic Assessment (see Section 6.8), which is based on the existing road network. Additional consideration of the expanded WSEA road network once the Southern Link Road is open to the east (ie. the 2031 scenario in the Traffic Assessment) was not considered necessary, given that the development of the Southern Link Road will be subject to separate approvals.

However, to ensure that the amenity of these 2 residences is protected, LOGOS has committed to providing the residences with architectural noise treatments (such as double glazing, insulation and/or air-conditioning) at the landowners request, as part of the proposed upgrade works to Bakers Lane.

Given the low number of affected residences, other traffic noise mitigation measures (such as a noise abatement wall) are not considered appropriate or warranted.

With the implementation of the above measures to mitigate noise and vibration, it is considered that the project can be undertaken in a manner that would not significantly affect the amenity of the surrounding area.

6.4 Air Quality

The main sources of air emissions associated with the project would be:
- dust during construction; and
- plant and vehicle emissions.

Dust emissions during construction works – the majority of which would be associated with bulk earthworks – are considered able to be managed in accordance with standard best practice techniques, including:
- minimising the area of disturbance as far as practicable during works;
- minimising drop heights for materials being worked on the site;
- keeping exposed surfaces moist at all times;
- rehabilitating/revegetating disturbed surfaces as soon as practicable; and
- ensuring that trucks are covered and do not track sediment onto public roads.

These measures would be documented in a construction dust management plan, which would be prepared as part of an Environmental Management Strategy for the project.

Air emissions from vehicles, plant and equipment would be fairly typical of a modern urban industrial estate setting, the levels of which are not expected to result in any significant air quality impacts. Initiatives to encourage sustainable transport (see Section 6.8) and minimise energy use (see Section 3.10) associated with the project would help to reduce these air emissions.

6.5 Greenhouse Gases and Climate Change

An Energy and Greenhouse Gas Assessment has been undertaken for the project by NDY Management, and is attached as **Appendix K**.

The assessment includes an estimate of the energy consumption and greenhouse gas (GHG) emissions generated by each of the main GHG sources associated with the project, namely:
- ambient temperature warehouses;
- temperature-controlled warehouse (cold store);
- ancillary offices;
- café;
- car parking (lighting); and
- transport.

Further, the assessment considers three energy use scenarios, namely:
- a lower end estimate for similar facilities;
- a higher end estimate for similar facilities; and
- the energy savings measures as outlined in Section 3.10 (ie. the proposed energy savings measures for the project).

A summary of the estimated annual energy consumption and GHG emissions based on these scenarios (excluding transport-related emissions), is presented in the following table.

Table 6.6: *Estimated Annual Energy Consumption and GHG Emissions (excluding transport)*

	Electrical Energy Consumption (kWh)			***GHG Emissions (tonnes CO_2 equivalent)***			***Saving on Upper End (%)***
	Lower End	***Higher End***	***Project Estimate***	***Lower End***	***Higher End***	***Project Estimate***	
Office	2,208,750	4,611,870	3,364,819	2,076	4,335	3,163	
Warehouse	6,306,828	16,870,202	8,156,941	5,928	15,858	7,668	
Cold Store	4,048,170	8,096,340	5,470,500	3,805	7,611	5,142	
Café	84,780	84,780	84,780	80	80	80	
Car Parking	0	977,337	428,460	0	919	403	
Total	**12,648,528**	**30,640,529**	**17,505,500**	**11,889**	**28,803**	**16,456**	**43%**

As indicated in the table, the proposed energy savings measures would result in a saving of approximately 12,347 tonnes of CO_2 a year based on the upper end estimate for similar facilities, which represents an energy savings of 43%. This saving is equivalent to the annual GHG emissions produced by approximately 2,744 cars.

With regard to transport-related emissions (including trucks and passenger vehicles), the assessment calculates that the project would produce approximately 6,944 tonnes of CO_2 a year. Measures to reduce these emissions, through promotion of sustainable transport modes, is discussed in Section 6.8.

In total, it is estimated that the project would generate GHG emissions of approximately 23,400 tonnes of CO_2 a year.

LOGOS has committed to undertaking the project in accordance with the energy savings measures in this EA and the Energy and Greenhouse Gas Assessment.

6.6 Flora and Fauna

As discussed in Section 2.2.8, the site is predominantly cleared for the existing agricultural land use (grazing), however there are scattered trees around the site as well as a number of farm dams that provide some aquatic habitat.

As the project requires significant excavation and levelling to create level building pads for development of the estate, all of the existing site vegetation is required to be cleared for the project.

To assess the impacts associated with this clearing, a specialist flora and fauna assessment has been prepared for the project by Cumberland Ecology, and is attached as **Appendix L**.

The assessment includes literature review (including relevant threatened species databases), flora survey, aquatic vegetation surveys, targeted threatened fauna surveys and habitat assessment. The assessment considers the site as well as that part of the Bakers Lane road reserve which is proposed to be upgraded as part of the project.

6.6.1 Flora

Vegetation communities occurring on the site are shown in **Figure 6.9**, and summarised in the following table. In addition to these communities, there are approximately 15 hollow-bearing trees scattered across the site.

Table 6.7: *Site Vegetation Communities*

Community	***Area (hectares)***	***Conservation Significance***
Cumberland Plain Woodland	1.12	CEEC under TSC Act and EPBC Act[1]
Exotic Grassland	40.39	-
Degraded Derived Native Grassland	9.22	-
Swamp Oak Stands	0.27	-
Wetland Vegetation (farm dams)	1.0	-
Total	**52**	

1 A 0.71 hectare patch of the Cumberland Plain Woodland meets the classification criteria in the EPBC Act.

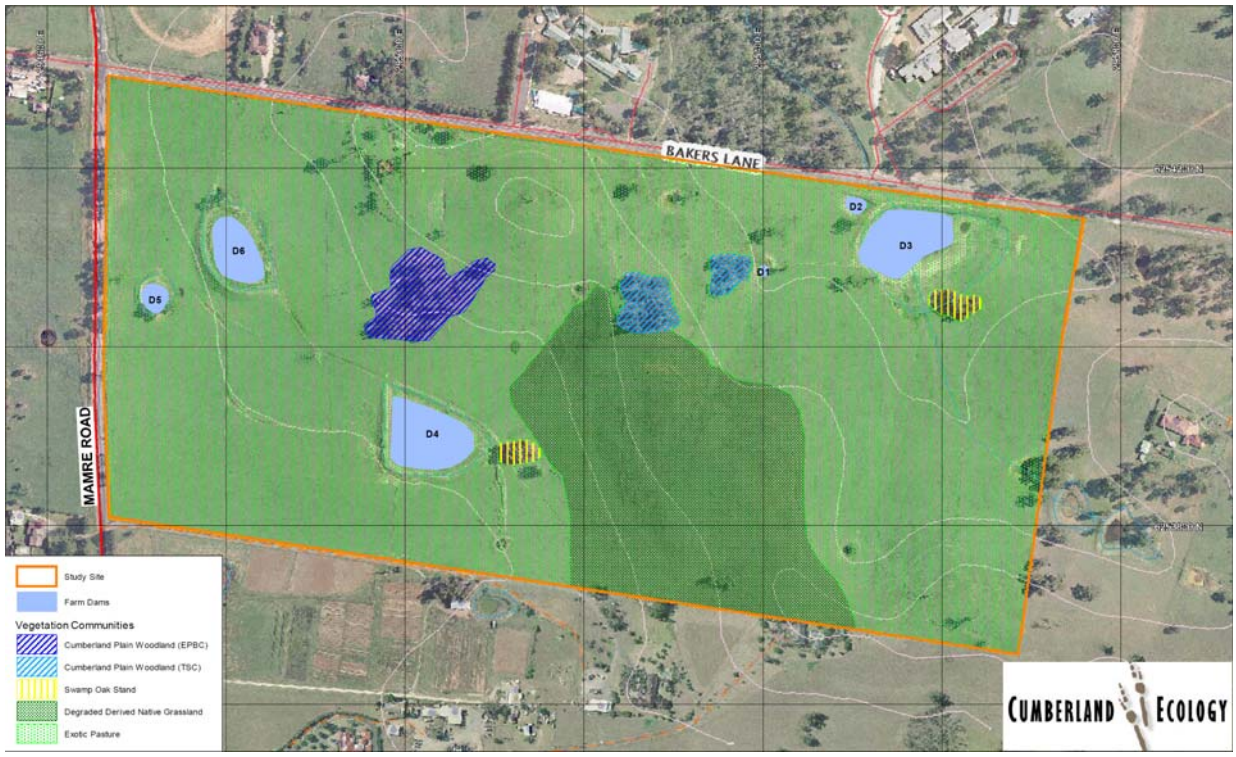


Figure 6.9: *Site Vegetation Communities (Source: Cumberland Ecology)*

Cumberland Plain Woodland

Cumberland Plain Woodland (CPW) is a critically endangered ecological community (CEEC) listed under the NSW *Threatened Species Conservation (TSC) Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*.

