URBIS

ASPECT INDUSTRIAL ESTATE

Environmental Impact Statement

Prepared for
MIRVAC
November 2020

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Jacqueline Parker
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Project Code	P0013978
Report Number	Final

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FIGURES

PICTURES

TABLES

DECLARATION BY AUTHOR

ENVIRONMENTAL IMPACT STATEMENT

Prepared under Part 4 of the *NSW Environmental Planning and Assessment Act 1979*

Authors		
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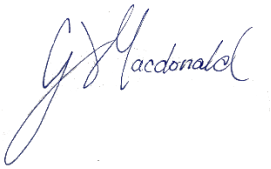
Company	Urbis Pty Ltd Angel Place, Level 8, 123 Pitt Street Sydney, NSW 2000	
Proposed Development		
Application Reference	SSD 10448	
Proposed Development	Concept masterplan for industrial or warehouse and distribution centre uses. Stage 1 of development of an Industrial Estate for two warehousing and distribution centres.	
Applicant Details		
Company/Organisation	Mirvac Projects Pty Ltd	
Address	Level 28, 200 George Street Sydney, NSW 2000 Australia	
Contact	Russell Hogan – Development Manager	
Land to be developed		
Name	Aspect Industrial Estate	
Address	804-882 Mamre Road, Kemps Creek, NSW 2178	
Legal Description	Lots 54 – 58 in DP 259135	

Declaration		
We certify that the contents of the Environmental Impact Statement to the best of our knowledge has been prepared in accordance with the requirements of Clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000;* contains all available information that is relevant to the assessment of the development and that to the best of our knowledge the information contained in this report is neither false nor misleading.		
Signature		
	Jacqueline Parker Director Urbis Pty Ltd	Grace Macdonald Consultant Urbis Pty Ltd

GLOSSARY OF TERMS

Term	Abbreviation
Aboriginal Cultural Heritage Assessment Report	ACHAR
Asbestos Containing Material	ACM
Australian Height Datum	AHD
Aspect Industrial Estate (also referred to as ‘the Site’)	AIE
Australian Noise Exposure Concept	ANEC
Australian Noise Exposure Forecast	ANEF
Asset Protection Zone	APZ
Archaeological Research Design	ARD
Australian Standards	AS
Air Traffic Control	ATC
Biodiversity Assessment Method	BAM
Building Code of Australia	BCA
Biodiversity Conservation Act 2016	BC Act
Biodiversity Development Assessment Report	BDAR
Biodiversity Offsets Policy for Major Projects	BoP
Benzene, toluene, ethyl benzene, xylenes and naphthalene	BTEXN
Critically Endangered Ecological Community	CEEC
Capital Investment Value	CIV
Concept Masterplan	Not applicable
Construction Environmental Management Plan	CEMP
Construction Stage	Not applicable
Construction Management Transport Plan	CMTP
Construction Noise and Vibration Management Plans	CNVMP
Department of Planning	DoP
Department of Planning, Industry and Environment	DPIE
Department of Premier and Cabinet – Heritage	DPC - Heritage

Term	Abbreviation
Development Control Plan	DCP
Digital Elevation Model	DEM
Western City District Plan	District Plan
Dust Management Plan	DMP
Draft *State Environmental Planning Policy (Western Sydney Aerotropolis)*	draft SEPP WSA
Ecologically Sensitive Development	ESD
Environmental Impact Statement	EIS
Environmental Protection Authority	EPA
Environmental Planning Instrument	EPI
Environmental Planning and Assessment Act 1979 (NSW)	EP&A Act
Environmental Planning and Assessment Regulation 2000 (NSW)	EP&A Reg
Environmental Protection and Biodiversity Act 1999 (Cth)	EPBC Act
Estate Roads	Not applicable
Excavated Natural Material	ENM
Finished Floor Levels	FFL
Fire Safety Strategy	FSS
Gross Floor Area	GFA
Gross Pollutant	GP
Gross Pollutant Trap	GPT
Hectare	ha
Interim Biogeographic Regionalisation for Australia	IBRA
Kilometre	km
NSW Interim Construction Noise Guidelines	ICNG
State Environmental Planning Policy (Infrastructure) 2007	ISEPP
Local Aboriginal Land Council	LALC
Local Government Area	LGA
Limit of Reporting	LOR
Penrith Local Strategic Planning Statement	LSPS

Term	Abbreviation
Minister for Planning and Public Spaces	the Minister
Mirvac Pty Ltd	Mirvac
Metre	m
Metre squared	m^2
Metre cubed	m^3
Noise Catchment Areas	NCA
Noise Policy for Industry	NPFI
Natural Resources Access Regulator	NRAR
National Parks and Wildlife Act 1974	NPW Act
Obstacle Assessment Surfaces	OAS
Organochlorine/ organophosphate pesticides	OCP/OPP
Obstacle Limitation Surface	OLS
On Site Detention	OSD
Operational Environmental Management Plan	OEMP
Potential Asbestos Containing Material	PACM
Protection of the Environment Operations Act 1997	POEO Act
Protection of the Environment Operations (Waste) Regulation 2014	POEO Reg
Polycyclic aromatic hydrocarbons	PAH
Polychlorinated Biphenyl	PCBs
Penrith City Council	PCC
Procedure Design Gradient	PDG
Penrith Local Environmental Plan 2010	PLEP 2010
Preliminary hazards analysis	PHA
Project Noise Trigger Levels	PTNLs
A Metropolis of Three Cities: Greater Sydney Region Plan	Region Plan
Remediation Action Plan	RAP
Roads and Maritime Services	RMS
EPA's *Road Noise Policy*	RNP

Term	Abbreviation
Serious and Irreversible Impacts	SAII
Secretary's Environmental Assessment Regulations	SEARs
Secretary for Planning, Industry and Environment	the Secretary
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development	SEPP 33
State Environmental Planning Policy No. 55 – Remediation of Land	SEPP 55
State Heritage Register	SHR
Social Impact Assessment	SIA
Standard Instrument Departures	SID
State Environmental Planning Policy (State and Regional Development) 2011	SRD SEPP
State Significant Development	SSD
State Significant Development Application	SSD DA
State Significant Infrastructure	SSI
Total Nitrogen	TN
Total Phosphorus	TP
Total recoverable hydrocarbon	TRH
Total Suspended Solids	TSS
Western Sydney Aerotropolis Stage 1 Land Use and Infrastructure Implementation Plan	Stage 1 LUIIP
Threatened Ecological Communities	TEC
Urbis Pty Ltd	Urbis
Vegetation Management Plan	VMP
Vehicles per hour	vph
Visual Impact Assessment	VIA
Virgin Excavated Natural Material	VENM
Waste Management Plan	WMP
Water Sensitive Urban Design	WSUD
State Environmental Planning Policy (Western Sydney Employment Area) 2009	WSEA SEPP

Term	Abbreviation
Western Sydney (Nancy-Bird Walton) Airport	WSA
Western Sydney Aerotropolis Plan	WSAP
Western Sydney Employment Area	WSEA

EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared by Urbis Pty Ltd (Urbis) for the Proponent, Mirvac Projects Pty Ltd (Mirvac), and is submitted to the New South Wales Department of Planning, Industry and Environment (DPIE) in support of a state significant development for a staged development of land within the Western Sydney Employment Area (WSEA), known as the Aspect Industrial Estate (AIE). The application seeks approval for a staged development of the AIE for a warehouse and industrial uses and includes a Concept Masterplan and Stage 1 Development Application comprising estate-wide earthworks, infrastructure and services, and construction and use of warehouse and distribution centre buildings proposed in Lots 1 and 3.

A request for Secretary's Environmental Assessment Requirements (SEARs) was submitted to the DPIE on 02 April 2020. The SEARs for SSD 10448 were subsequently provided by the DPIE to Mirvac on 30 April 2020.

The EIS describes the site and proposed development, provides relevant background information, and assesses the development against relevant legislation, environmental planning instruments, and planning policies, and the SEARs issued.

The proposed development has been informed by specialist technical studies. These studies have provided a detailed assessment of the potential environmental impacts and have provided recommendations to mitigate any potential impacts on the site and surrounding environment. The application has been amended following receipt of initial comments from DPIE, as part of the EIS review for Test of Adequacy.

Mirvac's vision for its site is to deliver an employment estate for industrial and logistic users based around an emphasis on design quality, flexibility, technology and sustainability.

Project Overview

The proposal comprises the following aspects:

A Concept Masterplan for the AIE comprising 11 industrial or warehouse and distribution centre buildings, internal road network layout, building locations, gross floor area (GFA), car parking, concept landscaping, building heights, setbacks and built form parameters.

- Detailed Stage 1 Development of the AIE including:
  - Pre-commencement works including:
    - Demolition and removal of existing rural structures.
    - Site remediation works as defined within the Remediation Action Plan.
    - Heritage salvage works (if applicable).
  - Subdivision construction works including:
    - Creation of roads and access infrastructure, including a signalised intersection with Mamre Road.
    - Clearing of existing vegetation on the subject site and associated dam dewatering and decommissioning.
    - Realignment of existing creek and planting in accordance with a Vegetation Management Plan.
    - On-site bulk earthworks including any required ground dewatering.
    - Importation, placement and compaction of:
      - Virgin Excavated Natural Material (VENM) within the meaning of the POEO Act, and/or
      - Excavated Natural Material (ENM) within the meaning of the NSW EPA's Resource Recovery Exemption under Part 9, Clause 91 and 92 of the POEO (Waste) Regulation 2012 – The Excavated Natural Material Order 2014, and/or

- materials covered by a specific NSW EPA Resource Recovery Order and Exemption which are suitable for their proposed use.

- Construction of boundary retaining walls.
- Delivery of stormwater infrastructure, trunk service connections, utility infrastructure.
- Boundary stormwater management, fencing and landscaping.
- Construction and dedication of internal road network to Penrith City Council.
- Construction and operation of signalised intersection with Mamre Road.

– Building works including:

- Construction and fit out of two warehouse and distribution buildings in Stage 1 on Lots 1 and 3 which will operate 24 hours/day, seven days/week.
- Construction and fit out of a café, which will operate 12 hours/day, seven days/week.

– Subdivision of Stage 1.

– Signage.

Future stages of the Estate, including subsequent industrial or warehouse distribution centres buildings, will be subject to separate development applications.

An artist's impression of the proposed warehouse building 1 within Stage 1 is shown at **Figure 1**.

Figure 1 Visualisation of Building 1 and café

Source: Mirvac

Permissibility Pathway

Aspect Industrial Estate is zoned majority IN1 General Industrial with an E2 Environmental Conservation corridor traversing the site. Through the design development phase, Mirvac collaborated with DPIE and stakeholders to understand how the E2 corridor could traverse the site but also enable a logical development footprint.

Clause 33A, Development near zone boundaries, State Environmental Planning Policy (Western Sydney Employment Area) 2009 (WSEA SEPP) allows a 20 metre zone of flexibility for land adjacent to the E2

Environmental Conservation zone. It is understood this clause was specifically included as part of the Mamre Road Precinct amendment to the WSEA SEPP to facilitate flexibility in the boundaries of the E2 zone.

The proposed AIE development relies on Clause 33A to seek consent for industrial purposes across the majority of E2 zoned land on its site, being a corridor 40m wide running generally east-west. Simultaneously, this application seeks to construct a new, relocated creekline connecting the ground-truthed stream in the north western corner of the site to the location where the E2 zone currently crosses the eastern site boundary.

The proposed development demonstrates compliance with objectives of both the IN1 General Industrial and E2 Environmental Conservation zones as:

- the realigned creek corridor will result in a significantly enlarged area of riparian land on the site, which will be planted and managed in accordance with a VMP.
- the realigned creek corridor will contribute to the restoration of valuable east-west riparian connections between Ropes Creek and South Creek, in a manner which supports high ecological values where currently these values on the site are very low.
- the design of the overall masterplan provides for effective separations between the creek corridor and nearby warehousing lots, providing a 20m riparian zone and 10m buffer to the south of the creek. The warehouse masterplan layout will enhance the interface with the riparian land and will not result in a development which would destroy, damage or have an adverse effect on the ecological values of the riparian area.
- accommodation of the full 40m wide riparian area within the AIE site boundary, consistent with WSEA SEPP maps, ensures that the riparian values of the creek can be maintained under the responsibility of a single entity rather than relying on the future development of land to the north.
- development for industrial or warehouse and distribution purposes across the existing E2 land with low ecological value will provide for rational use of that land for development lots which will ensure effective warehouse sizes to meet the current demands of operators seeking to locate in the WSEA, close to planned regional transport routes.
- the efficient estate design and layout will provide for a high standard of development that contributes to sustainability and environmental outcomes in a more effective manner than would result if the E2 zone was retained in its current location.

The realigned corridor would be defined as *artificial waterbody* under the WSEA SEPP. This land use is prohibited under the IN1 General Industrial zone. In order to pursue assessment and determination of this SSD DA, Clause 4.38(3) of the EP&A Act is relied upon. This clause states:

> *development consent may be granted despite the development being partly prohibited by an environmental planning instrument.*

Overall, it is considered that the proposed creek realignment will result in a much improved ecological outcome for the site and region.

Engagement

Consultation was undertaken with a range of State authorities, service providers and members of the community during the preparation of the EIS. The following agencies have also been consulted in the preparation of this development application as required by the SEARs.

- Penrith City Council
- Department of Planning, Industry and Environment
  - Greater Sydney, Place and Infrastructure, Central Western Team
  - Industry Assessment
  - Environment, Energy and Science Group
  - Natural Resource Access Regulators and Water Group
- Endeavour Energy

- Environmental Protection Authority
- Fire and Rescue NSW
- NSW Rural Fire Service
- Sydney Water
- Transport for New South Wales, including the former Roads and Maritime Services
- Water NSW
- Western Parkland City Authority
- Western Sydney Airport
- Western Sydney Planning Partnership
- Neighbouring Landowners

All matters raised during this pre-lodgement consultation are considered to have been adequately addressed within the EIS or in the accompanying consultant reports and plans within the Appendices.

Assessment

The proposal is consistent with the relevant legislation and policy flamework including the *Environmental Planning and Assessment Act 1979* and *State Environmental Planning Policy (Western Sydney Employment Area) 2009*.

The proposed development is classified as 'State Significant Development' (SSD) pursuant to Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP).

The majority of environmental site constraints and impact management have been addressed in **Section 5** of this EIS. These matters include:

- Approach
- Visual Impacts
- Ecology
- Noise and Vibration
- Traffic and Access
- Waterways and Riparian Areas
- Other Issues
  - Geology and Soils
  - Contamination
  - Site Contamination Audit
  - Farm Dams
  - Stormwater and Drainage
  - Flooding
  - Heritage
  - Air Quality
  - Bushfire
  - Mineral Resources
  - Ecologically Sustainable Development
  - BCA and Fire Engineering

  - Waste Management
  - Aeronautical Impacts
  - Social and Economic Impacts
- Residual Impacts

The assessment of the proposal has not identified any significant environmental, social or economic impacts which cannot be appropriately mitigated or managed.

Conclusion

The findings of this EIS and the appended technical reports have concluded the proposal can be accommodated without impacts or externalities beyond that considered appropriate by the relevant legislation or the site's environmental capacity.

Moreover, a positive assessment and determination of the project should prevail given:

- The proposed development will result in a land use that is consistent with the zoning of the land and contribute an employment generating use in line with the strategic goals for the Western Parkland City and the Western Sydney Employment Area.
- The proposed development is complimentary to the 24 hour operations of the Western Sydney International (Nancy-Bird Walton) Airport.
- The relationship between the site and its surrounding residential, rural and education lots will be protected with appropriate setbacks and landscape buffers, noting that this is a precinct in transition.
- The proposal demonstrates consistency with the relevant environmental planning instruments including strategic planning policy, and State and local planning legislation, regulation and policies.
- The proposal will generate approximately 555 new construction jobs and 1,703 operational jobs. The concept proposal has a Capital Investment Value of $341,141,724 (excl. GST). The Stage 1 works is $99,990,064 (excl. GST) and Building 1 works (including Stage 1 Site Preparation and Estate Infrastructure) totals $79,200,635.
- This assessment has demonstrated that the proposed works will result in minimal environmental impacts, all of which can be managed or mitigated through the recommendations outlined in the sections of this report.

Given the merits of the proposal, it is requested that the Minister approve the proposal subject to the mitigation measures outlined in this report being appropriately implemented.

1. INTRODUCTION

1.1. PROJECT OVERVIEW

This report is an Environmental Impact Statement (EIS) prepared pursuant to Section 4.38 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act) and Schedule 2 of the *NSW Environmental Planning and Assessment Regulation 2000* (EP&A Reg) for the staged development of land within the Western Sydney Employment Area (WSEA), known as the Aspect Industrial Estate (AIE).

The proposed development is classified as 'State Significant Development' (SSD) pursuant to Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) and consent is sought for the staged development of the land for industrial or warehouse and distribution uses, as provided for by Clause 4.22 of the EP&A Act.

This EIS has been prepared in consideration of the Secretary for Planning, Industry and Environment's (the Secretary) Environmental Assessment Requirements (SEARs) issued for the proposal on 30 April 2020 (**Appendix A**).

1.1.1. The Applicant

Mirvac Projects Pty Ltd (Mirvac) is the applicant for this development application. Mirvac owns Lot 54 in DP 259135. Mirvac has unconditional arrangements for the purchase of Lots 55 – 58 in DP 259135 (inclusive). Vendor consent regarding the lodgement of development applications relating to the proposed use or development of this land has been received (**Appendix NN**). Mirvac is a leading Australian property group, listed on the Australian Securities Exchange. For over 45 years, Mirvac has played a vital role in the evolution of our cities, reimagining urban life and creating places that enrich the home, work and social lives of many thousands of Australians.

Mirvac is one of the only integrated property companies in Australia encompassing residential, retail, office and industrial portfolios. Mirvac owns several industrial estates across the Greater Sydney region, including Calibre Estate at 60 Wallgrove Road, Eastern Creek. Mirvac's experience in delivering high quality industrial estates enables a depth of experience and understanding of the key issues, challenges and drivers of employment lands and industrial development across the Greater Sydney region.

1.1.2. The Site

The site is legally described as Lots 54-58 in DP 259135. The site has an area of approximately 56.3 hectares (ha) and a direct frontage to Mamre Road (refer to **Figure 2** below). The majority of the site is cleared with scattered vegetation and includes a series of farm dams.

Figure 2 Aerial Photograph

Source: Nearmap/ Urbis

The site is located within the suburb of Kemps Creek, which falls within the Penrith LGA. It is in the Mamre Road Precinct within the broader WSEA and is currently surrounded by rural land uses.

The site is approximately 4 kilometres (km) north-east of the future Western Sydney International (Nancy Bird Walton) Airport, 12 km south-east of Penrith CBD and 40 km west of the Sydney CBD.

The site has 950 metre (m) frontage to Mamre Road with a proposed signalised intersection at the site boundary consistent with the proposed Mamre Road Upgrade design providing vehicular access via Mamre Road to the M4 Motorway and Great Western Highway to the north and Elizabeth Drive to the south.

The site is bounded by Mamre Road to the west and agricultural uses to the north, south and east. The historic land uses on the site include rural residential, grazing, dairy farming, poultry farming and horticulture. This land is identified for future employment land, as this site and the broader Mamre Road Precinct has recently been rezoned to, primarily, IN1 General Industrial under the WSEA SEPP.

The Ministerial 9.1 Local Planning Directions 3.5 and 7.8 preclude future residential development, as the site is affected by the Western Sydney International Airport's ANEF 20 noise contour. The NSW Government has identified an opportunity for land uses which are not sensitive land uses to locate in this precinct, such as warehouse and distribution centres.

The nearest residential receivers are located in Mount Vernon and Twin Creek approximately 2 km east and west of the site respectively. Other nearby environmental living areas include Luddenham (approximately 2.3 km east of the site), and Kemps Creek (approximately 4 km south of the site). In addition, Mamre Road Precinct existing land uses comprises of rural residential, a private education facility and seniors living development. This land has been been rezoned to facilitate future employment within the Mamre Road Precinct.

1.1.3. The Proposal

Mirvac's vision for the site is to deliver an employment estate for industrial and logistics users based around an emphasis on design quality, flexibility, technology and sustainability. The project will facilitate the construction of the first stage of the proposed warehouse or distribution estate to be known as Aspect Industrial Estate (AIE). The following objectives have been identified as forming the basis of the proposed development:

- Provide flexibility for an employment generating land use;
- Contribute to local employment opportunities in Western Sydney;
- Respond to the critical shortage of serviced, zoned employment land;
- Ensure minimal environmental and amenity impact by responding to the site context and key interfaces with surrounding lands including sensitive receivers;
- Integrate with existing and planned infrastructure; and
- Deliver high quality market leading industrial facilities.
- Deliver sustainable development in line with Mirvac's sustainability objectives.

The proposed development is consistent with the overarching aim for the WSEA, which is to facilitate the delivery of employment generating uses in Western Sydney. In addition, it aligns with the vision of the Western Sydney Aerotropolis and is compatible with the future 24-hour airport operations at the Western Sydney (Nancy-Bird Walton) Airport.

The proposal seeks approval for the staged development of the AIE, facilitated via a staged SSD DA process. The SSD DA seeks consent for:

- A Concept Masterplan for the AIE comprising 11 industrial or warehouse and distribution centre buildings, internal road network layout, building locations, gross floor area (GFA), car parking, concept landscaping, building heights, setbacks and built form parameters.
- Detailed Stage 1 Development of the AIE including:
  - Pre-commencement works including:
    - Demolition and removal of existing rural structures.

- Site remediation works as defined within the Remediation Action Plan.
- Heritage salvage works (if applicable).

– Subdivision construction works including:
  - Creation of roads and access infrastructure, including a signalised intersection with Mamre Road.
  - Clearing of existing vegetation on the subject site and associated dam dewatering and decommissioning.
  - Realignment of existing creek and planting in accordance with a Vegetation Management Plan.
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    – materials covered by a specific NSW EPA Resource Recovery Order and Exemption which are suitable for their proposed use.
  - Construction of boundary retaining walls.
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  - Construction and fit out of a café, which will operate 12 hours/day, seven days/week.

– Subdivision of Stage 1.

– Signage.

Future stages of the Estate, including subsequent warehouse buildings, will be subject to separate development applications.

1.1.4. Permissibility Pathway

Aspect Industrial Estate is zoned majority IN1 General Industrial with an E2 Environmental Conservation corridor traversing the site. Through the design development phase, Mirvac collaborated with DPIE and stakeholders to understand how the E2 corridor could traverse the site but also enable a logical development footprint.

Clause 33A, Development near zone boundaries, State Environmental Planning Policy (Western Sydney Employment Area) 2009 (WSEA SEPP) allows a 20 metre zone of flexibility for land adjacent to the E2 Environmental Conservation zone. It is understood this clause was specifically included as part of the Mamre Road Precinct amendment to the WSEA SEPP to facilitate flexibility in the boundaries of the E2 zone.

The proposed AIE development relies on Clause 33A to seek consent for industrial/ warehouse and distribution centre purposes across the majority of E2 zoned land on its site, being a corridor 40m wide running generally east-west. Simultaneously, this application seeks to construct a new, relocated creekline connecting the ground-truthed stream in the north western corner of the site to the location where the E2 zone currently crosses the eastern site boundary.

The proposed development demonstrates compliance with objectives of both the IN1 General Industrial and E2 Environmental Conservation zones as:

- the realigned creek corridor will result in a significantly enlarged area of riparian land on the site, which will be planted and managed in accordance with a VMP.
- the realigned creek corridor will contribute to the restoration of valuable east-west riparian connections between Ropes Creek and South Creek, in a manner which supports high ecological values where currently these values on the site are very low.
- the design of the overall masterplan provides for effective separations between the creek corridor and nearby warehousing lots, providing a 20m riparian zone and 10m buffer to the south of the creek. The warehouse masterplan layout will enhance the interface with the riparian land and will not result in a development which would destroy, damage or have an adverse effect on the ecological values of the riparian area.
- accommodation of the full 40m wide riparian area within the AIE site boundary ensures that the riparian values of the creek can be maintained under the responsibility of a single entity rather than relying on the future development of land to the north.
- development of industrial or warehouse and distribution purposes across the existing E2 land with low ecological value will provide for rational use of that land for development lots which will ensure effective warehouse sizes to meet the current demands of operators seeking to locate in the WSEA, close to planned regional transport routes.
- the efficient estate design and layout will provide for a high standard of development that contributes to sustainability and environmental outcomes in a more effective manner than would result if the E2 zone was retained in its current location.

The realigned corridor would be defined as *artificial waterbody* under the WSEA SEPP. This land use is prohibited under the IN1 General Industrial zone. In order to pursue assessment and determination of this SSD DA, Clause 4.38(3) of the EP&A Act is relied upon. This clause states:

> *development consent may be granted despite the development being partly prohibited by an environmental planning instrument.*

Overall it is considered that the proposed creek realignment will result in a much improved ecological outcome for the site and region.

1.2. PROJECT HISTORY

The site has been designated for future employment land since 2014 when the NSW Government announced a proposal to expand the WSEA to dedicate a further 4,574 hectares (ha) of employment land. This proposal amended the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP) Land Application map to expand the boundary south to Elizabeth Drive and include land west to the planned Western Sydney Airport. The expansion of the employment area was referred to as the Broader WSEA.

In 2018, the NSW Government announced the Western Sydney Aerotropolis, which included parts of the Broader WSEA. The release of the Stage 1 Land Use and Infrastructure Implementation Plan (Stage 1 LUIIP) provided preliminary guidance on the Aerotropolis, including staging and future land uses.

Following this Aerotropolis announcement, rezoning of the Mamre Road Precinct, including the site, was exhibited from 20 November – 18 December 2019. The exhibition package included the following:

- Mamre Road Precinct Structure Plan;
- Mamre Road Precinct Discussion Paper outlined an explanation of intended effects of the proposed rezoning; and
- Proposed SEPP maps.

Mamre Road Precinct was subsequently rezoned on 11 June 2020. The rezoning confirms the WSEA SEPP as the primary environmental planning instrument (EPI) governing land use and development on the site. The SEPP maps confirm the site is zoned IN1 General Industrial with a small sliver of land zoned E2 Environmental Conservation running generally east-west.

Mirvac has worked closely with DPIE's Greater Sydney, Place and Infrastructure and Industrial Assessment teams on resolving planning controls on the site to facilitate a quick response to the zoned industrial land shortfall and ensure appropriate infrastructure is guaranteed to support future development. The proposed development responds to the strategic direction set by the DPIE and provides opportunities for integration with adjacent sites as their planning pathway is progressed.

1.3. REGIONAL INFRASTRUCTURE UPGRADES

AIE fronts Mamre Road to the west. Mamre Road is an arterial road running between the Great Western Highway and M4 Motorway to the north and Elizabeth Drive to the south (refer to **Figure 3** below). Mamre Road provides two traffic lanes for two-way traffic, with additional through movement and turning infrastructure at key intersections to the north through the Erskine Park and Mamre West industrial precincts; and to the south at Elizabeth Drive.

The NSW Government has commenced early planning for a future upgrade of Mamre Road between M4 Motorway and Kerrs Road to support economic and residential growth in the area. The Mamre Road upgrade provides the following key infrastructure proposals:

- Two traffic lanes in each direction with a wide central median between the M4 Motorway and Kerrs Road;
- Provisions (further to a wide central median) for a future third lane in each direction;
- Shared bicycle and pedestrian paths to promote active transport;
- New or upgraded signalised intersection including one identified at the site.

The NSW Government has committed $220 million to upgrade Mamre Road between M4 and Erskine Park Road. Transport for New South Wales, formerly known as Roads and Maritime Services, will commence the next stage of the development including concept design and environmental impact assessment when the budget is allocated.

In addition to Mamre Road, the following infrastructure upgrades are proposed in the Mamre Road Precinct to facilitate development and connectivity to the broader region:

- Southern Link Road: The Southern Link Road is a key link from Wallgrove Road to Mamre Road, connecting the precinct to the eastern WSEA precincts. The road was identified in 2015 and will run along the northern boundary of the Mamre Road precinct, providing a vital east-west connection. Transport for NSW is undertaking concept design for this road which includes environmental opportunities and constraints analysis.
- Western Sydney Freight Line: Transport for NSW has identified the Western Sydney Freight Line to promote the efficient movement of freight to Western Sydney. The future freight line would:
  - provide for a freight rail connection between Port Botany and Western Sydney via Southern Sydney Freight Line;
  - support the movement of container and bulk freight by rail across Greater Sydney; and
  - provide for freight rail connections to serve employment lands and future industries across Western Sydney.

Figure 3 Regional Road Network

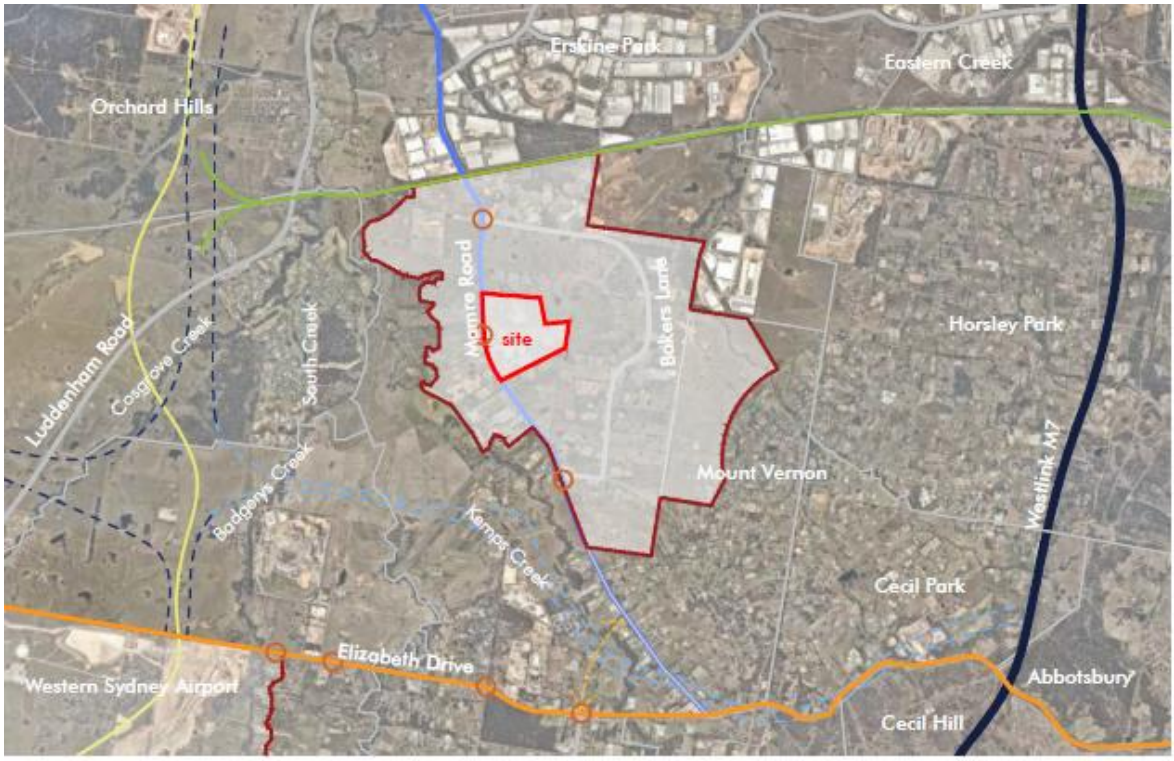
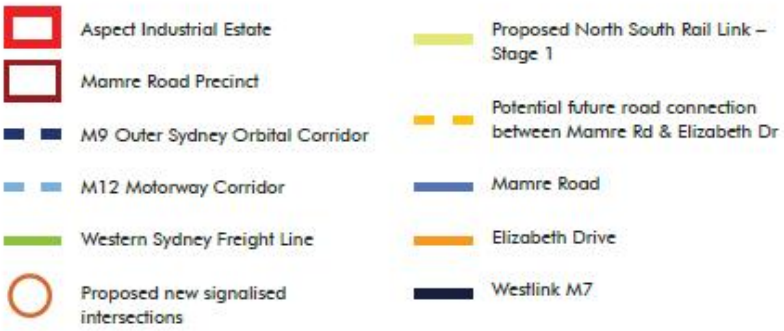


Figure 11 – Planned Infrastructure Map 1:60,000



Source: Nettleton Tribe

1.4. ALTERNATIVES

The alternatives to undertaking the project include:

- Do nothing; and
- Development of the AIE under an alternative Concept Proposal design/layout.

Do Nothing

The 'Do Nothing' alternative would result in the land comprising the AIE remaining unplanned, serviced and undeveloped. The risk and results of this alternative include the following.

- Outcomes for the site that are contradictory or inconsistent with the strategic objectives, goals and direction of the Greater Sydney Region Plan – '*A Metropolis of Three Cities*', Western City District Plan, Western Sydney Aerotropolis Plan, and Mamre Road Precinct Structure Plan.
- Failure to achieve the underlying objectives of the rezoning or the land as part of the WSEA, in particular the provision of a long term supply of industrial land to serve the needs of the Sydney market.
- Land use outcomes that are inconsistent with the aims of the WSEA SEPP.

- Potential unplanned, ad-hoc development of the AIE without a guiding Concept Proposal and without due consideration of the various constraints and opportunities of the site and its context.
- Suboptimal development outcomes for AIE in terms of efficiency, sustainability, design and feasibility.
- Failure to develop the AIE in a timely manner to align with market demand, potentially further contributing to a shortfall in the supply of serviced industrial sites in the short to medium term with subsequent impacts on economic productivity and employment in the region.
- Impacts upon planned local and regional road infrastructure, including risks to the delivery of important road intersection, leading to potential deficiencies in the WSEA road network and/or additional costs for the delivery of required infrastructure.
- Loss of potential local and regional contributions to critical infrastructure through the development contributions system.
- Loss of significant, direct private investment in new and upgraded public road infrastructure and substantial indirect investment in the local economy to the benefit of residents and businesses in Western Sydney.
- Loss of direct employment generating potential of the AIE, providing in the order of 555 new construction jobs and 1,703 operational jobs, and the wider potential of the broader Mamre Road Precinct which would deliver approximately 200,000 jobs for Western Sydney.

Due to the significance of the risks noted above, the 'Do Nothing' alternative was discounted in favour of a staged development option for the site.

Alternative Designs and Layouts

Multiple options (**Figure 4**) were prepared and analysed when considering the AIE Concept Master Plan. The following key design requirements have been considered in the preparation of the concept masterplan options:

- Location of signalised intersection at Mamre Road.
- The realignment of riparian corridor to improve biodiversity and ecological values in accordance with Biodiversity Development Assessment Report (**Appendix O**).

In addition to the requirements listed above, the following key objectives have been considered in the preparation of the concept masterplan:

(a) Improve the biodiversity and ecological values of the area through the incorporation and restoration of riparian corridors within the site. Utilising landscape and urban design features to complement biodiversity values.

(b) Provide a rational, efficient road network which is integrated with the future local road network.

(c) Provide a development that enables integrated water management and stormwater infrastructure to be designed to have multiple functions of water cycle management, recreation and amenity. Integrate water into the landscape and urban form to enhance ecological, visual, social, economic and cultural values.

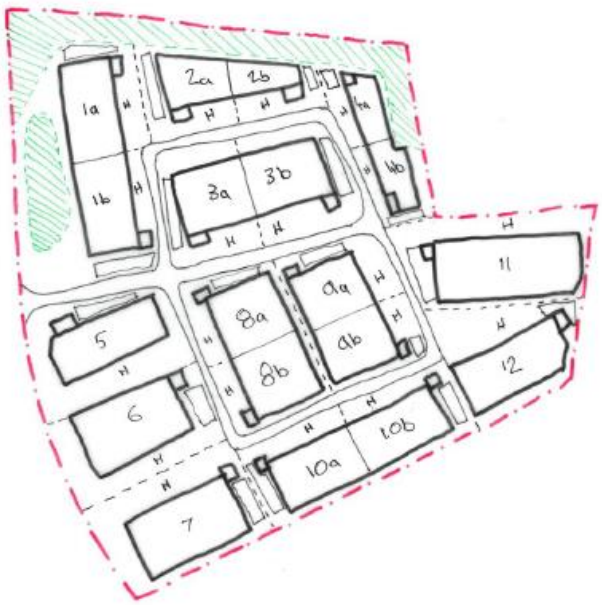
(d) Provide contextually and economically appropriate design whilst mitigating earthworks requirements and retaining walls fronting public road reserves.

(e) Economic and orderly development catering for IN1 General Industrial user requirements for large regular shaped lots to enable flexibility to provision for a diverse range of customer requirements.

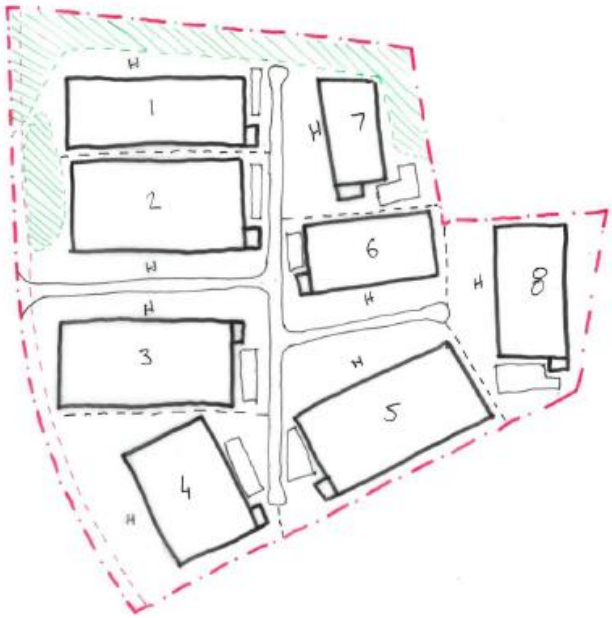
Figure 4 Design Alternatives

Picture 1 Option 1: SEARs Master Plan Realigned Riparian Area

Picture 2 Option 2: Naturalised Riparian & WSEA SEPP E2 Corridor Alignment with Precinct Connectivity



Picture 3 Option 3: Naturalised Riparian & E2 Realignment, Ring Road with Smaller Lots



Picture 4 Option 4: Naturalised Riparian & E2 Realignment, Large Flexible Lots with North/South Connectivity

Picture 5 Option 5: Naturalised Riparian Realignment, Large Flexible Lots with Precinct Connectivity

Source: Nettleton Tribe

Table 1 provides an assessment of Options 1 – 5 against the objectives (a) to (e) listed above. The assessment demonstrates that Option 5 has the best outcomes which respond to the site's existing conditions, maximise riparian and ecological values, meet NSW Government objectives, and provide for efficient layout to optimise the land for future tenant's needs.