Three small remnant patches of CPW were found on the site, identified as Patch 1 (0.33 hectares), Patch 2 (0.08 hectares) and Patch 3 (0.71 hectares) (see **Figures 6.9** and **6.10**).

The flora and fauna assessment notes that the patches are fragmented and highly degraded (from continual cattle access), with all patches devoid of a shrub layer, except for the occasional weed (African Boxthorn) and minor recruitment of *Eucalyptus tereticornis* in localised areas. Edge effects are evident throughout.

Figure 6.10: *Cumberland Plain Woodland (Patch 3) (Source: Cumberland Ecology)*

Although small and degraded, the assessment considered that Patches 1 and 2 meet the listing criteria for CPW under the TSC Act, and that Patch 3 meets the listing criteria under the TSC Act and the EPBC Act due to its larger relative size and presence of some tree hollows (approximately 6 hollows were identified in this patch). The assessment notes that the patches would be categorised as 'Lower Long Term Management Viability' (LMV), using the tests described in the *Conservation Plan for the Western Sydney Growth Centres* (2007).

The flora and fauna assessment includes an assessment of the significance of clearing the patches of CPW on the site. The assessment concludes that the clearing required for the project would not have a significant impact on the CEEC, given the degraded and fragmented nature of the CPW on the site, its low species diversity and lack of natural regeneration, its small size and its generally non-viable nature. The CPW on the site represents less than 0.01% of the regional distribution of the community, and the flora and fauna assessment considers the CPW on site to be of low conservation significance.

Notwithstanding, to compensate (or offset) the localised impact on CPW, LOGOS has committed to re-establishing at least 4.48 hectares of CPW on the site within the landscape setbacks to Bakers Lane and Mamre Road. This commitment, which has been incorporated into the landscaping plan for the project, would increase the extent of CPW currently on the site by approximately 4 times.

Grassland

Areas of degraded Derived Native Grassland occur on the site, with all areas exhibiting low diversity and varied condition. The highest quality areas consisted of approximately 50% weed cover. The areas do not classify as CPW under the TSC Act or EPBC Act, given the low species diversity.

Other grassland areas on site are dominated by exotic pasture grasses, with a weed cover of more than 50%.

The flora and fauna assessment considers that the grasslands provide limited conservation value due to their poor condition, and as such the clearing required for the project would not result in any significant impact on this community.

Swamp Oak Stands

Two stands of Swamp Oak (*Casuarina glauca*) are located on the site, both of which are essentially monocultures and heavily degraded from cattle access. The stands contain no shrub or small tree layer, and the groundcovers are heavily dominated by exotic pasture grass species (>90%).

The flora and fauna assessment considers that the stands provide limited conservation value due to their poor condition, small size and extent of weed cover. As such, the clearing required for the project would not result in any significant impact on this community.

Wetland Vegetation

A number of farm dams varying in size are scattered across the site which provide habitat for a small amount of aquatic vegetation.

Cattle access is evident throughout all farm dams which has resulted in extensive trampling and degradation of banks. These edges were dominated in *Cyndon dactylon* (Couch). Native species present in these areas included scattered occurrences of *Juncus usitatus* and *Paspalum distichum* (Water Couch).

The flora and fauna assessment considers that the wetlands provide limited conservation value due to their poor condition, and as such the clearing required for the project would not result in any significant impact on this community.

Notwithstanding, it is noted that the landscape plan for the project has incorporated approximately 0.87 hectares of native wetland revegetation on the site within the landscape setbacks to Bakers Lane and Mamre Road. It is considered that the provision of this revegetated aquatic habitat would adequately compensate the removal of the degraded farm dam habitat on the site.

Other Threatened Flora Species

No other threatened flora listed under the TSC and EPBC Acts was identified on the site during flora surveys, or is considered likely to occur on the site.

6.6.2 Fauna

The flora and fauna assessment notes that the site provides limited habitat features. Habitat features consist of small patches of low quality remnant woodland, scattered hollow bearing trees and farm dams. The patches of woodland and stands of Swamp Oak provide very limited habitat values due to the lack of structural elements like fallen logs, leaf litter and absence of a shrub or small tree layer. However, the 15 hollow bearing trees likely provide habitat for possums, bats and some birds.

No threatened fauna species were identified on the site. In this regard, the flora and fauna assessment noted that:

- suitable habitat does not exist on site for the threatened Cumberland Land Snail, and the species was not identified despite targeted surveys;
- no threatened frog or reptile species are likely to occur on site;
- no threatened bird species are likely to utilise the site;
- no threatened bat species are likely to utilise the site; and
- no other threatened mammals are likely to utilise the site, although urban adapted arboreal mammals like Ringtail Possum and Brushtail Possum may use the tree hollows as nest sites.

To mitigate the impacts of the project on potential nesting sites in tree hollows, the flora and fauna assessment recommends that a tree removal protocol be prepared for the project that provides for pre-clearance fauna surveys (by a qualified fauna ecologist) and the progressive removal of trees. The assessment also recommends that tree hollows removed for the project be re-used in landscaping works.

In accordance with these recommendations, LOGOS has included a commitment to preparing a tree removal protocol, and has incorporated the re-use of tree hollows in the landscape plan for the project.

6.7 Archaeology and Heritage

As discussed in the preceding section the project requires significant excavation and levelling to create level building pads for development of the estate. As such, all soils and landforms on the site (as well as in the Bakers Lane reservation adjacent the site) would be required to be disturbed for the project, with resultant impacts on any extant heritage items.

To assess these potential impacts, a detailed Aboriginal and Non-Aboriginal cultural heritage assessment for the project has been undertaken by Dominic Steele Consulting Archaeology. The assessment is attached in **Appendix M**, and a summary of the assessment is provided below.

6.7.1 Aboriginal Heritage

The Aboriginal assessment involved archaeological survey of the site, along with background research, database searches, consultation and development of predictive modelling in accordance with applicable DECCW guidelines.

The assessment (including site survey) was undertaken in consultation with DECCW and the local Aboriginal groups that registered an interest in the project[7], including:

- Deerubbin Local Aboriginal Land Council (DLALC);
- Darug Aboriginal Cultural Heritage Assessments (DACHA);
- Darug Custodian Aboriginal Corporation (DCAC);
- Darug Land Observations (DLO);
- Darug Tribal Aboriginal Corporation (DTAC); and
- Yarrawalk (a division of Tocomwall Pty Ltd).

The Aboriginal Assessment report was forwarded to the Aboriginal groups on 12 August 2010 for comment. No responses had been received from the groups as at the date of this EA[8].

The Registrar of the *Aboriginal Land Rights Act 1983* was also consulted, which confirmed that the site does not have any registered Aboriginal owners under that Act.

Known Aboriginal Sites in the Area and Predicted Usage Patterns

A search of DECCW's Aboriginal Heritage Information Management Service (AHIMS) register identified 19 registered Aboriginal sites/objects within 3 kilometres of the site, with the nearest on the Emmaus Retirement Village site immediately to the north of the *LOGOS Estate* site. All of the identified sites are open flaked stone artefact scatters comprising 1 or more stone artefacts (ie. isolated finds and open camp sites).

[7] Following consultation in accordance with DECCW's Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010).

[8] The date the EA was finalised is noted on the certificate at the front of the EA. The period of comment provided to the Aboriginal groups meets the recommended timeframe in DECCW's consultation guidelines (ie. 28 days).

The assessment notes that previous archaeological investigations in the area suggests an intermittent and low intensity use of the place by Aboriginal people in the past, partly because the site is located in the upper reaches of the South Creek catchment. Most Aboriginal activity in the area is likely to have occurred further down the catchment around permanent water supplies.

A relatively high number of surface surveys (and subsequent subsurface investigations) in adjacent and nearby areas have repeatedly demonstrated both the low density of archaeological materials to occur in similar contexts, and also the degree of past historical and (ongoing) natural disturbance.