Table 1 Assessment of options

Options					
	A	B	C	D	E
Option 1	✓	✓	✓	✓	X
Option 2	✓	✓	✓	X	X
Option 3	✓	X	✓	X	X
Option 4	✓	X	✓	X	X
Option 5	✓	✓	✓	✓	✓

Conclusion

The analysis of alternatives for Aspect Industrial Estate confirms the proposed development scheme (Option 5) and layout provides the best balance between development and environmental outcomes. It addresses the industrial land shortfall with lot sizes and configurations which suit and provide flexibility to the market, while providing opportunities for significant embellishment of flora and fauna habitats and ensuring integration into the broader Mamre Road Precinct.

1.5. SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

In accordance with the provisions of the EP&A Act and the EP&A Reg, the Secretary for Planning issued SEARs for the AIE proposal as detailed in **Table 2**.

Table 2 Secretary's Environmental Assessment Requirements

Key Issue	Requirements	EIS Reference
General Requirements	The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (EP&A Reg). In addition, the EIS must include: ▪ Site history and development consents; ▪ Detailed description of the development, including: – The need for the proposed development; – Justification for the proposed development; – Suitability of the site; – Alternatives considered; – Likely staging of the development; – Likely interactions between the development and existing, approved and proposed operations on site and in the vicinity of the site; – Plans of any proposed building works; – Contributions required to offset the development; and – Infrastructure upgrades or items required to facilitate the development, including measures to ensure these upgrades are appropriately maintained. ▪ Consideration of all relevant environmental planning instruments and proposed environmental planning instruments, including identification and justification of any inconsistencies with these instruments; ▪ Consideration of issues discussed in Attachment 2 (public authority responses to key issues); ▪ Risk assessment of the potential environmental impacts of the development,	▪ **Section 1: Introduction** ▪ **Section 2: Project Description** ▪ **Section 3: Statutory and Strategic Context** ▪ **Section 5: Environmental Impact Assessment** ▪ **Section 6: Mitigation Measures** ▪ **Section 7: Environmental Risk Assessment** ▪ **Appendix C: Concept Masterplan** ▪ **Appendix D: Stage 1 Architectural Plans** ▪ **Appendix F: Civil Drawings**

Key Issue	Requirements	EIS Reference
	identifying the key issues for further assessment; ▪ Detailed assessment of the key issues specified below, and any other significant issues identified in this risk assessment, which includes: – A description of the existing environment, using sufficient baseline data; – An assessment of the potential impacts of all stages of the development including any cumulative impacts, taking into consideration relevant guidelines, policies, plans and statutes; – A description of the measures that would be implemented to avoid, minimise, mitigate and if necessary, offset the potential impacts of the development, including proposals for adaptive management and/or contingency plans to manage significant risks to the environment; and – A consolidated summary of all the proposed environmental management and monitoring measures, highlighting commitments included in the EIS.	
CIV	The EIS must also be accompanied by a report from a qualified quantity surveyor providing: ▪ Detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV; ▪ Estimate of jobs that will be created during the construction and operational phases of the proposed development; ▪ Certification that the information provided is accurate at the date of preparation.	▪ **Appendix B: QS Report**
Strategic and Statutory Context	The EIS must provide: ▪ Detailed justification that the proposed land use is permissible with consent;	▪ **Section 3: Strategic and**

Key Issue	Requirements	EIS Reference
	▪ Details of any proposed consolidation or subdivision of land; ▪ Demonstration that the proposal is consistent with all relevant planning strategies, environmental planning instruments, proposed environmental planning instruments, adopted precinct plans, draft district plan(s) and adopted management plans and justification for any inconsistencies. This includes, but is not limited to: – State Environmental Planning Policy (Infrastructure) 2007; – State Environmental Planning Policy (State and Regional Development) 2011; – State Environmental Planning Policy (Western Sydney Employment Area) 2009; – State Environmental Planning Policy No. 33 – Hazardous and Offensive Development; – State Environmental Planning Policy No. 55 – Remediation of Land; – Penrith Local Environmental Plan 2010; – Draft Mamre Road Precinct Rezoning Package for SEPP WSEA; – Draft Western Sydney Aerotropolis Plan; – Western Sydney Aerotropolis Discussion Paper on the proposed Western Sydney Aerotropolis State Environmental Planning Policy; – Greater Sydney Region Plan: A Metropolis of Three Cities; – Western City District Plan; – Future Transport 2056 and supporting plans; – Freight and Ports Plan 2018-2023; – Draft Mamre Road Precinct Structure Plan – Local Road Network Structure Plan; – Mamre Road Upgrade Strategic Design Report (2016);	**Statutory Context**

Key Issue	Requirements	EIS Reference
	– Mamre Road Upgrade Strategic Design Plans;	
Suitability of the Site	▪ Detailed justification for the proposal and the suitability of the site including suitability in the context of the draft IN1 General Industrial, E2 Environmental Conservation and SP2 Infrastructure Zones and the Transport Infrastructure Investigation Area applicable to the site under the Draft Mamre Road Precinct Rezoning Package for SEPP WSEA. ▪ Detailed description of the history of the site, including the relationship between the proposed development, other proposed developments and all development consents and approved plans previously and/or currently applicable to the site; ▪ Analysis of site constraints;	▪ **Section 1: Introduction** ▪ **Section 2: Project Description** ▪ **Section 3: Strategic and Statutory Context**
Community and Stakeholder Engagement	▪ Detailed community and stakeholder participation strategy which identifies who in the community has been consulted and a justification for their selection, other stakeholders consulted and the form(s) of the consultation, including a justification for this approach; ▪ A report on the results of the implementation of the strategy including issues raised by the community and surrounding owners and occupiers; ▪ Details of how issues raised during community and stakeholder consultation have been addressed and whether they have resulted in changes to the development; and ▪ Details of the proposed approach to future community and stakeholder engagement based on the results of the consultation.	▪ **Section 4: Engagement** ▪ **Appendix MM: Engagement Report**
Traffic and Transport	▪ Details of all traffic types and volumes likely to be generated during construction and operation, including a description of haul routes. Traffic flows are to be shown diagrammatically to a level of detail sufficient for easy interpretation;	▪ **Section 5.5: Traffic and Access** ▪ **Appendix K: Traffic Assessment**

Key Issue	Requirements	EIS Reference
	▪ An assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model. This is to include the identification and consideration of approved and proposed developments/planning proposals/road upgrades in the vicinity. The assessment needs to consider the impact on Mamre Road for the duration of the works because traffic growth in this area is expected to increase more quickly than standard growth rates; ▪ Consideration of the draft SP2 Infrastructure zone and draft Transport Infrastructure Investigation Area within the Draft Mamre Road Precinct Rezoning Package for SEPP WSEA, in consultation with Transport for NSW; ▪ Addressing the detailed design comments by Transport for NSW regarding the Mamre Road/development intersection and the future Mamre Road alignment; ▪ Detailing how the proposed development connects to adjoining sites to facilitate their future development for their intended purposes; ▪ Plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network; ▪ Detailed plans of the site access and proposed layout of the internal road and pedestrian network and parking on site in accordance with the relevant Australian Standards and Council's DCP; ▪ Swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site; ▪ Details of road upgrades, infrastructure works or new roads or access points required for the development;	

Key Issue	Requirements	EIS Reference
	▪ Details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site; ▪ Details of the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development; and ▪ Measures to integrate the development with the existing/future public transport network.	
Soils and Water	▪ Topographic assessment and justification the proposed earthworks are site responsive and contextually appropriate; ▪ An assessment of potential impacts to soil and water resources, topography, hydrology, groundwater, groundwater dependent ecosystems, drainage lines, downstream assets such as the Warragamba Pipelines Corridor, watercourses and riparian lands on or nearby to the site, including mapping and description of existing background conditions and cumulative impacts and measures proposed to reduce and mitigate impacts; ▪ Consideration of the NSW Aquifer Interference Policy (2012) and the Guidelines for Controlled Activities on Waterfront Land (2018); ▪ Detailed site water balance including identification of water requirements for the life of the project, measures that would be implemented to ensure an adequate and secure water supply is available for the development and a detailed description of the measures to minimise the water use at the site;	▪ **Section 5.7.1: Geology and Soils** ▪ **Section 5.6: Waterways and Riparian Areas** ▪ **Section 5.7.3: Farm Dams** ▪ **Section 5.7.5: Stormwater and Drainage** ▪ **Appendix O: Biodiversity Development Assessment Report** ▪ **Appendix P: Vegetation Management Plan** ▪ **Appendix Q: Riparian Lands Assessment**

Key Issue	Requirements	EIS Reference
	▪ Demonstration satisfactory arrangements for drinking water, wastewater and if required recycled water services have been made; ▪ Characterisation of water quality at the point of discharge to surface and/or groundwater against the relevant water quality criteria (including proposed mitigation measures to manage any impacts to receiving waters and monitoring activities and methodologies); ▪ A site specific integrated water management strategy with details of stormwater/wastewater management system including how it will be designed, operated and maintained, including the capacity of onsite detention system(s), onsite sewage management and measures to treat, reuse (including indicative quantities) or dispose of water; ▪ Description of the measures to minimise water use; ▪ Detailed flooding assessment; ▪ Description of the proposed erosion and sediment controls during construction; and ▪ Consideration of salinity and acid sulphate soil impacts.	▪ **Appendix X: Groundwater Management Plan** ▪ **Appendix Z: Geotechnical Investigation Combined Reports** ▪ **Appendix AA: Flood Risk Assessment** ▪ **Appendix BB: Flood Impact Assessment**
Infrastructure requirements	▪ Detailed written and/or graphical description of infrastructure required on the site, including any upgrades required; ▪ Identification of any infrastructure upgrades required off-site to facilitate the development, and describe any arrangements to ensure that the upgrades will be implemented in a timely manner and maintained; ▪ An infrastructure delivery and staging plan, including a description of how infrastructure on and off-site will be co-ordinated and funded to ensure it is in place prior to the commencement of construction; and ▪ An assessment of the impacts of the development on existing utility infrastructure	▪ **Section 2.5.4: Stormwater and Drainage** ▪ **Section 2.5.5: Roads and Access** ▪ **Section 2.5.6: Utilities and Services**

Key Issue	Requirements	EIS Reference
	and service provider assets surrounding the site.	
Biodiversity	▪ An assessment of the proposal's biodiversity impacts in accordance with the Biodiversity Assessment Method including the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the Act, except where a waiver for preparation of a BDAR has been granted; and ▪ An assessment of the development's impacts on the riparian corridor on site, including detailed interface management measures.	▪ **Section 5.3: Ecology** ▪ **Section 5.6: Waterways and Riparian Areas** ▪ **Appendix O: Biodiversity Development Assessment Report** ▪ **Appendix Q Riparian Lands Assessment**
Urban Design and Visual	▪ Detailed design and options analysis of the development including diagrams, illustrations and drawings with reference to the built form, height, setbacks, bulk and scale in the context of the immediate locality, the wider area and the desired future character of the area, including views, vistas, open space and the public domain with consideration of Clause 31 of SEPP WSEA; ▪ A visual impact assessment (including photomontages and perspectives) of the development layout and design, including staging, site coverage, setbacks, open space, landscaping, height, bulk, scale, colour, building materials and finishes, façade design, signage and lighting, particularly in terms of potential impacts on: – Nearby public and private receivers; – Significant vantage points in the broader public domain; – Mamre Road; – The riparian corridor on site. ▪ Consideration of the layout and design of the development having regard to the	▪ **Section 1.4: Alternatives** ▪ **Section 5.2: Visual Impacts** ▪ **Appendix J: Urban Design Report** ▪ **Appendix L: Landscape and Visual Impact Assessment**

Key Issue	Requirements	EIS Reference
	surrounding vehicular, pedestrian and cycling networks; and ▪ Detailed landscaping plans	
Noise and Vibration	▪ A quantitative noise and vibration impact assessment for construction and operation of the development, including traffic noise, undertaken by a suitably qualified person in accordance with the relevant Environment Protection Authority guidelines and including an assessment of nearby sensitive receivers; ▪ Cumulative impacts of other existing and proposed developments and; ▪ Details and justification of the proposed noise mitigation, management and monitoring measures.	▪ **Section 5.4: Noise and Vibration** ▪ **Appendix EE: Noise and Vibration Impact Assessment**
Cultural Heritage and Aboriginal Cultural Heritage	▪ Identifying and describing the Aboriginal cultural heritage values that exist across the development and document in an Aboriginal Cultural Heritage Assessment Report (ACHAR); ▪ Consultation with Aboriginal people must be undertaken and documented in the ACHAR; and ▪ Description of the impacts on Aboriginal cultural heritage values.	▪ **Section 5.7.7: Heritage** ▪ **Appendix M: Aboriginal Cultural Heritage Assessment Report**
Social	Preparation of a Social Impact Assessment which: ▪ Identifies and analyses the potential social impacts of the development from the point of view of the affected community/ies and other relevant stakeholders, i.e. how they experience the project; ▪ Considers how potential environmental changes in the locality may affect people's: way of life; community; access to and use of infrastructure, services and facilities; culture; health and wellbeing; surroundings; personal and property rights; decision-making systems; and fears and aspirations, as relevant and considering how different groups may be disproportionately affected;	▪ **Section 5.7.15: Social and Economic Impacts** ▪ **Appendix GG: Social Impact Assessment**

Key Issue	Requirements	EIS Reference
	▪ Assesses the significance of positive, negative, and cumulative social impacts considering likelihood, extent, duration, severity/scale, sensitivity/importance, and level of concern/interest; ▪ Includes mitigation measures for likely negative social impacts, and any proposed enhancement measures; and ▪ Details how social impacts will be adaptively monitored and managed over time.	
Air Quality	▪ An assessment of air quality impact at sensitive receivers during construction and operation in accordance with NSW Environment Protection Authority guidelines and details of mitigation, management and monitoring measures.	▪ **Section 5.7.8: Air Quality** ▪ **Appendix DD: Air Quality and Odour Impact Assessment**
Bushfire	▪ An assessment against the requirements of Planning for Bush Fire Protection 2019.	▪ **Section 5.7.9: Bushfire** ▪ **Appendix R: Bushfire Assessment**
Contamination	▪ An assessment of site suitability under the provisions of SEPP 55.	▪ **Section 3.2.9: State Environmental Planning Policy No. 55 – Remediation of Land** ▪ **Section 5.7.2: Contamination** ▪ **Appendix S: Contamination Preliminary Site Investigation Phase 1** ▪ **Appendix T: Contamination Detailed Site Investigation Phase 2**

Key Issue	Requirements	EIS Reference
		▪ **Appendix OO: Site Contamination Audit**
Hazards and Risk	▪ A preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development. Should preliminary screening indicate that the project is "potentially hazardous" a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).	▪ **Section 3.2.10: State Environmental Planning Policy No. 33 – Hazardous and Offensive Developmen**t
Waste Management	▪ Details of the quantities and classification of waste streams generated during construction and operation and proposed storage, handling and disposal requirements.	▪ **Section 5.7.13: Waste Management** ▪ **Appendix Y: Waste Management Plan**
Greenhouse gas and energy efficiency	▪ An assessment of the energy use of the proposal and all reasonable and feasible measures that would be implemented on site to minimise the proposal's greenhouse gas emissions.	▪ **Section 5.7.11: Ecologically Sustainable Development** ▪ **Appendix CC: Energy Efficiency Report**
Ecologically Sustainable Development	▪ A description of how the development will incorporate the principles of ecologically sustainable development in the design, construction and ongoing operation of the development.	▪ **Section 5.7.11: Ecologically Sustainable Development** ▪ **Appendix CC: Energy Efficiency Report**

Key Issue	Requirements	EIS Reference
Airport safeguarding	▪ A risk assessment of the proposed development on airport operations and addressing related matters in the Draft Western Sydney Aerotropolis Plan and the Discussion Paper on the proposed Western Sydney Aerotropolis State Environmental Planning Policy.	▪ **Section 5.7.14: Aeronautical Impact** ▪ **Appendix FF: Aeronautical Impact Assessment**
Planning Agreement/Development Contributions	▪ Consideration of any applicable Section 7.11 Contribution Plan and/or details of any Voluntary Planning Agreement and demonstration that satisfactory arrangements have been or would be made to provide, or contribute to the provision of, necessary local and regional infrastructure as required by SEPP WSEA or any other policy or plan	▪ **Section 3.2.8: State Environmental Planning Policy (Western Sydney Employment Area) 2009**
Plans and Documents	▪ The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. The EIS must include high quality files of maps and figures of the subject site and proposal.	**Noted.**
Consultation	▪ During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: – Penrith City Council; – Department of Planning, Industry and Environment, specifically the: • Central (Western) team; • Environment, Energy and Science Group (the Climate Change and Sustainability Division); • Water Group including the Natural Resources Access Regulator. – Endeavour Energy; – Environment Protection Authority; – Fire and Rescue NSW;	▪ **Section 4: Engagement** ▪ **Appendix MM: Engagement Report**

Key Issue	Requirements	EIS Reference
	– NSW Rural Fire Service; – Sydney Water; – Transport for NSW (including the former Roads and Maritime Services); – Water NSW; – Western City and Aerotropolis Authority; – Western Sydney Airport; – Western Sydney Planning Partnership. ▪ The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	

1.6. STRUCTURE OF THE EIS

In the consideration and design of the AIE SSD DA package, a range of baseline environmental studies were undertaken to identify inherent site constraints and opportunities, followed by an impact assessment for key issues as relevant to the proposed development of the estate. **Table 3** lists the suite of technical studies and assessments underpinning the AIE SSD DA package and where these documents can be found in the EIS.

Table 3 AIS SSD DA – Supporting Technical Studies and Documents

Supporting Technical Studies and Assessments	Reference in EIS/SSD DA
SEARs	Appendix A
QS CIV	Appendix B
Concept Masterplan	Appendix C
Stage 1 Architectural Drawings	Appendix D
Architectural Concept Report	Appendix E
Civil Drawings	Appendix F
Civil Report	Appendix G
Landscape Masterplan	Appendix H
Landscape Package	Appendix I
Urban Design Report	Appendix J
Traffic Assessment	Appendix K

Supporting Technical Studies and Assessments	Reference in EIS/SSD DA
Landscape & Visual Impact Assessment	Appendix L
Aboriginal Cultural Heritage Assessment Report	Appendix M
Non-Aboriginal Statement of Heritage Impact	Appendix N
Biodiversity Development Assessment Report	Appendix O
Vegetation Management Plan	Appendix P
Riparian Lands Assessment	Appendix Q
Bushfire Assessment	Appendix R
Contamination Preliminary Site Investigation Phase 1	Appendix S
Contamination Detailed Site Investigation Phase 2	Appendix T
Imported Fill Protocol	Appendix U
Unexpected Finds Protocol	Appendix V
Dam Dewatering Report	Appendix W
Ground Water Management Plan	Appendix X
Waste Management Plan	Appendix Y
Geotechnical Investigation Combined Reports	Appendix Z
Flood Risk Assessment	Appendix AA
Flood Impact Assessment	Appendix BB
Energy Efficiency Report	Appendix CC
Air Quality and Odour Impact Assessment	Appendix DD
Noise and Vibration Impact Assessment	Appendix EE
Aeronautical Impact Assessment	Appendix FF
Social Impact Assessment	Appendix GG
Fire Safety Strategy	Appendix HH
BCA Compliance Report	Appendix II
Site Survey	Appendix JJ
Aspect Industrial Estate Development Control Plan	Appendix KK
DCP Comparison Table	Appendix LL
Engagement Report	Appendix MM

Supporting Technical Studies and Assessments	Reference in EIS/SSD DA
Landowners Consent	Appendix NN
Site Contamination Audit	Appendix OO
Draft Plan of Subdivision	Appendix PP
Strategic Planning Considerations Memo	Appendix QQ

2. PROJECT DESCRIPTION

2.1. ASPECT INDUSTRIAL ESTATE OVERVIEW

The proposal seeks approval for the staged development of the AIE facilitated via the staged SSD DA process. The SSD DA seeks consent for:

- A Concept Masterplan for the AIE comprising 11 industrial or warehouse and distribution centre buildings, internal road network layout, building locations, gross floor area (GFA), car parking, concept landscaping, building heights, setbacks and built form parameters.
- Detailed Stage 1 Development of the AIE including:
  - Pre-commencement works including:
    - Demolition and removal of existing rural structures.
    - Site remediation works as defined within the Remediation Action Plan.
    - Heritage salvage works (if applicable).
  - Subdivision construction works including:
    - Creation of roads and access infrastructure, including a signalised intersection with Mamre Road.
    - Clearing of existing vegetation on the subject site and associated dam dewatering and decommissioning.
    - Realignment of existing creek and planting in accordance with a Vegetation Management Plan.
    - On-site bulk earthworks including any required ground dewatering.
    - Importation, placement and compaction of:
      - Virgin Excavated Natural Material (VENM) within the meaning of the POEO Act, and/or
      - Excavated Natural Material (ENM) within the meaning of the NSW EPA's Resource Recovery Exemption under Part 9, Clause 91 and 92 of the POEO (Waste) Regulation 2012 – The Excavated Natural Material Order 2014, and/or
      - materials covered by a specific NSW EPA Resource Recovery Order and Exemption which are suitable for their proposed use.
    - Construction of boundary retaining walls.
    - Delivery of stormwater infrastructure, trunk service connections, utility infrastructure.
    - Boundary stormwater management, fencing and landscaping.
    - Construction and dedication of internal road network to Penrith City Council.
    - Construction and operation of signalised intersection with Mamre Road.
  - Building works including:
    - Construction and fit out of two warehouse and distribution buildings in Stage 1 on Lots 1 and 3 which will operate 24 hours/day, seven days/week.
    - Construction and fit out of a café, which will operate 12 hours/day, seven days/week.
  - Subdivision of Stage 1.
  - Signage.

Future stages of the Estate, including subsequent warehouse buildings, will be subject to separate assessment and approval in line with the fundamental layout and development controls established under the AIE Concept Masterplan.

The details of the AIE proposal are summarised in **Table 4**.

Table 4 Summary of AIE SSD DA

Aspect Industrial Estate – PROPOSED STATE SIGNIFICANT DEVELOPMENT	
Concept Proposal	
General	▪ Staged development for a regional 'industrial' or 'warehouse and distribution' estate ▪ State Significant Development pursuant to the SRD SEPP ▪ CIV: $341,141,742 (excl GST) ▪ Approximately 555 new construction jobs and 1,703 new operational jobs
Proposal	▪ Regional warehouse and distribution hub ▪ 24 hours/day, seven day/ week operation ▪ Access via new signalised intersection to Mamre Road ▪ Indicative lot layout, site levels, concept stormwater drainage and internal road network ▪ Truck infrastructure and service connections
Indicative Development Figures	▪ Total Site Area: 558,213 m^2 ▪ Total Developable Area: 446,536 m^2 ▪ Non-Developable Area: 111,677 m^2 ▪ Industrial or Warehouse and Distribution Centre Building Envelopes: 11 ▪ Café Building Envelope: 1 ▪ Industrial or Warehouse and Distribution Centre Building Area: 239,440 m^2 ▪ Office Building Area: 11,480 m^2 ▪ Café Building Area: 122 m^2
Staging	▪ Future building staging will be confirmed as tenants are secured.
Stage 1 Development	
General	▪ Cut and fill and fill importation operations on Lots 54-588 (inclusive). ▪ Detailed earthworks for Lots 1 and 3 ▪ Boundary retaining walls

Aspect Industrial Estate – PROPOSED STATE SIGNIFICANT DEVELOPMENT	
	▪ Watercourse realignment and associated landscaping ▪ Construction and use of two warehouse buildings at Lot 1 and Lot 3 ▪ Construction and use of café at Lot 1. ▪ CIV: – Stage 1 works: $99,990,064 (excl. GST) – Building 1 works: $79,200,635 (excl. GST)
Concept Plan Development Figures	▪ Total Site Area: 558,213 m^2 ▪ Access Roads Area: 43,489 m^2 ▪ Future Roads Area: 3,324m^2 ▪ Creek Riparian Area: 29,615m^2 ▪ Retained Riparian Area: 3,955 m^2 ▪ Basin Lot Area: 17,290 m^2 ▪ Total Developable Area: 446,536 m^2 ▪ Total Office Area: 11,480 m^2 ▪ Total Warehouse Area: 239,440 m^2 ▪ Café: 122 m^2
Warehouse 1 Development Figures	▪ Total Site Area: 58,106 m^2 ▪ Office: 1,630 m^2 ▪ Warehouse: 34,970 m^2 ▪ Café: 122 m^2 ▪ Car parking: 232 spaces
Warehouse 3 Development Figures	▪ Total Site Area: 42,882 m^2 ▪ Office: 800 m^2 ▪ Warehouse: 20,735 m^2 ▪ Car parking: 89 spaces
Roads and Access	▪ Construction, operation and dedication of a new signalised intersection to Mamre Road in a location consistent with the proposed Mamre Road Strategic Design Upgrade. ▪ Internal Estate Road network for roads No. 1 and No. 2 designed to the draft Aspect Industrial Estate DCP.
Infrastructure and Services	▪ One stormwater detention and bio retention basin and reticulation in estate road reserves

	▪ Connection of trunk services including potable water, sewer and electricity along with internal reticulation ▪ Provision for gas and telecommunication infrastructure ▪ Warehouse 1 and 3 on site drainage and infrastructure services connecting to the Estate-wide system.

2.2. SITE FEATURES AND CHARACTERISTICS

The key features and characteristics of the site and considerations and implications for concept planning and development of the AIE are summarised in **Table 5** and key opportunities and constraints are mapped in

Figure 5. Further detailed analysis of these site characteristics is provided in the relevant technical appendices to the EIS.

Table 5 Summary of Site Features and Characteristics

Issue	**Key Features**
Land Use and Character	▪ The site has been used for agriculture including farming and grazing. ▪ The site character is predominantly rural. ▪ Existing site feature include farm dams, scattered vegetation, watercourse in the north-west corner of the site.
Surrounding Land Use	▪ North, South, East: Rural land uses comprising of rural residential, farming and grazing ▪ West: Mamre Road. Beyond Mamre Road are rural uses comprising rural residential, farming and grazing. ▪ Land surrounding the proposed AIE is identified for future Industrial uses.
Topography and Landform	▪ With high points running along the Southern and Eastern boundaries, the site has a gentle undulating topography falling north-west towards the dams and Mamre Road. ▪ The site's lowest point is in the north-western corner. ▪ The elevation varies from 67 AHD at the south to 49 AHD at the site's centre.
Geology/ Soils	▪ Underlying geology of the site is the Bringelly Shale of the Wianamatta Group and alluvium associated with South Creek and Kemps Creek. This unit is only present in the north-west corner of the site. Surface and sub-surface conditions are as follows: ▪ Topsoil: Silty Clay (0.0 to 0.3 m) ▪ Fill: Clay (0.0 to 4.5 m) ▪ Natural Soil: Clay and Silty Clay (0.1 to 4.5 m) ▪ Bedrock: Shale (1.0 to 6.5 m) ▪ No acid sulphate soils were identified.
Surface Water, Hydrology and Flooding	▪ The AIE is located within the South Creek sub-catchment. ▪ There are two unnamed watercourses within the site: a 1st order and 2nd order watercourse. Validation identified the 1st order watercourse did not meet the definition of a waterway. The 2nd order stream has a defined channel observed only in the north-west corner of the site.

Issue	Key Features
	▪ There are five farm dams with limited riparian or fringing vegetation surrounding them and poor aquatic habitat values. ▪ The site is affected by 100 year overland flows. It remains unaffected by South Creek 100 year mainstream flooding extent for the tributary to South Creek.
Groundwater	▪ Standing groundwater levels measured at the site range between 2.52 m and 8.31 m below ground level. Groundwater is not expected to be intersected during shallow earthworks programs.
Vegetation	▪ The extent of native vegetation within the development site and buffer is 1.13 ha (approximately 2% of the site area) with majority cleared for agricultural uses. ▪ Two Plant Community Types were identified: – Forest Red Gum – Grey Box ▪ Native vegetation is limited to small patches and sparsely scattered through the site. ▪ Condition of the vegetation is poor due to the persistent impacts from agricultural land uses.
Bushfire	▪ The vegetation within the site is mapped as Category 2 Bushfire Prone Vegetation.
Heritage	▪ No identified State or local items of environmental heritage. ▪ Aboriginal archaeology identified 5 artefact concentrations and 6 isolated artefacts.

Figure 5 Constraints and Opportunities

Figure 26 – Opportunities Plan 1:7,500 [Source: SBA Architects]

Connections to Mamre Road Precinct
Mamre Road frontage
New Signalised Intersection
Validated not a watercourse
Validated Watercourse

Picture 6 Opportunities

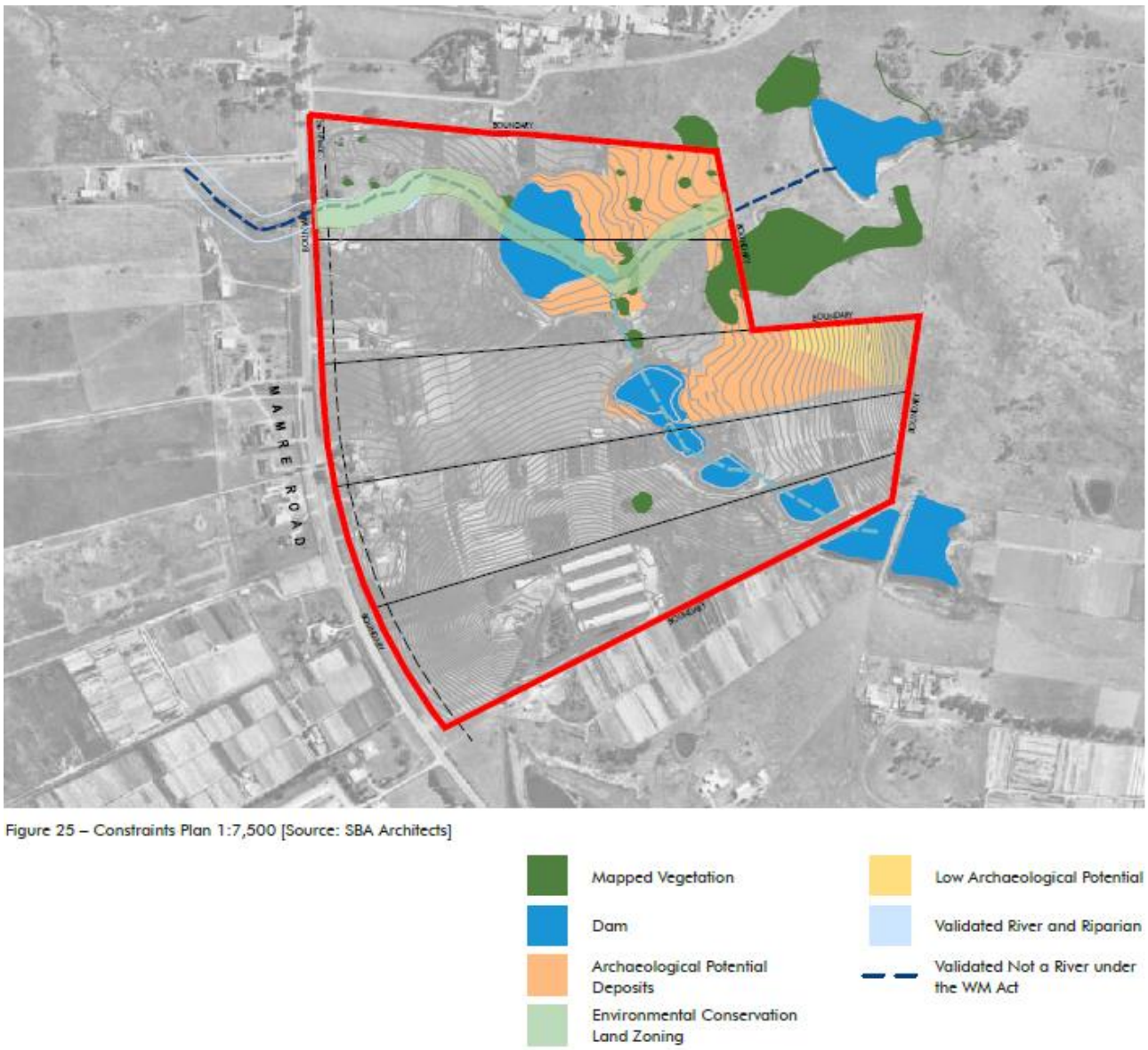


Figure 25 – Constraints Plan 1:7,500 [Source: SBA Architects]

Picture 7 Constraints

Source: Nettleton Tribe

2.3. DEVELOPMENT OBJECTIVES

The Concept Masterplan for the AIE was developed in consideration of a comprehensive constraints analysis of the site, with particular reference to riparian lands and topography. The constraints analysis resulted in the identification of 111,677 m^2 of non-developable land across the site. Much of this land lies adjacent to Mamre Road to the east and the relocated creek line running across the north-east boundary of the site.

The proposed development is consistent with the overarching aim for the broader Mamre Road Precinct to support the need for additional industrial and urban services land in response to long-term projected population and development growth in Sydney. Its vision is to contribute to the employment option for Western Sydney and build upon the opportunities presented by the Western Sydney Aerotropolis.

The proposal elicits a design response that delivers opportunities for architectural diversity within a coordinated palette of materials and colours. This will unite the overall presentation of the estate as a high quality logistics precinct whilst enabling sufficient diversity to maintain interest and individual customer diversity and expression of corporate identity.

A fundamental consideration in the formulation of the Concept Proposal is to create flexible development lots which provide a range of potential end user requirements as well as maximising the potential to accommodate larger footprint facilities in keeping with current best practice for efficiency of industrial or warehouse and distribution centre operations.

To this end, the core objectives of the AIE proposal are to:

- Secure developable areas and high level development controls to provide certainty and minimise risk in the future development of the site;
- Deliver critical local road infrastructure, such as the upgraded intersection to Mamre Road, to connect the site to the external road network and enable connectivity from Mamre Road to the wider Mamre Road Precinct, and support further employment generating development within the precinct;
- Allow for the staged development of the site over time in line with infrastructure delivery and market demand;
- Facilitate earthworks and infrastructure/services development on the land concurrently with the servicing of road infrastructure by government agencies and authorities;
- Secure approval for the first stage of development within the site to allow for a quick response to industrial demand; and
- Respond to the site context and key interfaces with surrounding lands, including sensitive receivers to ensure an appropriate and sustainable development outcome.

2.4. ASPECT INDUSTRIAL ESTATE CONCEPT PROPOSAL

2.4.1. Overview

Mirvac's vision for its site is to deliver an employment estate for future industrial and warehouse and distribution centre users based around an emphasis on design quality, flexibility, technology and sustainability. The Concept Masterplan has been derived to accommodate industrial, warehouse and distribution development in a functional and efficient manner while respecting environmentally sensitive land. Key principles in determining the Concept Masterplan layout are as follows:

- Provide a rational, efficient road access system which is integrated with the future regional road network;
- Provide large, flexible, regular shaped 'lots' including a diverse range of sizes having regard to the market demand for different sized warehouses and large footprint facilities;
- Improve existing waterways and environmentally sensitive land; and
- Provide land to support stormwater quality and quantity needs for the site.

The AIE would be developed over stages with timing determined by market demand. **Table 6** summarises key elements of the AIE Concept Masterplan which is shown in **Figure 6**. Full details of the proposed Concept Masterplan are provided in drawings within the architectural package at **Appendix C**.

Table 6 Summary of Proposed AIE Concept Proposal

Aspect Industrial Estate – Project Snapshot	
Total Site Area	558,213 m^2
Riparian Land	33,570 m^2
Access Roads Area	43,489 m^2
Basin Lot Area	17,290 m^2
Total Developable Area	446,536 m^2
Development Lots	11

Aspect Industrial Estate – Project Snapshot	
Total Industrial/ Warehouse or Distribution Centre Area	239,440m^2
Total Ancillary Office Area	11,480 m^2
Café	122 m^2
Total Building Area	251,042 m^2

Figure 6 AIE Concept Masterplan

Source: SBA Architects

2.4.2. Key Elements

The AIE Concept Masterplan provides for the staged development of the site for industrial or warehouse and distribution centre uses with associated infrastructure and services. The Concept Masterplan has been designed in consideration of, and consistent with, the future Mamre Road upgrade including a signalised intersection at the entrance of the site. The estate road network distributes from the Mamre Road intersection with provisions made for future connections to adjoining land holdings in certain locations consistent with the wider road network contemplated for the Mamre Road Precinct.

The Concept Masterplan divides the site into 11 industrial or warehouse and distribution centre lots each incorporating indicative building footprints and envelopes. Provision is made for a basin and vegetation lot to support the site's stormwater requirements and existing waterways.

The key elements of the proposed AIE Concept Masterplan are described in **Table 7**.

Table 7 Key Elements of Proposed AIE Concept Masterplan

Element	Description	Design Parameters
Site Access	▪ Access via new signalised intersection to Mamre Road consistent with the location specified with Transport for NSW's strategic design of the future Mamre Road upgrade. ▪ Delivery of signalised Mamre Road intersection fronting the site.	▪ Designed to relevant AS and RMS standards
Estate Roads	▪ Four local estate roads (Access Roads 01 to 04) extending from the Mamre Road intersection providing access to AIE development.	▪ Estate road network designed to match the specification of the draft AIE DCP road network. ▪ Estate designed to accommodate heavy vehicles whilst ensuring that access to regional and sub-arterial roads is achieved. ▪ The design of Concept Masterplan and Stage 1 provides for full integration with the future internal Mamre Road Precinct road network.
Subdivision and Development Lots	▪ 11 development lots where future industrial/ warehouse or distribution centre development would take place ▪ Four estate roads for future dedication to Council. Delivery of roads to be staged.	▪ Development lots to have a minimum area of 1,000 m^2 consistent with the draft AIE DCP. ▪ Development lots to provide opportunity for a variety of sizes, layouts and configurations of development.
Utilities and Services	▪ Utility infrastructure requirements accommodated in Concept Masterplan layout.	▪ Essential infrastructure will be delivered on site and connected to the regional network as per Agencies and Authority standards.
Stormwater and Drainage	▪ Estate-wide stormwater system to manage runoff from the future AIE development Lots.	▪ Stormwater management for the AIE designed in accordance with Penrith City

Element	Description	Design Parameters
	▪ Provision for one stormwater basin within the estate.	Council requirements and WSUD principles. ▪ Detailed design and capacity of basins included in Civil Report at **Appendix G**.
Riparian	▪ Improves the biodiversity and ecological values of the area through the naturalised realignment and restoration of riparian assets.	▪ Refer to Riparian Lands Assessment at **Appendix Q.**
Open Space	▪ Concept Proposal includes landscaped open space areas along the riparian corridor, surrounding detention basin, open space at entrance to AIE fronting Lot 1, and landscape nodes.	▪ Open space along riparian corridor and detention basin have included a 1.8m shared path to provide public access along the corridor.
Public Domain and Landscaping	▪ Landscape Concept Plan establishes landscaping principles and guidelines for the AIE including landscape typologies and planting schedules.	▪ Minimum setbacks and landscape treatments to be consistent with the proposed AIE DCP controls.