Given these factors, the archaeological assessment considers that the most likely Aboriginal sites/objects to remain on the site would include isolated finds, open camp sites and potentially scarred trees.

Survey Results

The archaeological surveys of the site, undertaken with the assistance of the Aboriginal groups noted above, identified 6 actual or potential Aboriginal sites/objects on the site (see **Figure 6.11**).

Figure 6.11: *Aboriginal Sites (and suggested sites)* *(Source: DSCA)*

The sites/objects include:

- LOGOS IF1 – an isolated stone artefact located near the eastern boundary;
- LOGOS IF2 – an isolated stone artefact located near the western boundary;
- LOGOS OC1 – an open camp site located around the margins of the farm dam in the north-eastern area of the site, comprising at least 3 stone artefacts and some potential archaeological deposit (PAD);
- LOGOS OC2 – an open camp site located within one of the patches of Cumberland Plain Woodland in the centre of the site, comprising at least 5 stone artefacts and some PAD;

- DACHA PAD 1 – a suggested (by DACHA) PAD near the southern boundary of the site, in an area which was considered by the archaeologist to be historically disturbed with no subsurface potential; and
- TOC 001 – a suggested (by Yarrawalk) scarred tree and associated area of PAD located near the northern boundary of the site (see discussion below).

No Aboriginal sites/objects were identified in the Bakers Lane reservation, with the assessment concluding that there is no archaeological potential in this area due to significant previous disturbance of the road corridor.

Although effective survey coverage of the *LOGOS Estate* site was limited due to pasture cover, the Aboriginal assessment concludes that the probability that as yet undetected Aboriginal sites or features of significance are present within the site is low, due to previous disturbance and the shallow and often truncated nature of the soil profiles on the site. Any unrecorded Aboriginal sites/objects would most likely consist of isolated finds and/or low-density distributions of flaked stone artefacts within relatively disturbed contexts.

Potential Scarred Tree

The possible scarred tree along with an associated area of PAD (TOC 001), was identified by the Yarrawalk Aboriginal group, which suggested that the tree may have been used to make a 'coolamon'.

The tree is a large *Eucalyptus tereticornis* (Forrest Red Gum). It has a large basal wound extending close to ground level, although the scar thought by Yarrawalk to be of possible Aboriginal origin is located some 10 metres up the main trunk (see **Figure 6.12**).

Figure 6.12: *Suggested Scarred Tree (suggested scar on right) (Source: DSCA)*

During field investigations the archaeologist noted that the top right corner of this upper scar was irregular in form and suggested a natural origin, and that the tree appeared to be of insufficient age to have been scarred traditionally.

To review the tree in more detail a specialist arborist (The Arborist Network), was engaged to review the age of the tree and the origin of the scar. The arborist's report is appended to the archaeological assessment in **Appendix M**.

The arborist considered that the branched and multi-stemmed form of the tree demonstrates that it has grown in an open woodland or cleared environment, and that the age of the tree was between 60 and 120 years of age. The nature of the scar indicates that the injury occurred approximately 80% of the way through the life of that portion of the tree, which indicates that the scar is no more than 25 years old. The arborist noted that even if an error of 100% is applied the scar is less than 50 year old and as such does not coincide with Aboriginal land use in the area.

The arborist also noted that the way that trees respond to wounding is reasonably predictable, and that the elliptical shaped scar on the subject tree is not uncommon.

Given the arborist's findings, and recognising that a number of similar isolated trees occur on the site with the same sort of scars, it is considered unlikely that the identified scar is of Aboriginal origin.

Impacts and Mitigation Measures

As outlined above, the project requires the disturbance of all soils and landforms on the site, in order to create level building pads for construction of the facilities, and to construct ancillary infrastructure.

Accordingly, the 4 identified and 2 suggested Aboriginal sites/objects would be impacted by the project, along with any other unidentified archaeological material.

The archaeological assessment concludes that the project is unlikely to adversely affect Aboriginal archaeological values of the area, and that the identified Aboriginal sites/objects are largely unremarkable and of low archaeological potential. As such, the assessment considers that future test excavation of the site (as recommended by some Aboriginal groups) is not warranted given the disturbed nature of the site, the lack of suitable soil profile, the lack of significant landforms (eg. sandstone outcrops), the predicted low Aboriginal usage of the site, and the minimal information of value likely to be revealed by such investigations.

However, to appropriately manage the impact of the project on Aboriginal sites and cultural heritage values, and consistent with the recommendations of the archaeological assessment, LOGOS has committed to the preparation of an Aboriginal Heritage Management Plan for the project. The plan would include provisions for:

- salvaging identified Aboriginal sites/objects on the site, in consultation with the Aboriginal groups;
- monitoring of initial site works by the Aboriginal groups, if requested; and
- managing the discovery of any additional Aboriginal sites/objects identified during construction works.

With the implementation of these measures, the project is not expected to have any significant impact on Aboriginal heritage.

6.7.2 Historical Heritage

Review of applicable heritage registers indicates that there are no listed heritage items on or in the immediate vicinity of the site.

However, the heritage assessment found that there is 1 item of potential heritage significance on the site, namely the single dilapidated and vacant weatherboard homestead located just off Bakers Lane in the north-western area of the site (see **Figure 6.13**). The homestead was most

likely constructed around c.1912/1913, and historical title information indicates that the property has been occupied and/or owned by farming interests associated with the land since this time.

Figure 6.13: *Existing Vacant Homestead (Source: DSCA)*

The homestead was identified as having possible heritage significance by Penrith City Council preparation of its *Penrith Heritage Study 2007*. This study was commissioned by Council to review heritage items and places within the Penrith local government area, for potential listing on Penrith's heritage registers.

The 2007 study recommended listing the site as a heritage item on the draft *Penrith Local Environmental Plan (LEP) 2008*, referring to the item as comprising:

> *'planting to [the] homestead, 705-752 Mamre Road (site on Bakers Lane), [and that] 'this area was nominated for the landscape quality of [the] garden of the farmhouse and hedging of the paddock which is clearly defined by the ridge line of undulating hills. The listing should include the farmhouse and structures'.*

In 2009, following a submission by the current landowners questioning the appropriateness of the proposed listing, Council initiated a review of the 2007 heritage assessment of the farmhouse and surrounding garden precinct. The review, undertaken by Hubert Architects Pty Ltd, provides the following Statement of Significance for the homestead and surrounds:

> *'The property is representative of early grazing properties in the Kemps Creek area. It is important in the Local Government Area for its evidence of the continuum of use for grazing with the surviving early twentieth farmhouse and "home paddock" marked by the African Boxhorn hedge.*
>
> *The homestead and homestead precinct are a rare surviving example of early twentieth century occupation of grazing land in the Kemps Creek area. Sited on the side of a hill they have aesthetic valuable as a legible Federation homestead and associated plantings that provide interest in the local landscape of grazing land and undulating hills.*
>
> *The condition of the house is very poor with extensive termite damage. The integrity of the house is compromised by the replacement of most doors in the Post WWII period and by vandalism resulting in the loss of original windows.*

The hedge that marks the homestead precinct on the property is African Boxhorn, a class 4 noxious weed in NSW that should be controlled by removal. This will further compromise the integrity of the significant aspects of the property.

While the property has some historical and aesthetic value, it is not recommended for listing as a heritage item'.

On the basis of a detailed consideration and application of State Heritage Register (SHR) significance criteria, the 2009 Hubert review recommends that the homestead and landscape is not listed on the LEP. The site is not listed as a heritage item in the recently-commenced *Penrith Local Environmental Plan 2010* (see Section 4.2).

The heritage assessment undertaken for the project considers that the 2009 Hubert review recommendation for non-listing provides a sound and considered response to this item, and concludes that the demolition of the homestead would not significantly affect the historical heritage values of the area.

No other areas of potential historical heritage sensitivity were identified on the *LOGOS Estate* site or in the Bakers Lane reservation.

Based on the findings of the heritage assessment, it is considered that the project would not have any significant impact on historical heritage values of the site.

However, to appropriately record the historic values of the vacant homestead, and consistent with the recommendations of the heritage assessment, LOGOS has committed to undertaking photographic archival recording of the homestead, prior to its demolition. The archival recording would be undertaken in accordance with applicable guidelines, and in consultation with Council.

6.8 Traffic and Parking

A Traffic Assessment has been undertaken for the project by Thompson Stanbury Associates, and is attached as **Appendix N**. A summary of the assessment is provided below.

6.8.1 Access and Road Network

Existing Road Network

As discussed in Section 2.2.11, the site has direct and extended frontage to Mamre Road (approximately 500 metres frontage) Bakers Lane (approximately 1,100 metres frontage).

Mamre Road is a State Road under the care and control of the RTA. It provides direct access from the site to Erskine Park Road, the M4 Motorway and the Great Western Highway. The road primarily forms a 2 lane undivided carriageway providing one through lane of traffic in each direction. Traffic flow is governed by a signposted speed limit of 80km/h. Pavement widening is provided on approach to major junctions to accommodate exclusive turning lanes.

Bakers Lane is currently a local road providing access to the schools and retirement village to the north of the site, and the rural-residential properties in the area. In the vicinity of the site Bakers Lane comprises a 2 lane road undivided carriageway within a 20 metre road reserve. Traffic flow is governed by a signposted speed limit of 60km/h, however a 40km/h school zone speed limit applies for a majority of the site frontage associated with the schools to the north.

Bakers Lane provides direct access to Mamre Road via a signalised intersection.

Future WSEA Road Network

As discussed in Section 4.1, the WSEA SEPP includes a 'Transport and Arterial Road Infrastructure Plan Map' that outlines the envisaged arterial road network for the WSEA. The road network is based on detailed strategic road network planning undertaken by the RTA.

The road network is reproduced on **Figure 6.14**, and includes the following key features:

- a 'Northern Link Road' (or 'Erskine Park Link Road') – a northern east-west route as an extension of Lenore Lane, linking Erskine Park Road to the Old Wallgrove Road interchange with Wallgrove Road and the M7 Motorway;
- a Southern Link Road – a southern east-west route commencing at Bakers Lane (to the west), linking Mamre Road with Wallgrove Road and the M7 Motorway;
- north-south connections linking the Northern and Southern link roads; and
- a northern access road to Archibold Road connecting the area to the M4 Motorway (at a new interchange with east facing ramps only) and the Great Western Highway.

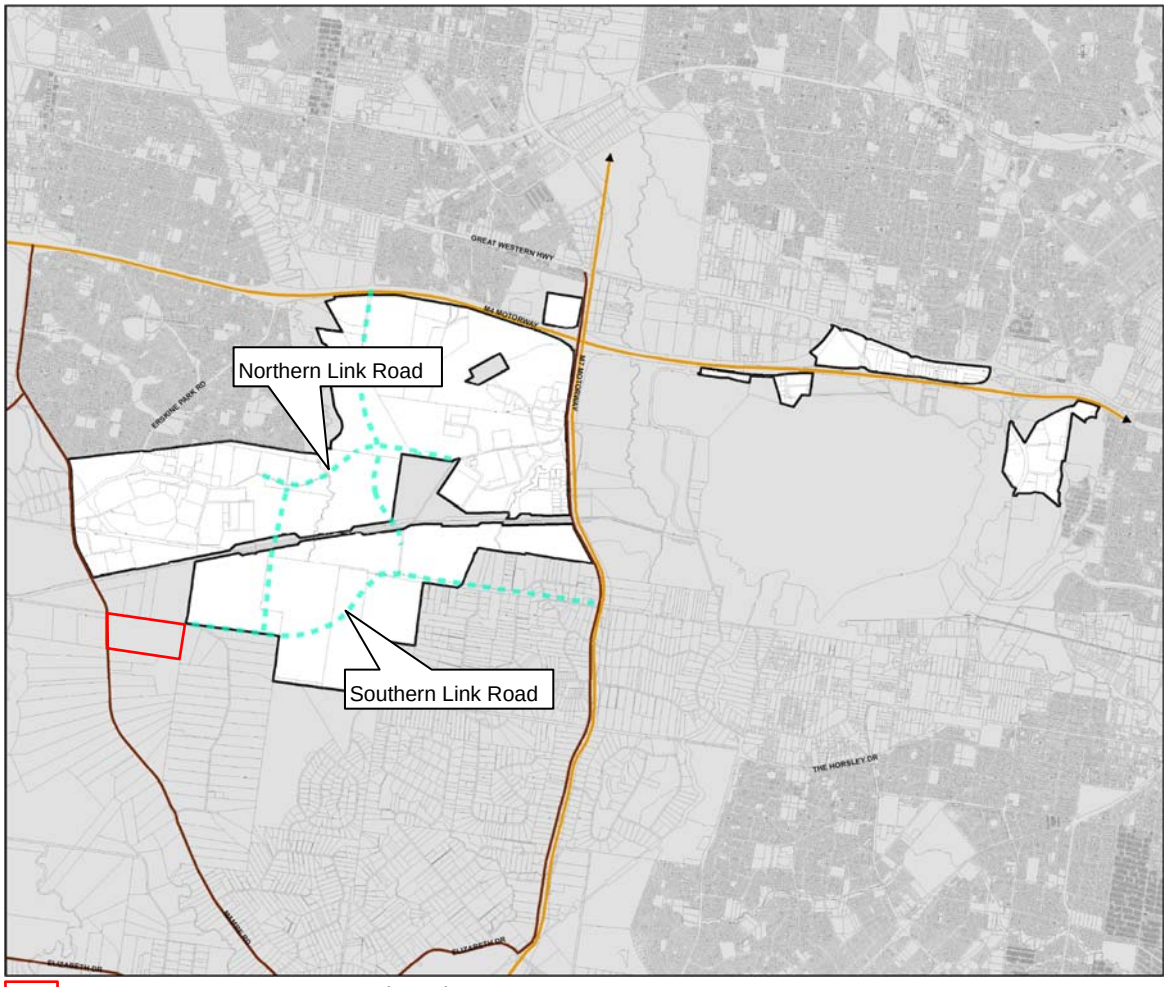


Figure 6.14: *WSEA Proposed Road Network (Source: WSEA SEPP)*

These new road links encompass 40 metre wide corridors and are to be constructed to a 4 lane divided carriageway standard, widening at intersections to accommodate additional exclusive turning lanes.

It is further planned that there will be additional lower order internal access roads that would be required to suit the development needs of the area.

Based on the RTA's modelling, a list of roads external to the WSEA that require upgrading to accommodate the traffic demand generated by the planned development of the WSEA has been identified as follows:

- Mamre Road is to provide a 4 lane divided carriageway between Bakers Lane and the M4 Motorway including the duplication of the bridge over the Motorway and associated upgrading of the existing on and off ramps;
- Archibold Road is to provide a 4 lane divided carriageway between Great Western Highway and the M4 Motorway, where west facing ramps are to be provided;
- Erskine Park Road is to provide a 4 lane divided carriageway between Mamre Road and Coonawarra Drive; and
- the M7 Motorway is to provide an additional 2 southbound lanes and 1 northbound lane between the M4 Motorway and Old Wallgrove Road, including the widening of access ramps to and from Wallgrove road at Old Wallgrove Road.

The abovementioned upgrading of Mamre Road between Bakers Lane and the M4 Motorway encompasses a series of intersections including Erskine Park Road, which is proposed to be significantly upgraded to provide additional auxiliary turning lanes and operate under traffic signal control.

Proposed Site Access and Internal Roads

As discussed in Section 3.9, the primary access to the *LOGOS Estate* is proposed to be via a signalised intersection on Bakers Lane, approximately 650 metres to the east of Mamre Road. This intersection would provide access to a central north-south internal access road, which would provide the key access to the DHL and Metcash campuses.

The estate access road would be constructed as a 2 lane divided carriageway (13 metre wide pavement within a nominal 20 metre reservation) widening on approach to Bakers Lane to accommodate suitable exclusive turning lanes. The access road is proposed to connect with a centrally located 4-way single lane circulating roundabout, providing access to the Metcash and DHL campuses.

The Metcash Campus would be accessed directly off the estate access road, with separate accesses for cars (via driveways) and trucks (via the roundabout). The truck access driveway would provide a pavement width of 11 metres, with a security gatehouse set back approximately 50 metres from the site boundary to ensure that queuing from the gatehouse does not influence the operation of the estate access road.

The DHL Campus would be accessed primarily via an east-west access road from the estate access road roundabout, which would provide separated car and truck access to each DHL building. This access road would also provide a left-in, left-out access driveway to/from Mamre Road. This secondary access would have a number of benefits, which include:

- the additional access reduces traffic reliance/volumes on Bakers Lane;
- the additional access provides an additional access/egress point in the event of disruption to the Bakers Lane access (ie. in the event of an accident blocking the primary access); and
- traffic assessment indicates that the left-in, left-out access would not adversely impact traffic on Mamre Road (see below).