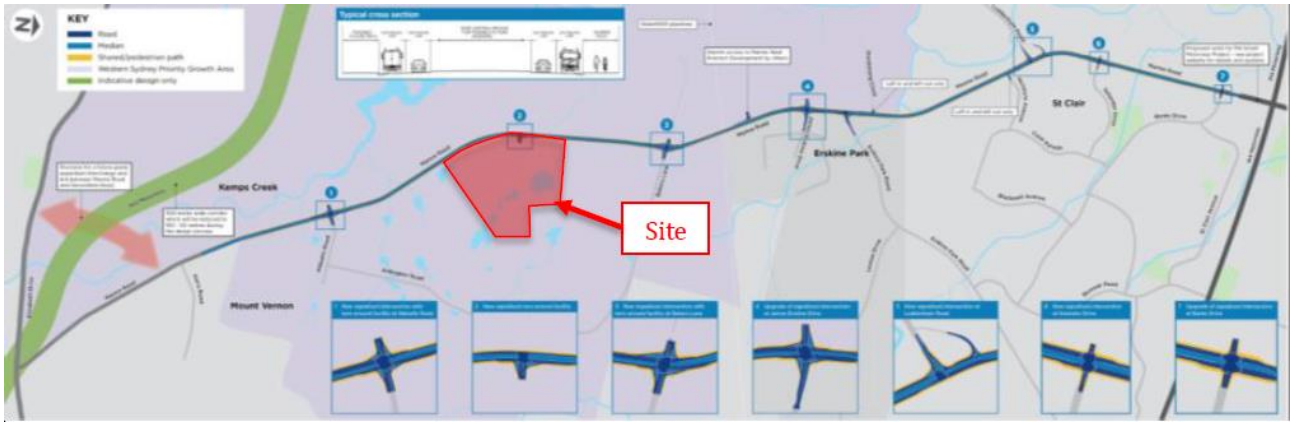
2.4.3. Access

The AIE has been designed to integrate with the regional road network planned for the Mamre Road Precinct as shown in **Figure 3**.

Access to the site would be facilitated by a new signalised intersection to Mamre Road, which will be delivered in a location consistent with the Transport for NSW's proposed Mamre Road Upgrade Strategic Design (refer to **Figure 7** below). Other access arrangements for the AIE include four internal estate roads providing circulation throughout the development. The concept plan identifies future connection points north and south of the precinct, which facilitates broader road connections across the Mamre Road Precinct.

All access driveways, parking areas and service areas have been designed with reference to the appropriate Australian Standards. Further detailed description of the road infrastructure proposed as part of the AIE development is provided in **Section 5.5** of the EIS and **Appendix K**.

Figure 7 Mamre Road upgrade



Source: Transport for NSW

2.4.4. Development Controls

The AIE lies within the Penrith LGA in the Mamre Road Precinct. There is no adopted Development Control Plan which applies to the Mamre Road Precinct for industrial or warehouse and distribution centre uses. Clause 18 of SEPP WSEA requires that a DCP must be prepared for the land prior to the issuance of development consent. However, it is noted that pursuant to Clause 11 of the SRD SEPP, DCPs do not apply to SSD.

The development controls for the AIE will be established via the Concept Masterplan and the proposed Aspect Industrial Estate Development Control Plan. The controls have been drafted to allow for easy integration into the precinct-wide Mamre Road Precinct DCP, when the DPIE chooses to exhibit and adopt one for the Precinct. It is understood that DPIE is currently preparing this precinct-wide DCP.

The proposed controls have been designed to be consistent with similar industrial or warehouse and distribution centre estates across the WSEA and to respond to the site specific constraints and characteristics of the AIE. Proposed development controls for the AIE are summarised in **Table 8**.

Table 8 Principal AIE Development Controls

Issue	Key Issues/Considerations	Proposed Control/Standard
Lot Size	Flexibility in lot sizes and dimensions required to accommodate a diversity of development typologies and configurations. Lot size and width must respond to contemporary industrial development standards and requirements, and the needs of modern industrial operations. Lot size to provide sufficient area of unrestricted heavy vehicle access and manoeuvring, loading and car parking. Lot size and dimension to maximum efficiencies in the construction phase.	Minimum lot size: 1,000m^2 Minimum frontage (excluding cul-de-sacs): 40m Minimum lot width at building line: 35m 60 m for lots greater than 5,000m^2 and less than 10,000m^2
Setbacks	Development within the AIE must respond to required setbacks to regional roads. Road setbacks within the AIE must be sufficient to allow for services	Minimum building setbacks for the AIE: Mamre Road: 20m (10m minimum landscaping)

Issue	Key Issues/Considerations	Proposed Control/Standard
	infrastructure (as required), pedestrian pathways (as required) and appropriate landscaping. Setbacks within the AIE to be consistent with adjacent industrial precincts. Side and rear setbacks to accommodate and/or respond to emergency vehicle access, asset protection zones, fire rating and BCA standards and amenity for adjoining landowners.	Local Estate Roads: 7.5m (3.5 minimum landscaping) Setbacks: 5m building setback (2.5m rear, no minimum for side landscaping subject to compliance with fire rating requirements)
Car parking	Car parking rates to recognise the needs of modern warehouse and distribution centre operations and the unique characteristics of the WSEA and typical WSEA operations. Car parking rates to provide flexibility to respond to the demands of different operators that may locate on the site.	On-site car parking for the AIE to be provided at the following rates: Warehouse and distribution centres: one space per 300m^2 of warehouse GFA Office: one space per 40m^2 of ancillary office GFA Industrial/Manufacturing: one space per 200m^2 of industrial/manufacturing GFA Café: one space per 10m^2 of café/restaurant seating area

Further discussion of development controls applying to the AIE and variations to existing development controls established under Aspect Industrial Estate DCP is provided in **Section 3.2.13**.

2.4.5. Development Lots

The Concept Masterplan for the AIE establishes indicative locations across the site for development, access, drainage, environmental protection and infrastructure and services. The site is divided into 11 development lots. Details on each development lot established under the AIE Concept Masterplan are provided in **Table 9**.

Table 9 AIE Development Lots

Lot/Warehouse	Indicative Stage[1]	Site Area*	Built form
1	1	58,156 m^2	One building pad with opportunity for tenant. Serviced by Access Road 1 and 2.

[1] Staging of Warehouses will be dependent on user demand and will be confirmed as tenants are secured.

Lot/Warehouse	Indicative Stage[1]	Site Area*	Built form
2	2	41,945 m^2	One building pad with opportunity for tenant. Serviced by Access Road 1 and 2.
3	1	42,882 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 1 and 2.
4	3	41,044 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 3 (south).
5	3	28,392 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 3 (south).
6	4	37,843 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 3 (south).
7	5	37,847 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 4.
8	4	50,786 m^2	One building pad with opportunity for up to two tenants. Serviced by Access Road 1, 3 (south) and 4.
9	5	35,571 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 4.
10	5	33,421 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 4.
11	5	38,649 m^2	One building pad with opportunity for one tenant. Serviced by Access Road 4.

2.4.6. Infrastructure and Servicing

The servicing of lands within the WSEA has been the subject of extensive planning and consultation with relevant utility providers since 2008. As a result, the works required to service these lands have been considered in the development of forward work programs for State and local authorities and providers including Sydney Water, Endeavour Energy, Transport for New South Wales, Jemena, NBN/Telstra, and Penrith City Council.

Infrastructure and servicing requirements for the AIE are well understood, with infrastructure and services to be provided through connections from either existing infrastructure within Mamre Road to service AIE Stage 1 or connections to planned infrastructure upgrades as part of utility Authority servicing plans for the wider WSEA and Aerotropolis.

The delivery of essential infrastructure and services would form part of the proposed Stage 1 development and is described in **Section 2.5**.

2.4.7. Indicative Staging

The indicative staging of the Concept Masterplan has been developed to provide connectivity to surrounding sites, however the staging of the development will be determined by user demand and will be confirmed when tenants are secured.

2.4.8. Landscaping

Landscaping for the AIE responds to the key interfaces of the estate with the public domain, adjoining properties and environmentally sensitive lands such as riparian corridors. The landscape strategy for the AIE aims to reflect a consistent image and maintenance regime across the entire estate and respond to its unique site characteristics.

The Landscape Masterplan is defined by seven key elements as outlined below.

- Entry Landscape: The entry landscape located to the northern side of Mamre Road entry provides a landscape arrival feature. An open lawn area with a series of banding of grasses and concrete inlays frames the entry road and provides a framework for future amenity in this area. The adjacent stormwater basin's planting will be visible for this area. Connecting the entry feature to Lot 1 is a carpark with feature unit paving to encourage permeability of pedestrians between the building, carpark and broader landscape.
- Typical Lot Frontage: The lot frontages are the main presentational frontage of lots to the estate road. Planting to the frontages will consist of a variety of native and exotic, shrubs, groundcovers and small-medium trees. Security fencing is to be positioned amongst the landscape to recede into planting.
- Mamre Road Frontage: The Mamre Road frontage consists of embankments sloping from lots down the road. Massed planting of shrubs, grasses and groundcovers is proposed with large canopy trees.
- Estate Roads:
  - Primary Access Roads: Estate Roads are proposed to have groups of canopy trees with low grass and groundcover underplanting. Tree species will vary based on the street hierarchy.
  - Secondary Roads: Secondary roads feature the same general arrangement as primary roads. Groups of trees can be positioned to allow for the arrangement of services and utilities such as light poles.
- Boundaries: Boundary treatments will feature planting of native shrub grass and groundcovers. In locations where there is a retaining wall below cascading plants will be provided to break up the mass of the wall.
- Stormwater Basin: The stormwater basin will feature planting to compliment the water retention and treatment processes designed by Civil Engineers. A Grass-Cel maintenance pathway provides access around the perimeter of the basin at the top of the embankment. Appropriate safety fencing shall be included where necessary.
- Riparian Zone: The Riparian Zone will be planted and maintained in accordance with the Vegetation Management Plan. The riparian zone will be demarcated with fencing – security fencing where adjoining lots and post and rail as boundary marker style.

- Riparian Zone Pathway and Nodes: A 1.8m wide pedestrian path will provide access along the riparian zone with a number of amenity nodes featuring seating.

Full details of concept AIE landscaping are provided in the drawing package at **Appendix H**, prepared by Site Image Landscape Architects.

Figure 8 Concept Landscape Plan

Source: Site Image Landscape Architects

Landscape setbacks are proposed along site boundaries to maximise amenity within and surrounding the estate and provide visual screening of the development from surrounding areas. Subsequent estate and on-lot landscaping will be subject to separate applications for individual sites, including internal landscaped setbacks and landscaping of carparking/ hardstand areas.

2.4.9. Signage

The estate-wide signage has been designed in accordance with Mirvac's corporate signage strategy for consistency across the AIE (refer to **Figure 9** below). The AIE signage would incorporate a combination of typologies ranging from estate pylon signage at the entrance of the estate to wayfinding and identification signage throughout the estate. The details of the signage to be used within specific areas of the site to be provided in applications for the future staged development of the site.

Figure 9 Concept Masterplan Signage Locations

Source: SBA

2.5. STAGE 1 DEVELOPMENT

2.5.1. Overview

The Stage 1 Development for the AIE comprises both Estate wide and on-lot works as follows:

- Detailed Stage 1 Development of the AIE including:
  - Pre-commencement works including:
    - Demolition and removal of existing rural structures.
    - Site remediation works as defined within the Remediation Action Plan.
    - Heritage salvage works (if applicable).
  - Subdivision construction works including:
    - Creation of roads and access infrastructure, including a signalised intersection with Mamre Road.

- Clearing of existing vegetation on the subject site and associated dam dewatering and decommissioning.
- Realignment of existing creek and planting in accordance with a Vegetation Management Plan.
- On-site bulk earthworks including any required ground dewatering.
- Importation, placement and compaction of:
  - Virgin Excavated Natural Material (VENM) within the meaning of the POEO Act, and/or
  - Excavated Natural Material (ENM) within the meaning of the NSW EPA's Resource Recovery Exemption under Part 9, Clause 91 and 92 of the POEO (Waste) Regulation 2012 – The Excavated Natural Material Order 2014, and/or
  - materials covered by a specific NSW EPA Resource Recovery Order and Exemption which are suitable for their proposed use.
- Construction of boundary retaining walls.
- Delivery of stormwater infrastructure, trunk service connections, utility infrastructure.
- Boundary stormwater management, fencing and landscaping.
- Construction and dedication of internal road network to Penrith City Council.
- Construction and operation of signalised intersection with Mamre Road.

▪ Stage 1 on-lot works including

– Warehouse 1 (Lot 1)
  - Detailed on-lot earthworks to refine final levels and establish final building pads;
  - On-lot stormwater and utility infrastructure and services connection;
  - Construction of warehouse building as shown on the Stage 1 Architectural Plans;
  - Fit out of buildings as shown on Stage 1 Architectural Plans, including standard racking and office fit out; and
  - Landscaping of development sites in accordance with Stage 1 Landscape Plans.

– Warehouse 3 (Lot 3)
  - Detailed on-lot earthworks to refine final levels and establish final building pads;
  - On-lot stormwater and utility infrastructure and services connection;
  - Construction of warehouse building as shown on the Stage 1 Architectural Plans;
  - Fit out of buildings as shown on Stage 1 Architectural Plans, including standard racking and office fit out; and
  - Landscaping of development sites in accordance with Stage 1 Landscape Plans.

– Building works including:
  - Construction and fit out of two warehouse and distribution buildings in Stage 1 on Lots 1 and 3 which will operate 24 hours/day, seven days/week.
  - Construction and fit out of a café, which will operate 12 hours/day, seven days/week.

– Subdivision of Stage 1.

– Signage.

2.5.2. Estate Works

The extent of the proposed stage 1 development estate works is shown in **Figure 10** and details are provided in the drawings included at **Appendix D**. A summary of key elements of the proposed Stage 1 – Estate Work is provided in **Table 10**.

Figure 10 Stage 1 Plan

Source: SBA Architects

Table 10 Key Elements of the Proposed AIE Stage 1 Development – Estate Works

Aspect Industrial Estate – Snapshot of Estate Works	
Pre-commencement	Demolition works, remediation works in accordance with the Remediation Action Plan and Heritage Salvage works
Site Preparation	Clearing and grubbing – including slashing, removal of existing trees and vegetation in Concept Masterplan 'developable area' and removal of grass and roots within the top layer of topsoil.
Earthworks	Importation of fill required to achieve site levels. Bulk earthworks across the site, including cut and fill, road grading, benching and stabilisation (batters and/or retaining walls).

Aspect Industrial Estate – Snapshot of Estate Works	
Road Infrastructure	Staged construction of internal estate road network and signalised connection to Mamre Road for primary site access consistent with Transport for NSW's strategic design for Mamre Road upgrade.
Stormwater Infrastructure	Staged construction of stormwater infrastructure and bio-retention basins across the site.
Utilities and Services	Construction of lead in services to provide water, sewer, gas, electricity and telecommunication services to the site.
Environmental protection/ management works	Installation and maintenance of erosion and sediment control measures, water quality management measures and land stabilisation works across the site. Realignment of riparian corridor in the north-west site with restoration of vegetation.

The following sections describe the proposed Stage 1 Development – Estate Works in further detail.

2.5.3. Estate Wide Earthworks

The cut and fill requirements within the AIE have been defined through multiple iterations and careful consideration of the following:

- Undulating topography within the Mamre Road Precinct resulting in the requirement for extensive cut and fill operations in order for AIE to facilitate economic development and provide flexibility to cater for the range of industrial customer requirements.
- TfNSW proposal for a potential co-located intermodal facility within Mamre Road Precinct therefore driving the requirement to ensure that allotments can facilitate flexibility to cater for current and future connectivity requirements.
- Provisioning for connectivity to adjoining lands and managing existing upstream catchment flows.
- Mitigating retaining walls fronting Mamre Road and internal public road reservices.
- Mitigating extensive cut in bedrock sub-surface units.
- Meeting the requirements for the site to cater for IN1 General Industrial employment which requires large flexible allotments.
- Implementing circular economy principles of 'Reduce, Reuse and Recycle' throughout all lifecycle stages of the development.

It is recommended that the proposed earthworks design contained within the AT&L documentation provides the most contextually and economically appropriate design in consideration of the above requirements. Whilst retaining walls fronting Mamre Road have been avoided, this has resulted in a localised maximum 10.9m high cut retaining wall along a section of the AIE eastern boundary due to significant topography within the site. It is noted this retaining wall does not front proposed public road reserves. Where possible, landscaped battered slopes have been proposed to mitigate retaining walls and provide landscape-led visual amenity within the precinct.

The adopted civil design for the AIE is detailed in drawings at **Appendix F** and described in the following sections.

Site Levels and Grading

Bulk earthworks would be undertaken across the AIE to achieve overall finished site levels as shown in the civil drawings at **Appendix F**. **Table 11** breaks down the finished site level for each lot.

Table 11 Finished Level

Lot	Finished Level * +/- 1000mm
1	RL 47.80
2	RL 48.20
3	RL 49.00
4	RL 57.00
5	RL 57.00
6	RL 56.00
7	RL 56.00
8	RL 50.00
9	RL 49.00
10	RL 54.00
11	RL 56.00

** Subject to final detailed design*

Cut and Fill

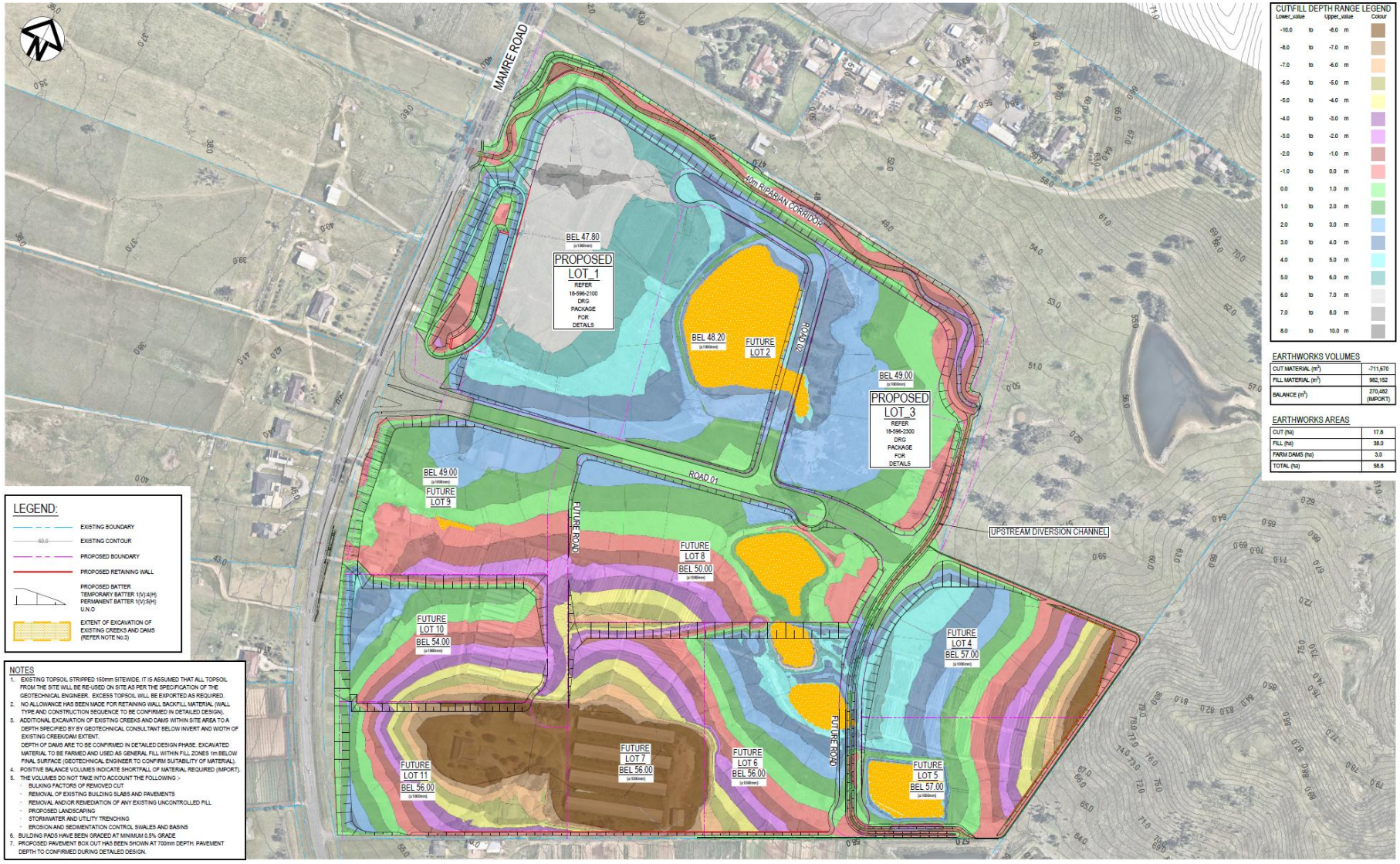
To achieve the required finished site levels across the entire AIE, the proposal requires the import of approximately 270,482m^3 of fill (refer to **Figure 11**). Fill would be imported to the site in stages to reflect the overall construction staging strategy.

Fill material would be screened and validated at the source, prior to being trucked to AIE. All fill material brought to the site would be classified as Virgin Excavated Natural Material (VENM) within the meaning of the POEO Act; and/or; Excavated Natural Material (ENM) within the meaning of the NSW EPA's Resource Recovery Exemption Under Part 9, Clause 91 and 92 of the POEO (Waste) Regulation 2012 - The Excavated Natural Material Order 2014; and/or Materials covered by a specific NSW EPA Resource Recovery Order and Exemption which are suitable for their proposed use.

It would be geotechnically suitable for the AIE and proposed development in accordance with the Geotechnical Report at **Appendix Z.**

Topsoil is only proposed to be stripped from cut areas and or areas that have less than 2 metres of filling over. In all other areas, topsoil is to be left in-situ with filling to occur directly over. Where topsoil has been stripped, the topsoil will be blended with either cut material or imported material and used as general fill. While it is not expected, should any surplus of stripped topsoil remain this will be exported offsite to an approved location for reuse.

Figure 11 Cut/Fill Plan



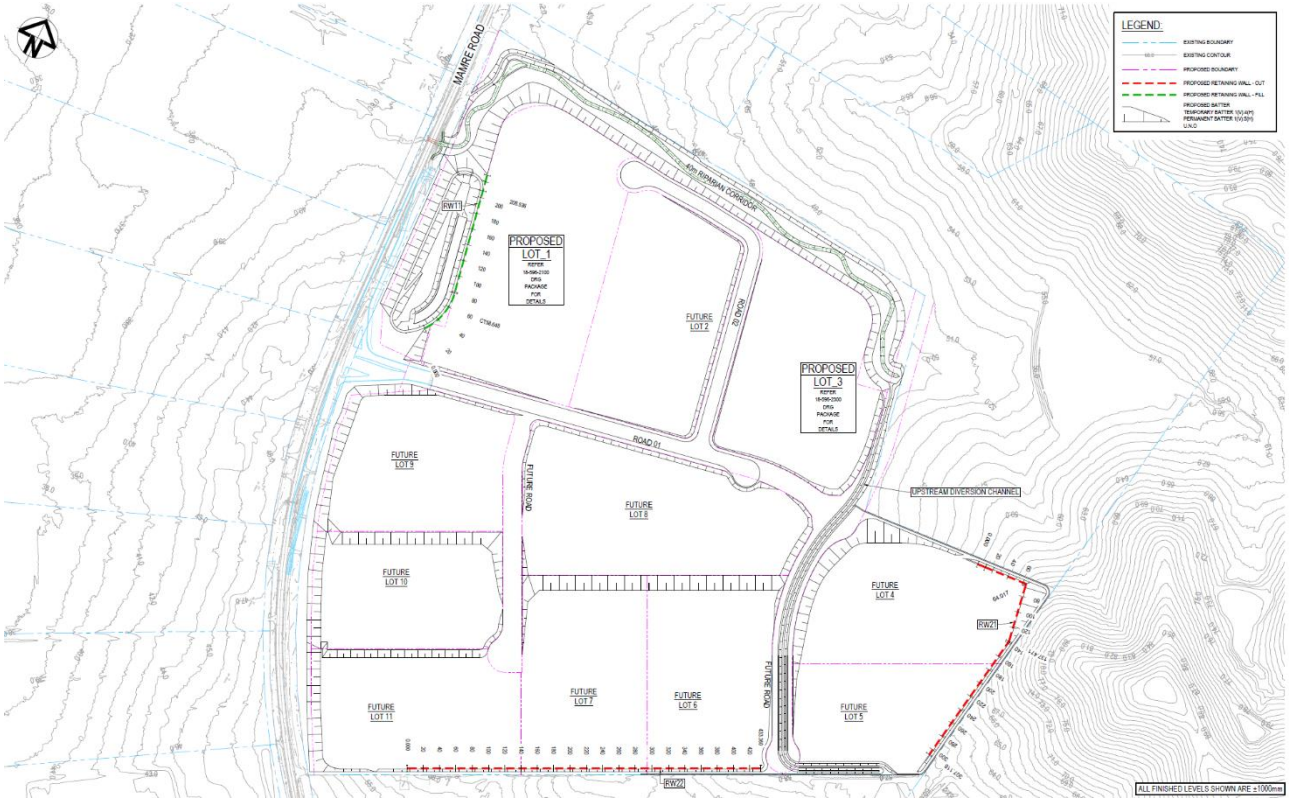
Source: AT&L

Structural Support and Stabilisation

Where possible, batter slopes will be provided to accommodate level changes. Where this is not possible retaining walls will be constructed. Retaining walls are required along the southern and eastern boundary of the AIE. In addition, a retaining wall is required between the eastern edge of the OSD/bio-retention basin and proposed Lot 1. All retaining walls will be constructed on a staged basis. Future retaining walls will be located between future lots for warehouses 9, 10 and 11 and between lot 8 and lots 6 and 7. These retaining walls will be subject to future development applications.

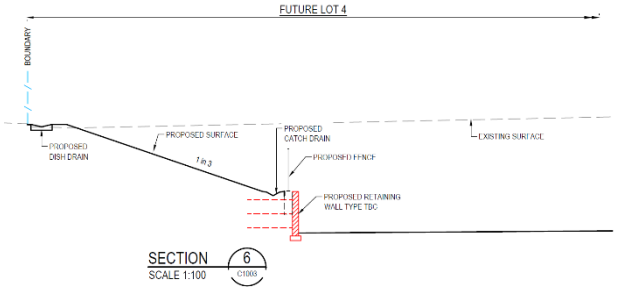
Figure 12 and **Appendix F** illustrates the location and extent of retaining walls.

Figure 12 Retaining Walls

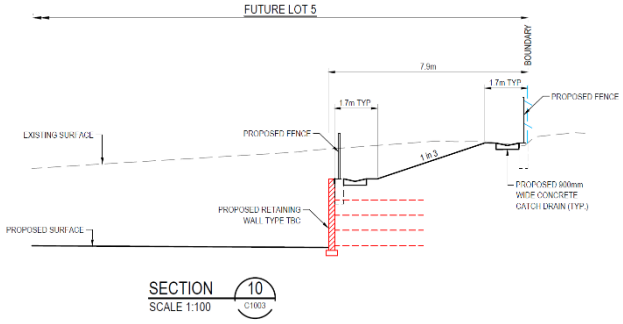


Source: AT&L

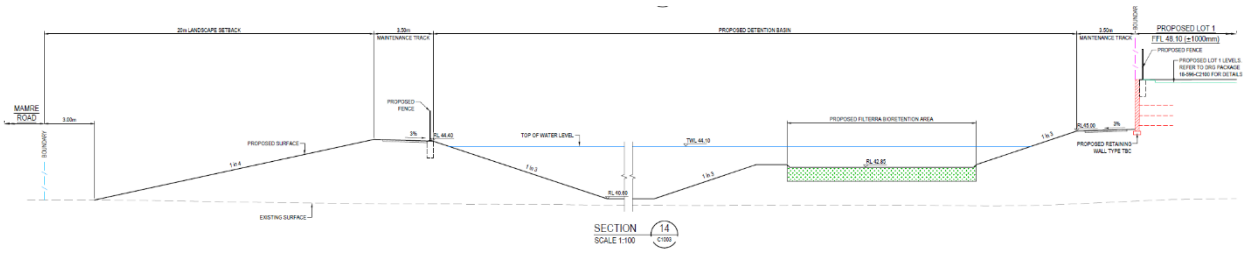
Figure 13 Typical cross sections for retaining walls



Picture 8 Lot 4



Picture 9 Lot 5



Picture 10 Lot 1

Source: AT&L

2.5.4. Stormwater and Drainage

Currently the site comprises rural land and is classified as a greenfield site with an entire coverage of pervious areas and farm dams.

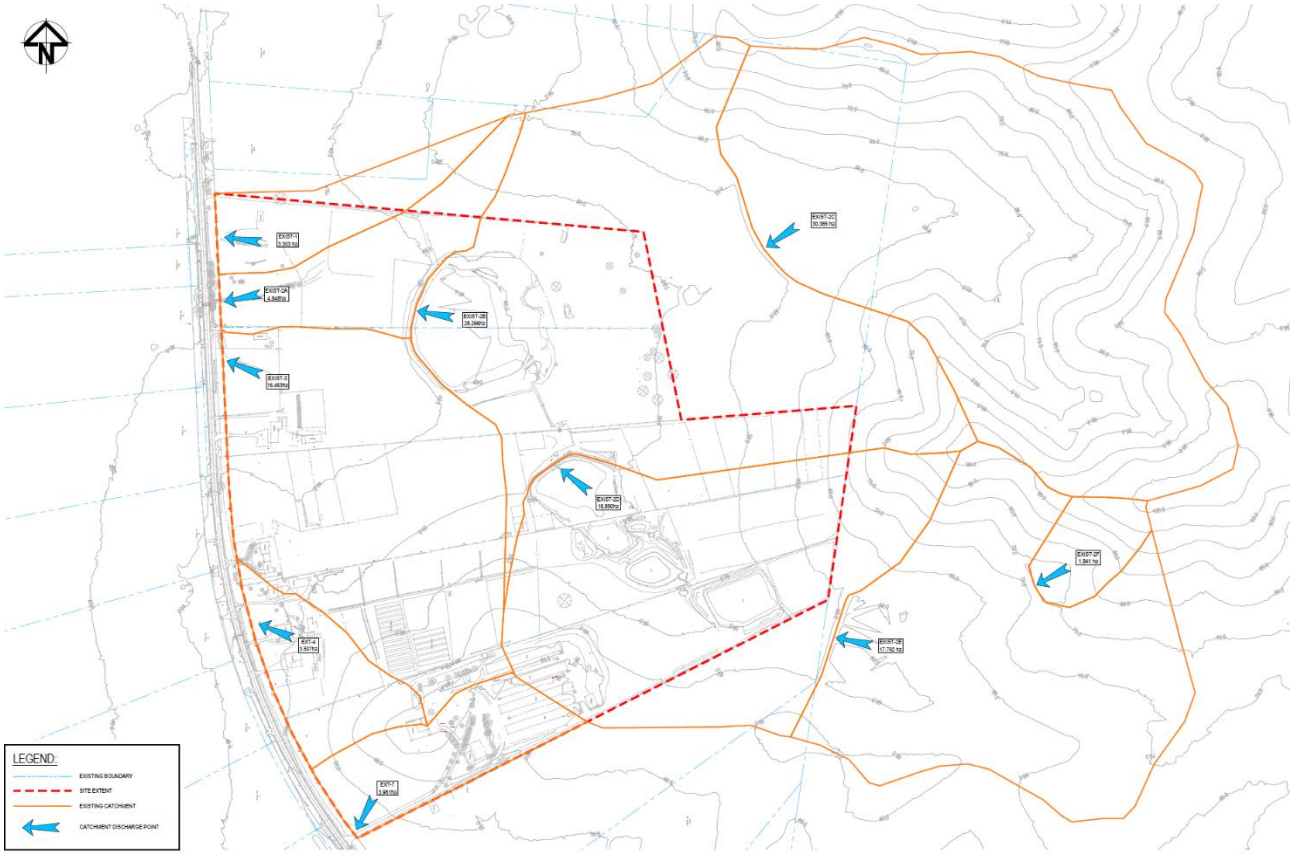
The majority of the site falls from the east to the corner of the northern and western boundary. The high point of the site is located on the eastern boundary and is approximately at RL70.5m. This catchment discharges from the site into the road reserve before draining west underneath Mamre Road in existing culverts at RL39.9m.

The remaining small catchment in the south-west corner of the site falls from approximately RL 67 to the west towards Mamre Road. This catchment is captured in a swale to the east of Mamre Road and drains to the west into the existing pipes on the western boundary of the site.

Extensive cutting and filling is required to ensure level pads are created for proposed roads and on lot building pads. The main objective for the stormwater drainage design of the proposed development is to ensure post-developed catchment flows do not exceed the pre-developed catchment flows. With on-site detention (OSD) systems in place to limit discharges to pre-developed rates, this will ensure the downstream catchments will not be inundated with flows and cause adverse flooding affects downstream of the development. This is in accordance with the Penrith City Council Engineering guidelines.

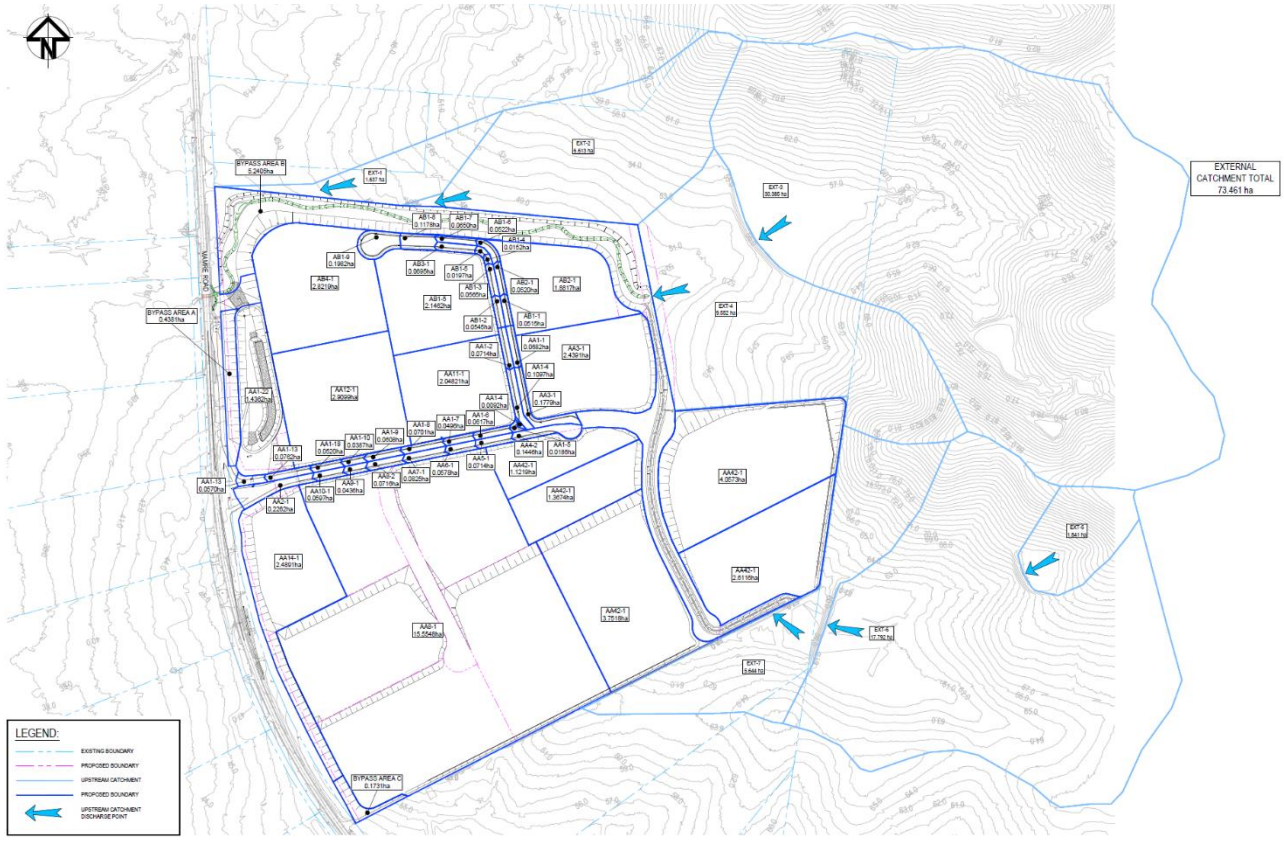
All stormwater on lots and within road reserves for the entire site is proposed to be collected via pits and pipes and connect into an On-Site Detention basin in the north-west corner of the site. The basin will have an outlet structure and overflow weir system to drain into the existing culverts draining below Mamre Road. Scour protection will be provided on these outlet structures to minimise the effects of scour and erosion on the existing creek systems. Detailed specifications are provided in the Civil drawings at **Appendix F**. Pre- and post-development drainage catchments are shown at **Figure 14** and **Figure 15**.

Figure 14 Stormwater Drainage Catchment (Pre-Development)



Source: AT&L

Figure 15 Stormwater Drainage Catchment (Post-Development)



Source: AT&L

2.5.5. Roads and Access

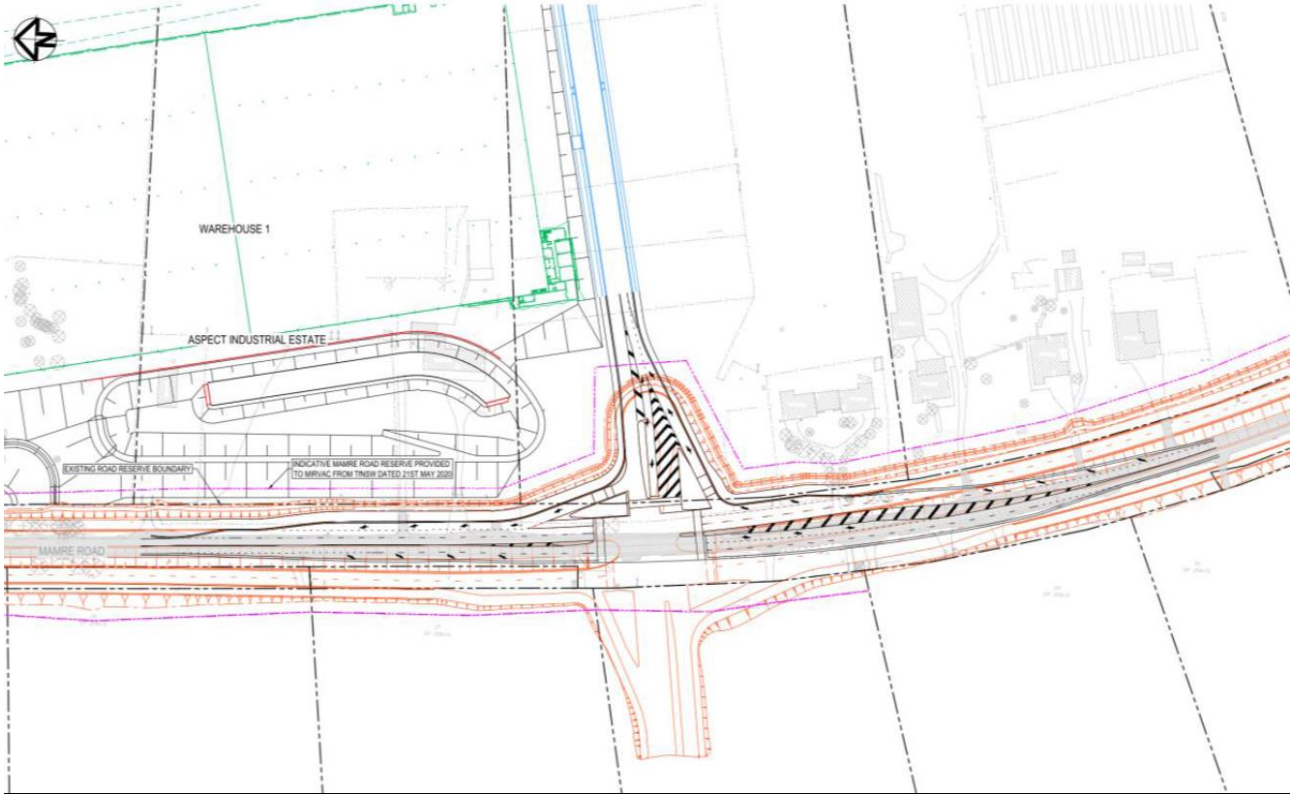
The AIE would be accessed via a new signalised intersection with Mamre Road. The location of this signalised intersection is consistent with Transport for NSW's Mamre Road Upgrade community updates and strategic design documentation.

The AIE interim signalised intersection would provide signalised connection to Mamre Road in its existing alignment in accordance with the requirements of the Traffic Impact Assessment (**Appendix K**). Note: The future proposed upgrade to Mamre Road requires significant land acquisition of properties along the western side of Mamre Road. The proposed interim signalised intersection for AIE is not subject to land acquisition on the western side of Mamre Road.

The final AIE signalised intersection design will be coordinated with Transport for NSW and approved as part of the formal Transport for NSW Works Authorisation Deed (WAD) process.

The proposed AIE interim signalised intersection (shown black in **Figure 16)** is proposed to be constructed and operation in advance of the wider Mamre Road upgrade (shown red in **Figure 16**) by Transport for NSW. Detail of the intersection is shown at **Figure 16**. Traffic modelling undertaken by Ason Group indicates interim signalised intersection arrangement will operate at a Level of Service A (Good Operation) for AIE Stage 1 at the 2026 horizon and a Level of Service B (Good with acceptable delays and spare capacity) for the entire AIE concept masterplan.

Figure 16 Proposed AIE signalised intersection to Mamre Road/ Access Road 01 Intersection



Source: AT&L

Estate Road Infrastructure

The AIE proposed road reserves and cross sections have been designed in accordance with the draft AIE DCP prepared following discussions with Transport for NSW, Penrith City Council and DPIE. Design specifications are generally consistent with Austroad requirements and Australian Standards (AS) to accommodate B-Double vehicles. The design speed of the estate road network is 60km/hour.

Typical cross sections of the AIE estate roads are provided at **Figure 17** and

Figure 18 and in the civil drawings at **Appendix F**. There are two typical Estate Road typologies proposed.

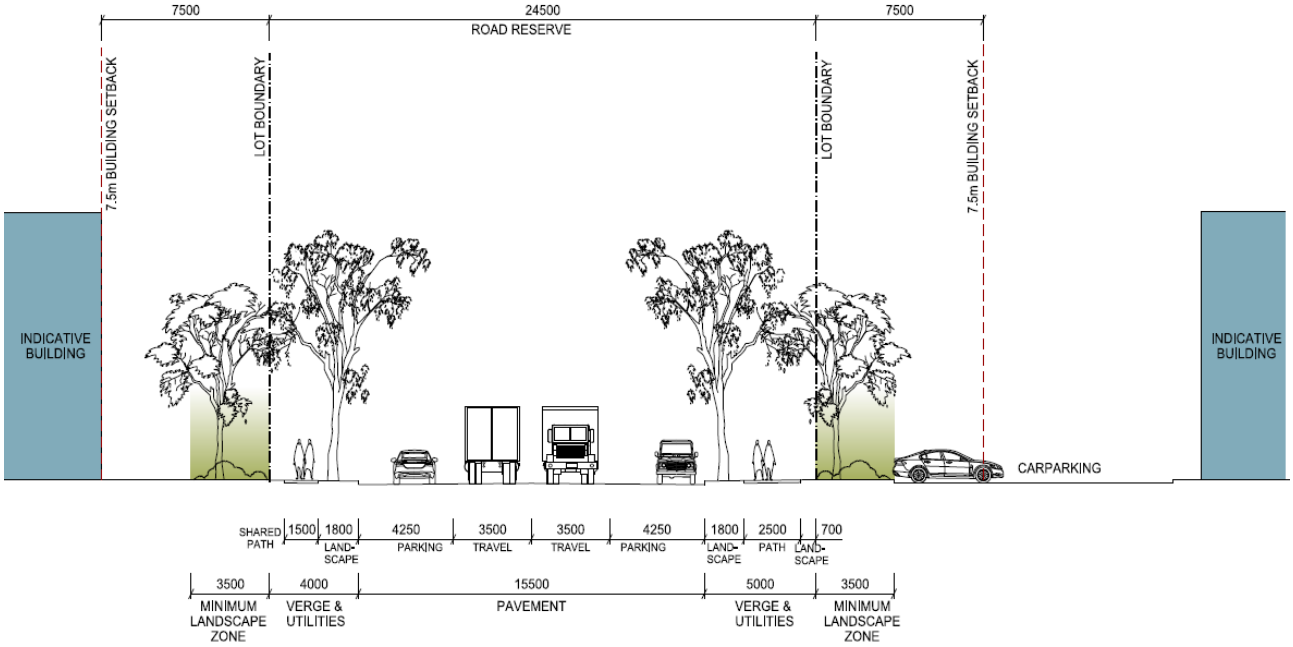
The proposed typical AIE Estate Road 01 is designed as follows:

- A road reserve of 24.5m,
- A 15.5m carriageway incorporating two 3.5m traffic lanes and two 4.25m wide parking lanes,
- Verge 1 at 4.0m wider containing a 1.5m wide footpath and verge 2 at 5.0m wide containing a 2.5m shared path,
- Cul-de-sac at 33m diameter to accommodate the largest design vehicle.

The proposed AIE typical Estate Road 02 is designed as follows:

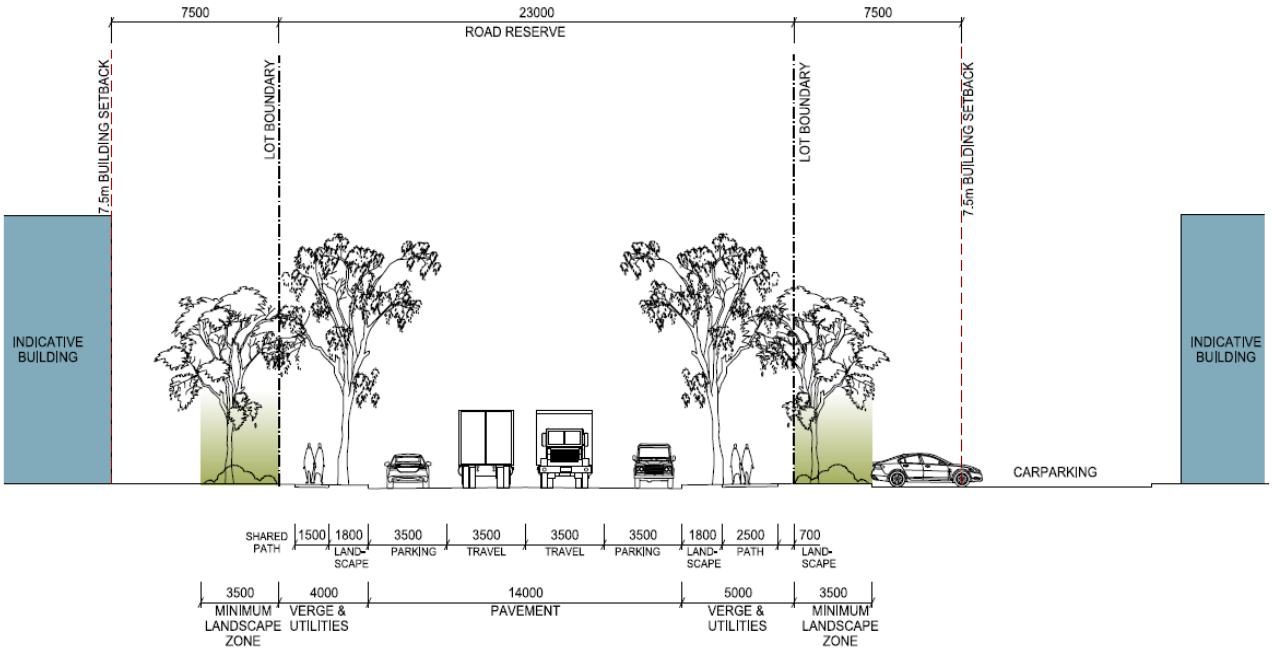
- A 23.0m wide Road Reserve
- 14.0 wide carriageway comprising two x 3.5m wide traffic lanes and two x 3.5m wide parking lanes adjacent the kerb
- Verge 1 at 4.0m wider containing a 1.5m footpath and verge 2 at 5.0m wide containing a 2.5m shared path
- Cul-de-sac at 33m wide diameter to accommodate the largest design vehicle.

Figure 17 Typical Estate Road Section 01



Source: SBA

Figure 18 Typical Estate Road Section 02



Source: SBA

2.5.6. Utilities and Services

Essential services would generally be provided to the AIE via connections to utility infrastructure as described in **Table 12**.

Table 12 Utility Infrastructure Requirements

Utility	Existing Services	Proposed AIE Services
Potable Water	▪ 100mm diameter DICL potable watermain on the eastern side of Mamre Road ▪ 150mm diameter uPVC potable watermain on the western side of Mamre Road ▪ Supplied from a 200uPVC main approximately 220m north of the site which is currently supplied from the Cecil Park Reservoir Supply	▪ Connection to existing potable water infrastructure in accordance with received Sydney Water advice. ▪ Connection to existing assets within Mamre Road subject to completion of up-stream potable water extension (by others). Sydney Water has advised upstream works will be completed by Q2 2021.
Non-Potable Water	▪ None	▪ Connection to Sydney Water non-potable network subject to Sydney Water advice
Sewer	▪ None	Various sewer connection options are available to the site, including

Utility	Existing Services	Proposed AIE Services
		▪ Connection to the proposed future Sydney Water South Creek Catchment Wastewater Treatment Plant (WWTP). ▪ Connection to the existing St Mary's WWTP. ▪ Subject to Sydney Water and Consent Authority Approvals, an Interim Operating Procedure (IOP) for the initial stages of the site may be provided. This would involve a large holding tank constructed at the lower ed of the site. Generally, the IOP would be approved under Section 68 of the Local Government Act by Penrith Council. From discussion with Sydney Water, approvals of temporary IOP would be via Sydney Water Part 5 approvals.
Electrical	▪ Exiting zone substation at Kemps Creek and Mamre Road.	▪ Endeavour Energy has advices the following indicative servicing strategy for Mamre Road Precinct: ▪ 22kV reticulation for the Western Sydney Aerotropolis Area comprising 22kV underground cable and 22kV padmount substations. ▪ The new South Erskine Park Substation would be the ultimate point of supply for the site, due to be commissioned Q3 2022. ▪ Temporary connection arrangements may be provided from the existing network along Mamre Road from Kemps Creek Zone Substation or Mamre Zone

Utility	Existing Services	Proposed AIE Services
		Substation depending on feeder loads at the time.
Gas	▪ None	▪ Currently being investigated subject to occupant demand.
Telecommunications	▪ Existing telecommunication network in Mamre Road	▪ Connection to the existing telecommunications network

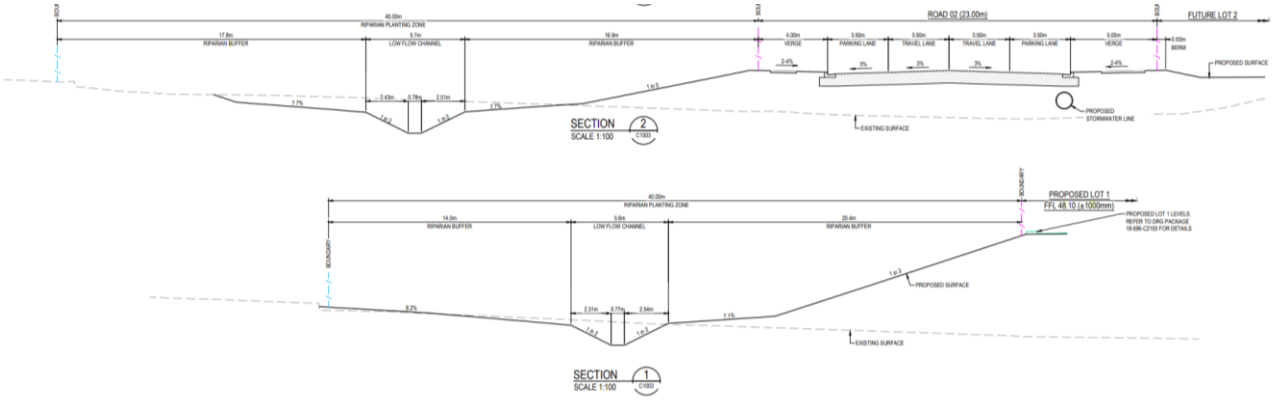
2.5.7. Creek Construction and Riparian Area

Civil works across the site will construct a new creekline along the northern boundary, connecting from the existing validated stream in the north western corner of the site through to the eastern site boundary. The stream bed and riparian area will be constructed to accommodate a riparian corridor with a minimum width of 40m width comprising

- 0.7m wide low flow channel
- 2.3 – 2.5m width from channel to top of bank
- riparian buffer zone to the northern AIE site boundary of variable width but generally 14-17m
- riparian zone to the south of variable width but generally 17-20.5m, interfacing with access roads and development lots.

Figure 19 shows a cross section of the proposed creek line.

Figure 19 Creekline Cross Sections



Source: AT&L

The creekline will require the realignment of the validated existing 180m 2nd order watercourse in the north western corner of the site and will deliver a new 800m long creekline corridor.

Detailed civils plans are included at **Appendix F**.

Riparian Zone

A new riparian area will be constructed totalling 3.33ha, comprising a channel that is approximately 0.41 ha, an inner vegetated Riparian Zone of approximately 1.58ha and an outer Vegetated Riparian Zone of approximately 1.34ha.

The vegetated channel will also incorporate instream woody debris to create instream aquatic habitat, have a range of different surfaces along the bed and banks of the channel to create different geomorphic features such as pools and riffles during high flow events and be maintained under a Vegetation Management Plan for a period of five years to ensure that the vegetation is not dominated by exotic species.

The riparian zone will be demarcated with fencing – security fencing where adjoining lots and post and rail as a boundary marker style. The following plant species are to be included in the riparian zone:

Figure 20 Riparian zone plant species

Riparian Zone

Botanic Name	Common Name
Eucalyptus amplifolia	Cabbage Gum
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus eugenioides	Thin-leaved Stringybark
Eucalyptus moluccana	Grey Box
Eucalyptus tereticornis	Forest Red Gum +
Acacia decurrens	Sydney Green Wattle
Acacia falcata	-
Acacia implexa	Hickory Wattle
Acacia parramattensis	Parramatta Wattle
Bursaria spinosa	Blackthorn
Daviesia ulicifolia	Gorse Bitter Pea
Dillwynia sieberi	-
Dodonaea viscosa subsp. cuneata	Wedge-leaf Hop-bush
Exocarpos cupressiformis	Native Cherry
Indigofera australis	Australian Indigo
Aristida ramosa	Purple Wiregrass
Aristida vagans	Threeawn Speargrass
Bothriochloa macra	Red Grass
Carex inversa	-
Chloris truncata	Windmill Grass
Dichelachne micrantha	Shorthair Plumegrass
Echinopogon caespitosus var. caespitosus	Tufted Hedgehog Grass
Echinopogon ovatus	Forest Hedgehog Grass
Entolasia marginata	Bordered Panic
Fimbristylis dichotoma	Common Fringe-sedge
Imperata cylindrica var. major	Blady Grass
Juncus usitatus	Common Rush
Lomandra filiformis	-
Lomandra multiflora subsp. multiflora	-
Microlaena stipoides var. stipoides	Weeping Meadow Grass
Poa labillardieri	Tussock Grass
Rytidosperma caespitosum	Whitetop
Rytidosperma racemosa var. racemosum	Wallaby Grass
Rytidosperma tenuior	-
Themeda australis	Kangaroo Grass
Asperula conferta	-
Brunoniella australis	Blue Trumpet
Centella asiatica	Indian Pennywort
Cheilanthes sieberi subsp. sieberi	Poison Rock Fern
Clematis glycinoides	Old Man's Beard
Commelina cyanea	Creepinng Christian
Desmodium varians	Slender Tick-trefoil
Dianella longifolia	Blueberry Lily
Dichondra repens	Kidney Weed
Geranium solanderi	Native Geranium
Glycine clandestina	Twining Glycine
Glycine microphylla	Small-leaf Glycine
Glycine tabacina	-
Hardenbergia violacea	Purple Coral Pea
Plectranthus parviflorus	Cockspur Flower
Pultenaea microphylla	-
Solanum prinophyllum	Forest Nightshade

Source: Site Image

2.5.8. Landscaping

The extent of estate landscaping works forming part of the Stage 1 Development package is described in **Table** 13 and detailed in drawings at **Appendix I.**

The staging of these works would align with the proposed construction staging for the Estate Works. On-lot landscaping would be completed as part of the staged development of each lot with only Lot 1 and Lot 3 on-lot works included in this current SSD DA.

Table 13 AIE Stage 1 Proposed Landscaping

Landscape Zones	Landscape Character
Estate Entry and Primary Road Frontage	▪ A 20m building setback is established along the boundary of Mamre Road with a minimum 10m landscaping. ▪ Site entry to be marked with Mirvac Estate Signage and associated landscape treatment.
Estate Streetscapes	▪ Street-tree planting in the form of copses rather than traditional avenue tree planting emulating a more natural pattern of vegetation.
Landscape Interfaces and Transitions	Bio-retention basin ▪ Landscaping of basins to be principally functional and informed by the relevant Penrith City Council requirements. Riparian corridor ▪ Landscaping within the riparian corridor is subject to a vegetation management plan (VMP), which will use appropriate native aquatic macrophyte and River-flat Eucalypt-forest species including trees, shrubs and groundcover species. Further detail on the VMP, refer to **Appendix P**. Defendable Zones: ▪ Defendable zones to be established within landscape zones as required for bushfire protection. ▪ Defendable zones to be delineated by maintenance pathways or concrete strip edging (or similar). ▪ Landscape treatment to consist of managed lawn area (mowed and maintained). ▪ Scattered tree plantings as appropriate designed to avoid connecting canopy areas across the defendable space.
Batters and Retaining Walls	▪ Batters and retaining walls highly exposed to the public domain would be landscaped to soften and screen appearance and integrate them into the landscape of the AIE. ▪ Landscape treatment of embankments would be designed to serve the dual purpose of stabilising the landform and integrating it into

Landscape Zones	Landscape Character
	the landscape of the AIE through tree planting and groundcover.

The proposed species to be included in the above landscape zones is as follows:

- Mamre Road Frontage Planting
  - Spotted Gum *(Corymbia maculate)*
  - Thin leaved stringybark *(Eucalyptus eugenioides)*
  - Prickly Leaved Paperbark *(Melaleuca styphelioides)*
  - Lilly Pilly *(Acmena smithii var.* minor)
  - Bottlebrush *(Callistemon* 'Endeavour')
  - Dwarf Bottle Brush *(Callistemon* 'Little John')
  - Wedge-leaf Hop-brush *(Dodonaea viscosa subsp. Cuneate)*
  - Honey Myrtle *(Melaleuca linariifolia* 'Claret Tops')
  - Bronze Flax *(Phormium tenax* 'Purpureum')
  - Coastal Rosemary *(Westringia fruticose)*
  - Pigface *(Carpobrotus glaucescens)*
  - Silver Gazania *(Gazania tomentose)*
  - Purple Coral Pea *(Hardenbergia violacea)*
  - Matt Rush *(Lomandra longifolia)*
  - Creeping Boobialla *(Myoporum parvifolium)*
  - Tussock Grass *(Poa* 'Kingsdale')
  - Swamp Foxtail Grass *(Pennisetum* 'Nafray')
  - Star Jasmine *(Trachelospermum jasminoides)*
- Boundary Planing
  - Spotted Gum *(Corymbia maculate)*
  - Narrow-leaved ironbark *(Eucalyptus crebra)*
  - Thin-leaved Stringybark *(Eucalyptus eugenioides)*
  - Grey Box *(Eucalyptus moluccana)*
  - Lilly Pilly *(Acmena smithii var.* minor)
  - Bottlebrush *(Callistemon* 'Endeavour')
  - Wedge-leaf Hop-brush *(Dodonaea viscosa subsp. Cuneate)*
  - Pigface *(Carpobrotus glaucescens)*
  - Purple Coral Pea *(Hardenbergia violacea)*
  - Silver Gazania *(Gazania tomentose)*
  - Creeping Boobialla *(Myoporum parvifolium)*
  - Tussock Grass *(Poa* 'Kingsdale')

- Swamp Foxtail Grass *(Pennisetum* 'Nafray')

- Stormwater Basin
  - *Carex inversa*
  - Matt Rush *(Lomandra longifolia)*
  - Blady Grass *(Imperata cylindrica var. major)*
  - Common Rush *(Juncus usitatus)*
  - Blady Grass *(Imperata cylindrica var major)*
  - Tussock Grass *(Poa labillardieri)*
  - Kangaroo Grass *(Themeda Australia)*

Figure 21 Stage 1 Landscape Concept Plan

Source: Site Image

2.5.9. Proposed Warehouse Developments on Lot 1 and Lot 3

Overview

This SSD DA includes the construction, fit out and use of buildings and associated on-lot works within Lot 1 and 3 as part of the Stage 1 Development. Lot 1 and Lot 3 are part of the northern-most part within AIE. Lot 1 will accommodate a large warehouse with a potential inter-tenancy wall to accommodate two tenants varying size. Lot 3 will accommodate a single warehouse and distribution building. Lot 1 is primarily accessed via Access Road 01 with a secondary access via Access Road 02. Lot 3 is accessed off Access Road 02 with Fire Brigade egress to Access Road 01.

The design of both lots aims to maximise the flexibility in site layout and configuration and building floor plates to accommodate a range of potential end users. The proposal on both lots includes:

- Detailed on-lot earthworks to refine final levels and establish final building pads;
- On-lot stormwater and utility infrastructure and service connection;
- Construction and operation of warehouse buildings on the two development sites in the configuration shown on the Architectural Plans at **Appendix D**;
- Construction and operation of café within Lot 1;
- Construction of site access, hardstand, car parking and loading areas;
- Fit out of buildings as shown on development plans; and
- Landscaping of development sites in accordance with landscape plans for each precinct.

Figure 22 Illustrations of Lots 1 and 3

Picture 11 Vehicle Entrance, Café and Office 1A at Lot 1

Picture 12 Entrance via Mamre Road with Lot 1 in the background

Source: Impact Media

Warehouse 1 Development

The SSD DA includes the construction, fit out and use of buildings and café, and associated on-lot works on Lot 1 as part of Stage 1 of the development. Warehouse 1 is located in the north-west corner of the AIE, representing the gateway to the estate.

Warehouse 1 development has the flexibility to be split into two separate tenancies (Warehouse 1A and Warehouse 1B) if required. Access to Warehouse 1A would be off Access Road 01 for both truck and car, with car and truck access to Warehouse 1B off Access Road 02.

The design of the warehouses aims to maximise flexibility in site layout and configuration and building floor plates to accommodate a range of potential end users. The proposed works associated with the construction on Warehouse 1 includes the following:

- Detailed on-lot earthworks to refine levels and establish building pads;
- On-lot stormwater and utility infrastructure and services connections;

- Construction and operation of the single warehouse building that has the flexibility to be divided into two separate tenancy areas (Warehouse 1A and Warehouse 1B), as shown on the Stage 1 Architectural Plans;
- Construction and operation of café with Warehouse 1A;
- Fit out of the warehouses as shown on Stage 1 Architectural Plans, including standard racking and office fit out; and
- Landscaping of the development site in accordance with Stage 1 Landscape Plans.

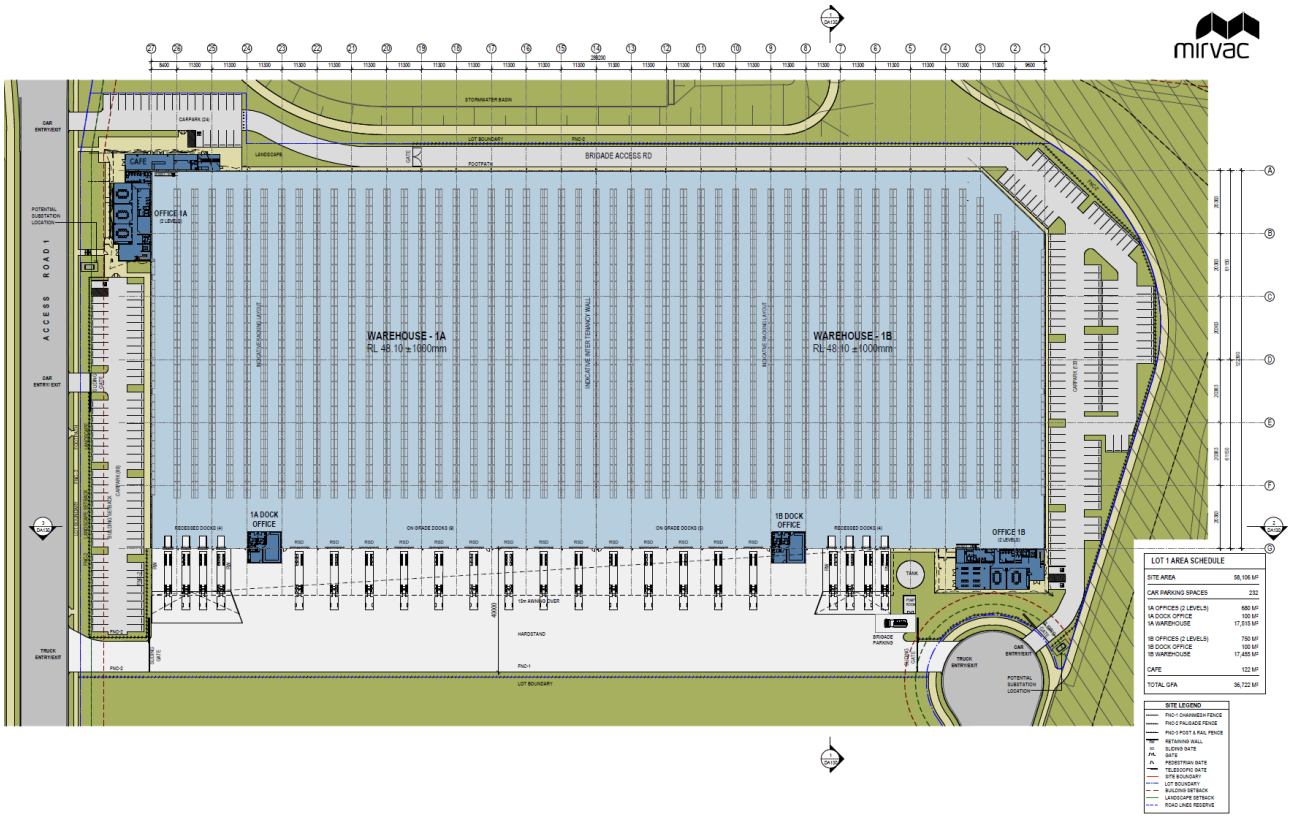
Figure 23 Illustrative Image of Warehouse 1 Development

Picture 13 Warehouse 1A Office and Café from Access Road 1

Picture 14 Warehouse 1B Office from North East

Source: SBA Architects

Figure 24 Proposed Warehouse 1A and Warehouse 1B Development



Source: SBA Architects

Development Site

The total warehouse floorplate is 34,970m^2 with an additional 1,630m^2 allocated to ancillary office and a café. The floorplate seeks to enable flexibility in the ultimate configuration of space. The warehouse building

is serviced by a central hardstand area for loading and manoeuvring, separate car parks and landscaped perimeters.

The proposed building height of 13.7m responds to the needs of modern warehousing operations in terms of internal clearances. The building is designed to address street frontages with office areas and primary entrances oriented toward key access roads. Building materials comprise a mixture of non-combustible metal cladding and concrete panels.

A summary of Warehouse 1 is provided in **Table 14** with detailed provided in the Stage 1 Architectural drawings at **Appendix D**.

Table 14 Summary of the proposed AIE Warehouse 1 Development

	Warehouse 1A	**Warehouse 1B**	**Lot 1 Total**
Site Area	-	-	58,106m^2
Total GFA	18,295m^2	18,305m^2	36,722m^2
Warehouse GFA	17,515m^2	17,455m^2	32,970m^2
Office GFA	680m^2	750m^2	1,430m^2
Dock Office GFA	100m^2	100m^2	200m^2
Café GFA	-	-	122m^2
Building Height	13.7m	13.7m	13.7m

Access and Loading

Warehouse 1 provides separate access for heavy and light vehicles with car parking also separated from loading docks and manoeuvring areas. All access points and internal driveways, service and circulation areas are designed to be compliant with AS 2890.1 and 2890.2 and accommodate the turning paths of B-Double vehicles (the largest proposed vehicle to access AIE) in accordance with Austroad requirements and Australian Standards. Access and loading arrangements are outlined below.

- Warehouse 1A
  - Service and loading access from Access Road 01;
  - Separate car parking access from Access Road 01;
  - Internal hardstand designed for two-way circulation with ingress and egress available via the same access point,;
  - Four recessed and nine on grade loading docks.
- Warehouse 1B
  - Service and loading access from Access Road 02;
  - Separate car parking access from Access Road 02;
  - Internal hardstand designed for two-way circulation with ingress and egress available via same access point;
  - Four recessed and five on grade loading docks

The Fire Brigade access driveway is provided around the northern and western perimeters of the Warehouse 1 building.

Car Parking

Parking rates for the proposed Lot 1 are provided in accordance with the DCP parking provisions outlined in Aspect Industrial Estate DCP. The breakdown of parking spaces provided are the following:

- Warehouse 1A, 1B and Café: 232 spaces

Two percent of on-site parking spaces would be provided as accessible parking spaces, designed in accordance with AS 2890 Part 6: Off-street parking for people with disabilities.

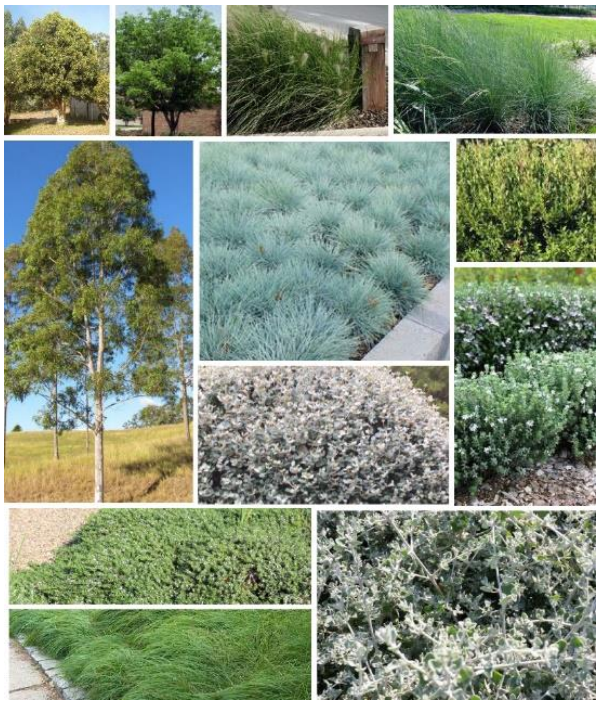
Landscaping

The lot frontages present to the main Estate Access Road (Access Road 01). Planting to the frontages will consist of a variety of native and exotic shrubs, groundcovers and small-medium trees. Security fencing is to be positioned amongst the landscape to recede into planting.

Boundary treatments will feature planting of native shrub grass and groundcovers. For a list of species to be including in the lot frontages and boundaries, refer to Section 2.6.8 above.

Landscaping proposed as part of the development of Lot 1 includes on-lot landscaping as described in plans at **Appendix I**. **Figure 25** illustrates the proposed planting types.

Figure 25 Proposed Planting Types



Source: Site Image

Services and Utilities

Utility connections will be made to the lot from the estate utility service connections in the road reserve. Electricity feeder connections may be required to the existing Mamre or Kemps Creek zone substation subject to future occupant capacity requirements.

Stormwater will be piped from the roof and hardstand into the Estate stormwater system and discharged into the on site detention basin in the north west corner of the estate.

Signage

Site signage has been designed to support the overall urban and landscape masterplan.

Signage locations are shown on the Warehouse 1 elevation plans at **Appendix D**. Tenant signage is proposed as follows:

- One Estate and tenant sign on north elevation
- One Estate and tenant sign on south elevation

- Two Estate tenant signs on west elevation

Smaller tenant signs are located closer to office entry courtyards to reinforce pedestrian paths and clearly identify entries into office buildings.

Use

It is proposed that Warehouses 1A and 1B be used as 'warehouse and/or distribution centres' as defined under the WSEA SEPP including ancillary office space with operations 24 hours a day, seven days a week.

A café space serving the convenience needs of workers within the AIE will be located at the south western corner of Warehouse 1, printing the main estate access road.

Fit Out

Proposed fit out of Warehouses 1A and 1B would comprise of the following key elements:

- Installation of basic racking systems within the warehouse space;
- Basic fit out of office and dock office space including flooring, ceiling, lighting, services and amenities; and
- Standard finishes to lobby/reception areas.

Proposed fitout of the Café space is as shown on the architectural plans at **Appendix D**.

Fitout details are shown on the accompanying Warehouse 1 drawings at **Appendix D**.

2.5.9.1. Warehouse 3 Development

The SSD DA includes the construction, fit out and use of buildings and associated on-lot works within Warehouse 3 as part of Stage 1 of the development. Warehouse 3 is located in the north-east corner of the AIE.

Access to Warehouse 3 will be off Access Road 02 for both trucks and cars.

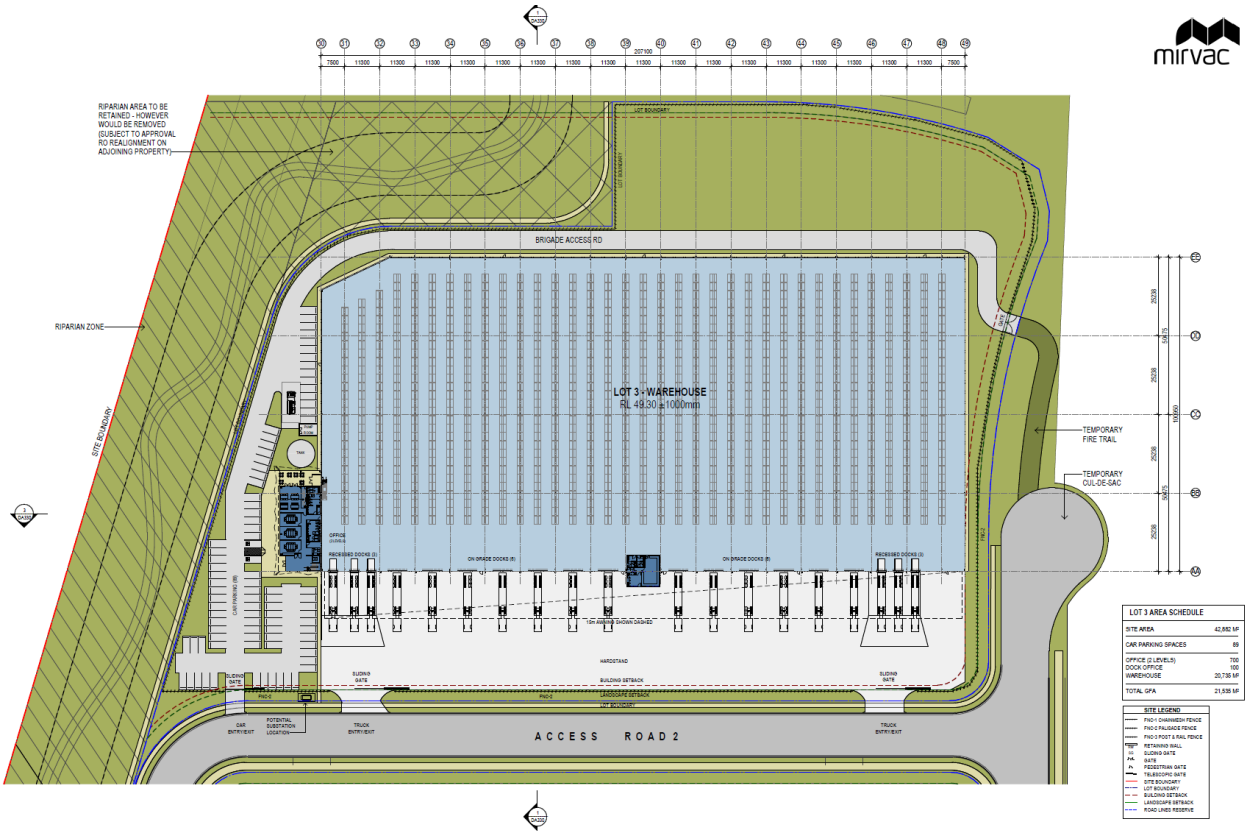
The design of the warehouse aims to maximise flexibility in site layout and configuration, and building floor plates to accommodate a range of potential end users. The development of Warehouse 3 includes the following:

- Detailed on-lot earthworks to refine levels and establish building pads;
- On-lot stormwater and utility infrastructure and services connection;
- Construction of one building as shown on the Stage 1 Architectural Plans;
- Fit out of Warehouse 3 as shown on Stage 1 Architectural Plans, including standard racking and office fit out; and
- Landscaping of Warehouse 3 in accordance with Stage 1 Landscape Plans.