The internal road system has been designed to accommodate vehicles up to and including B-Doubles. All access roads would be constructed in accordance with the RTA's *Road Design Guide* and applicable standards.

At this stage it is intended to maintain all internal access roads in private ownership.

External Roadworks

As discussed in Section 3.9, proposed external roadworks include the:

- upgrade of Bakers Lane to a 4 lane dual carriageway for the full frontage to the site; and
- upgrade of the intersection of Bakers Lane and Mamre Road, and localised upgrade of Mamre Road in the vicinity of the site, including deceleration and acceleration lanes associated with the proposed left-in, left-out access driveway.

The proposed upgrade of Bakers Lane would be consistent with, and is expected to ultimately form an integral component of, the Southern Link Road, which in turn forms part of the planned regional road network for the WSEA. The upgrade would include:

- widening the road reserve to 30 metres, through dedication of the northern 10 metre frontage of the site;
- construction of a 4 lane dual carriageway for the full site frontage (ie. approximately 1.1 kilometre), and regrading (ie. lowering) the crest of Bakers Lane to provide a more amenable grade for the roads' envisaged future arterial status;
- construction of a 5.5 metre width service road to the north of the divided carriageway (but within the existing road reserve) in order to provide safe and efficient access to the upgraded road for the existing community and educational establishments located to the north; and
- construction of the signalised Bakers Lane/Estate Access Road intersection (which may be staged in accordance with demand).

It is noted that the proposed service road to the north of the Bakers Lane dual carriageway has been designed in consultation with the RTA and representatives of Mamre Christian College and Parramatta Diocese (the trustees for the total property occupied by Trinity Primary School, Emmaus College and the Emmaus Retirement Village), and is based on existing service roads recently constructed on similar state roads in Sydney. The 5.5 metre wide service road would be accommodated wholly within the existing Bakers Lane road reserve.

The eastern termination of the service road is proposed to be provided with an interim U-turn facility which would allow access to both the east and westbound Bakers Lane carriageways. The traffic assessment considers that the extremely low traffic volumes accommodated by Bakers Lane to the east of the site are such that these U-turning movements can be undertaken in a safe and efficient manner.

Following the development of the adjoining south-west precinct of the WSEA, it is likely that the interim U-turn facility would need to be closed and vehicles exiting the service road would need to undertake a U-turn manoeuvre via the future road network, most likely via a future roundabout within Bakers Lane to the east of the site (to be undertaken subject to separate approvals).

The traffic assessment considers that the service road would effectively separate traffic and pedestrian activity associated with the land uses to the north from traffic on the upgraded arterial road (including project-related traffic). The assessment notes that a similar traffic solution would most likely be necessary when Bakers Lane accommodates the significant increases in traffic demands associated with the development of the WSEA, with or without the project.

It is noted that the service road is not proposed to service the two rural-residential properties to the west of the schools (ie. 25 Bakers Lane and 696 Mamre Road). These properties are proposed to be given direct access to the eastbound lanes of the upgraded Bakers Lane, with westbound access to Mamre Road via the U-turn facility described above.

All external road works would be constructed in consultation with Penrith Council and the RTA, and to the satisfaction of the applicable roads authority.

6.8.2 Traffic Generation and Road Network Performance

Traffic Generation

The traffic assessment has adopted a trip rate of 15 trips per developable hectare to assess the traffic generation associated with the project. This rate has been adopted by the RTA in other comparable areas of the WSEA (including its concept plan for the WSEA road network). The rate is considered to be a worst-case scenario which in the long term is likely to overstate the traffic generation from the project, as a result of the following factors:

- large warehouse developments typically operate 24 hours per day and 7 days per week, thereby spreading traffic loads and minimising peak period generation;
- warehouses are usually staffed over this 24 hour shift with changeover times that do not generally coincide with the on-street peak period;
- peak period travel is usually associated with administrative staff, which is only a small proportion of the overall Metcash and DHL activity; and
- the rate is unlikely to take into consideration the modal shift to public transport.

Application of this rate to the project at full development results in the following trips:

- 750 vehicle trips per hour in the morning peak (525 in, 225 out); and
- 750 vehicle trips per hour in the evening peak (225 in, 525 out).

Local Road Network Performance

Based on these traffic generation rates, the traffic assessment modelled the impact of the project on the capacity (ie. mid-block flows) of the surrounding road network. The results are presented in the following tables.

It is noted that the 2031 traffic volume projections incorporate the planned future WSEA road network described above (including the Southern Link Road), whilst the 2016 projections assume the existing road network prevails.

Table 6.8: *Predicted Road Network Traffic Volumes*

Road	***2016***						***2031***					
	RTA Prediction		***RTA Prediction and Project***		***Increase (%)***		***RTA Prediction***		***RTA Prediction and Project***		***Increase (%)***	
	AM	***PM***	***AM***	***PM***	***AM***	***PM***	***AM***	***PM***	***AM***	***PM***	***AM***	***PM***
Bakers Lane (East)												
Eastbound	943	283	943	283	0	0	2,217	164	2,341	453	6	176
Westbound	283	1,032	283	1,032	0	0	237	2,257	526	2,381	122	5
Bakers Lane (West)												
Eastbound	943	283	1,468	508	56	80	2,217	164	2,453	265	11	62
Westbound	283	1,032	508	1,557	80	51	237	2,257	338	2,493	43	10
Mamre Road (North)												
Northbound	723	1,061	869	1,402	20	32	1,102	2,259	1,147	2,364	4	5
Southbound	1,087	758	1,398	904	29	19	2,140	1,050	2,245	1,095	5	4
Mamre Road (South)												
Northbound	1,055	704	1,239	783	17	11	1,922	966	2,053	1,022	7	6
Southbound	729	1,150	808	1,334	11	16	980	1,850	1,036	1,981	6	7

Notes:

1. *Bakers Lane (East) is the section of Bakers Lane to the east of the subject site;*
2. *Bakers Lane (West) is the section of Bakers Lane between the masterplan site access and Mamre Road;*
3. *Mamre Road (North) is the section of Mamre Road to the north of Bakers Lane; and*
4. *Mamre Road (South) is the section of Mamre Road to the south of Bakers Lane.*

Table 6.9: *Predicted Road Network Mid-Block Level of Service*

Road	***2016***				***2031***			
	RTA Prediction		***RTA Prediction and Project***		***RTA Prediction***		***RTA Prediction and Project***	
	AM	***PM***	***AM***	***PM***	***AM***	***PM***	***AM***	***PM***
Bakers Lane (East)								
Eastbound	A	A	A	A	D	A	D	A
Westbound	A	A	A	A	A	D	A	D
Bakers Lane (West)								
Eastbound	A	A	B	A	D	A	D	A
Westbound	A	A	A	B	A	D	A	D
Mamre Road (North)								
Northbound	A	A	A	B	A	D	A	D
Southbound	A	A	B	A	D	A	D	A
Mamre Road (South)								
Northbound	A	A	A	A	C	A	C	A
Southbound	A	A	A	B	A	C	A	C

Note: Level of Service is fully defined in the traffic assessment, however a summary of the ratings is:
A – Good operation with free flow
B – Good with acceptable flow
C – Satisfactory flow
D – Near capacity
E – At capacity
F – Extra capacity required

As indicated in the above tables, the project would result in some increases to the mid-block carriageway volumes of Mamre Road and Bakers Lane. However, as indicated in Table 6.9, the levels of service of the carriageways are not projected to change to any unreasonable extent. In this regard, the 2016 levels of service within the Mamre Road and Bakers Lane carriageways are projected to be at least B incorporating the project. This level of service represents stable flow capable of accommodating additional capacity.

Whilst the increased 2031 traffic demands throughout the surrounding road network are envisaged to see a general reduction in the level of service surrounding the site, the additional traffic generated by the project would not alter the performance of Mamre Road and Bakers Lane.

Based on these estimated volumes, the traffic assessment concludes that the surrounding road network (existing and planned) has sufficient capacity to accommodate the additional traffic from the project.

Intersection Performance

Based on the predicted traffic generation and the local road network, the traffic assessment modelled the impact of the project on local intersections. The results are presented in the following table.