Figure 26 Illustrative Image of Lot 3 Development

Source: SBA

Figure 27 Proposed Warehouse 3 Development



Source: SBA Architects

Development Site

The total warehouse gross floor area is 20,735m^2 with an additional 800m^2 allocated to ancillary office and dock office. The floorplate seeks to enable flexibility in the ultimate configuration of space. The warehouse building is serviced by a central hardstand area for loading and manoeuvring, separate car parks and landscaped perimeters.

Building heights respond to the needs of modern warehousing operations in terms of clearance with a maximum height of 13.7m. The building is designed to address street frontages with office areas and primary entrances oriented toward key access roads. Building materials are a mixture of non-combustible metal cladding and concrete panels.

A summary of Lot 3 building is provided in **Table 15** with detailed provided in the Stage 1 Architectural drawings at **Appendix D**.

Table 15 Summary of the proposed AIE Warehouse 3 Development

	Warehouse 3
Site Area	42,882m^2
Total GFA	21,535m^2
Warehouse GFA	20,735m^2
Office GFA	700m^2
Dock Office GFA	100m^2
Building Height	13.7m

Access and Loading

Lot 3 provides separate access for heavy and light vehicles with car parking also separated from loading docks and manoeuvring areas for each warehouse. All access points and internal driveways, service and circulation areas are designed to be compliant with AS 2890.1 and 2890.2 and accommodate the turning paths of B-Double vehicles (the largest proposed vehicle to access AIE). Access and loading arrangements are outlined below.

- Warehouse 3
  - Service and loading access via two crossings from Access Road 02;
  - Separate car parking access from Access Road 02;
  - Internal hardstand designed for two-way circulation with ingress and egress via same access point;
  - Six recessed and 12 on grade loading docks.
  - Fire Brigade access around the northern and eastern perimeter of the site accessed between Access Road 01 and Access Road 02.

Car Parking

Parking rates for the proposed Lot 3 are provided in accordance with the DCP parking provisions outlined in Aspect Industrial Estate DCP. The breakdown of parking spaces provided are the following:

- 89 spaces

Two percent of on-site parking spaces would be provided as accessible parking spaces, designed in accordance with AS 2890 Part 6: Off-street parking for people with disabilities.

Landscaping

Landscaping proposed as part of the development of Lot 3 includes on-lot landscaping as described in plans at **Appendix I** and **Figure 25** above.

The lot frontages present to the Estate access roads. Planting to the frontages will consist of a variety of native and exotic shrubs, groundcovers and small-medium trees. Security fencing is to be positioned amongst the landscape to recede into planting.

Boundary treatments will feature planting of native shrub grass and groundcovers. For a list of species to be including in the lot frontages and boundaries, refer to Section 2.5.8 above.

Services and Utilities

Utility connections will be made to the lot from the estate utility service connections in the road reserve unless further lead-in infrastructure is required from utility authorities.

Stormwater will be piped from the roof and hardstand into the Estate stormwater system and discharged into the on site detention basin in the north west corner of the estate.

Signage

Site signage has been designed to support the overall urban and landscape masterplan.

Signage locations are shown on the Warehouse 3 elevation plans. Tenant signage is proposed as follows:

- One Estate and tenant sign on south elevation
- One Estate tenant signs on west elevation

Smaller tenant signs are located closer to office entry courtyard to reinforce pedestrian paths and clearly identify entries into office buildings.

Use

It is proposed that Warehouse 3 be used as ‘warehouse and/or distribution centre’ as defined under the WSEA SEPP including ancillary office space with operations 24 hours a day, seven days a week.

Fit Out

Fit out of Warehouse 3 would comprise of the following key elements:

- Installation of basic racking systems within the warehouse space;
- Basic fit out of office and dock office space including flooring, ceiling, lighting, services and amenities; and
- Standard finishes to lobby/reception areas.
- Fitout details are shown on the accompanying Lot 3 drawings at **Appendix D**.

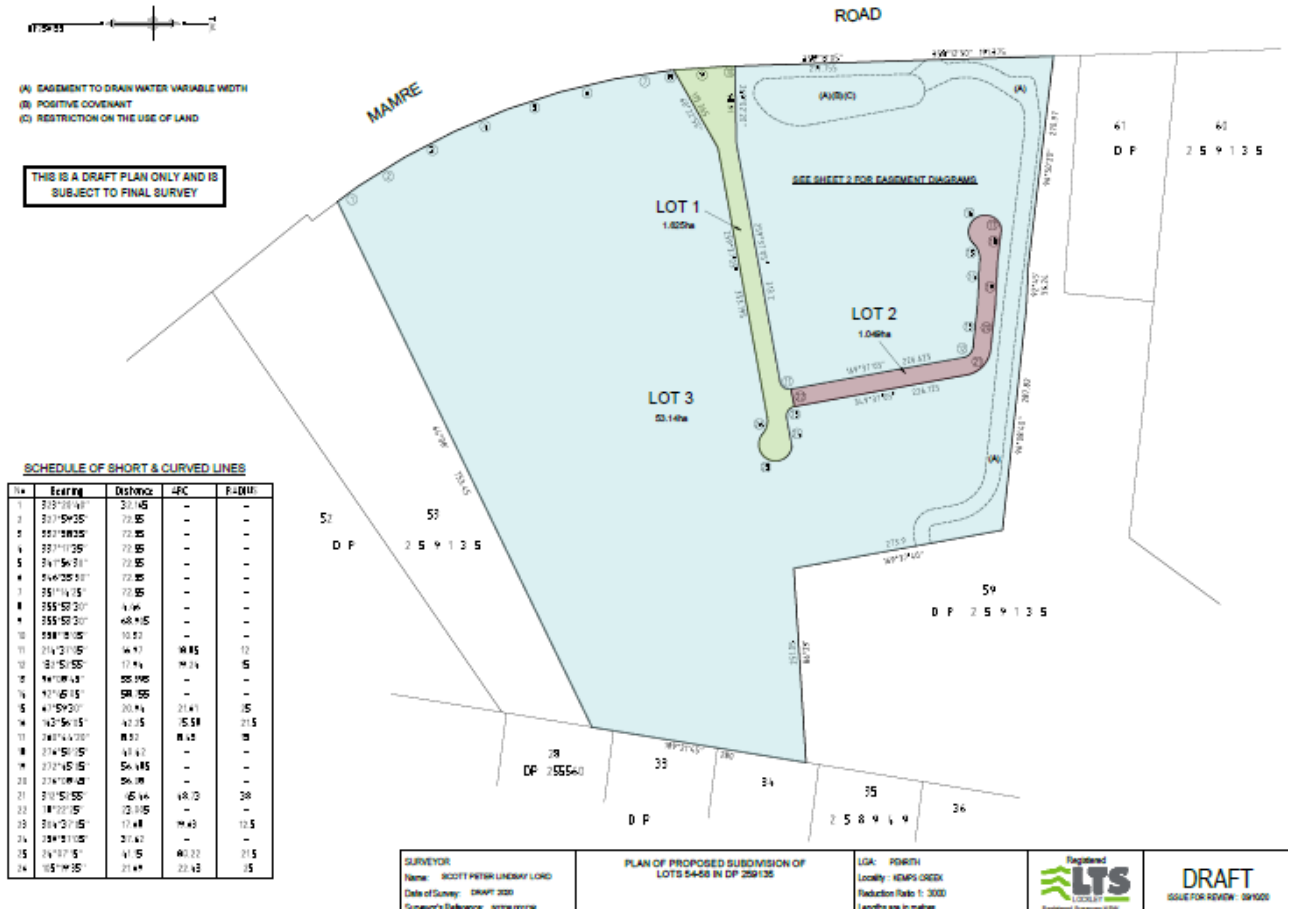
2.5.10. Subdivision

The subdivision of AIE would be based around the following:

- One development lot to remain under the ownership of Mirvac (Lot 3); and
- Two Road Lots incorporating internal access roads to be dedicated to Penrith City Council (Lots 1 - 2).

The proposed draft subdivision layout for the AIE is shown at **Figure 28** below.

Figure 28 Proposed Draft Plan of Subdivision



Source: SBA Architects]

3. STRATEGIC AND STATUTORY CONTEXT

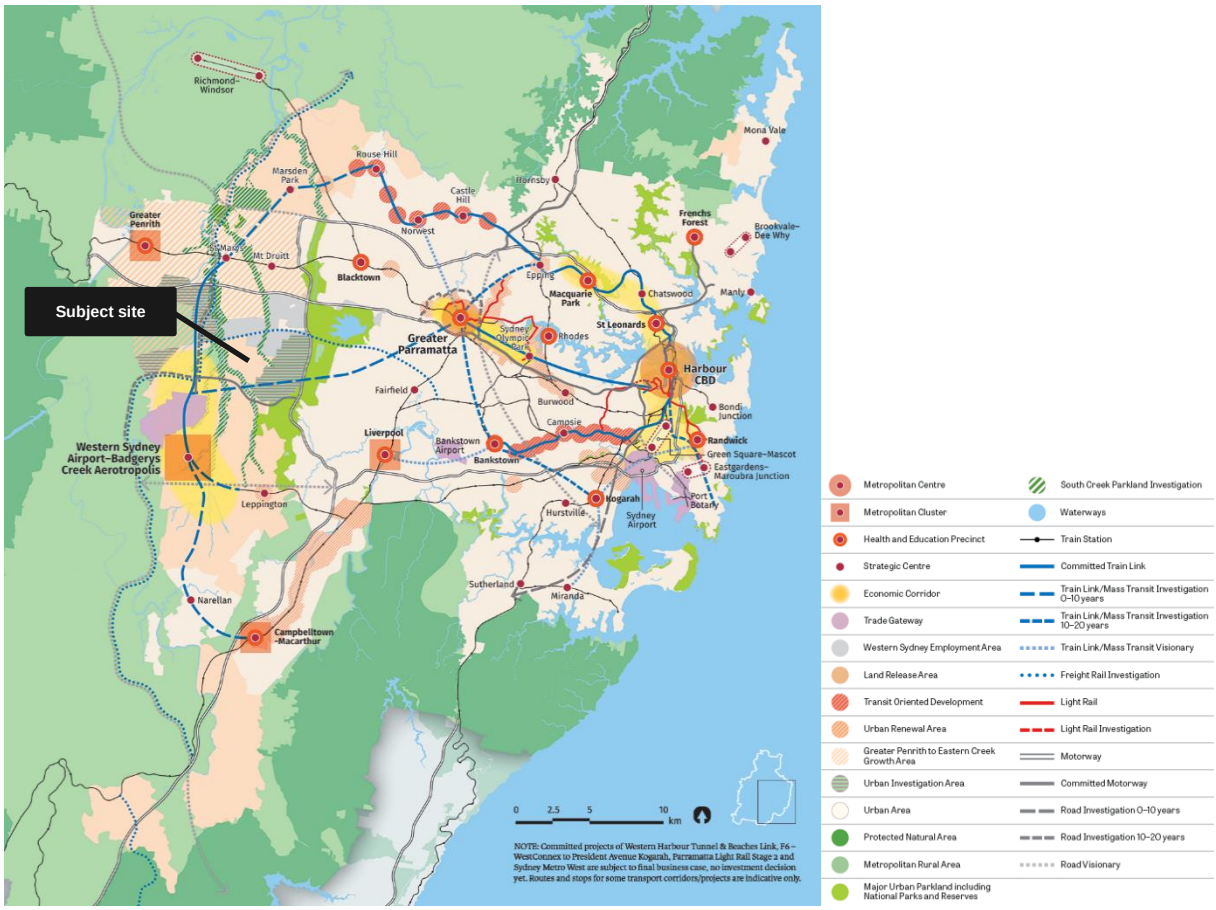
3.1. STRATEGIC CONTEXT

3.1.1. A Metropolis of Three Cities: Greater Sydney Region Plan

A Metropolis of Three Cities: Greater Sydney Region Plan (Region Plan) was finalised in March 2018. The Region Plan has been prepared in accordance with Section 3.3 of the EP&A Act. The Region Plan is built on a vision of three cities, where most residents live within 30 minutes of their jobs, education and health facilities, services and great places. It identifies four themes: infrastructure and collaboration, liveability, productivity, and sustainability. Within these four themes, a set of planning priorities and actions are identified to achieve the Region Plan's vision.

The Region Plan includes a high-level structure plan identifying key centres, employment areas, and important infrastructure contributions. The site is identified as a land release area (refer to **Figure 29** below).

Figure 29 Region Plan's Structure Plan



Source: Greater Sydney Commission

The proposed development supports the vision of the Region Plan as summarised below:

- **Infrastructure and collaboration**: The site is accessible to existing road infrastructure. It fronts Mamre Road which provides direct access to the M4 Motorway, Great Western Highway and Elizabeth Drive. This road is undergoing detailed design for an upgrade by RMS to service the future employment lands. In addition, the proposal seeks to provide essential infrastructure, e.g. sewer, water, electricity, gas and telecommunications to the site. Preliminary discussions regarding the servicing of the site has commenced with Sydney Water, Jemena, NBN, and Endeavour Energy.

  Through the Western Sydney City Deal, there are significant infrastructure commitments proposed to service the Western Sydney International Airport and significant road upgrades and public transport projects to support the future employment of the site and surrounding area.

- **Liveability**: The proposed development will support the 30-minute city by providing employment to nearby residential suburbs. It is surrounded by land identified for future employment. The proposed future uses on the site will not negatively impact on nearby residential.
- **Productivity**: The proposed development responds to the industrial land shortfall identified in the Region Plan. The site is well-located to the M4 and M7 Motorways and supports the vision of the Western Sydney Aerotropolis.

3.1.2. Western City District Plan

The *Western City District Plan* (District Plan) was finalised by the Greater Sydney Commission in conjunction with the Region Plan in March 2018. The District Plan has been prepared in accordance with Section 3.4 of the EP&A Act. The proposed development aligns with the vision of the District Plan, as summarised below:

- **Infrastructure and Collaboration**: The proposed development will assist in the delivery of essential infrastructure needed to support the Western Parkland City.
- **Liveability**: The proposed development will deliver employment opportunities accessible to nearby residents, thus contributing to the 30-minute city vision.
- **Productivity**: The site is within the Western Sydney Aerotropolis and surrounded by land identified for future employment. The proposed development will supply industrial lands within a land release area in response to long-term projected population and development growth.
- **Sustainability**: The proposal includes a range of measures to mitigate, minimise or manage the potential environmental impact of the proposal. The EIS will detail stormwater management measures to protect and manage the existing natural systems and ecologically sustainable development initiatives to minimise demand on infrastructure systems, such as sewer, water and electricity.

3.1.3. Future Transport 2056

The Future Transport Strategy sets the 40 year vision and strategy for managing the growth of transport services and infrastructure in NSW over the next 40 years. It has been developed alongside the Region Plan in order to provide an integrated planning framework for NSW, that supports the repositioning of Sydney as a metropolis of three cities.

For Greater Sydney, the plan is also built on the same vision of the 30-minute city, which it says will be underpinned by an integrated network of city-shaping, city-serving and centre serving corridors. To support this vision, transport for NSW has established 6 outcomes for Greater Sydney which demonstrate its aspirations for transport over the next 40 years. These outcomes will be used to guide transport services and infrastructure in Greater Sydney to 2056. The identified and relevant Greater Sydney outcomes include:

1. Successful places
2. A strong economy
3. Safety and performance
4. Accessible services
5. Sustainability

Transport networks in the Western Parkland City will be developed in order to support sustainability and jobs growth in the District. The plan identifies that strategic transport corridors, which include city-shaping, city-serving and centre-serving networks will integrate the city to create 30-minute connections to strategic centres and metropolitan centres and clusters. The WSA, as an economic catalyst, is also identified as a key node in this network that will be served by north-south rail links and east-west connections.

The proposed development will facilitate the delivery of city shaping corridors through the partial upgrade to Mamre Road fronting the site. This will enable better connections to and from the site to the broader region.

3.1.4. Freights and Ports Plan 2018 – 2023

The NSW Freight and Ports Plan 2018 – 2023 sets clear initiatives and target to make the NSW freight task more efficient and safe so NSW can continue to move and grow. The Western Sydney Freight Line and

Intermodal Terminal are initiatives identified to contribute to the growing demand on logistics in Western Sydney through the delivery of the Western Sydney Airport and Aerotropolis.

The proposed development does not impact the delivery of these initiatives, and contributes to the delivery of jobs withing a 30 minute catchment of the Aerotropolis.

3.1.5. Western Sydney Aerotropolis Plan

The *Western Sydney Aerotropolis Plan* (WSAP) finalised in October 2020 , has been developed by the Western Sydney Planning Partnership and sets the planning framework for the Western Sydney Aerotropolis. Mamre Road Precinct, including the site, is identified as one of ten precincts within the growth area. Mamre Road Precinct is an initial precinct to be brought forward to create early employment opportunities and better coordinate infrastructure planning.

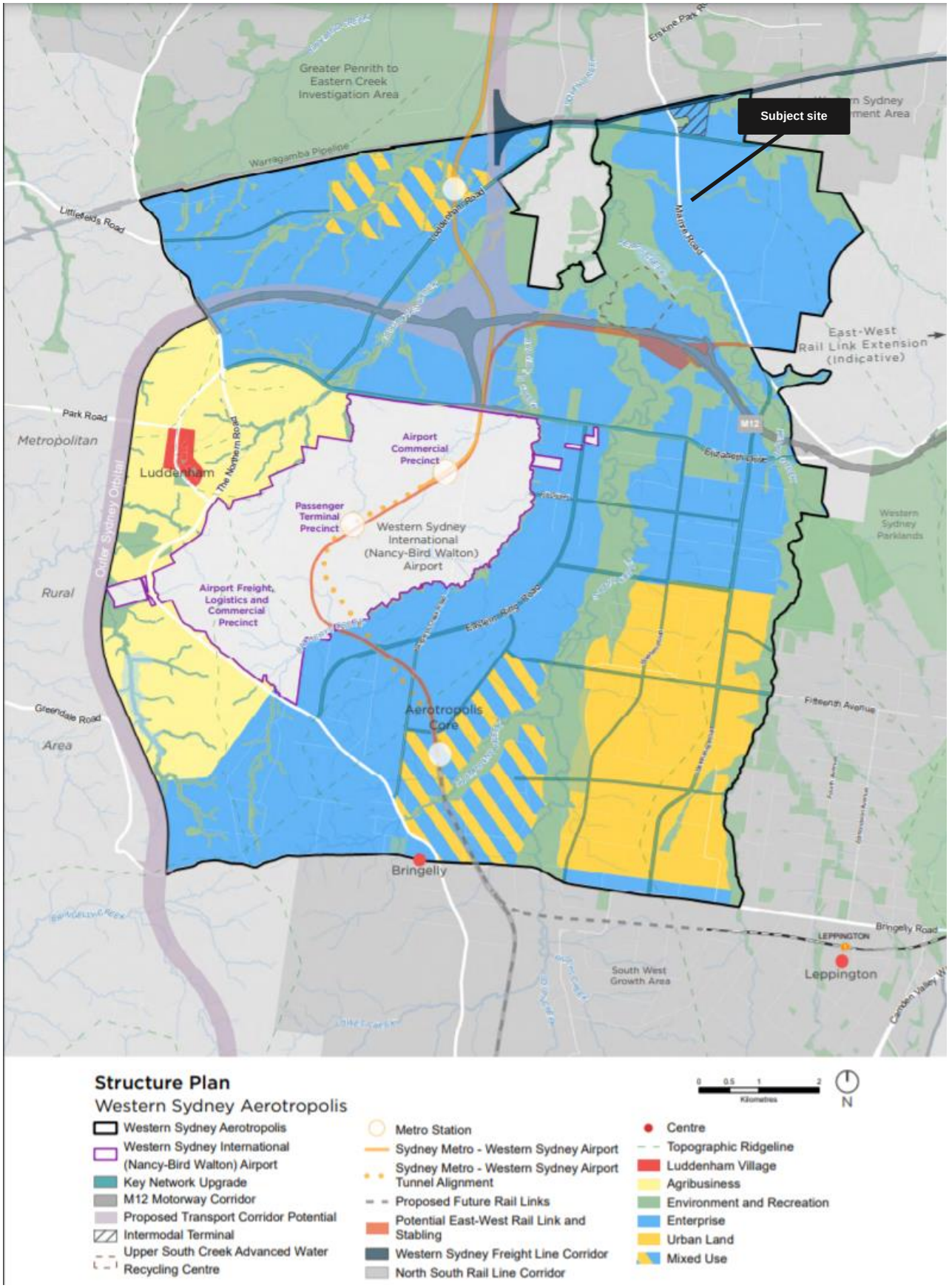
The WSAP identifies the planning pathway for Mamre Road Precinct under the WSEA SEPP, as the future employment land uses anticipated for the precinct align with the existing objectives of the WSEA. The Structure Plan identifies land within Mamre Road Precinct to be zoned for flexible employment (**Figure 30**) with intended land uses being industrial, warehousing and logistics. The statutory planning pathway will be separate from the remaining Aerotropolis precincts and the Mamre Road Precinct will have its own Development Control Plan.

Part 5 of the WSAP outlines measures to protect the 24-hour operations of the Western Sydney (Nancy-Bird Walton) International Airport. Key initiatives include:

- preventing the encroachment of noise-sensitive land uses into areas affected by aircraft noise and operational airspace
- locating buildings to avoid wind shear and turbulence
- managing wildlife attraction
- locating wind turbines appropriately
- ensuring lighting does not distract/confuse pilots
- maintain an obstacle free operational space
- ensuring off-airport development does not impact the communication, navigation and surveillance (CNS) equipment
- managing land uses in public safety areas.

The proposed development does not impact the future airports operations. Further information on airport safety measures are outlined in **Section 5** below.

Figure 30 Western Sydney Aerotropolis Structure Plan

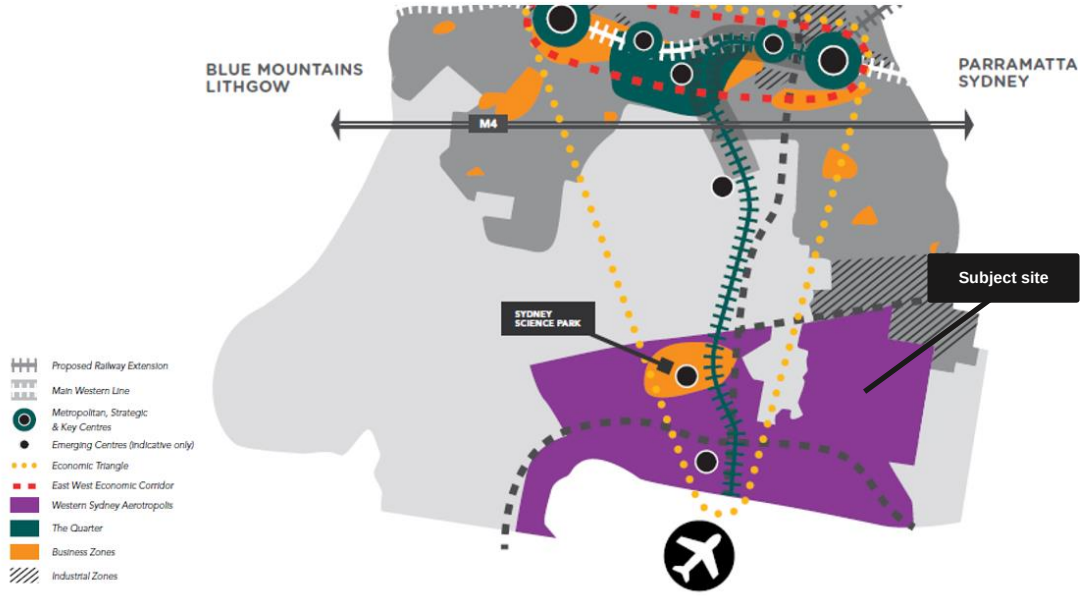


Source: Planning Partnership Office

3.1.6. Penrith Local Strategic Planning Statement

The Penrith Local Strategic Planning Statement (LSPS) was finalised on 23 March 2020. The LSPS identifies the vision and priorities for land use across the LGA, as well as outline the special character and values of the place and how they will be managed into the future. The Structure Plan identifies land within Mamre Road Precinct within the Western Sydney Aerotropolis. The LSPS identifies Western Sydney Aerotropolis as a key employment generator for the LGA and seeks to create an economic triangle with Penrith CBD and St Marys (refer below). The LSPS defers the details on the types of employment within the Western Sydney Aerotropolis to the Western Sydney Aerotropolis Plan, the main strategic planning document guiding this growth area.

Figure 31 Penrith's Economic Triangle



Source: Penrith City Council

3.1.7. Western Sydney Employment Area

The AIE forms part of the strategically significant employment precinct known as the WSEA, which is identified and endorsed in Region, District and local planning strategies.

Since the delivery of the M7 Motorway, the WSEA has developed rapidly into a freight and logistics hub which rivals many other industrial locations in Greater Sydney. The greenfield location offers opportunities for modern, custom design facilities and its proximity to Sydney's Motorway Network provides convenient access to Port Botany and Sydney Airport without the exposure to the congestion and vehicle restrictions present in many of the more established, inner ring industrial areas. Shifting land economies in these inner ring areas has also contributed to the growing dominance of the WSEA in Sydney's industrial market due to its ability to offer a supply of large, flat sites at a competitive market rate.

The importance of WSEA for employment will further be amplified through the delivery of the Western Sydney International (Nancy-Bird Walton) Airport, which will open 24-hour airport operations to Greater Sydney.

The WSEA supports the economy's global function and promotes employment, such as industrial uses, freight, logistics and research and development functions, as well as opportunities for agribusiness and food production,

3.1.8. Mamre Road Structure Plan

The Mamre Road Structure Plan identifies the development intent for the precinct, highlighting future industrial, environment and drainage areas, as well as identifying key infrastructure required to support the precinct.

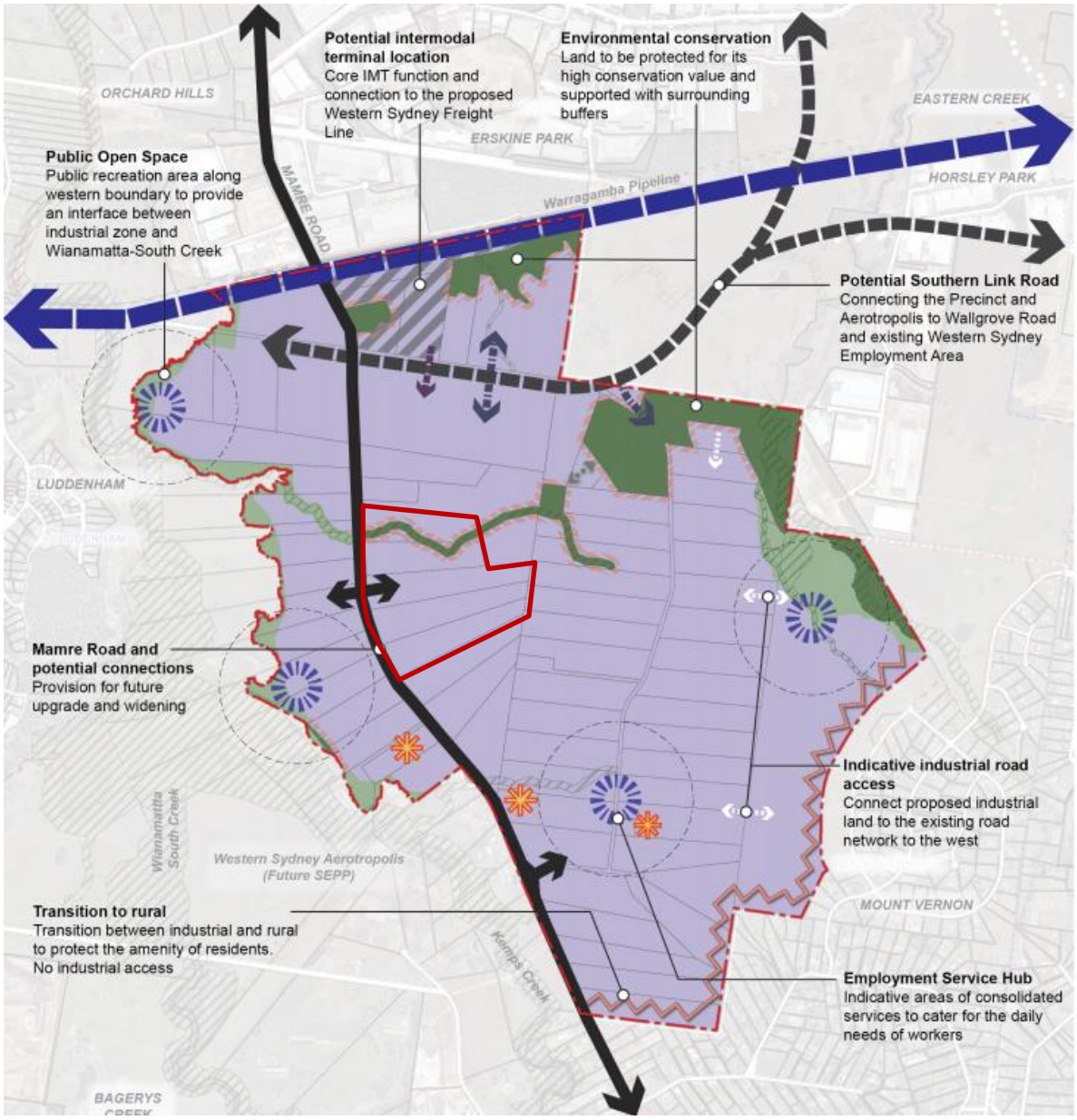
The site is identified for industrial land within the structure plan area. It includes a riparian zone that traverses the site.

The proposed masterplan delivers on the intent of the Structure Plan as it relates to the subject land, however seeks to do this in a way that will optimise both environmental and riparian outcomes and the efficient development of the site for warehouse and distribution purposes.

It is proposed to construct a new creek alignment along the northern boundary to maintain an east-west green grid connection between Ropes Creek and South Creek and significantly improve the quality of the riparian corridor across this site. The design of the buildings adjacent to this proposed creek corridor enables a sensitive transition from the warehouse uses to the environmental land to the north comprising the new creek corridor.

The proposed masterplan sets the framework for future internal road network connections to the broader precinct.

Figure 32 Mamre Road Structure Plan



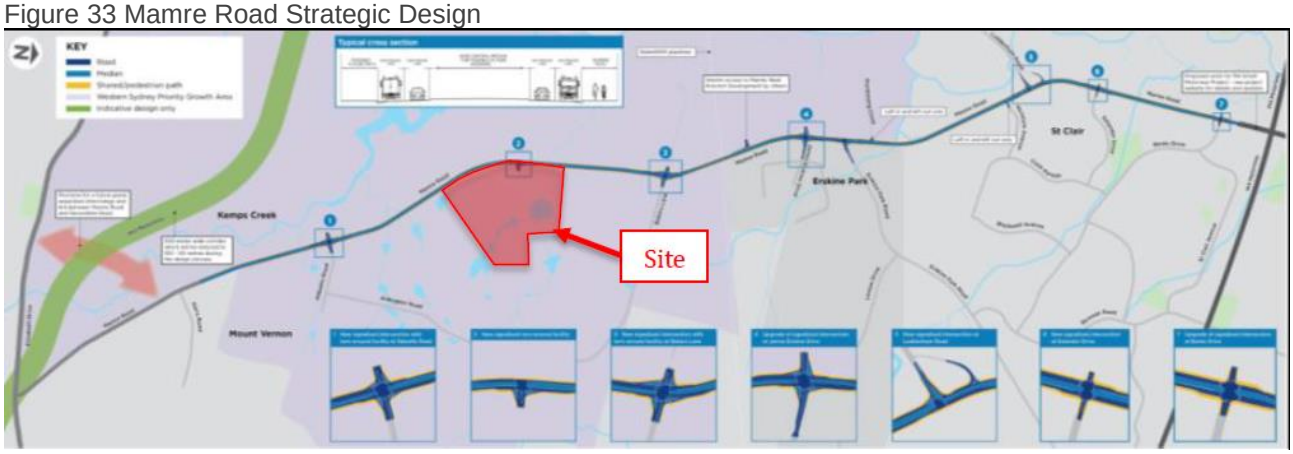
Source: Department of Planning, Industry and Environment

3.1.9. Mamre Road Upgrade

The NSW Government has started planning for a future upgrade of Mamre Road between Kerrs Road and the M4 Motorway, to support economic and residential growth in this area. The Mamre Road upgrade is part of a plan to progressively upgrade arterial roads in Western Sydney to deliver a more efficient, reliable network that meets the future needs of the community and the economy. This includes the need to support Western Sydney Airport and the Aerotropolis.

The proposed corridor width for Mamre Road as a Primary Arterial Road is 50 metres. Transport for NSW, formerly known as Roads and Maritime Services, has completed the strategic design for the Mamre Road upgrade. The strategic design is publicly available and identified intersections (refer to **Figure 33** below).

Figure 33 Mamre Road Strategic Design



Source: Roads and Maritime Services

The proposed development reflect the strategic design outcomes and has incorporated the future upgrade into the overall design. This includes delivering an upgraded interim intersection to Mamre Road to facilitate future access to and from the site.

3.2. STATUTORY CONTEXT

3.2.1. Approvals Process

The AIE proposal is classified as SSD pursuant to Section 4.36 of the EP&A Act and also seeks consent for 'staged development' as defined under Section 4.22 of the EP&A Act. The Minister for Planning and Public Spaces is the consent authority.

Pursuant to Section 4.41 of the EP&A Act, the following approvals, permits and concurrences do not apply to SSD:

- A permit under section 201, 205, or 219 of the *Fisheries Management Act 1994,*
- Approval under Part 4 or an excavation permit under section 139 of the *Heritage Act 1977;*
- An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974;*
- A bushfire safety authority under section 100B of the *Rural Fires Act 1997; and*
- A water use approval under Section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000.*

3.2.2. Environmental Protection and Biodiversity Conservation Act 1999

The Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) aims to protect the environment and matters of national environmental significance, including flora, fauna, ecological communities and heritage.

As discussed in **Section 1**, the land has been historically used for agricultural uses and farming with little disturbance. The site has gradually been cleared of vegetation and has been subject to the construction of farms dams. Eco Logical Australia Pty Ltd (Eco Logical) was engaged to prepare a Biodiversity Development

Assessment Report (BDAR) **Appendix O** in accordance with the NSW Framework and in consultation with Natural Resources Access Regulator (NRAR). A habitat assessment was undertaken and identified the Latham's Snipe and Grey-headed Flying-fox as 'Matters of National Environmental Significance'. The assessment concluded that the development will not have a significant impact on either species.

3.2.3. Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) aims to maintain a healthy, productive and resilient environment in accordance with Ecologically Sensitive Development (ESD) principles, including an assessment framework for determining the likely impacts of development on biodiversity and threatened species and a consistent methodology for calculating measure to off-set those impacts.

The BDAR has been prepared in accordance with the NSW BC Act. The investigation identified that the Cumberland Plain Woodland, listed as critically endangered under the BC Act was in poor condition. The report concluded that although 0.61 ha of Cumberland Plain Woodland will be removed as a result of the proposal, due to its poor condition, no offsets consistent with the Biodiversity Offsets Scheme are required. The proposal's compliance with the BC Act is detailed in **Appendix O**.

3.2.4. Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) outlines the strategic and statutory planning framework for the State and establishes the process by which any development is to be considered for approval by the relevant consent authority. The EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Reg) include provisions relating to the approval of development to ensure that development with the potential to impact the environment is subject to detailed assessment.

Objectives of the EP&A Act

The proposed development is consistent with the objectives of the EP&A Act, as discussed in the table below.

Table 16 Objects of Act

Objects of Act	Response
a. To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.	The proposal seeks to provide industrial uses which is consistent with the strategic planning framework for the Mamre Road Precinct. The proposal provides employment within an area identified for flexible employment generating land uses under the *Western Sydney Aerotropolis Plan*.
b. To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	The proposal seeks to redevelop the site for uses which will provide significant jobs for the local and broader western Sydney communities. The staged development of the land will ensure that detailed design is undertaken that considers all potential economic, environmental and social impacts.
c. To promote the orderly and economic use and development of land.	The strategic planning framework that applies to the land envisaged flexible employment industrial land uses. As such, the proposal has been developed to support the future vision of the Mamre Road precinct.
d. To promote the delivery and maintenance of affordable housing	No residential uses are proposed as part of this SSD DA.

Objects of Act	Response
e. To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats	As detailed in Section 5 of this EIS, a suite of technical studies have been undertaken to determine the environmental impact of the warehouse and distribution centre use on the surrounding natural environment. The technical studies have confirmed that there is limited environmental impact associated with the proposal. Where there is an impact present, this mitigation measure have been implemented as detailed in Section 6 to ensure that it does not cause an unacceptable impact on the surrounding natural environment.
f. To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)	In preparation of this SSD DA, several technical studies have been undertaken to identify the presence of built and cultural heritage and ensure their sustainable management. Refer to section 5.7.7 for an environmental impact assessment of potential built, cultural and Aboriginal cultural heritage.
g. To promote good design and amenity of the built environment	The accompanying Architectural Package (**Appendix D**) and Urban Design Report (**Appendix J**) illustrates the design outcome proposed by the development. The proposed signalised intersection and open space at the entrance along Mamre Road promotes amenity for vehicles entering and exiting the site. The site has been master planned to ensure that the future stages of the development will collectively promote good design and amenity outcomes.
h. To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants	The detailed design of the warehouse buildings and offices will comprise of high quality materials. The health and safety of all occupants remains a top priority of the development, as such, several technical studies have been undertaken to ensure that the development remains safe both in the construction phase and operational phase, these include: ▪ Fire Safety Strategy (**Appendix HH**); and ▪ BCA Compliance assessment (**Appendix II**).
i. To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State	Not relevant to this proposal.

Objects of Act	Response
j. To provide increased opportunity in community participation and environmental planning and assessment	Consultation was undertaken as required by the SEARs. Additionally, the application is required to be notified for a minimum of 28 days which will allow for further consultation opportunities for community participation in the assessment of the application.

This application also relies upon the provisions of s4.38(3) of the Act for the purpose of seeking consent for construction of an 'artificial waterbody'. Section 4.38(3) states that

> *Development consent may be granted despite the development being partly prohibited by an environmental planning instrument.*

An 'artificial waterbody', defined below, is prohibited in the IN1 zone under SEPP WSEA.

> *an artificial body of water, including any constructed waterway, canal, inlet, bay, channel, dam, pond, lake or artificial wetland, but does not include a dry detention basin or other stormwater management construction that is only intended to hold water intermittently.*

3.2.5. Environmental Planning and Assessment Regulation 2000

Clause 275B of the *Environmental Planning and Assessment Regulation 2000* (EP&A Reg) requires that:

> *(1) For the purpose of Section 4.12(1) of the Act, a person cannot apply to a consent authority for consent to carry out development on land within the Mamre Road Precinct unless the application is accompanied by an assessment of the consistency of the proposed development with the Mamre Road Precinct Structure Plan.*

The proposed development has responded to the Mamre Road Structure Plan by addressing the following:

- The majority of the site proposes industrial land uses.
- The realignment of the creek to the northern boundary enables retention of a east-west green grid connection between Ropes Creek and South Creek, and will significantly improve the quality and extent of riparian area on the site from that existing.
- The design of the buildings enables a sensitive transition to the environmental conservation zoned land to the north.
- The proposed masterplan sets the framework for future connections to the broader precinct.
- The proposed internal road network makes provisions for Precinct wide road connections consistent with the Road Structure Plan.