Table 6.10: *Predicted Intersection Performance*

Intersection	***Control Type***	***2016***				***2031***			
		Without Project		***With Project***		***Without Project***		***With Project***	
		AM	***PM***	***AM***	***PM***	***AM***	***PM***	***AM***	***PM***
Mamre Road / Bakers Lane	Signal								
Delay (sec)		22.2	24.1	30.0	34.1	37.2	46.9	43.8	55.7
Degree of Saturation		0.49	0.67	0.61	0.83	0.80	0.89	0.87	0.91
Level of Service		C	C	C	C	C	C	C	C

Intersection	*Control Type*	*2016*				*2031*			
		Without Project		*With Project*		*Without Project*		*With Project*	
		AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
Bakers Lane / Estate Access Road	Signal								
Delay		-	-	7.7	15.1	-	-	14.1	22.6
Degree of Saturation		-	-	0.49	0.70	-	-	0.73	0.86
Level of Service		-	-	A	B	-	-	B	B

Note: Level of Service is fully defined in the traffic assessment, however a summary of the ratings is:
A – Good operation
B – Good with acceptable delays
C – Satisfactory
D – Near capacity
E – At capacity
F – Extra capacity required

The modelling indicates that:

- the Mamre Road/Bakers Lane intersection is projected to operate with a level of service C incorporating 2016 and 2031 traffic volumes without the project, representing satisfactory conditions;
- whilst the average vehicular delay and the junction degree of saturation is projected to increase marginally as a result of the project, the level of service of the Mamre Road/Bakers Lane intersection is projected to remain satisfactory incorporating both the 2016 and 2031 scenarios;
- the proposed Bakers Lane/Estate Access Road intersection is projected to operate with a level of service A / B incorporating 2016 traffic demands, representing good operation with spare capacity; and
- the proposed Bakers Lane/Estate Access Road intersection is projected to operate with a level of service B incorporating 2031 traffic demands, once again representing good operation with spare capacity.

Greater Road Network Performance

The traffic assessment includes consideration of the project in relation to the wider regional road network, including consideration of the operation of the Mamre Road intersections with James Erskine Drive and Erskine Park Road (as requested by the RTA during initial consultation for the project).

The assessment notes that:

- the Mamre Road/James Erskine Drive intersection has recently been constructed as part of the development of the Erskine Park Employment Area to accommodate the future 4 lane divided carriageway nature of Mamre Road in conjunction with exclusive turning lanes. This amplification work also included the provision of traffic signals; and
- the Mamre Road/Erskine Park Road intersection is also proposed to be upgraded in a similar fashion with signalised control (as discussed in Section 6.8.1 above).

These works, as well as the planned widening of Mamre Road and Erskine Park Road (as described in Section 6.8.1 above) will ensure that the levels of traffic service available at these junctions is capable of accommodating the future traffic demands associated with the project, particularly in the interim period pending the redevelopment of the WSEA. It is noted that these works will be required irrespective of the project.

The traffic assessment notes that the additional traffic volumes associated with the project on Mamre Road to the north of the subject site are not significant, particularly during the 2031 scenario. As described above, the project would not significantly affect on the mid-block carriageway level of service on Mamre Road to the north of Bakers Lane. Accordingly, an

analysis of future projected traffic flows along with the additional traffic generated by the project would indicate that the project would have insignificant impact with respect to intersection performance parameters such as vehicular delay, degree of saturation and level of service.

At the regional level, the *LOGOS Estate* represents approximately 2% of the total area of the WSEA, indicating that any impacts of the project on the greater road network over and above that of the development of the wider employment area, would be negligible.

6.8.3 Parking

The project includes provision of a total of 1,293 car parking spaces. This parking provision is based on 1 space per 300m^2 of warehouse gross floor area and 1 space per 40m^2 of office gross floor area, which is consistent with contemporary industrial estates in the WSEA (eg. Greystanes Southern Employment Lanes), and is also consistent with DHL and Metcash specified parking requirements.

Each DHL building, and the total Metcash site, has been designed to comply with this parking provision, as illustrated in the following table.

Table 6.11: *Proposed Parking Provision*

Building	***Gross Floor Area (m^2)***	***Car Parking Required[1]***	***Car Parking Provided***
DHL Campus			
Building 1			
Warehouse	18,600	62	
Office	1,600	40	
Sub-total	20,200	102	102
Building 2			
Warehouse	18,600	62	
Office	1,600	40	
Total	20,200	102	102
Building 3			
Warehouse	18,600	62	
Office	1,600	40	
Total	20,200	102	102
Building 4			
Warehouse	18,600	62	
Office	1,600	40	
Total	20,200	102	102
Building 5			
Warehouse	19,800	66	
Office	1,600	40	
Total	21,400	106	106
Building 6			
Warehouse	15,180	51	
Office	1,400	35	
Total	16,580	86	86
Building 7			
Warehouse	15,180	51	
Office	1,400	35	
Total	16,580	86	86

Building	*Gross Floor Area (m^2)*	*Car Parking Required*[1]	*Car Parking Provided*
Building 8			
Warehouse	19,800	66	
Office	1,600	40	
Total	21,400	106	106
Café (under Building 5)			
Floor Area	360	14	16
DHL Campus Totals			
Total Warehouse	144,360		
Total Office	12,400		
Total Café	360		
Total	157,120	805	808
Metcash Campus (inc. expansion)			
Ambient Temp. Warehouse	68,185	227	
Temp. Controlled Warehouse	18,235	61	
Office Building	6,470	162	
Ancillary Plant and Gatehouse	525	0	
Total	93,415	450	485
Grand Total	**250,535**	**1,255**	**1,293**

1 At 1 space per 300m^2 for warehouse, 1 space per 40m^2 for office and 1 space per 26m^2 for café.

A comparison of the proposed parking provision against the requirements under the *Erskine Park Employment Area DCP* and the RTA's *Guide to Traffic Generating Development (2002)*, is presented in the following table.

Table 6.12: *Parking Provision Comparison with RTA and Council Rates*

Landuse	*Required Parking Space Rate*		*Total Required*		*Proposed*
	DCP	*RTA Guide*	*DCP*	*RTA Guide*	*Spaces*
Warehouse/Storage	1 per 100m^2	1 per 300m^2	2,308	769	1,293
Office	1 per 40m^2	1 per 300m^2	472	63	
Cafe	1 per 26m^2	1 per 26m^{2*}	14	14	
Total			2,794	846	

* Assumed

As indicated in the above table, the proposed parking provision exceeds the RTA requirements but is less than the DCP requirements. The DCP requirements greatly exceed the predicted number of employees on the site (ie. 1,580).

It is considered that the proposed parking provision would adequately cater for the peak parking demand created by the project, such that there would not be any unreasonable overspill of parking onto the adjoining road network or the estate access road.

6.8.4 Sustainable Transport

Public Transport

There is limited public transport available to the site at present. The nearest railway stations are at St Marys and Mt Druitt, which are located approximately 8 kilometres to the north. Westbus operates a single bus service in the vicinity of the site, namely Route 779 which operates between St Marys Station and Erskine Park, with the closest stop located on James Erskine Drive approximately 1.5 kilometres to the north of the site. This service operates every 30 minutes during peak business commuter periods.

The draft *North-West Subregional Strategy* identifies the challenge of providing public transport services for employees in the WSEA. Prior to the introduction of the WSEA SEPP, SEPP 59 provided a target public transport utilisation of 10% for employment lands such as the *LOGOS Estate*. Applying this target to the employee population expected for the project translates to 160 people using public transport to access to the site on a daily basis.

It is considered that the only feasible method of providing public transport to/from the *LOGOS Estate* is via bus services between the site and nearby railway stations, such as St Marys, Mt Druitt, Fairfield and Liverpool. It is anticipated that the existing Westbus service between the Western Railway Line and James Erskine Drive could be extended to service the site relatively easily. Based on an average bus occupancy of 40 employees, approximately 4 new bus services would be required to meet the public transport utilisation target stated above.

To facilitate the provision of public transport services and facilities (including a bus stop in the vicinity of the site), LOGOS has committed to preparing a detailed Transport Management and Accessibility Plan (T-MAP) for the project. The plan is discussed in more detail below.

Pedestrian and Bicycle Facilities

To encourage safe and efficient pedestrian and cycle movement around the *LOGOS Estate*, a network of pedestrian pathways and cycle ways would be provided in conjunction with the road network. The facilities would include:

- a shared pedestrian/cycleway on one side of all internal estate roads; and
- provision of bicycle parking facilities for all buildings, as well as change facilities/amenities .

Transport Management and Accessibility Plan

The Traffic Assessment includes an outline T-MAP, including a 'package of measures' designed to respond to and manage the transport impacts of the project and encourage sustainable transport modes. This package of measures includes:

- provision of a 1.1 kilometre section of the Southern Link Road, an integral component of the planned arterial road network for the WSEA;
- localised upgrades to Mamre Road adjacent the site;
- provision of all internal roads required to service the project;
- identification of potential public transport services and provision of facilities (including a bus stop); and
- provision of pedestrian and bicycle infrastructure and facilities.

These measures provide a holistic approach to the transport management needs of the site and the project. To further facilitate and encourage sustainable transport modes, LOGOS has committed to developing a detailed T-MAP for the project. The plan would be prepared in accordance with the RTA's *Draft Interim Guidelines on Transport Management and Accessibility Plans*, in consultation with applicable stakeholders including the RTA, Transport NSW, the Department of Planning, Penrith Council and bus service operators.

6.8.5 Construction Traffic

As detailed in Section 3.4, project construction would staged over a period of about 5 years.

The traffic assessment notes that whilst the construction phase would generate considerable traffic (including the earthworks phase which may involve the export of approximately 50,000m^3 of fill from the site), these traffic volumes are not expected to exceed the predicted operational traffic volumes. Accordingly, it is not envisaged that the construction phase would result in unreasonable impacts on the surrounding road network.

To ensure that construction traffic is effectively managed, LOGOS has committed to the preparation of a detailed Construction Traffic Management Plan for the project. The plan would be prepared in consultation with the RTA and Penrith Council, and include detail on:

- construction vehicle transport routes;
- construction site access locations and management measures;
- construction personnel parking controls;
- construction traffic generation; and
- mitigating construction-related traffic impacts on adjoining land users, in particular the community and educational facilities located on Bakers Lane.

With regard to construction transport routes, it is noted that the site enjoys direct access to the arterial road network (ie. Mamre Road via Bakers Lane), thereby avoiding the need to travel through residential areas.

With regard to construction access, the traffic assessment recommends that, until the proposed road upgrades are completed, the site access location should be located away from the existing access driveways servicing the community and educational establishments on Bakers Lane, to ensure that any interaction is minimised. The assessment states that the most desirable location is likely to be on Bakers Lane approximately 150 metres to the east of Mamre Road. Any temporary construction site access is to be supervised by appropriately qualified traffic controllers.

To further mitigate the potential for conflict with the schools, the traffic assessment recommends that site access movements by construction vehicles are avoided during periods of peak school operation (start and finish periods, i.e. 8.00am – 9.30am and 2.30pm – 4.00pm, school days).

These recommendations would be incorporated into the Construction Traffic Management Plan for the project.

6.9 Wastes and Hazards

6.9.1 Wastes

Construction and Demolition Waste

The project would generate a considerable amount of construction and demolition waste, associated with:

- demolition of the existing dwelling and farm improvements (mainly paddock fencing);
- excavation, including the export of approximately 50,000m^3 of fill from the site; and
- infrastructure and building construction.

The existing dwelling on the site is of weatherboard construction, but does contain some asbestos cement sheeting in wall cladding. To ensure that the risk associated with the asbestos material is appropriately managed, the asbestos cement sheeting would be managed and disposed in accordance with relevant legislative requirements and guidelines, including the *Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (2005)]* and the *Protection of the Environment Operations (Waste) Regulation 2005*.

The excavation phase would generate about 50,000m^3 of excess topsoil that would need to be exported from the site. As detailed in Section 6.2, the fill is not expected to be contaminated and as such would classify as virgin excavated natural material (VENM) as defined in the *Protection of the Environment Operations Act 1997* and DECCW's *Waste Classification Guidelines (2008).*

Construction of the project would also generate a considerable amount of waste. However, with appropriate planning and management, construction waste is able to be minimised through application of best practice waste avoidance, re-use and recycling measures.

To ensure this occurs, LOGOS has prepared a Waste Management Plan for the project (see **Appendix O**), which has been prepared in accordance with the requirements of the Erskine Park Employment Area DCP. All construction and demolition works would be undertaken in accordance with this plan.

Operational Waste

The proposed warehouses are not expected to generate a significant amount of waste, with waste streams typical of standard warehousing developments.

A generic operational Waste Management Plan has been prepared for the facilities, which is attached as **Appendix O**. All operations on the *LOGOS Estate* would be carried out in accordance with this plan.

6.9.2 Bushfire Hazard

Although the site is generally devoid of treed vegetation, Penrith Council's Bushfire Prone Land Map indicates that a small part of the northern area of the site comprises a buffer zone to Category 1 Bushfire Prone Vegetation located within the Emmaus School site to the north of Bakers Lane.

To assess the bushfire risk associated with the project, a Bushfire Hazard Assessment has been undertaken for the project by Australian Bushfire Protection Planners, and is attached as **Appendix P**. The assessment has been prepared in accordance with applicable guidelines including the NSW Rural Fire Service's *Planning for Bushfire Protection 2006*.

The bushfire assessment concludes that the bushfire hazard on the site is low, and that no specific estate design, building construction or bushfire evacuation planning measures are required for the project.

The assessment recommends a number of standard bushfire management strategies, including:

1. *Landscape Management* – Landscaping to be managed to:
    - maintain a clear area of low cut lawn or pavement adjacent to the building;
    - keep areas under shrubs and trees raked and clear of combustible fuels;
    - use non-flammable materials such as scoria or pebbles as groundcover to landscaped gardens in close proximity to building;
    - maintain trees and shrubs to separate canopies and lower density;
2. *Building Construction Standards* – Buildings to be constructed to mitigate potential ember attack, including:
    - operable windows to be fitted with appropriate flyscreens;
    - access doors appropriately sealed;
    - external vents, grilles and ventilation louvres to be fitted with meshing; and
3. *Fire Water Supplies* – Fire-fighting water supply to comply with the Building Code of Australia and Australian Standard *AS 2419.1-2005*.

The development and operation of the *LOGOS Estate* would be managed in accordance with the recommendations of the Bushfire Assessment.

6.9.3 Dangerous Goods and Hazardous Substances

As outlined in Section 4.2.3, SEPP 33 and the Department of Planning's *Applying SEPP 33* guidelines are used to ascertain whether a proposal is a 'potentially hazardous' or 'hazardous' industry.

The proposed DHL warehouses are not expected to store significant quantities of hazardous materials or dangerous goods, given that the facilities are likely to store general consumer goods. However, DHL would use the facilities to store goods on behalf of third party clients, and the precise details of such storage not known at this stage.

Metcash proposes to use its facilities to store fast moving consumer goods (ie. groceries), which may include a range of consumer goods classified as dangerous goods. Such dangerous goods would be stored within the warehouses in domestic sized packaging, and may include:

- Class 1.4 – Explosives with no significant hazard (eg. party poppers, sparklers);
- Class 2.1 – Flammable Gases (eg. gas lighters, butane canisters);
- Class 3 – Flammable Liquids (eg. nail polish remover, correction fluid, toiletries, mouthwash, glues);
- Class 4.1 – Flammable Solids (eg. fire lighters);
- Class 5 – Oxidising Agents and Organic Peroxides (eg. hair colouring kits, pool chlorine); and
- Class 8 – Corrosives (eg. dishwashing liquid, cleaners).

The precise details of this storage (including quantities and arrangements) have not been resolved at this stage. However, based on similar developments for fast moving consumer goods warehouses in Sydney and NSW, it is considered unlikely that the proposed Metcash facility would be classed as 'hazardous' under SEPP 33.

Given the uncertainty associated with dangerous goods storage on site at this stage, and to ensure that all dangerous goods storage is effectively planned, LOGOS has committed to providing a hazards review (and additional hazards studies if required, such as a Preliminary Hazard Analysis), prior to construction of any building involving storage of hazardous materials or dangerous goods (apart from minor storage). The review would be undertaken in accordance with the Department of Planning's *Applying SEPP 33* guidelines, to the satisfaction of the Department of Planning.

Further, all dangerous goods and hazardous substances storage and handling on site would be undertaken in accordance with the Dangerous Goods Code and *AS 1940-2004: The storage and handling of flammable and combustible liquids*.

7 PROJECT JUSTIFICATION AND CONCLUSION

7.1 Statement of Commitments Summary

LOGOS has prepared a Statement of Commitments for the project, which is attached as **Appendix A**.