3.2.6. State Environmental Planning Policy (State and Regional Development) 2011

The *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) identifies and established assessment frameworks for SSD and State Significant Infrastructure (SSI). Projects that fall within these categories are subject to an alternative assessment and approval process with the Minister for Planning being the consent authority. Schedule 1 of the SEPP identifies the general classes of SSD including development for the purposes of 'warehouse and distribution centres' with a capital investment value (CIV) of more than $50 million at one location and related to the same operation as SSD.

The works comprising Stage 1 of the SSD DA and AIE (incorporating early works and building works) would have a value of approximately $100 million including Lot 1 building works totalling $79,200,635. The project is therefore appropriately characterised as SSD and approval is sought via a SSD DA to NSW DPIE. The Minister for Planning and Public Spaces is the consent authority.

Other notable provisions of the SRD SEPP including:

- Clause 11 which states that Development Control Plans do not apply to SSD.
- Clause 12 which confirms that staged development applications may still be considered as SSD despite whether individual stages of the development do not meet the minimum threshold.

3.2.7. State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across the State by providing a consistent planning regime for infrastructure and the provision of services.

The SEPP provides an alternative approvals pathway for major infrastructure development and seeks to protect key infrastructure form the potential effects of new development by controlling sensitive development within or adjacent to road and rail corridors.

The SEPP also deals with traffic generating developing and requires referral and concurrence of the NSW RMS, now part of Transport for NSW, for certain development which is expected to generate significant traffic. Schedule 3 of the ISEPP identifies 'traffic generating development' which must be referred to the Transport for NSW for concurrence. The schedule includes development for the purposes of industry incorporating 20,000m^2 or more of gross floor area (GFA).

The overall proposed Estate development would create in the order of 251,000m^2 of total GFA and would therefore exceed the threshold under Schedule 3 of the ISEPP. The Transport for NSW has been consulted as part of the preparation of the EIS and the project would be referred to Transport for NSW as part of the SSD DA process.

3.2.8. State Environmental Planning Policy (Western Sydney Employment Area) 2009

The WSEA SEPP applies to land within the WSEA and provides a framework to guide the efficient release and development of land. The SEPP zones the land and establishes core development controls and design principles as well as setting the framework for regional infrastructure contributions. Part 4 of the WSEA SEPP requires the preparation of a development control plan for any land within the WSEA prior to development consent being granted.

The relevant clauses of WSEA SEPP are detailed below.

Clause 3 – Aims of Policy

WSEA SEPP sets out various aims which are addressed below:

(a) to promote economic development and the creation of employment in the Western Sydney Employment Area by providing for development including major warehousing, distribution, freight transport, industrial, high technology and research facilities,

The proposal includes a concept and detailed Stage 1 application for a warehouse and distribution estate, consistent with this aim.

(b) to provide for the co-ordinated planning and development of land in the Western Sydney Employment Area,

The proposal has been prepared following significant engagement with DPIE and regional infrastructure providers, both prior and subsequent to exhibition and gazettal of Mamre Road Precinct SEPP Amendment. Whilst this proposal will be one of the early developments within the Precinct, the application provides for connections to the main access road, Mamre Road, and provisions for future estate road connections onto adjoining lots, supporting coordinated future development within the Precinct.

(c) to rezone land for employment or environmental conservation purposes,

The land is zoned IN1 General Industrial and E2 Environmental Conservation. The proposal has been designed to reflect this intended future land use zoning, notwithstanding that a revised creek alignment is proposed along the northern boundary of the site which will result in an improved ecological outcome.

(d) to improve certainty and regulatory efficiency by providing a consistent planning regime for future development and infrastructure provision in the Western Sydney Employment Area,

The proponent has been involved in the wider discussions and planning for future infrastructure services and delivery to the new industrial precinct. A VPA will be entered into to provide a contribution to regional infrastructure provision, commensurate with the size of the land, scale of the development and the demand anticipated to be generated on these infrastructure services.

(e) to ensure that development occurs in a logical, environmentally sensitive and cost-effective manner and only after a development control plan (including specific development controls) has been prepared for the land concerned,

The proposal is in accordance with the structure plan, however seeks a solution to provide for riparian land via an east-west connection across the site.

(f) to conserve and rehabilitate areas that have a high biodiversity or heritage or cultural value, in particular areas of remnant vegetation.

This proposal seeks to significantly increase the quality of riparian vegetation and habitat quality within the site, through realigning in an easterly direction the validated watercourse in the north western corner of the site, through to the site's eastern boundary. This will result in an enlargement (by 2.58ha) in the area of riparian land on the site than would otherwise result from the current E2 zoned area and will significantly improve the overall ecological quality of the riparian land.

Clause 11 – Zone Objectives and Land Use Table

The site is zoned partially IN1 General Industrial and partially E2 Environmental Conservation.

- All site establishment, development lot and building works associated with the warehouse and distribution estate, ancillary office, and cafe are permissible with consent in the IN1 General Industrial zone.
- These warehouse and distribution and associated works are also permissible within 20m of the boundary of the E2 zone, in accordance with clause 33A of SEPP WSEA (Development Near Zone Boundaries) addressed below.
- It is noted that the proposed construction of the 'artificial waterbody' along the northern boundary of the site is not permissible within the IN1 zone. EP&A Act clause 4.38(3) is relied upon for the purpose of those works.

The IN1 and E2 zone objectives are addressed below.

<u>IN1 General Industrial</u>

The proposal is consistent with the objectives of the IN1 zone as

- it provides for employment generation associated with industrial, warehousing and storage uses
- it is sited in a precinct services by the M7 and M4.
- it is located on land that is evolving in land use character due to the recent rezoning of the precinct from Rural to Industrial. The proposal has been assessed to cause acceptable effects on nearby sensitive uses that are expected to evolve to industrial land uses over time.
- a VPA will be agreed to provide funding for the provision of regional infrastructure including road network connections.
- The proposal will present a high design quality informed by sustainability principles which will not detrimentally affect the redevelopment of adjoining land for industrial or related purposes and will result in improved environmental outcomes.
- It will provide for small scale services within the estate to service the needs of employees and visitors.

  There are parts of the site which are zoned E2 Environmental Conservation. The objectives of E2 Environmental Conservation are as follows:

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.

- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

E2 Environmental Conservation

The overall proposal is consistent with the objectives of the E2 zone as follows, notwithstanding these objectives are met by works along the northern boundary of the site.

- The area of validated watercourse in the north western corner of the site which is located within the E2 zone will be relocated with establishment of planting within the associated riparian area s in accordance with the proposed Vegetation Management Plan. Refer to **Section 2.5.8** for details on types of planting species to be located within the realigned riparian area.
- The realigned creek along the northern boundary of the site will significantly improve the quality and extent of riparian land with high ecological value from that currently existing on the land. It will provide a suitable creekline connection from the site's eastern boundary through to the validated watercourse in the north western corner of the site, facilitating the future east west creekline connection across the site. This is a significant improvement from the current site condition where that creekline connection is in poor condition or non existent.
- Development for warehouse and distribution purposes, and associated site establishment works, have been designed in a way that interfaces sensitively with the future creekline corridor. A 10m buffer zone is provided from the edge of the riparian corridor to the warehouse buildings. Civil works for the creek construction have been designed to replicate natural slopes within the riparian zone. The integrated design of the warehouse works and creekline/riparian area has ensured that the warehouse and distribution uses will not adversely affect the ecological values of the proposed riparian corridor.

The development proposes a solution which would ensure these objectives are achieved on the site. These are further discussed in Section 5.6 below.

Clause 14 – Subdivision – consent requirements

Consent is sought for subdivision of the AIE, resulting in one development lot and six road lots to facilitate their future dedication to Penrith City Council.

Clause 15A – Demolition requires development consent

Development consent is sought for the demolition of all existing structures on the subject lots.

Clause 18 – Requirement for Development Control Plans

Clause 18 of the WSEA SEPP requires that a consent authority must not grant consent to development on any land to which WSEA SEPP applies unless a development control plan has been prepared for the land.

A draft DCP has been prepared by Mirvac and accompanies this application. It sets out the intended development control framework for the site. It is understood that DPIE is progressing a precinct-wide DCP and the site specific DCP may be used to inform or supplement that precinct-wide DCP.

Notwithstanding, it is noted that a DCP must be in force prior to the determination of this SSD DA.

Clause 20 – Ecologically sustainable development

The proposed development complies with Clause 20. Refer to **Section 5.7.11** below for further information.

Clause 21 – Height of buildings

Clause 21 of the WSEA SEPP addresses building height and states that:

> *"The consent authority must not grant consent to development on land to which this Policy applies unless it is satisfied that:*
>
> *(a) building heights will not adversely impact on the amenity of adjacent residential areas, and*
>
> *(b) site topography has been taken into consideration'.*

Building heights proposed for the AIE have been established in consideration of the needs of current and emerging industrial development typologies and the potential visual impacts of the proposed AIE development.

The proposed building height of the AIE does not exceed 14m. This is consistent with similar industrial estates across the Western Sydney Employment Area. In addition, detailed visual analysis has been undertaken to understand the likely impacts of the site to the surrounding area. This analysis identifies the level of impact and provide mitigation measures to minimise its impact. This is further detailed in **Section 5.2** below.

Clause 22 – Rainwater harvesting

Rainwater tanks have been provided within the proposed development.

Clause 23 – Development adjoining residential land

Clause 23 of the WSEA SEPP addresses development within 250 metres of residential land and states that:

> *"The consent authority must not grant consent to development on land to which this clause applies unless it is satisfied that—*
>
> *(a) wherever appropriate, proposed buildings are compatible with the height, scale, siting and character of existing residential buildings in the vicinity, and*
>
> *(b) goods, plant, equipment and other material resulting from the development are to be stored within a building or will be suitably screened from view from residential buildings and associated land, and*
>
> *(c) the elevation of any building facing, or significantly exposed to view from, land on which a dwelling house is situated has been designed to present an attractive appearance, and*
>
> *(d) noise generation from fixed sources or motor vehicles associated with the development will be effectively insulated or otherwise minimised, and*
>
> *(e) the development will not otherwise cause nuisance to residents, by way of hours of operation, traffic movement, parking, headlight glare, security lighting or the like, and*
>
> *(f) the development will provide adequate off-street parking, relative to the demand for parking likely to be generated, and*
>
> *(g) the site of the proposed development will be suitably landscaped, particularly between any building and the street alignment."*

Building heights for the proposed AIE have been limited to 14 metres to reduce the visual impact of the development on surrounding residential properties. Landscaping features including various tree and bush species have been carefully designed to produce a buffer between the site and surrounding land uses.

A Landscape and Visual Impact Assessment has been undertaken from a number of suitable viewpoints determined by a Visual Impact Assessment the entire site to ensure that the height, scale and siting will not impact on surrounding land uses **Appendix L**.

Furthermore, a Traffic Impact Assessment (**Appendix K**) has been undertaken for the development to ensure that the traffic movements will not result in reduced amenity for surrounding developments. Given the site's location fronting Mamre Road which currently facilitates heavy vehicle movements, it is expected that the traffic generated by the development will not result in further impacts on surrounding residential development. This is supported by a Noise and Vibration Impact Assessment (**Appendix EE**) which assessed the construction, operational and traffic generated noise impacts on surrounding residential receivers.

Clause 24 – Development involving subdivision

The subdivision proposed will result in amalgamation of land lots and then subdivision of developable land and roads to facilitate development of the estate. This will facilitate land supply for employment purposes. The proposed estate layout will provide for connections through to adjoining lots and as such will not preclude other lots of land from having reasonable access to roads and services.

Clause 25 – Public utility infrastructure

Arrangements are being agreed for the provision of public utility infrastructure services to the Mamre Road Precinct more broadly and the subject estate specifically. A VPA will be entered into for the funding and provision of these services if required.

Refer to **Section 2.5.6** for further information.

Clause 26 – Development on or in vicinity of proposed transport infrastructure routes

Clause 26 of the WSEA SEPP addresses development on or in the vicinity of proposed transport infrastructure routes and requires that the consent authority refers to the Director-General of the DPIE to comment on the compatibility of the development as it relates to the proposed transport infrastructure route.

The proposed development has been designed in conjunction with ongoing discussions with Transport for NSW and DPIE on the upgrade of Mamre Road, the delivery of an intermodal terminal within the Mamre Road Precinct, and the overall Precinct-wide Road Structure Plan. This feedback has been incorporated into the final design of the Concept Masterplan, which includes the delivery of an intersection in a location that is consistent with the Mamre Road upgrade and provides for a north-south trunk road at the eastern boundary of the site.

Clause 29 – Industrial Release Area – satisfactory arrangements for the provision of regional transport infrastructure and services

Clause 29 of the WSEA SEPP provides that the consent authority must not consent to development on land identified on the 'Industrial Release Area Map' unless the Director-General has certified in writing to the consent authority that satisfactory arrangements have been made to contribute to the provision of regional transport infrastructure and services (including the Erskine Park Link Road Network) in relation to the land.

The requirement for regional infrastructure contributions will be satisfied via a monetary contribution in accordance with the satisfactory arrangement requirement for the WSEA and contribution to *Penrith Section 7.11 Contribution Plan* for the provision of infrastructure and services.

The proposed infrastructure contributions will be at the existing WSEA rate.

Local contributions to infrastructure include the construction of local roads that will be dedicated to Council.

Clause 31 – Design principles

The proposal has been developed based on robust principles and an iterative design process, underpinned by carefully considered design principles related to bulk and scale, accessibility and permeability, landscaping and public domain, materials and finishes and integration with the surrounding land use character and context. These principles and design responses have been developed by Mirvac's awarding winning architects and specialist industrial architects. Further detail on the design approach, refer to **Appendix E**.

In determining a development application that relates to land to which this Policy applies, the consent authority must take into consideration whether or not -

(a) the development is of a high quality design, and

The proposed building materials and design are of a high quality as demonstrated in the architectural package at **Appendix D**. The design will present a modern structure to the Mamre Road frontage and the internal access roads, complemented by well designed and located landscaped areas which provide cohesion throughout the estate.

(b) a variety of materials and external finishes for the external facades are incorporated, and

The proposal allows for a variety of materials and finishes on future buildings throughout the estate. The Stage 1 warehouses have been designed to present as high quality and architecturally interesting forms,

taking design-lead from the Cumberland plain woodland tree species indigenous to this area. Materiality proposed includes concrete, metal screens, and cladding. Materials have been selected to reflect the industrial nature of the building, being concrete, steel and metal cladding, while still reflecting the colours of the Australian landscape.

(c) high quality landscaping is provided, and

Landscaping in the riparian zone will utilise indigenous species and will be planted and maintained in accordance with the VMP accompanying this application. Landscaping within the development lots and within the estate road network presents a cohesive response throughout the estate.

(d) the scale and character of the development is compatible with other employment-generating development in the precinct concerned.

The proposed buildings will be a maximum of 13.7m in height which is compatible with the scale of general warehousing in the broader WSEA. Notwithstanding that this will be an earlier development within the Mamre Road Precinct, it is anticipated that the proposed building scale will not be detrimental or inconsistent with the future scale of development anticipated for this Precinct.

Clause 33A – Development near Zone Boundaries

This clause provides that consent may be granted to development of land within land zoned E2 Environmental Conservation, within 20m of the boundary between that E2 zone and another zone, for a purpose permissible in that other zone, if

(a) the development is not inconsistent with the objectives for development in both zones, and
(b) *the carrying out of the development is desirable due to compatible land use planning, infrastructure capacity and other planning principles relating to the efficient and timely development of land.*

As the E2 zone is 40m wide, this clause provides a statutory pathway for development across the entire width of the E2 zone for the purposes of warehouse and distribution (and associated) uses. This proposal seeks to rely on this clause for the purpose of locating warehouse and distribution uses and associated works within the majority of the E2 zoned land across the site. The proposal concurrently seeks to relocate the east-west creekline currently contained within the E2 zone, to the northern boundary of the AIE site.

Consistency with zone objectives

Overall the development of the AIE in the manner proposed will result in an outcome that meets the objectives of both the IN1 and E2 zone as set out in consideration of Clause 11 above, and as summarised below:

- The realigned creek corridor will result in a significantly enlarged area of riparian land on the site, which will be planted and managed in accordance with a VMP.
- The realigned creek corridor will contribute to the restoration of valuable east-west riparian connections between Ropes Creek and South Creek, in a manner which supports high ecological values where currently these values on the site are very low.
- The design of the overall masterplan provides for effective separations between the creek corridor and nearby warehousing lots, providing a variable width riparian zone to the south of the creek. The warehouse masterplan layout will enhance the interface with the riparian land and will not result in a development which would destroy, damage or have an adverse effect on the ecological values of the riparian area.
- Accommodation of the full 40m wide riparian area within the AIE site boundary ensures that the riparian values of the creek can be maintained under the responsibility of a single entity rather than relying on the future development of land to the north.
- Development of warehouse and distribution purposes across the existing E2 land with low ecological value will provide for rational use of that land for development lots which will ensure effective warehouse sizes to meet the current demands of operators seeking to locate in the WSEA, close to planned regional transport routes.
- The efficient estate design and layout will provide for a high standard of development that contributes to sustainability and environmental outcomes in a more effective manner than would result if the E2 zone was retained in its current location.

Desirability of Development

The proposed masterplan approach seeks to relocate the mapped watercourse from the E2 alignment to the northern portion of the site, whilst ensuring connectivity to zoned E2 land at the eastern and western boundaries. The proposal will improve the overall ecological values of the site, whilst also supporting the delivery of efficient and rational development lots that meet customer demand.

As detailed in section 5.6 of this EIS, the existing 2nd order stream within the development area is devoid of aquatic habitat and is lacking in riparian species apart from a few *C. glauca* trees in one area along the bank. It receives no observable maintenance, contains scattered litter and is not providing any form of habitat connectivity for aquatic or terrestrial fauna.

The construction of a vegetated channel on the northern boundary of the development area allows for a protected, rehabilitated watercourse to be established. As a dedicated waterway managed under a VMP, this vegetated channel will become a protected waterway within the new development area, resulting in a marked improvement on the current quality of the 2nd order watercourse.

The construction of the vegetated channel and associated riparian area on either side will allow for a significant increase in the amount of native vegetation within the development area, which will significantly improve the habitat values of the area. The current 2nd order watercourse is surrounded predominately by exotic flora species, whereas the riparian area either side of the realigned channel would be fully vegetated with native species and maintained for the period as specified in the VMP prepared for the development area (refer **Appendix P**).

Overall, the relocated watercourse will provide 3.33ha of vegetated riparian land compared with

- The 0.75ha of existing area of riparian land on the site, and
- The total 2.5ha of E2 zoned land across the site.

The channel length will increase from approximately 180m to 800m and will provide for a heavily vegetated and well-maintained east west connection across the site for fauna species, enhancing the existing low-quality east-west linkage between Ropes Creek and South Creek.

The options analysis at section 1.4 of this EIS demonstrates the impact a retained E2 zone alignment across the site would have on the delivery of and access to rational warehouse lots. The alignment of the E2 zone, which follows a natural creek line, does not confirm to the more 'regular' site boundaries. This results in the need to chamfer warehouse lots and design access roads to cross the E2 zone to provide truck access. The proposed creekline relocation and development of warehouse lots within the E2 zone will generate a much more rational and market appropriate Estate layout, catering to the needs of operators wanting to locate in the WSEA to take advantage of the planned road and transport infrastructure.

On balance the proposed design provides an optimal outcome for both biodiversity values on the site as well as the efficient design of a high-quality warehouse and distribution estate. If the proposed creekline relocation is approved, a mapping amendment to SEPP WSEA can be undertaken to align the E2 zone with the approved relocated creek.

Clause 33C – Development within the Mamre Road Precinct

The proposed development requires concurrence to Transport for NSW, as it has a capital investment value over $200,000 and is within Mamre Road Precinct. Transport for NSW is required to take into account the likely effect of the development on:

- the compatibility of the proposed development with the delivery of an integrated freight network, including the use of fire access roads and connection to fire access roads to adjoining land, and
- the operation of an integrated freight network, including whether the development is likely to impede access to or from the integrated freight network, and
- the practicability and cost of carrying out transport projects on land in the future.

The proposed development has been designed in order to ensure access to and from the site will be compatible with the delivery and operation of an integrated freight network. This is further detailed in Section 5.5 below.

Clause 33D – Development in areas subject to aircraft noise

The proposed development satisfies this clause as it is not a sensitive development and would not have any adverse impacts to Airport operations.

Clause 33E – Airspace operations

The proposed development does not impact on future airport operations at the Western Sydney Airport. Further discussion on this matter is provided at **Section 5.7.14** below.

Clause 33F – Development of land adjacent to Airport

The proposed development will not attract birds or animals of a kind and in numbers that are likely to increase the hazards of operating an aircraft.

Clause 33G – Water recycling and conservation

The proposed development introduces various sustainability measures across AIE. For further information refer to **Section 5.7.11** below. No water recycling facilities are proposed.

Clause 33H – Earthworks

A cut and fill strategy is proposed to accommodate the future development. The proposed earthworks do not affect the surrounding topography with appropriate erosion and sediment control measures to be incorporated during construction and stormwater designs to minimise runoff from the site.

A Visual Impact Assessment has been prepared at **Appendix M** which assesses the impacts on earthworks viewed from the waterways. The impacts can be mitigated through landscaping between the riparian corridor and proposed development. The design of the development ensures the riparian corridor can still function and appropriate setbacks are provided to minimise impacts to views.

Clause 33I – Development on flood prone land

A detailed flood study has been undertaken. Flood risk can be managed on the site with appropriate measures to ensure no negative cumulative impacts will affect upstream or downstream properties. Further information on flooding, refer to **Section 5.7.6**.

Clause 33K – Consent for clearing native vegetation

The proposed development removes approximately 1.08 hectares of native vegetation across the site. This vegetation has been assessed and is identified as poor quality. The proposed realignment of the riparian corridor creates an opportunity to revegetate with native species and create a habitat where native vegetation can exist and be maintained under a Vegetation Management Plan. The realigned riparian corridor is approximately 3.33 ha in area.

The Biodiversity Development Assessment Report and Riparian Lands Assessment finds the clearing of existing native vegetation and construction of a riparian corridor with native species as acceptable and will improve the overall ecological values of the site

Clause 33L – Stormwater, water quality and water sensitive urban design

A Water Cycle Management Report has been prepared which assesses stormwater, water quality and water sensitive urban design. The proposed stormwater management approach and resultant water quality and WSUD meets the requirements of this clause. al Further information is provided at **Section 5.7.6** below.

3.2.9. State Environmental Planning Policy No. 55 - Remediation of Land

State Environmental Planning Policy No. 55 (Remediation of Land) (SEPP 55) seeks to provide a State-wide planning approach to the remediation of contaminated land. Clause 7(1)(a) of SEPP 55 requires that the consent authority, when assessing a development application, consider whether the land is contaminated and whether it is suitable for the proposed use. It also requires that the consent authority review a report specifying the findings of a preliminary contamination investigation of the land concerned when considering an application which involves a change of use of the land.

SEPP 55 also establishes a framework to ensure that the remediation of land complies with specified standards, and that local councils are notified prior to remediation work being carried out and once they are finished. The potential contamination of land is a key consideration in any rezoning proposal pursuant to the requirements of SEPP 55.

The proposed development would result in a change of use of the land and would introduce new development to the site. Contamination findings are discussed in **Section 5.7.2** below. A Remediation Action Plan has been prepared that confirms the site is able to be remediated to suit the intended development purpose.

3.2.10. State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) requires the consent authority to consider whether an industrial proposal is a potentially hazardous or a potentially offensive industry. In doing so, the consent authority must give careful consideration to the specific characteristics and circumstances of the development, its location and the way in which the proposed activity is to be carried out. Any application to carry out potentially hazardous development must be supported by a preliminary hazards analysis (PHA).

The proposal is for a master planned industrial or warehouse and distribution complex which is intended to have a freight and logistics focus. The proposal itself is not potentially hazardous or potentially offensive development. Should an operator seek to occupy the premises within the AIE for purposes that would be classified as potentially offensive or hazardous, a PHA would be required to be prepared and submitted with a further application for assessment and approval.

3.2.11. State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

The *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020* (Aerotropolis SEPP) provides the primary development controls for the Aerotropolis, land zoning provisions, and permissible land uses that are compatible with the Western Sydney Airport and which seek to protect native vegetation and natural areas. The Aerotropolis SEPP:

- implements the WSAP;
- sets the boundary for the Aerotropolis and the area to which the SEPP applies;
- defines precincts within the Aerotropolis;
- applies land use zones throughout the Aerotropolis;
- sets strategic objectives for future planning within the area;
- outlines planning controls, using mapping for some of those proposed controls;
- identifies transport corridors and utility sites required to service the Aerotropolis; and
- outlines approval pathways.

The Aerotropolis SEPP does not inform the land zoning and associated development controls related to the AIE site, which is governed by WSEA SEPP. However, as the Aerotropolis SEPP applies to the land, there are parts of the Aerotropolis SEPP with which the proposed development must demonstrate compliance. These controls relate to:

- adoption of the National Airports Safeguarding Framework.
- protection of airport operation through ensuring sensitive land uses will not be affected by aircraft noise. This is monitored through the Australian Noise Exposure Concept (ANEC) and Australian Noise Exposure Forecast (ANEF) maps.
- protection of airspace through ensuring appropriate heights for buildings and temporary structures do not affect airport operations. An Obstacle Limitation Surface (OLS) map will be incorporated within the draft SEPP WSA.

- wildlife management around airports to minimise wildlife strikes which cause major damage to aircraft and/or compromises aircraft safety.

The Aeronautical assessment at **Section 5.7.14** confirms that the site is compatible with future Airport operations.

3.2.12. State Environmental Planning Policy No. 64 – Advertising and Signage

The SSD DA seeks approval for a total of six building identification signs as well as Estate and Lot wayfinding signs. The following *State Environmental Planning Policy No. 64 – Advertising and Signage* (SEPP 64) assessment demonstrates the proposed building identification sign meets the compliance requirements in accordance with the aims of the policy, identified below.

SEPP 64 applies to the proposed signage zones as they will be visible to the surrounding area. SEPP 64 aims to regulate signage to ensure effective communication of high-quality signage that maintains the desired amenity and character of the area. It is noted that the SEPP will apply in the event of any inconsistency with another environmental planning instrument. The relevant provisions of this policy are assessed below.

Clause 8 Granting of consent to signage

The proposed signage is complaint with Clause 8 which states:

> *A consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied:*
>
> *(a) that the signage is consistent with the objectives of this Policy as set out in clause 3(1)(a); and*
>
> *(b) that the signage, subject of the application, satisfies the assessment criteria specified in Schedule 1.*

Aims of the Policy

The aims of the policy are addressed with respect to the proposal below.

SEPP 65 aims to ensure signage (including advertising):

> *(i) is compatible with the desired amenity and visual character of an area; and*

The proposed signage for the Stage 1 and the entire estate avoids visual clutter.

> *(ii) provides effective communication in suitable locations, and*

The proposed signage provides building identification for the estate. Individual elements of both the logo and letters align with existing signage in the WSEA.

> *(iii) is of high quality design and finish*

The proposed signage has been designed to a high standards, in order to achieve a well-presented building identification. The proposed size and scale of the signs are not visually dominant and form part of the overall building design.

SEPP 64 Schedule 1 Criteria

The proposed signage has been assessed against the criteria for SEPP 64 (**Table 18** below).

Table 17 SEPP 64 Schedule 1 Assessment

SEPP 64 Provision	Comment	Compliance
Character of the area		
Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	The proposed signage is consistent with the proposed development. It will serve as building identification signage for Warehouse 1 and 3, and wayfinding signage across the site.	Yes.
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	The proposed signage is consistent with concepts utilised in the WSEA.	Yes.
Special areas		
Does the proposal detract for the amenity of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	The proposal will not detract from the amenity or visual quality of the surrounding area. Further, it will serve to identify the location of businesses.	Yes.
Views and vistas		
Does the proposal obscure or compromise important views?	The proposed signage is appropriate for the industrial setting. The building signage will be within the building footprint. The wayfinding signage will be located at ground level.	Yes.
Does the proposal dominate the skyline and reduce the quality of vistas?	The signage will not dominate important view or vistas nor does it dominate the skyline.	Yes.
Does the proposal respect the viewing rights of other advertisers?	The proposed signage will not impact the visibility of other buildings or the viewing rights of other advertisers.	Yes.
Streetscape, setting or landscape		
Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	The proposed signage is appropriate for an industrial setting.	Yes.

SEPP 64 Provision	Comment	Compliance
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	The proposed signage has been designed to a high standard, in order to achieve well-presented building identification.	Yes.
Does the proposal reduce clutter by rationalising and simplifying existing advertising?	There is no exiting advertising on the site.	N/A
Does the proposal screen unsightliness?	Not relevant.	Yes.
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	The proposed signage is compatible with the scale and proportion of the building size given the dimensions of the signage as shown on the signage plans.	Yes.
Does the proposal require ongoing vegetation management?	No.	Yes.
Site and building		
Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?	The proposed signage will not detract from any important building features and has been positioned and scaled by the project architects.	Yes.
Does the proposal respect important features of the site or building, or both?	The signage has been designed to enhance the aesthetic quality of the building.	Yes.
Associated devices and logos with advertisements and advertising structures		
Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	The proposed signage and logo are integrated with the industrial building.	Yes.
Illumination		
Would illumination result in unacceptable glare?	The proposed signage will not result in unacceptable glare.	Yes.

SEPP 64 Provision	Comment	Compliance
Would illumination affect safety for pedestrians, vehicles or aircraft?	The proposed signage will not affect safety for pedestrians, vehicles or aircraft. They will be designed to promote wayfinding/identification during day and night time.	Yes.
Would illumination detract from the amenity of any residence or other form of accommodation?	The proposed signage will not detract from residential areas, as it is within an zoned industrial precinct.	Yes.
Can the intensity of the illumination be adjusted, if necessary?	The proposed signage can adjust the illumination if necessary.	Yes.
Is the illumination subject to a curfew?	The proposed signage lighting is not subject to a curfew. The proposed development is seeking 24 hours, 7 day a week operations.	Yes.
Safety		
Would the proposal reduce the safety for any public road?	The proposed signage is for building identification and wayfinding. It is located at a height that will not impact the safety of public roads.	Yes.
Would the proposal reduce the safety for pedestrians or bicyclists?	Signage will not be located at a height that will impact the safety of pedestrians or cyclists.	Yes.
Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	The signage will not obtrude into any public area and will not be at a height that will impact the safety of pedestrians or children.	Yes.

The proposed signage upholds the objectives of SEPP 64 and should be approved based on compliance with Schedule 1 assessment criteria. The proposed signage is consistent with the scale and context of the WSEA. The simple and clear font utilised on the signage effectively identifies the business to the surrounding locality, facilitating economic growth and development.

3.2.13. Site Specific Development Control Plan

There are no local environmental planning instruments applicable to the AIE. Pursuant to Clause 11 of the SRD SEPP, DCPs also do not apply to SSD, however future development on the AIE that is not classified as SSD would be subject to the provisions of a future DCP. Further, clause 18 of SEPP WSEA states that:

> *Except in such cases as the Secretary may determine by notice in writing to the consent authority or as provided by clause 19, the consent authority must not grant consent to*

development on any land to which this Policy applies unless a development control plan has been prepared for that land.

A site-specific Development Control Plan has been prepared for AIE and is attached to the SSD DA at **Appendix KK**. The Aspect Industrial Estate DCP is an interim DCP to set and guide development standards within the Precinct. It is understood that DPIE is also currently preparing a Mamre Road Precinct Development Control Plan for the broader area. Site development controls as proposed in AIE DCP are outlined in **Table 18** below.

Table 18 Aspect Industrial Estate DCP Compliance

Issue/Element	**Control**	**Proposed**	**Compliance**
Minimum Lot Size	Minimum 1,000m^2	Each proposed development lot substantially exceeds the minimum lot size requirement with the smallest lot having an area of 28,392m^2.	Yes
Minimum Frontage	Minimum 40m (excluding cul-de-sacs).	Lot 1 – 122.30m frontage to Access Road 1. Lot 3 - 116.9m frontage to Access Road 2	Yes
Minimum Lot Width	Minimum 35m (at building line).	Lot 1 – 289.2m lot width Lot 3 – 207.1m lot width	Yes
FSR	-	-	-
Building Height	Maximum 15m (unless otherwise increased by Consent Authority Approval).	Lot 1 – 13.7m Lot 3 – 13.7m	Yes
Building Setback – Primary Frontage	Minimum 20m to Mamre Road Minimum 7.5m to Subdivision Road	Lot 1 frontage to Mamre Road - setback 41.7m Lot 1 to Access Road 1: 7.5m Lot 3 frontage to Access Road 2 (Subdivision Road) - setback 36.5m.	Yes
Building Setback – Side	Minimum 0m (subject to compliance with fire rating requirements).	0m	Yes

Issue/Element	Control	Proposed	Compliance
Building Setback – Rear	Minimum 0m (subject to compliance with fire rating requirements).	0m	Yes
Car Parking	On-site car parking to be provided at the following minimum rates: Warehouse – 1 space/300m^2 GFA. Ancillary office – 1 space/40m^2 GFA. Industrial/manufacturing – 1 space/200m^2 GFA. Café/restaurant – 1 space/10m^2 of seating area. Accessible parking – in accordance with the provisions of the *Building Code of Australia and relevant Australian Standards.* 2 accessible spaces/100 spaces.	Stage 1 Office: 2,460 m^2 (63 spaces required) Warehouse: 55,795 m^2 (161 spaces required) 322 spaces proposed Concept Plan Office: 9,050 m^2 (226 spaces required) Warehouse: 183,735 m^2 (613 spaces required) 940 spaces proposed	Yes
Road Infrastructure	24.5m wide road reserve for internal industrial roads adjoining an arterial road (Road No. 1) including: ▪ One x 4.0 m verge width (including a 1.5m concrete footway) ▪ One x 5.0m verge width (including a 2.5m concrete shared footway) ▪ A 15m carriage way, comprising 7m for travel lanes in both directions and two x	Proposed road estate infrastructure meets the provisions. Typical cross sections of the AIE estate Roads are provided at **Figure** 18 and is provided in the civil drawings at **Appendix F.**	Yes

Issue/Element	Control	Proposed	Compliance
	4.25m parking lanes. ▪ Verge 1 at 4.0m wider containing a 1.5m wide footpath and verge 2 at 5.0m wide containing a 2.5m shared path, 23m wide road reserve for internal industrial subdivision roads (only for Road No. 2) including: ▪ One x 4.0 m verge width (including a 1.5m concrete footway) ▪ One x 5.0m verge width (including a 2.5m concrete shared footway) ▪ A 14m carriage way, comprising 7m for travel lanes in both directions and two x 3m parking lanes.		

The development controls proposed for the AIE as part of the SSD DA consider the adopted standards in Mamre West DCP. Consistency across the AIE is an important management issue for Mirvac and is therefore a key driver of the design of the concept masterplan and proposed development controls.

Development controls proposed for the AIE are generally consistent with those in the Mamre West DCP as detailed in **Appendix LL** (comparison table), with the exception of:

- Rear and side setbacks;
- Minimum lot sizes;
- Minimum frontage;
- Road infrastructure; and
- Car parking.

The proposed varied controls for the AIE remain consistent with the underlying intent and objectives of these development standards and would not result in suboptimal development outcomes or land use conflicts. Of most significance is the proposed variation to minimum car parking rates, described in further detail below.

Car Parking

The proposed AIE proposes to adopt minimum parking rates within the estate as follows:

- Warehousing and distribution – 1 space per 300m^2 GFA.
- Ancillary offices – 1 space per 40m^2 GFA.
- Industrial/manufacturing – 1 space per 200m^2 GFA.
- Café/restaurant – 1 space per 10m^2 of seating area.

Proposed car parking controls for 'industrial/manufacturing' are inconsistent with those adopted under the Mamre West DCP, that establishes a minimum parking rate for 'industrial/manufacturing' of 1 space per 100m^2.

In relation to this inconsistency, the following key points are made:

- The AIE is located within the WSEA which is a unique industrial location, attracting a specific type and scale of warehousing operation not typically found in other existing industrial areas.
- The WSEA offers a supply of large (> 10,000m^2), flat sites that are capable of accommodating large floorplate warehousing typically occupied by major retailers for the purposes of primary distribution and/or large freight and logistics operators such as TOLL and DHL. Warehouse floorplates in the WSEA are in general significantly larger than in other Western Sydney locations.
- Significant advances in technology have led to these operations becoming increasingly automated with typical employment densities of less than 20 employees per hectare (Department of Planning and Infrastructure, 2012). As a result, many of these developments in the WSEA provide on-site parking well in excess of actual requirements.
- Traditionally, car parking controls within LEPs and DCPs for industry and warehousing uses have not been informed by the actual needs of the user. Instead, non-specific minimum rates have typically been used for all forms of industrial/warehousing use regardless of the nuances of the particular operation.
- In the case of the AIE, a substantial case exists for a site-specific parking rate for warehousing that better matches the needs of the end user.

Other Proposed Variations

The proposed variations with respect to rear and side setbacks, lot size, minimum frontages and road infrastructure are considered to be justifiable in the case of AIE as:

- Minimum lot size provisions generally aim to preserve large industrial sites from erosion and fragmentation. The AIE is a large estate under single ownership and would remain under the management of Mirvac into the long term. The proposed minimum lot size for the AIE allows for flexibility in the size and configuration of lots delivered to the market without impacting on supply of large sites and/or fragmentation of land in the WSEA and is therefore considered appropriate.
- Minimum lot frontage standards seek to ensure that sites are able to accommodate appropriate vehicular access, setbacks and development footprints. Through its extensive urban design analysis (**Appendix J**), Mirvac is confident that a minimum frontage of 35m is capable of supporting efficient and functional modern industrial development and is therefore appropriate for the AIE.
- The purpose of side and rear setbacks in industrial development is principally to preserve appropriate emergency access and minimise risks in relation to fire safety. It is therefore appropriate to allow flexibility in the application of side setbacks in the AIE to account for circumstances where zero setbacks may be allowable on the basis of fire safety considerations.

3.2.14. Draft Mamre Road Precinct Development Control Plan

Following the gazettal of Mamre Road Precinct, it was identified that DPIE would prepare a precinct-wide development control plan. At the time of preparing this EIS, the Mamre Road Precinct DCP is not publicly available and will require a public exhibition prior to finalisation.

The Industrial Assessment team raised concern during Test of Adequacy for this SSD DA regarding the consistency between the proposed development and the pre-exhibition draft Mamre Road Precinct DCP provisions relating to

- Road widths,
- Building setbacks, and
- Access points to development lots from Access Road 1.

Urbis has prepared a strategic planning considerations memo at **Appendix QQ** outlining how the proposed development intends to respond to these issues following exhibition of the draft Mamre Road Precinct DCP.

In summary, the concept masterplan has been designed to allow the Estate to respond to outcomes resulting from the precinct-wide traffic modelling and draft Mamre Road Precinct DCP provisions. Any amendments to the road network will not affect the Stage 1 development footprint as currently proposed. The concept masterplan can be easily updated to respond to the draft Mamre Road Precinct DCP road network and setbacks as part of the Response to Submissions package. The Response to Submissions package would then also address any other matters within the draft Mamre Road Precinct DCP that may better resolve design matters across the Estate, ensuring a single coordinated response.

Given the current pre-exhibition status of the draft Mamre Road Precinct DCP, the proposed development has been designed with the latest information available from respective agencies and Council. Therefore, it is deemed appropriate to progress assessment on the current scheme. Any design changes resulting from further publicly available information will be proactively updated across the concept masterplan area as part of the Response to Submission package.

4. ENGAGEMENT

4.1. OVERVIEW

A key input to the planning and design of the AIE proposal is an understanding of the views and requirements of a range of stakeholders, including State and local government agencies, adjoining landowners and the broader resident and business communities.

In accordance with the *Secretary's Environmental Assessment Requirements* (SEARs) issued for the AIE proposal, the applicant has consulted with a variety of stakeholders in relation to the development of the AIE and has responded to the issues raised through design and management measures as appropriate. The consultation process undertaken is documented in the following sections of the EIS.

4.2. STAKEHOLDER CONSULTATION

An extensive and ongoing dialogue has been established between Mirvac and key State and local agencies and authorities with regard to the development of its lands in the Mamre Road Precinct. This program of consultation, undertaken over a number of years, has provided a comprehensive understanding of the key issues and requirements of these stakeholders with regard to their site in the Precinct. To ensure that key issues specific to the AIE are captured and addressed in the design and assessment of the proposal, Mirvac has identified a number of key stakeholders:

Table 19 Stakeholder matrix

Stakeholder	Level	How this group participated
Residential neighbours located on Mamre Road, Bakers Lane, and Aldington Road, Kemps Creek	Inform/Consult	▪ Fact sheet letterbox drop ▪ Letter for residents ▪ Information and feedback hotline and email
Community and government stakeholders	Inform/Consult	▪ Fact sheet ▪ Letter for residents ▪ Information and feedback hotline and email

4.2.1. Fact Sheet and Letterbox Drop

A fact sheet was prepared to outline key features of the proposal and invite members of the community to provide feedback. The fact sheet advertised details of a dedicated email and phone number, managed by Urbis Engagement, to make further enquiries and an invitation to attend a face to face briefing with the project team.

The fact sheet was distributed on 22 May 2020 to the mailboxes of approximately 29 households on Mamre Road, Bakers Lane and Aldington Road, Kemps Creek. A copy of the fact sheet and distribution catchment can be found at **Appendix NN**.

4.2.2. Near Neighbour Information Letter

A letter to accompany the fact sheet was distributed on 22 May 2020 to the mailboxes of approximately 29 households on Mamre Road, Bakers Lane and Aldington Road, Kemps Creek.

A copy of the near neighbour information letter can be found at **Appendix NN**.

4.2.3. Stakeholder Notification

It was identified that some sensitive stakeholders were located within the Mamre Road Precinct, who were contacted separately to inform them of the proposal.

The fact sheet and information letter along with an invitation to contact the project team for a face to face briefing, were also provided via email to the following stakeholders:

- The Hon. Chris Bowen, Federal Member for McMahon
- Elected members of Penrith City Council
- Mrs Tanya Davies, State Member for Mulgoa
- Emmaus Retirement Village
- Emmaus Catholic College
- Trinity Primary School
- Little Smarties Early Learning Centre
- Mamre Anglican School.

4.2.4. Engagement Email and Phone Line

Members of the public were invited to contact Urbis Engagement through a dedicated 1800 phone number and/or an email address between 20 May and 12 June 2020. There have been no enquiries received for further information or to provide feedback on the proposal.

4.2.5. Social Media Monitoring

Social media channels have been monitored for community thoughts, feedback and sentiment regarding the proposal. There has been no identified social media commentary.

4.2.6. Agency Consultation undertaken by Mirvac

Extensive consultation was undertaken by Mirvac with government agencies, including the Department of Planning, Industry and Environment. Stakeholders consulted include:

- Department of Planning, Industry and Environment
  - Greater Sydney, Place and Infrastructure
  - Environment, Energy and Science Group
  - Natural Resource Access Regulators
- Endeavour Energy
- Environmental Protection Authority
- Fire and Rescue NSW
- NSW Rural Fire Service
- Sydney Water
- Transport for New South Wales, including the former Roads and Maritime Services
- Water NSW
- Western City and Aerotropolis Authority
- Western Sydney Airport
- Western Sydney Planning Partnership
- Surrounding local residents and stakeholders.

Table 20 summarises the issues raised by the stakeholders consulted with a more detailed consultation report provided at **Appendix MM**.

Table 20 Summary of Consultation

Agency/Authority	Issues/Outcomes
Penrith City Council	In May 2020, Mirvac had a telephone conversation with a PCC's strategic planning team to discuss the AIE proposal, SEARs and lodgement of the SSDA. On 12 May 2020, Mirvac sent an email to PCC's development assessment and strategic planning teams requesting any final pre-lodgement comments (further to those already provided in response to the SEARS request) on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. No response received. On 2 September 2020, Mirvac held a meeting with Abdul Cheema, Adam Wilkinson, Peter Wood, Gavin Cherry, Michael Alderton, and Graham Green to present the AIE proposal to Penrith City Council. Detailed comments were provided by PCC included: Boundary retaining wall heights to Mamre Road. Mirvac advised PCC that no retaining walls fronting Mamre Road are proposed. Traffic volumes: Mirvac advised traffic network modelling is being completed as part of the Mamre Road Precinct Working Group. Traffic Assessment completed for the AIE SSD DA will benefit from this network modelling and utilise parameters for the Mamre Road Precinct network modelling. Planning permissibility for the E2 realignment. The planning permissibility of the E2 realignment has since been resolved in consultation with DPIE. Mamre Road Precinct Working Group was formed to work through key elements relating to the road network and development controls within the Mamre Road Precinct. Both Mirvac and Penrith City Council have formed part of the working group.
DPIE Greater Sydney, Place and Infrastructure	Prior to gazettal, significant consultation occurred with the DPIE Greater Sydney, Place and Infrastructure team regarding the site and the Mamre Road Precinct. On 12 June 2020, Mirvac held a meeting with DPIE On 28 July 2020, Mirvac issued Melissa Rassack and Gina Metcalfe with a letter to address the proposed E2 alignment on AIE. On 4 August 2020, Mirvac held a meeting with the DPIE strategic team.

Agency/Authority	Issues/Outcomes
	On 10 August 2020, Mirvac held a meeting with the DPIE assessment team to present the revised AIE masterplan with a realigned E2 corridor. DPIE's comments during the meeting included: Recommendation for Mirvac to seek Transport for NSW concurrence on whether the integrate freight networks are required to be shown in Mirvac documentation. Mirvac has since sought consultation with Transport for NSW who has advised formal response will be provided as part of the AIE SSD formal exhibition process Boundary retaining wall heights to Mamre Road. Mirvac advised DPIE that no retaining walls fronting Mamre Road are proposed. On 14 August 2020, the DPIE issued a letter with in-principle support of a realigned E2 corridor. DPIE is part of the Mamre Road Precinct working group.
DPIE Industry Assessment Team	On 10 August 2020 Industrial Assessments invited Mirvac to submit a draft EIS for Test of Adequacy (ToA) review. On 28 August 2020, the DPIE Assessment Team provided their ToA comments to Mirvac on the draft EIS. These comments have been addressed by Mirvac in the revised SSD DA package.
DPIE Environment, Energy and Science	On 2 June 2020, Mirvac sent an email to the Environment, Energy and Science team at DPIE requesting any final pre-lodgement comments (further to those already provided in response to the SEARS request) on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. No comments have been received to date
DPIE Natural Resource Access Regulator	On 20 May 2020, Ecological Australia sent an email to the Natural Resource Access Regulator team and Land Use Enquiries email address requesting NRAR feedback on the masterplan design and re-aligned watercourse. The email included the AIE Riparian Assessment prepared by Ecological. No response received. On 22 September 2020, Mirvac met with Jeremy Mourice and Jane Curran from the NRAR West Regulation (East) team to discuss the proposed development and realigned corridor. Comments raised in the meeting included: If scour protection of the bend of the riparian channel was necessary. Mirvac advised that this may be removed from the updated documentation subject to advice from the flood engineer; It was noted by both parties that the preference is for the low flow pond to be designed for an environmental function rather than hydraulic function;

Agency/Authority	Issues/Outcomes
	NRAR noted that they did not object to the E2 realignment and advised that a formal response will be provided by NRAR during the SSD DA referral and exhibition period.
Endeavour Energy	Significant consultation has occurred with EE regarding servicing arrangements for the AIE site. As part of the Mirvac AIE design development, Mirvac has engaged an Accredited Service Provider Level 3 (ASP3) and has made formal subdivision and connection of load applications to Endeavour Energy for provision of an electricity network for AIE with Design Briefs received from Endeavour Energy for these applications. On 12 May 2020, Mirvac sent an email to the EE requesting any final pre-lodgement comments (further to those already provided in response to the SEARS request) on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. No Comments have been received.
Environmental Protection Authority	On 13 May 2020, Mirvac sent an email to the EPA requesting any final pre-lodgement comments (further to those already provided in response to the SEARS request) on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. On 15 May 2020, the EPA confirmed via email no additional comments to be provided apart from response letter provided as part of SEARs response (ref: S2020/34870). On 1 October 2020, Mirvac phoned Jarrod Grimston and were advised that the EPA would typically provide further comment during the SSD DA referral and exhibition period.
Fire and Rescue NSW	On 13 May 2020, Mirvac sent an email to Fire and Rescue NSW requesting any final pre-lodgement comments (further to those already provided in response to the SEARS request) on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. On 15 May 2020, Fire and Rescue confirmed via email no additional comments to be provided apart from response letter provided as part of SEARs response.
NSW Rural Fire Service	On 28 May 2020 a final pre-lodgement email was issued to NSW Rural Fire Service requesting any pre-lodgement comments from on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. No response has been received.

Agency/Authority	Issues/Outcomes
Sydney Water	Significant consultation has occurred with Sydney Water (SW) regarding servicing arrangements for the AIE site and the Mamre Road Precinct. On 17 February 2020, SW provided a servicing advice letter to support the lodgement of the AIE SSD DA. On 12 May 2020, Mirvac had a telephone conversation with Kristine Leitch regarding AIE proposal, SEARs and lodgement of the SSDA. On 12 May 2020, Mirvac sent an email to SW requesting any final pre-lodgement comments (further to those already provided in response to the SEARS request) in on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. No response has been received. On 14 September 2020 Sydney Water provided letter of conditions and major works agreement for servicing for the AIE.
Transport for NSW (including former Roads and Maritime Services)	Significant consultation has been undertaken with Transport for NSW during the development of the AIE SSD proposal. Mirvac is currently collaborating and will continue to collaborate with Transport for NSW regarding the development of the Mamre Road Precinct local road network. On 7 November 2019, Mirvac and Civil Engineers AT&L held pre-lodgement meetings with then RMS regarding the proposed interim signalised intersection between AIE and Mamre Road, with RMS confirming that detailed comments and coordination could be made once RMS released detailed design documentation for the proposed Mamre Road Upgrade. The proposed signalised intersection documentation was provided to RMS as part of pre-lodgement consultation (RMS Reference: SYD19/01350). During pre-lodgement consultation with Transport for NSW, Transport for NSW's Louise Moran noted that Transport for NSW would consider five (5) year horizons for signalised intersection warrants. On 12 May 2020 a final pre-lodgement email was issued to Transport for NSW requesting any additional pre-lodgement comments (further to those already provided in response to the SEARS request) on the proposed AIE SSDA. The email included the Concept masterplan and Stage 1 plan. No response received. On 8 September 2020, Mirvac issued an email to Laura Van Putten, Michael Lee and Edward Scully of Transport for NSW to request a meeting to discuss the interim signalised intersection sketch. Details of this proposed intersection were provided within this email for Transport for NSW's information ahead of the requested meeting.

Agency/Authority	Issues/Outcomes
	On 21 September 2020, a meeting was held with Mirvac, Ason Group, Transport for NSW to discuss the interim intersection. Comments raised in the meeting included: Access to properties to the West of Mamre Road. Transport for NSW noted notification of access arrangements would be provided to residents post design approvals. Traffic Horizons, suggestion was made from Transprot for NSW regarding a 2026 and 2036 traffic horizon for signalised intersection modelling. Traffic horizons are discussed in the traffic assessment and included in this EIS. Wider Mamre Road Precinct network modelling: the traffic assessment has been informed through the same parameters adopted for the Mamre Road Precinct network modelling. Mirvac and Transport for NSW agreed that if updates are required as a result of network modelling, this could be responded to during the Response to Submissions phase. Timing: Mirvac noted timing for commissioning of signalised intersection is required for 3rd quarter 2021. Transport for NSW noted this timing would be subject to early/ongoing engagement and timing of SSD approvals.
Water NSW	On 13 May 2020, Mirvac sent an email to Water NSW requesting any final pre-lodgement comments (further to those already provided in response to the SEARS request) on the proposed AIE SSDA. On 20 May 2020, Water NSW confirmed via email no additional comments to be provided apart from response letter provided as part of SEARs response (ref: S2020/34870).
Western City and Aerotropolis Authority	On 14 May 2020, Mirvac sent an email to WCAA requesting any pre-lodgement comments on the proposed AIE SSDA. No response received.
Western Sydney Airport	On 13 May 2020, Mirvac sent an email to Western Sydney Airport requesting any pre-lodgement comments in relation to the proposed AIE SSDA. On 22 May 2020, WSA confirmed via email no additional comments to be provided. WSA will review the development application documentation in detail once the application is on public exhibition.
Western Sydney Planning Partnership	On 13 May 2020, Mirvac sent an email to Western Sydney Planning Partnership requesting any pre-lodgement comments in relation to the proposed AIE SSDA. No response received.

4.3. LANDOWNER CONSENT

Landowners consent has been received for the proposal. Landowner's consent has been provided at **Appendix NN.**

Table 21 Landowner Details

Legal Description	**Landowner**
Lot 54, DP 259135	Mirvac Funds Management Limited ATF Mirvac Kemps Creek Trust
Lot 55, DP 259135	Pasquale Maltese and Concetta Maltese
Lot 56, DP 259135	Angelo Perri, Antonio Perri and Emilia Ierufi
Lot 57, DP 259135	Benito Vitalone and Francesa Vitalone
Lot 58, DP 259135	Diab Finianos and Sayde Finianos

5. ENVIRONMENTAL IMPACT ASSESSMENT

5.1. APPROACH

This preliminary risk assessment considers a range of issues in relation to the proposed development with a view to identifying:

- The degree of constraint or influence (or significance) the issue has in relation to the formulation of the proposed Concept and Stage 1 Proposal including development design, layout, operation and management.
- The effectiveness of design responses applied in the project to manage potential impacts.
- The ability to effectively manage potential impacts through mitigation measures.

The Risk Assessment process aims to guide and inform both the development design and assessment stages of the SSD DA by providing an objective method and structure for the prioritisation of issues and assessment of impacts.

Early identification of issues through a risk assessment process maximises opportunities to mitigate potential impacts of development through design responses applied in the planning of the project and may avoid the need for mitigation measures to be applied in response to impact assessment. The risk assessment for the AIE proposal has been used as a tool to identify the key issues of relevance to the design and assessment stages and is based on consideration of the outcomes of site analysis, consultation and design specifications.

The risk analysis model used for the AIE SSD DA is shown in **Figure 34**

Figure 34 Risk Assessment Process

The risk assessment undertaken with respect to the AIE proposal is detailed in **Section 7** of the EIS.

Based upon the risk assessment, the key issues with regard to the AIE proposal are considered to be:

- Visual Impact;
- Ecology;
- Noise and Vibration; and
- Traffic and Access.

These issues are considered in detail in the following sections and the likely residual impacts of the proposal are evaluated in relation to:

- The potential for the proposed development to result in impacts following the application of mitigation measures.
- The confidence and reliability with which these potential impacts can be managed or mitigated.

Other issues of relevance to the proposed are considered in **Section 5.7** of the EIS.

5.2. VISUAL IMPACTS

A Visual Impact Assessment (VIA) has been prepared by Clouston Associates and is included in **Appendix M**. The purpose of the VIA is to assess the potential visual impacts of the proposed AIE on surrounding private and public receivers and outline appropriate strategies for mitigation. After undertaking a visual catchment assessment of the wider context of the site, a number of suitable viewpoints were selected to analysis for visual impact.

The VIA identifies 17 potential sensitive receivers, including several viewpoints along Mamre Road, Bakers Lane, Little Smarties Early Learning Centre/Mamre Anglican School, Emmaus Catholic College and Trinity School and Aldington Road. Based on the topographic and landscape desktop analysis of the proposed masterplan and understanding of the surrounding land uses, a site visit was undertaken to finalise the surveyed views. 17 view locations were selected to be surveyed and are located north, south, east and west of the site.

5.2.1. Key Considerations

The AIE is located within a rural context where land use is characterised by low intensity agricultural and rural residential land uses.

The overall visual impacts of the site have been assessed in terms of the Mamre Road Precinct Structure Plan which identifies the area as industrial land. Similarly as a result of Ministerial Local Planning Direction 3.5, future residential development of the site is not possible as it is contained within the Western Sydney Airport ANEF 20 noise contour, resulting in any future land use being limited to employment generating purposes.

The proposed development consists of 11 industrial or warehouse and distribution centre buildings with varying floor plate sizes and up to approximately 13.7 metres in height with associated service areas, public domain and landscape.

5.2.2. Existing Features and Conditions

The area immediately surrounding the site can typically be defined as highly modified landscape as a result of cleared pastureland and large lot residential. As a result of this, much of the vegetation on and surrounding the site has been cleared, however patches of remnant vegetation still remain in the wider surrounds. This creates a general landscape character that is rural and open in nature.

The surrounding topography is predominately undulating, with some more elevated positions allowing views towards the Blue Mountains.

To the north of the site is the Erskine Business Park which is an established industrial area consisting of a large number of warehouses and office spaces.

The business park separates the more rural landscape character surrounding the immediate site and that of the more suburban residential areas of St Clair and Colyton to the north which typically consist of a mixture of single and double storey detached housing of varying architectural styles.

The varying types of land uses across the surrounding landscape highlights the extensive influence development has had on landscape and topography. The area as a whole has been highly modified from its original characteristics, first as a result of agricultural uses and progressively through residential and industrial redevelopment.

5.2.3. Potential Impacts

A VIA was prepared in respect to the AIE proposal to identify and assess the potential impacts of the development on the landscape character of the area and specific views to and across the site from the surrounding lands. The full VIA is included at **Appendix M** of the EIS and was prepared in accordance with recognised methodology.

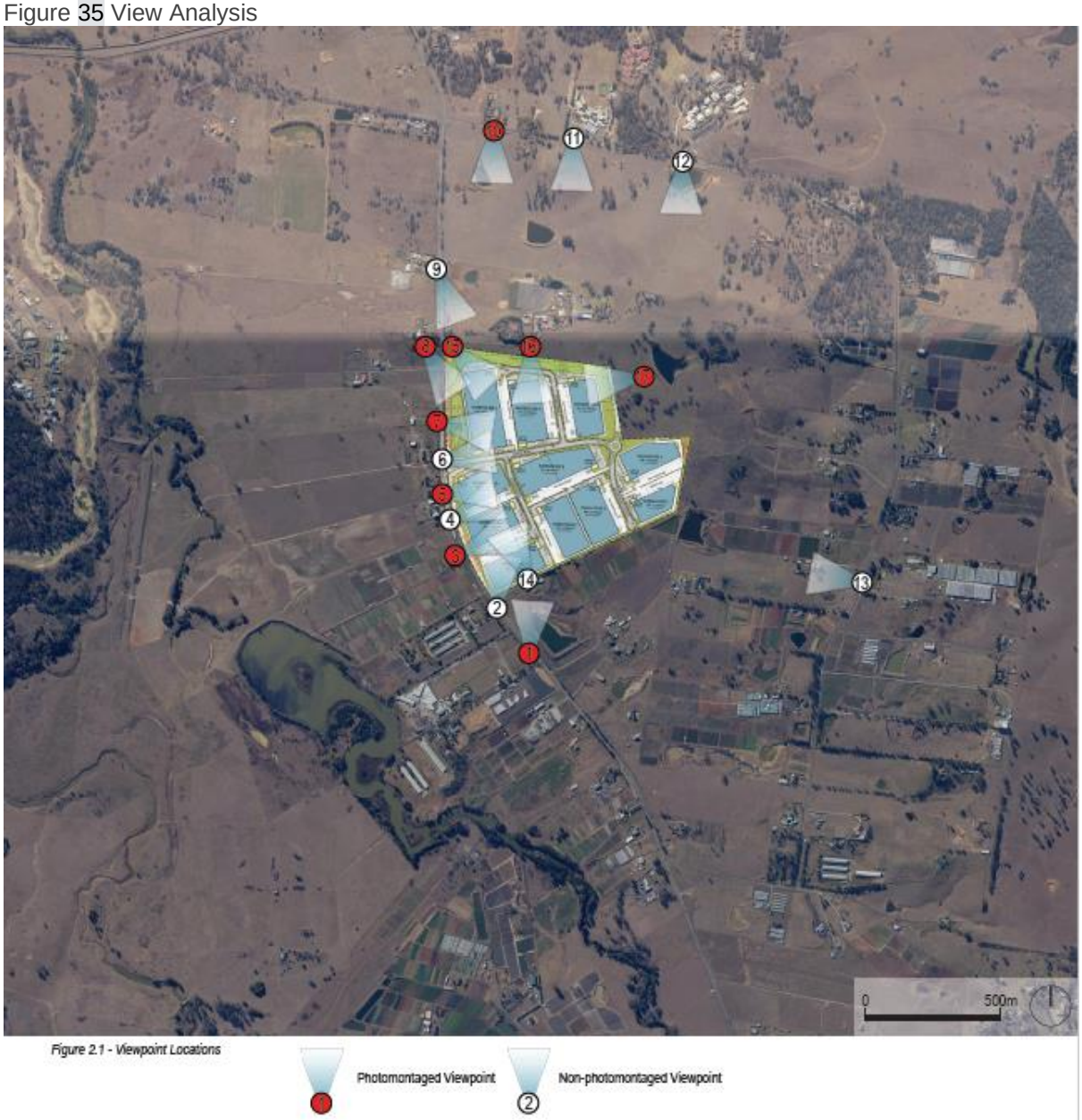
The VIA applied a rigorous approach to the selection of viewpoints for analysis, informed by ground truthing on site. Views were selected on the basis of a series of criteria including:

- Views where the development would be most prominent such as high points, places where the proposed development addresses public roads or zones with clear lines of sight to the proposed development.
- Views from important public domain elements such as open space or landscape corridors.
- The assessment categorised the value of views and ultimately, the extent of visual impact in consideration of the presence and prominence of the following features in the foreground, middle-ground and far distance:
- Expanse and openness;
- The nature and extent of the horizon;

- The natural landform;
- The presence of natural environmental features such as trees, water features;
- The degree to which the landscape has been modified by human interactions such as land clearance and construction;
- The presence of buildings and structures and their relative architectural quality; and
- The relative uniqueness of the view.

The viewpoints identified for analysis are shown in **Figure 35** and the assessed value and potential impacts on these views is summarised on **Table 23**. View montages have been prepared from select viewpoints to provide a representative comparison of existing and proposed views from outside the site.

Figure 35 View Analysis



Source: Clouston Associates

Table 23 Potential Visual Impacts of AIE Proposal

View	Features/Value	Impacts
01 – Mamre Road (approx. 915)	An undulating landform with a single residential dwelling on the crest occupies the view scene in the mid and distant view. In the foreground can be seen Mamre Road with the accompanying roadside verge. Apart from the residential dwelling, only a small number of constructed elements are visible such as overhead power lines and fencing.	Moderate Impact: Stage 1: As a result of the bulk earthworks, the existing topography in the mid-ground will be noticeably altered with the removal of the undulating landform. The private residence on top of this hill will also be removed. The resulting topography will be level pads which will not have any warehouses on them. Beyond these flattened pads will be visible the warehouse on Lot 1 and Lot 3. Elements of the proposed boundary planting will also be visible from this location, although these elements will take time to establish and reach maturity. The immediate foreground of the view will remain the same, consisting of grassland that is privately owned as the roadside reserve running parallel to Mamre Road. Completed Estate: Views of the Lot 11 warehouse will be clearly visible from this location. The warehouse will be 14 metres in height which will result in a significant increase in the level of built form in the view. Boundary planting running along the southern edge of the site will help break up views of the built form, particularly over time as the trees mature.

View	Features/Value	Impacts
 *Viewpoint 1: Existing*  *Viewpoint 1: Proposed*		
02 – Driveway of 885 Mamre Road	An undulating land form with a private dwelling on the crest occupies the majority of the visual scene. In the foreground can be seen Mamre Road. Apart from the dwelling, the only other constructed elements visible are Mamre Road, overhead power lines and fencing.	High/Moderate Impact: Stage 1: The existing topography will see a lowering of the current undulating landform to accommodate the flat pads. The proposed earthworks will replace the hill and dwelling view with flat expanses. A proposed embankment and smaller section of retaining wall will run along the southern boundary of the site,

View	Features/Value	Impacts
		creating a distinct buffer between the site and the driveway. A range of trees, shrubs and groundcovers, once established, will help mitigate the impact of the vegetation removal as well as create a more textured and filtered view of the proposed landform. Completed Estate: A clear view of Lot 11 will be possible from this location with the proposed 14 metre high warehouse located on the lot. This will decrease views of open sky from this position and increase the level of built form in the view. Views of the proposed boundary planting consisting of a variety of trees, shrubs, and groundcovers and grasses will be seen running parallel to the proposed warehouse. This will help to break up views on the built form, especially over time as the planting matures.
 *Viewpoint 2: Existing*		
03 – Driveway of 859 Mamre Road	A significant change in topography is noticeable between Mamre Road and the crest of a hill to the east of the road. On the peak of the hill can just be seen the roof of a	High/Moderate Impact: Stage 1: The mid-ground view of the rising hill with a private dwelling on it

View	Features/Value	Impacts
	private dwelling. A relatively limited amount of further built elements are visible from this location and are comprised of overhead power lines, a single power pole and a simple wire fence running alongside Mamre Road.	will be replaced by an embankment running parallel to Mamre Road. A flat pad will replace the hill topography and gently undulating landform in this location. As a result of the earthworks, the overall topography will be lowered by approximately 10-11 metres. The proposed embankment will be planted with a range of trees, shrubs and groundcovers which will increase the volume of vegetation currently visible at this location. The undulating landform of the site currently visible from this location will be replaced with a more constructed landform consisting of large, flat expanses separated by embankments unlike the current surrounding landform. Completed Estate: A clear view of the Lot 11 site will be visible from this location with views of the western side of a 14 metre high warehouse. Beyond Mamre Road the proposed 20m setback will be perceptible, as well as the proposed frontage planting consisting of mature trees, shrubs and groundcovers. This will help to lessen the impact of built form running parallel to the road due to the setback, and as the vegetation matures and helps to filter view of the built form.

Viewpoint 3: Existing

View	Features/Value	Impacts
 *Viewpoint 3: Proposed*		
04 – Driveway of 845A Mamre Road	The topography levels between the viewpoint and the proposed development are largely similar as opposed to the southern end of the site which is characterised by more distinctive level changes. The most noticeable elements of the visual scene are the single storey dwellings that occupy the mid-ground of the view. A small amount of mature vegetation can be seen surrounding the dwelling to the left, with a more open view of the dwelling to the right possible. Beyond the dwellings can be seen a more significant band of mature vegetation rising above the dwelling to the left, as well as the elevated dwelling to the south of the site to the right of the view. A simple wire fence runs parallel to Mamre Road and allows for unobstructed view into the proposal site.	High/Moderate Impact: Stage 1: A relatively minor difference in levels between Mamre Road and the proposed development currently exists. This will be replaced by a proposed embankment running parallel to Mamre Road along the majority of the eastern boundary of the site. A noticeable change to the visual scene will occur with a distinct change in level between the road and the site. To the left of the view at the top of the embankment the flat pad of Lot 9 will be discernible, while to the right of the view another embankment separating Lot 9 and Lot 10 will be visible. Both the road side embankment and the embankment separating Lot 9 and Lot 10 will be planted which will result in a significant amount of new vegetation becoming visible in the view. Completed Estate: Partial views of the warehouses proposed for both Lots 9 and 10 will be visible from this location. This will result in a significant increase in the level of built form views and reduction in sky views as a result of the elevated pads and 14 metre high warehouses.

View	Features/Value	Impacts
		Proposed frontage planting consisting of a mixture of species will help to soften the visual impact of the built form, especially as those species mature. The proposed 20m setback will help to ensure that built form does not sit in the immediate vicinity of the road, which would encroach on and restrict views looking along Mamre Road when travelling by car.
 *Viewpoint 4: Existing*		
05 – Driveway of 833B Mamre Road	Mature vegetation both within the road reserve as well as the private property comprises the most noticeable elements of the view. Highly filtered views of the private dwelling are possible through the mature vegetation. Overhead power lines running parallel to Mamre Road can be seen, as well as a simple wire fence.	<u>High/Moderate Impact</u>: Stage 1: The existing levels between Mamre Road and the private property are relatively level with one another currently, and this will be replaced by an embankment which will alter the level between Mamre Road and the proposed development. Existing vegetation will be removed in order to create the embankment and flat pad of Lot 9. The proposed embankment will be planted with a range of trees and groundcovers which will create a textured and varied embankment rather than a solid flat buffer along Mamre Road.

View	Features/Value	Impacts
		Completed Estate: The proposed 14 metre high warehouse of Lot 9 will be visible on top of the flat pad. This will significantly increase the level of built form in the view and diminish views of open sky. In the foreground the 20m setback and frontage planting will be visible. As this planting matures, this will further filter view of the warehouse.
 *Viewpoint 5 – Existing*  *Viewpoint 5 – Proposed*		
06 – Driveway of 819 Mamre Road	A long distance view over a rural landscape to low lying hills in the distance is the most defining element of the visual scene. Scattered groupings of mature vegetation through the view can be noticed, however the majority of the land is cleared in support of rural/farming activities. A low level of built elements can be seen, including sheds to the	High/Moderate Impact: Stage 1 and Completed Estate: Long distance views to the hills will be replaced by a planted embankment running parallel to Mamre Road. The Lot 1 warehouse will be clearly visible on the elevated flat pad beyond the embankment and will result in a

View	Features/Value	Impacts
	right of the view, overhead power lines, and simple wire fencing throughout the view.	significant new built-form edition to the visual scene. The proposed café and office will also be visible from this location. Over time views of the proposed warehouse will become more filtered as a result of the proposed frontage planting maturing which will break up the western façade of the building, however the present of the warehouse will still be discernible.
 *Viewpoint 6: Existing*		
07 – Driveway of 805 Mamre Road	A relatively flat rural landscape extending into the distance before eventually giving way to low lying hills defines the visual scene. A number of small man-made objects can be seen scattered throughout the landscape.	Moderate Impact: Stage 1 and Completed Estate: A noticeable change to the existing landform will be visible from this location as a result of the proposed basin. This will result in an embankment running parallel to Mamre Road in this location (and for the majority of the eastern boundary of the proposed development). This will result in the current long distance views being replaced by the embankment with frontage planting. Above the embankment and proposed planting will be views of the Lot 1 warehouse, which will obstruct any views into the distance. The warehouse will be a significant, new built-form

View	Features/Value	Impacts
		element to the visual scene, as the existing built-form elements in the immediate vicinity are comprised predominately of private residential housing and agricultural buildings. It is anticipated that over time as the frontage planting matures, views of the eastern façade of the proposed warehouse will become more filtered which will soften the visual impact, however the presence of the warehouse will still be clearly discernible.

Viewpoint 7 – Existing

Viewpoint 7: Proposed

View	Features/Value	Impacts
08 – Driveway of 783 Mamre Road	A number of mature trees dominant the view from this location, both within the road reserve and within the proposed development. This vegetation obscures a large portion of the proposed development, however the change in elevation at the southern end of the site can be seen to the right of the view. A number of man-made elements can be seen from this position including housing to the right of the view, power lines and power poles and also simple wire fencing.	High-Moderate Impact: Stage 1 and Completed Masterplan: Views of the Riparian Zone planting and Lot 1 warehouse will be visible from this location. Although sporadic mature trees run parallel to Mamre Road, views of the site will be easily accessible between them. The grouping of trees visible behind the road planting will be removed which will allow for distinct views of the proposed warehouse, however it is anticipated that over time as the Riparian Zone planting matures, the impact of the built-form of the warehouse will be diminished, with more filtered views resulting. The ecological assessment of the riparian zone concludes that the re-aligned riparian zone, rehabilitated in accordance with the VMP, will result in an increased riparian zone in significantly better condition than currently exists. Although the proposed planting will eventually help mitigate the impact of the Proposal, the scale of the warehouse will result in a new scale of built-form in this location that is currently comprised of residential and agricultural scale buildings.

Viewpoint 8: Existing

View	Features/Value	Impacts
 *Viewpoint 8: Proposed*		
09 – Driveway of 757-769 Mamre Road	The majority of the proposed development is obscured as a result of mature vegetation to the right of the view in the mid-foreground as well as a shed in front of vegetation in the centre of the view. The change in elevation towards the southern end of the site is just visible above the shed and central vegetation. Scattered mature trees can be seen to the left of the view. Mamre Road can be seen receding into the distance towards the proposed development.	Moderate/Low Impact: Stage 1 and Completed Estate: Views of the Riparian Zone planting and the Lot 1 warehouse will be possible between the gap of the dominant tree to the left of the view and the small quantum of trees to the right of the view. The grouping of trees running parallel to Mamre Road to the right of the view means that a significant portion of the proposed development will be either obstructed or be visible through highly filtered views. Although the removal of the shed, vegetation and buildings visible between the existing trees outside of the Proposal Site will be noticeable with the replacement of views if the Riparian Zone and the Lot 1 Warehouse, this will be lessened over time as the vegetation within the Riparian Zone matures, creating more filtered views of the proposed warehouse.

View	Features/Value	Impacts
 *Viewpoint 9: Existing*		
10 – Driveway of 1 Bakers Lane	The elevated position allows for views southwards which overlook a small portion of the north-eastern edge of the proposed development. Existing vegetation within the proposed development as well as running parallel to Mamre Road largely obscure long distance views. However the glimpse of the distant horizon are still possible. As a result of a change in topography in the foreground of the view, the majority of the subject site cannot be seen from this location.	Moderate/Low Impact: As a result of the landform beginning to rise to the right of the view, only a small portion of the north-western edge of the proposed development will be visible from this location, predominately the riparian zone and a small portion of the Lot 1 warehouse. A small quantum of vegetation will be removed from the scene, however it is anticipated that this will be mitigated as a result of the proposed planting in the riparian zone, although this will take time for the tree species to reach maturity. The distance of the viewpoint location and the limited visual accessibility of the proposed development from this location means that although it will form a noticeable change in the visual scene, it will sit within the wider view and not dominate the view.

View	Features/Value	Impacts
 *Viewpoint 10: Existing*  *Viewpoint 10: Proposed*		
11 – Driveway of Little Smarties Early Learning Centre / Mamre Anglican School	A distinctive change in level between the viewpoint and the rural land located on the opposite side of Bakers Lane is the most noticeable element of the view. Grass comprises the majority of the vegetation visible with a small scrub in the foreground. Minimal man-made elements can be seen which include simple wire fencing and a small sign.	Negligible Impact: Stage 1: As a result of a distinct level difference between Bakers Lane and the landform to the south, views of the proposed development from this location will not be possible, resulting in no change to the visual scene. Completed Estate: No change in view will result.

View	Features/Value	Impacts
 *Viewpoint 11: Existing*		
12 – Entrance of Emmaus Catholic College and Trinity Primary School	An undulating rural landscape occupies the visual scene. The dominant vegetation is grassland. However a number of mature trees can be seen throughout the view in both the mid and foreground. Man-made elements are very minimal from this location and are comprised of simple wire fencing and a small road marker.	Negligible Impact: Stage 1: As a result of the existing landform, the proposed development will not be visible from this location, resulting in no change to the visual scene. Completed Estate: No change in view will result.
 *Viewpoint 12: Existing*		

View	Features/Value	Impacts
13 – 183 – 197 Aldington Road	A rural landscape comprised of a single private dwelling surrounded by mature vegetation in the mid-ground are the most noticeable visual elements. In the foreground can be seen a simple wire fence running parallel to Aldington Road, as well as the edge of a basin to the very left of the view.	Negligible Impact: Stage 1: As a result of the existing landform views, the proposed development will not be possible from this location, which is consistent with much of Aldington Road, particularly to the northern portion of the road as a result of a more significant change in topography between the road and the crease of the landform to the east of the road. Completed Estate: No change in view will result.
 *Viewpoint 13: Existing*		
14 – Driveway of 865 Mamre Road	As a result of a significant change in level between the driveway and the neighbouring property, rural grassland is the most dominant feature of the view. To the right can be seen the western edge of a private residence on the site at the peak of the hill. In the immediate foreground can be seen a simple wire fence separating the property and the driveway. The viewing position is adjacent to the neighbouring private dwelling along the site boundary and has been chosen to represent the view from this dwelling.	High Impact: Stage 1: The naturally rising landform will be replaced by a noticeably different steep embankment which will level off to a flat pad at the top. This will result in an overall reduction in height of landform at this location as a result of the removal of the crest of the hill (and private residence). The current natural looking landform will be replaced with a highly modified topography. A mixture of boundary planting is proposed for this location and will consist of a range of trees, shrubs,

View	Features/Value	Impacts
		grasses and groundcovers. The grasses and shrubs will establish more quickly than the trees, which will require a number of years to reach maturity. The variation in height between the vegetation along the boundary will help to soften the impact of the flat pad level. Completed Estate: Views of the southern elevation of the 14 metre high Lot 11 warehouse will significantly increase built form views. Due to the proximity of the viewpoint to the site boundary and proposed warehouse, views of the open sky will be significantly decreased. Vegetation from Stage 1 will help to filter views of the warehouse over time but will not be able to fully obstruct views of the warehouse.
 *Viewpoint 14: Existing*		
15 – Entrance to Driveway of 784 Mamre Road	The visual scene is dominated by rural elements such as the paddock in the foreground. In the distance can be seen a scattering of trees as well as a farming shed to the centre left. To the centre right in a gap between the trees more farming sheds can be seen in the distance, with a private residential dwelling visible to the right of the view.	<u>Moderate Impact:</u> Stage 1: A noticeable change to the ground level will occur as a result of the earthworks for the riparian corridor and the pad for Warehouse 1, creating a 'hill' in the area that is predominately flat in the existing view. A significant increase in the level of vegetation in the view will occur as a result of the riparian

View	Features/Value	Impacts
		corridor, increasing both the number of trees and shrub/grass planting. Significant long distance views in the existing view were largely obstructed as a result of trees in the view, however a small number of gaps in the trees allowed for highly framed views. As a result of the proposal these limited number of long distance views will be obstructed, limiting views to mid-ground. Completed Estate: No significant difference to the visual scene will result between the Stage 1 works and completed masterplan.