The Statement of Commitments outlines a range of measures that LOGOS would implement during the detailed design, construction and operational phases of the project, to ensure that the project is undertaken in an orderly and environmentally responsible manner.

A summary of the key commitments is presented in the following table.

Table 7.1: *Statement of Commitments Summary*

Aspect	***Key Commitment***
Subdivision	LOGOS will prepare a final subdivision plan to the satisfaction of the Department of Planning prior to obtaining a subdivision certificate for the site.
Development Contributions	LOGOS will provide development contributions consistent with the proposed State Infrastructure Contribution (SIC) for the WSEA, subject to suitable offsets for applicable works-in-kind.
Design and Visual	LOGOS will prepare and implement a detailed Signage Strategy, Fencing Strategy and Lighting Strategy for the project. LOGOS will maintain landscaping on site to a high quality, and ensure that all lighting is installed and maintained in a manner that does not cause nuisance.
Soil and Water	*Erosion and Sediment Control* LOGOS will prepare and implement Erosion and Sediment Control Plans for individual buildings and works. *Stormwater Management* LOGOS will prepare and implement Stormwater Management Plans for individual buildings and road works.
Noise	LOGOS will only carry out audible construction works within the day-time period. LOGOS will prepare and implement a Construction Noise Management Plan for the project. LOGOS will ensure that the operation of the project complies with the applicable project specific noise level criteria. LOGOS will undertake additional architectural noise mitigation measures on noise affected residences (21 Aldington Road, 25 Bakers Lane, and 696 Mamre Road), in consultation with the applicable landowners.
Air Quality and Odour	LOGOS will implement all reasonable and feasible measures to control dust emissions, and ensure that the project does not generate offensive odour.
Energy and Greenhouse Gas	LOGOS will carry out the project generally in accordance with the Energy and Greenhouse Gas Assessment for the project.
Flora and Fauna	LOGOS will prepare and implement a Tree Removal Protocol for the project, that provides for pre-clearance surveys and progressive tree removal.

Aspect	*Key Commitment*
Heritage	*Aboriginal Heritage* LOGOS will prepare and implement an Aboriginal Heritage Management Plan for the project, including provisions for salvage of Aboriginal sites/objects on the site. *Historical Heritage* LOGOS will undertake photographic archival recording of the vacant homestead on the site, prior to its demolition.
Traffic and Parking	LOGOS will construct the proposed external road works to the satisfaction of the applicable roads authority. LOGOS will construct all external and internal roads and car parking in accordance with applicable standards, and provide suitable bicycle parking facilities for the project. LOGOS will prepare and implement a Transport Management and Accessibility Plan (T-MAP) for the project, in consultation with relevant stakeholders. LOGOS will prepare and implement a Construction Traffic Management Plan for the project.
Wastes and Hazards	LOGOS will implement reasonable and feasible measures to minimise waste and carry out the project in accordance with the project Waste Management Plan. LOGOS will undertake hazard analyses for any building involving the bulk storage of dangerous goods, to the satisfaction of the Director-General
Environmental Management	LOGOS will prepare and implement an Environmental Management Strategy for the project.

7.2 Consideration of Alternatives

Alternatives to carrying out the project on the site in the proposed manner include:

- developing the site to a lesser or higher scale;
- developing the site with a different layout and/or design; and
- not undertaking the project at all.

In terms of project scale, it is noted that:

- the project provides generous setbacks to Mamre Road (minimum 20 metres) and Bakers Lane (minimum 20 metres plus an additional 10 metres for road widening), thus ensuring that the buildings are set into the site and do not dominate the streetscape;
- the site cover for the project is relatively low (52% for the DHL Campus and 48% for the Metcash Campus), and consistent with developed areas of the Erskine Park Employment Area and the wider WSEA;
- the height of the buildings are relatively low (maximum 14 metres) and consistent with other industrial facilities in the WSEA. Further, the buildings would be set down into the site through excavation, which would reduce the relative height of the buildings when viewed from external areas; and
- environmental assessment indicates that the project is able to be undertaken in a manner that would not adversely affect the environment or surrounding land users.

Accordingly, it is considered that the scale of the project provides a reasonable balance between maximising the development and employment opportunities of the site whilst ensuring that the amenity of the surrounding area is not adversely affected.

In terms of alternative layouts and/or designs, it is noted that:

- the campus-style distribution park project is different to a typical industrial development, giving the project more of a business park setting than an industrial type setting. This is

advantageous as it is more compatible with the schools and retirement village land use to the north of Bakers Lane;
- the project has been designed to a high quality by respected architects Mackenzie Pronk and Axis Architectural in a manner that befits a world-class estate;
- the design of the estate has paid particular attention to the sites topography and its key frontages, including providing batters to Mamre Road and Bakers Lane, restricting engineered retaining walls to the rear (non-visible) areas of the site, and having the buildings 'step up' the site in accordance with the site's topography; and
- as discussed above, the estate has been designed in a manner that is consistent with similar industrial development in the Erskine Park Employment Area and WSEA.

Accordingly, it is considered that the *LOGOS Estate* layout and design provides a good balance between the utilitarian needs of the development, the setting and constraints of the site, and the desire for a visually attractive campus-style industrial estate.

Not undertaking the project at all on the site is not considered to represent the orderly and economic use of the land.

The site is currently marginal agricultural grazing land, and its relatively small size, close proximity to urban areas and relatively poor soils precludes its use for high value agricultural purposes.

The site is immediately adjacent to existing employment zoned areas of the WSEA, is within the WSELIA and is part of an area that has been earmarked for potential employment land use for more than 20 years. The site also has extended frontage to a planned major arterial road for the WSEA (ie. the 'Southern Link Road'), and the project would deliver a key component of this link road in the short term.

Infrastructure assessment indicates that the project is able to be readily and reliably serviced without compromising other development in the WSEA or surrounds, and at no cost to government.

Environmental assessment indicates that the project is able to be undertaken in a manner that would not result in any significant environmental impacts.

Not undertaking the project would also conflict with the need to address Sydney's significant shortage of employment land, and the government's key priorities of 'releasing more employment land' and 'providing jobs closer to home'.

In this regard, not undertaking the project at all would:
- forego the creation of 800 construction jobs and 1,580 operational jobs for the people of Western Sydney;
- forego $235 million in direct capital investment;
- forego many more indirect jobs and capital investment; and
- forego an opportunity to deliver, in the short term, a key component of the arterial road network required for the WSEA (ie. a part of the 'Southern Link Road').

For these reasons, it is considered that not undertaking the project at all on the site, or delaying the project until the area is rezoned, is not a reasonable or responsible alternative.

7.3 Project Need and Justification

As detailed in this Environmental Assessment, strategic planning undertaken by the NSW Government and Department of Planning demonstrates a clear and present need to expand Sydney's stock of employment land, if Sydney is to remain Australia's global city and economic powerhouse.

The WSEA, along with recent releases of employment land in the North West and South West Growth Centres, have gone some way toward fulfilling Sydney's employment land needs, but analysis indicates that an additional 4,600 hectares will be needed by 2031 (which would still only take Sydney's supply up to Melbourne's existing supply).

The project provides an opportunity to increase Sydney's employment land supply in a responsible and orderly manner, and at no cost to government. In this regard, it is noted that:

- the site is located immediately adjacent to the existing WSEA;
- the site is within the WSELIA and is part of an area that has been earmarked for potential employment land use for more than 20 years;
- the site has extended frontage to a planned major arterial road for the WSEA (ie. the Southern Link Road), and the project would deliver a key component of this link road in the short term;
- by constructing part of the Southern Link Road (and contributing via the proposed WSEA State Infrastructure Contribution), the project would improve the economics of the WSEA road network (by increasing the pool of contributors), thus reducing the potential cost to government/taxpayers; and
- the project can be serviced through relatively simple extension of under-utilised infrastructure from the Erskine Park Employment Area, at no cost to government.

Environmental assessment indicates that the project is able to be conducted in a manner that would not result in any significant environmental impacts, or adversely affect the amenity of the surrounding area subject to certain mitigation measures.

The project would generate significant socio-economic benefits for the people of Western Sydney, through a capital investment of $235 million in the Kemps Creek and wider Penrith area, and the creation of 1,580 local jobs.

On balance, it is considered that the project represents the orderly and reasonable development of the land, and is therefore in the public interest.