Viewpoint 15: Existing

View	Features/Value	Impacts
 *Viewpoint 15: Proposed*		
16 – Driveway of 784 Mamre Road	The view is dominated by the rural landscape of paddocks, fence lines, and a number of buildings consisting of farming sheds and residential dwellings. A scattering of trees are visible in the mid-ground and distance, with a large dame visible to the centre right of the view. As a result of the limited number of trees, long distance views to the ridgeline are possible with a large shed visible to the centre left.	<u>Moderate Impact:</u> Stage 1: Elements of the riparian corridor will be the most visible aspect of the Proposal from this location. A significant increase in vegetation, both trees as well as grass and shrub planting, will occur. This will provide highly filtered views of Warehouse 1 and Warehouse 3. Long distance views will be lost as a result of the Proposal, limiting views to the mid-ground distance only. As the driveway is orientated on the east-west axis the users of the driveway will not be directly facing this view as they travel the driveway. However they will still be able to be aware of the view in their peripheral vision. Completed Estate: No significant difference to the visual scene will result between the Stage 1 works and the completed masterplan.

View	Features/Value	Impacts
 *Viewpoint 16: Existing*  *Viewpoint 16: Proposed*		
17 – Agricultural Field (784 Mamre Road)	The view is dominated by the agricultural paddock, with a small number of trees scattered throughout the mid-ground. A large dam can be seen to the centre left of the view, and to right of the view can be seen a number of small sheds and buildings. In the distance a number of private dwellings along Mamre Road are visible, and in the extreme distance the Blue Mountains are just visible.	Moderate Impact: Stage 1: The foreground of the view will remain unaltered and comprised of open paddock land. The riparian corridor and Warehouse 3 will clearly visible from this location, with the level of vegetation in the view significantly increasing as a result of the riparian corridor. The majority of the long distance views will be lost as a result of Warehouse 3. However a small section of long distance views will be visible to the right of the view which is outside of the Proposal boundary.

View	Features/Value	Impacts
		Completed Estate: No significant difference to the visual scene will result between the Stage 1 works and completed masterplan.

Viewpoint 17: Existing

Viewpoint 17: Proposed

Source: Coulston Associates

5.2.4. Mitigation and Management

Coulston Associates concludes the visual impacts of the proposed development on the studied viewpoints range from negligible to high. It is anticipated that the impact from all viewpoints will decrease over time as the proposed planting matures.

There are typically five broad approaches to mitigating the visual impacts of any change to a scene that entails built form development: Avoidance; Reduction; Alleviation; Off-site Compensation; and Management. The relevant responses to the approaches are outlined below.

- Avoidance: The proposed development is located within the Mamre Road Precinct in the Western Sydney Employment Area, which aims to create a productive region by driving opportunities for investment, business and jobs growth to support a metropolis of three cities. Given the objectives around

the planning for the area, avoiding the proposal altogether or locating it elsewhere is not a suitable mitigation option.

- Reduction: The scale of the proposed development is linked to the anticipated operational requirements, and therefore certain elements are required in order for successful operations, such as building scale, earthworks and access. The scope for reduction as the primary form of mitigation is limited given these operational constraints and is therefore not considered to be the most effective form of mitigation.
- Alleviation: A number of planting strategies have been deployed throughout the proposed development. Planting will help to filter views of the earthworks and warehouses, which will help limit the impact of new significant built form, as well as mitigate the required removal of any vegetation on the site. The effectiveness of the proposed planting will increase over time as the planting matures, particularly proposed trees which will be more effective after 10-15 years of growth.
- It is noted that the overall building materiality concept is centred around the use of unpainted and natural feeling materials and colours, where possible. The warehouses overall are proposed to be simple built forms which include Colourbond natural colours for the canopy which will help to anchor the proposed development within the surrounding landscape.
- Building upon the materiality concept will include consideration of specific building materials and building facades during the detailed design phase in order to minimise the visual impacts of the built-form. This could include the testing of appropriate colour pallets for building materials and ensuring that building materials have a lower reflectivity as possible.
- Off-site compensation: The number of visual receivers to the proposed development is limited and as a result the use of off-site compensation through the use of strategic planting is limited, but could provide filtered views of the proposed development for a limited number of receivers if they felt the visual impacts were too intrusive.
- Management: An appropriate Construction Environmental Management Plan (CEMP) should be prepared for the construction phase of the proposed development by the responsible construction contractor which outlines the management measures for environmental impacts including impacts on sensitive receivers.

5.2.5. Conclusion and Recommendations

The areas with the greatest potential for visual impact as a result of the AIE are along Mamre Road to the west of the site. However, the mitigation measures proposed will reduce these impacts to a moderate to lower range, by filtering views to the proposed development.

The following key measures are proposed for the western interface treatment:

- Introduction of a 20m landscape buffer along Mamre Road;
- Extensive planting with a mix of low, medium and high level plant;
- Retention of existing vegetation where possible;
- Implementation of a landscape maintenance and management regime to ensure the planting successfully establishes and thrives;
- Orientation of active faces of warehouses away from the western façade; and
- Selection of colours for the buildings which are of a complementary palate to the existing landscape colours.

This provides a comprehensive suite of measures to effectively mitigate the impact of the proposed development on adjacent occupiers. In addition, surrounding lands, including most of the receivers themselves are proposed to be zoned IN1 General Industrial. As this precinct evolves, surrounding lands will likely encompass similar built forms to the proposed development which will minimise the overall impact of the proposed development.

Based on this visual assessment of the Surveyed Views and character analysis of the local context, the proposed development is not considered to be incompatible with the height, scale, siting and character of the

immediate rural context. The proposal will not detract from the character of the locality or unduly impact the quality of views from the existing private and public receivers that have been considered in this study.

5.3. ECOLOGY

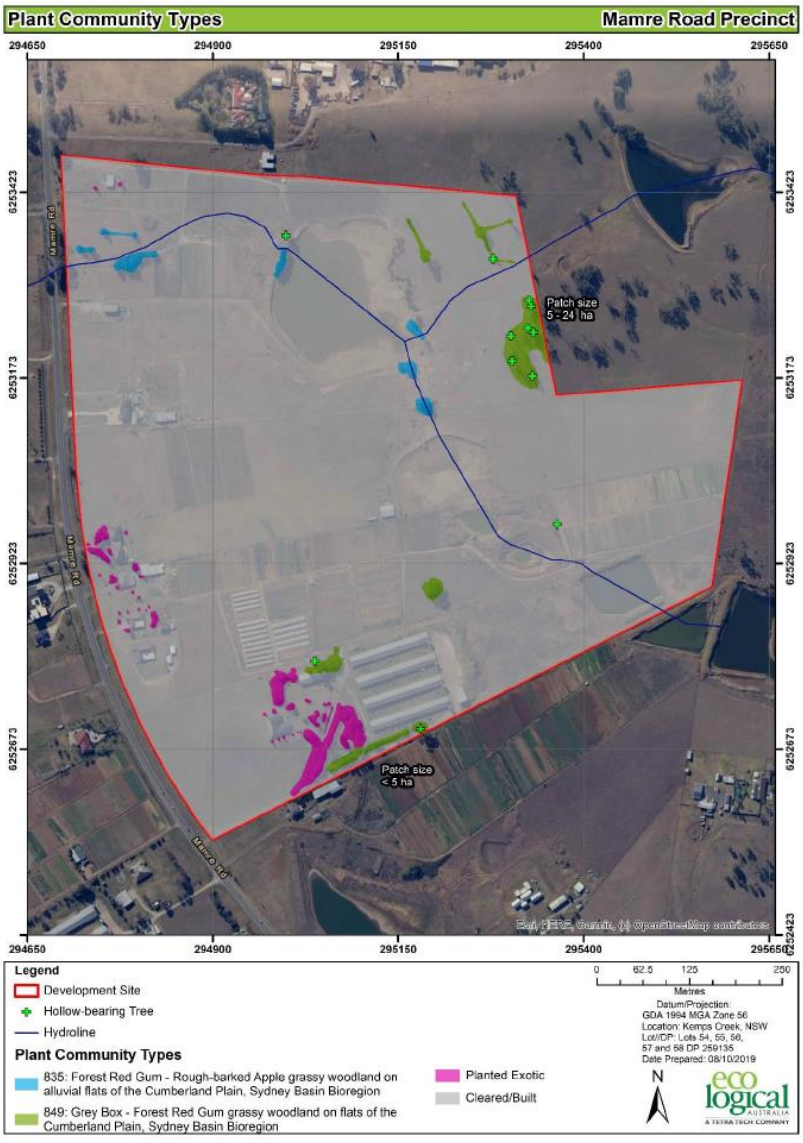
5.3.1. Overview

The AIE is largely cleared of native vegetation with approximately 89% of the vegetated cover on the site cleared. The remaining 11% vegetated cover on the site is limited to small remnant patches and sparsely scattered trees. Two plant community types were identified as occurring within the development site:

- PCT 835 – Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats, and
- PCT 849 – Grey Box – Forest Red Gum grassy woodland on flats.

The condition of vegetation across AIE is degraded due to persistent impacts from agricultural uses. Some of the remnant native vegetation on the site has been assessed as being associated with two Threatened Ecological Communities (TECs) listed under the BC Act. There is no present Critically Endangered Ecological Community (CEEC) as listed under the EPBC Act. These are considered at **Table** 22 below. The extent of the BC Act and EPBC Act listed communities are shown at **Figure 35.**

Figure 35 Vegetation Communities



Source: Ecological Australia

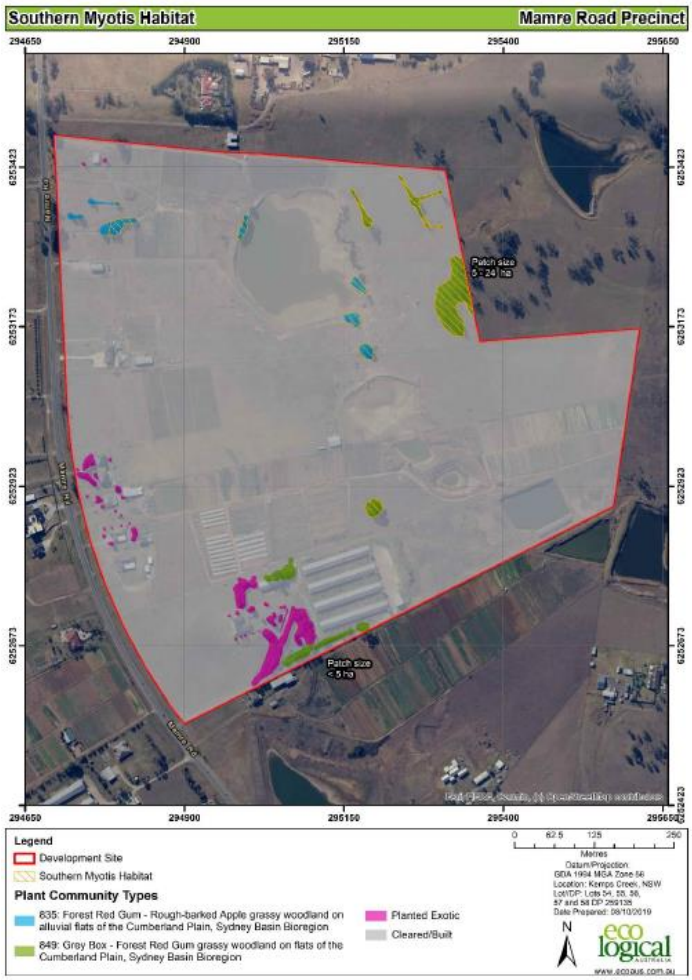
Table 22 Threatened and Endangered Ecological Communities

PCT	Condition	Area
835 Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion	Poor	0.28ha
849 Grey Box – Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion	Poor	0.84ha

The proposed development would result in the clearing of a total of .1.27ha of native vegetation.

In addition, *Myotis Macropus* (Southern Myotis), listed as vulnerable under the BC Act, was identified through echolocation surveys as utilising the development site. Southern Myotis is a credit species under the BAM. The investigations did not confirm whether the site is being used for breeding, so the assessment has assumed this is the case. The Southern Myotis habitat is shown at **Figure 36** below.

Figure 36 Southern Myotis Habitat



Source: Ecological Australia

5.3.2. Potential Impacts

The direct and indirect impacts of the proposed AIE development on flora and fauna are considered in the table below.

Table 23 Direct and Indirect Impacts on Flora and Fauna

Issue	Considerations	Impact
Vegetation	Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats (poor) Grey Box – Forest Red Gum grassy woodland on flats (poor, paddock trees, planted)	Direct Impact Removal of 1.08 ha of native vegetation
Threatened Fauna	Southern myotis habitat	Direct Impact Loss of 0.84 ha of habitat
Sedimentation and contaminated and/or nutrient rich run-off	Risk during the construction phase. Runoff during works. May occur during rainfall events.	Indirect Impact Will have short term impacts during rainfall events.
Inadvertent impacts on adjacent habitat or vegetation	Risk during the construction phase. May cause damage to adjacent habitat or vegetation.	Indirect Impact. Will have short term impacts. The duration is sporadically throughout the construction phase.
Transport of weeds and pathogens from the development site to adjacent vegetation.	Risk during the construction phase. Has the potential to spread to adjacent habitat.	Indirect Impact. Will have short term impacts. The duration is sporadically throughout the construction phase.
Rubbish dumping.	Risk during the construction and operational phase.	Indirect Impact. Will have long term impacts. Dumping may occur occasionally throughout the construction and operation period.
Increase in pest animal populations.	Risk during the construction and operational phases.	Indirect Impact. Negligible likelihood of impact occurring because only a small degraded area of native vegetation will be removed.

Issue	Considerations	Impact
Disturbance to specialist breeding and foraging habitat, e.g. beach nesting for shorebirds.	Risk during the construction and operational phases	Indirect Impact. Will have long term impacts. Removal of hollow bearing trees assumed breeding habitat for Southern Myotis.

Serious and Irreversible Impacts (SAII)

The development footprint contains one Serious and Irreversible Impacts (SAII) candidate entity:

- Cumberland Plain Woodland in the Sydney Basin Bioregion
  - Principle 1 and 2
  - Direct Impact: 0.61ha
  - No threshold has been set for this candidate SAII.

Detailed consideration of whether impacts on candidate TECs are serious and irreversible is included at **Table 24**.

Table 24 Evaluation of an impact on a TEC

Impact Assessment Provisions	Assessment
1. The action and measures taken to avoid the direct and indirect impact on the potential entity for an SAII.	No measures to avoid direct impacts to SAII entity as the vegetation is in poor condition and the site is identified for future employment land development.
2. The area and condition of the TEC to be impacted directly and indirectly by the proposed development. The condition of the TEC is to be represented by the vegetation integrity score for each vegetation zone.	The proposed development will directly impact 0.61ha of the community in poor condition with a vegetation integrity score of 8.6. Indirect impacts on this community within adjacent lands would be managed through strict sediment and erosion control measures.
3. A description of the extent to which the impact exceeds the threshold for the potential entity that is specified in the Guidance to assist a decision-maker to determine a serious and irreversible impact.	The SAII threshold has not yet been published for Cumberland Plain Woodland.
4. An estimate of the extent and overall condition of the TEC within an area of 1,000 ha, and then 10,000 ha, surrounding the proposed development footprint.	It is estimated that there is 260.03 ha of Cumberland Plain Woodland within 1,000 ha of the development site and 757.83 ha within 10,000 ha. The removal of 0.61 ha would result in a reduction of 0.23% of Cumberland Plain Woodland within 1,000 ha around the development site and 0.08% of Cumberland Plain Woodland within 10,000 ha of the development site.

Impact Assessment Provisions	Assessment
5. An estimate of the area of the potential TEC that is in the reserve system within the Interim Biogeographical Regionalisation for Australia (IBRA) region and the IBRA subregion.	Within the Cumberland Plain IBRA subregion there is also an estimated 1291.53 ha of Cumberland Plain Woodland remaining within the reserve system. It is estimated that the Cumberland subregion contains a total of approximately 22,158.8 ha of Cumberland Plain Woodland
6. The development's proposal's impact on: a. Abiotic factors critical to the long-term survival of the TEC; for example, will the impact lead to a reduction of groundwater levels or substantial alteration of surface water patterns; will it alter natural disturbance regimes that the TEC depends upon, e.g. fire, flooding, etc? b. Characteristic and functionally important species through impacts such as, but not limited to, inappropriate fire/flooding regimes, removal of under-storey species or harvesting of plants c. The quality and integrity of an occurrence of the TEC through threats and indirect impacts including, but not limited to, assisting invasive flora and fauna species to become established or causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants which may harm or inhibit growth of species in the TEC	a. The proposal is unlikely to impact abiotic factors critical to the long-term survival of the TEC. There is potential for areas directly adjacent to the development site to be impacted by salinity following clearing and soil disturbance. b. The proposal will not impact characteristic and functionally important species outside of the proposed impact area. c. The development has the potential to assist the spread of exotic flora in Cumberland Plain Woodland adjacent to the development footprint.
7. Direct or indirect fragmentation and isolation of an area of the TEC	The development will not cause direct or indirect fragmentation or isolation of any area of Cumberland Plain Woodland.
8. The measures proposed to contribute to the recovery of the TEC in the IBRA subregion.	Offsets for the development should be sourced from within the Cumberland IBRA subregion to contribute to the recovery of the TEC in the subregion.

5.3.3. Mitigation and Management

The approach to mitigation and management of flora and fauna for the AIE development is outlined in **Table 25** below.

Table 25 Measures to mitigate and manage impacts

Measure	Action	Outcome	Timing	Responsibility
Displacement of resident fauna and instigating clearing protocols including pre-clearing surveys, daily surveys and staged clearing, the presence of a trained ecological or licensed wildlife handler during clearing events	Pre-clearance survey of hollow-bearing trees to be removed and supervision of felling to prevent injury/relocate any resident	Limit harm to resident fauna during construction	Prior to / during clearance works	Project manager, ecologist
Timing works to avoid critical life cycle events such as breeding or nursing	10 hollow bearing trees were identified within the development footprint. Removal should not take place in spring and summer. If removal takes place in summer a detailed pre-clearance inspection must take place, including visually inspecting all hollows for the presence of microbats. If microbats are present at the time of inspection, then the suitably qualified ecologist will advise of a suitable methodology for tree removal	Limit harm to breeding individuals	Autumn and winter	Project manager, ecologist
Installing artificial habitats for fauna in adjacent retained vegetation and	10 hollow bearing trees were identified within the development footprint. Replace	Compensatory habitat provided	Prior to clearing of native vegetation	Project manager

Measure	Action	Outcome	Timing	Responsibility
habitat or human made structures to replace the habitat resources lost and encourage animals to move from the impacted site, e.g. nest boxes	with 10 nest boxes within the future riparian corridor.			
Clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, removal of native vegetation by chain-saw, rather than heavy machinery, is preferable in situation where partial clearing is proposed.	Install no go fencing prior to construction works adjacent to the retained vegetation adjoining the patch of PCT 849 in the north east.	Vegetation to be retained outside of the development site boundary (north eastern boundary) and retained vegetation within the Development Site will not be disturbed or impacted.	Fencing to be set up prior to any works occurring on site and to remain and be maintained throughout duration of construction works.	Project manager
Sediment barriers or sedimentation ponds to control the quality of water released from the site into the receiving environment.	Appropriate controls will be utilised and maintained to manage exposed soil surfaces and stockpiles to prevent sediment discharge into waterways	Erosion and sedimentation will be controlled	For the duration of construction works	Project manager
Noise barriers or daily/seasonal timing of construction and operational activities to reduce impacts of noise	Daily timing of construction activities is recommended in accordance with Table 1 of *Interim Noise Guidelines* (2009)	Noise impacts associated with the development will be managed in accordance with guidelines.	For the duration of construction works.	Project manager

Measure	Action	Outcome	Timing	Responsibility
	Monday to Friday 7:00am to 6:00pm Saturday 8:00am to 1:00pm No work on Sunday or public holidays			
Adaptive dust monitoring programs to control air quality	Dust suppression measure will be implemented during construction works to limit dust on site.	Mitigate dust created during construction activities	For the duration of construction works	Project manager
Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas	Vehicles, machinery and building refuse associated with the development construction should remain only within construction footprint areas, avoiding weed or pathogen related impacts to vegetation outside of the development site consist with Arrive Clean Leave Clean (DotEE 2015)	Prevent spread of weeds or pathogens	For the duration of construction works	Project manager
Staff training and site briefing to communicate environmental features to be protected and measure to be implemented	All staff working on the development will undertake an environmental induction as part of their site familiarisation. This induction will include items such as: avoiding indirect impacts to offsite	All staff entering the development site are fully aware of the presence of native vegetation adjacent to the site what to do in case of any environmental emergencies.	To occur for all staff entering/working at the development site. Site briefings should be updated based on phase of the work when environmental issues become apparent.	Project manager

Measure	Action	Outcome	Timing	Responsibility
	adjacent vegetation correct storage of chemicals to prevent runoff into adjacent vegetation			
Development control measures to regulate activity in vegetation and habitat adjacent to residential development including controls on pet ownership, rubbish disposal, wood collection, fire management and disturbance to nest and other niche habitats.	Temporary fencing to be placed around adjacent to the retained vegetation adjoining the patch of PCT 849 in the north east.	Protect vegetation and habitat adjacent to development site.	During operational phase	Client
Making provision for the ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on or adjacent to the development site	Any landscape planting in the development site is to use locality derived native species and those found within CPW.	Areas within the development site will be landscaped using appropriate species.	Following completion of construction activities	Project manager

Source: Ecological Australia

Biodiversity Offsets

The requirements for offsets as part of the AIE development was assessed and determined in accordance with the NSW BOP. The policy requires that offsets be provided for unavoidable impacts on certain significant vegetation. The offset requirements for AIE are as follows.

Table 26 Ecosystem credits required

PCT ID	PCT Name	Vegetation Formation	Direct Impact (ha)	Credits required
849	Grey Box – Forest Red Gum grassy woodland on flats	Grassy Woodland	1 paddock tree	1

PCT ID	PCT Name	Vegetation Formation	Direct Impact (ha)	Credits required
	of the Cumberland Plain, Sydney Basin Bioregion Paddock Tree			

Species	Common Name	Direct impact number of individuals/ habitat (ha)	Credits required
Myotis Macropus	Southern Myotis	0.84	3

Source: Ecological Australia

To address the credits required to offset the proposed AIE development, Mirvac would undertake BioBanking. As the AIE is a staged development, BioBanking credits would be required at the stage of earthworks. However, the revegetation and management of the biobank site would commence from approval of the BioBanking Agreement. A BioBanking Agreement Application for the site would be sought following approval of the SSD DA.

5.3.4. Conclusion and Recommendations

The proposed AIE development would result in unavoidable impacts to native vegetation on the site. A total of three species credits are required for Southern Myotis and one credit required to offset the impact to PCT 869 Scattered Paddock Tree. No ecosystem credits are required for PCT 849 or PCT 835 in poor condition as they received a vegetation integrity score of <17. Subject to the implementation of the mitigation and management measures described above, the impacts of the proposal on flora and fauna would be maintained at acceptable levels.

5.4. NOISE AND VIBRATION

5.4.1. Overview

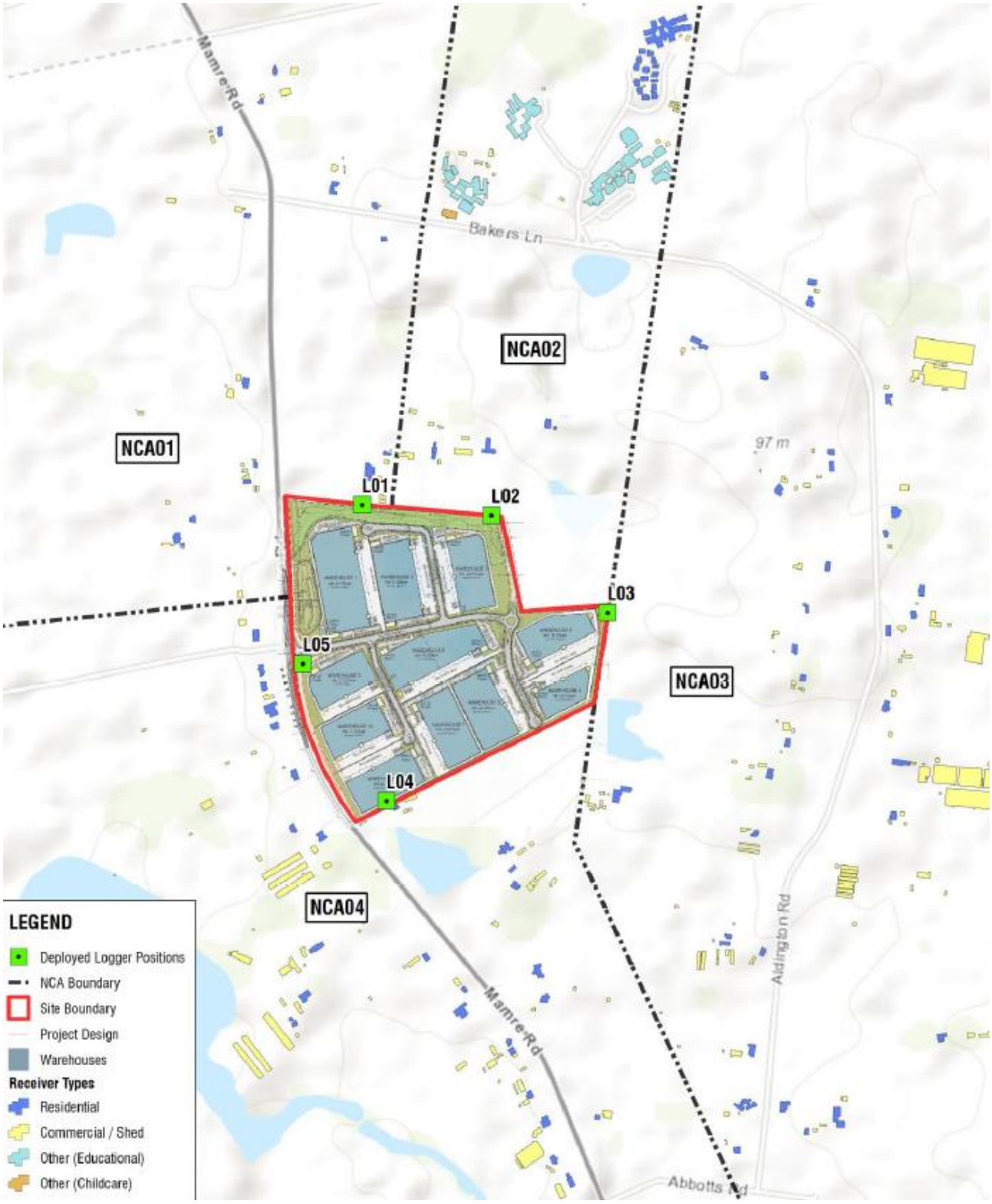
A Noise and Vibration Assessment has been prepared by SLR Consulting and is included in **Appendix EE**. The existing ambient noise environment surrounding the development site is typical of a rural environment, with the natural environment dominating the background noise. The area surrounding the development has been divided into four Noise Catchment Areas (NCAs). The NCAs group together sensitive receivers with similar existing noise environments. These are detailed in **Table 27** and shown in **Figure 37** below.

Table 27 Sensitive Receivers

NCA	Direction from Development	Description
NCA01	Northwest North	▪ Scattered rural residential dwellings with associated commercial shed structures. ▪ Closest receivers are 70m north and 100m northwest of the site.
NCA02	North	▪ Scattered rural residential dwellings with associated commercial shed structures. ▪ Several schools, a child care and aged care facility are located in this NCA north of Bakers Lane.

NCA	Direction from Development	Description
		▪ Closest residential receiver is approximately 140m and closest education/childcare receivers are 800m north.
NCA03	East	▪ Primarily scattered rural residential dwellings with associated commercial shed structures. ▪ Closest residential receivers are 250m to south-east and 500m to the east.
NCA04	South Southwest West	▪ Primarily scattered rural residential dwellings with associated commercial shed structures. ▪ Closest residential receivers to the site boundary are around 5m to the south and around 70m to the west.

Figure 37 Location of Sensitive Receivers



Source: SLR Consulting

The results of the unattended ambient noise surveys are presented in **Table 28** as the Rating Background Level (RBL) and LAeq (energy averaged) noise levels for the daytime, evening and night-time periods.

Table 28 Summary of Unattended Noise Logging Results

Noise Monitoring Locations	Noise Level (dBA)					
	Daytime		Evening		Night-time	
	RBL	LAeq	RBL	LAeq	RBL	LAeq
L01	39	50	39	49	32	50
L02	35	43	33	42	32	43
L03	34	44	33	41	29	41
L04	39	52	40	53	32	54
L05	42	59	43	59	34	56

5.4.2. Overview of Impacts

Construction Noise Impacts

Assessment of the construction phase acoustic impacts were assessed having regard to

- *NSW Interim Construction Noise Guidelines* (ICNG) for noise and vibration emanating from the construction site, and
- The EPA's *Road Noise Policy* (RNP) and *Construction Noise and Vibration Guideline* for construction traffic on public roads.

Where possible, the majority of construction works would be undertaken in accordance with the ICNG during the standard daytime construction working hours of:

- 7:00 am to 6:00 pm Monday to Friday, and
- 8:00 am to 1:00 pm on Saturdays.

Where works are required to be undertaken outside standard construction hours, the works will be conducted in accordance with an approved Out of Hours protocol to be prepared, submitted and approved as part of the Construction Environmental Management Plan (CEMP) prior to commencement of the works.

The assessment uses 'realistic worst-case' scenarios to determine the potential airborne noise impacts from the noisiest 15-minute period for each work scenario, as required by the ICNG. Scenarios have been categorised into 'Peak' and 'Typical' works which have been used to define the likely range of potential noise impacts:

- '**Peak**' works represent the noisiest stages and can require noise intensive equipment, such as rockbreakers or concrete saws. 'Peak' works scenarios also include multiple items of the same construction equipment where the works are conducted concurrently in several locations of the site. While 'Peak' works would be required at times, the noisiest works would not occur for the full duration of the works.
- '**Typical**' works represent typical noise emissions when noise intensive equipment is not in use. The 'Typical' works generally include most items of equipment for a given activity except for the loudest item. These items generally support the 'Peak' works activity and are referred to as 'supporting equipment'.

Construction activities would occur sequentially and it is expected that there would be relatively long periods where construction noise levels are much lower than the 'Peak' and 'Typical' worst-case levels presented in this assessment. There would also be times when works are not audible at receivers due to no noisy items of equipment being used.

Figure 38 sets out the predicted worst-case construction airborne noise levels for standard daytime construction hours.

Figure 38 Predicted Worst-Case Construction Airborne Noise Levels – Standard Daytime Construction Hours

Receiver Category	NCA	Day NML[1]	Predicted Worst-case LAeq(15minute) Noise Level (dBA)															
			Enabling works				Site establishment				Bulk earthworks				Stage 1 infrastructure works			
			'Typical'		'Peak'		'Typical'		'Peak'		'Typical'		'Peak'		'Typical'		'Peak'	
			Far	Near	Far	Near	Far	Near	Far	Near	Far	Near	Far	Near	Far	Near	Far	Near
			Supporting works		Demolition of existing structures		Supporting and earthmoving		Vegetation clearing		General earthworks		Excavation through hard rock		Construction works		Earthworks	
Residential	NCA01	49	38 to 61		51 to 74		40 to 63		48 to 71		42 to 65		52 to 75		38 to 61		41 to 64	
	NCA02	45	36 To 55		49 to 68		38 to 57		46 to 65		40 to 59		50 to 69		39 to 55		42 to 58	
	NCA03	45	37 to 52		50 to 65		39 to 54		47 to 62		41 to 56		51 to 66		37 to 51		40 to 54	
	NCA04	49	39 to 78		52 to 91		41 to 80		49 to 88		43 to 82		53 to 92		41 to 61		44 to 64	
Other Sensitive[1]	NCA01	-	- to -		- to -		- to -		- to -		- to -		- to -		- to -		- to -	
	NCA02	-	<30 to 38		42 to 51		31 to 40		39 to 48		33 to 42		43 to 52		30 to 38		33 to 41	
	NCA03	-	- to -		- to -		- to -		- to -		- to -		- to -		- to -		- to -	
	NCA04	-	- to -		- to -		- to -		- to -		- to -		- to -		- to -		- to -	

Note 1 NMLs for other sensitive receivers vary according to receiver category and a single NML cannot be used for all categories. Other sensitive results cannot by colour coded in the above table.

Legend

No Exceedance | 1 - 10 dB above NML | 11 - 20 dB above NML | >20 dB above NML

Source: SLR

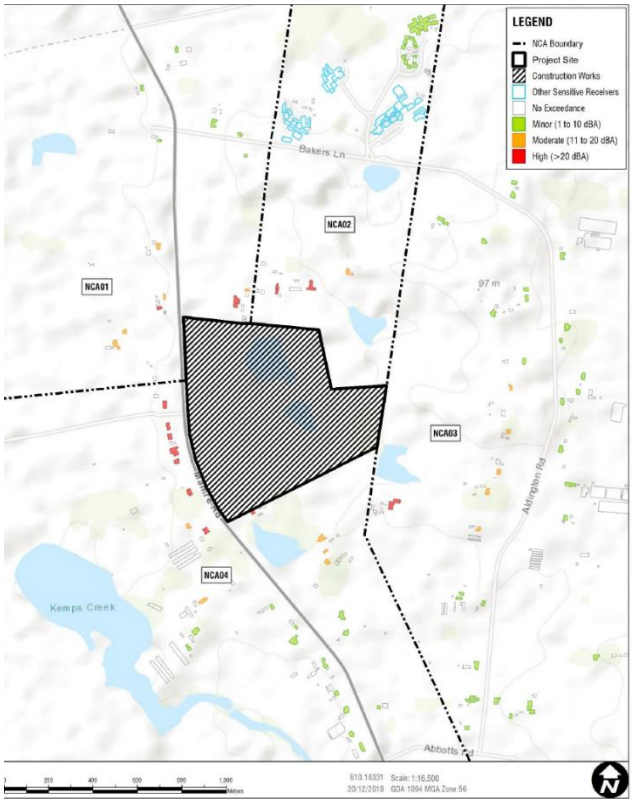
The assessment of the construction phase noise levels found that:

- The highest impacts are predicted during 'Peak' works activities associated with enabling works, site establishment, and bulk earthworks which involve the use of noise intensive equipment in close proximity to the nearest sensitive receivers. These works are, however, limited to daytime hours and would only be apparent for a relatively short duration compared to the overall construction program. Noise levels and impacts during 'Typical' works which do not require noise intensive equipment are considerably lower.
- Worst-case noise levels in NCAs with close receivers are predicted to be around 70 to 90 dBA.
- Individual receivers would be subject to a large range of worst-case impacts, depending on how far from the works they are. The highest impacts are seen when works are 'near' to receivers and are generally much lower when works are 'far', due to the increased separation distance. For example, several works with 'High' impacts at the potentially most affected receiver in a NCA are predicted to be compliant with the NMLs when the works are conducted further away.
- All works scenarios are predicted to be compliant with the NMLs at all receivers during 'Typical' works activities when the works are not close to receivers.
- The NCA with the highest predicted impacts is NCA04 which has a residential receiver located around 5m from the construction site boundary.
- The impacts at childcare, educational and commercial receivers are predicted to be compliant with the management levels for all construction scenarios and activities.

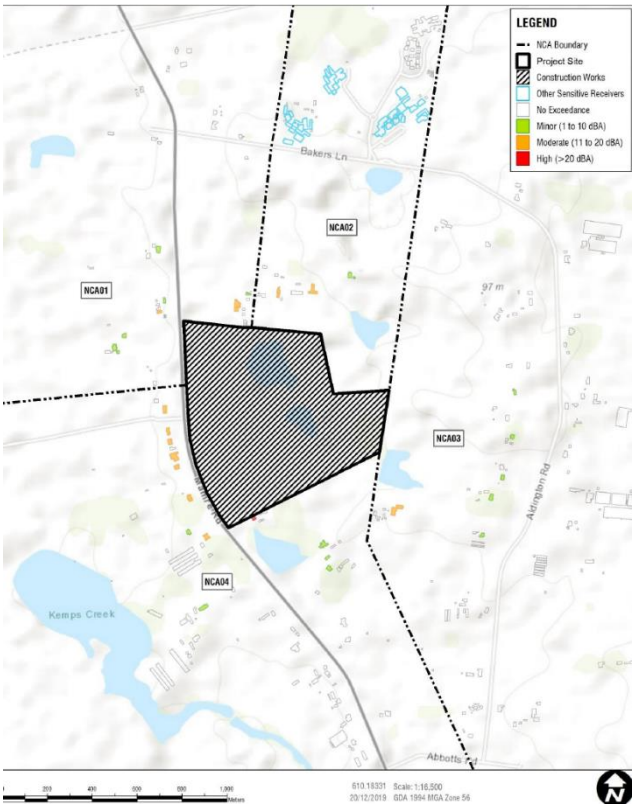
The construction works are predicted to result in 'high' worst-case noise impacts at the nearest receivers during higher noise generating activities. The impacts are generally limited to the closest few receivers in each NCA01, NCA02, and NCA03. The greater number of 'high' worst-case noise impacts are predicted in NCA04 as it contains a greater number of sensitive receivers within 70m of the construction site boundary.

The highest impacts are during ‘Peak’ scenarios which use noise intensive equipment such as rockbreakers and woodchippers. These items would, however, only be used intermittently during the works program. When noise intensive equipment is not in use during ‘Typical’ works, the worst-case impacts are predicted to generally be reduced to ‘minor’ or ‘moderate’ at the nearest receivers as shown in **Figure 39**.

Figure 39 Concept Masterplan Worst-case Airborne Noise Impact – Noise Intensive Bulk Earthworks



Picture 15 Peak Works

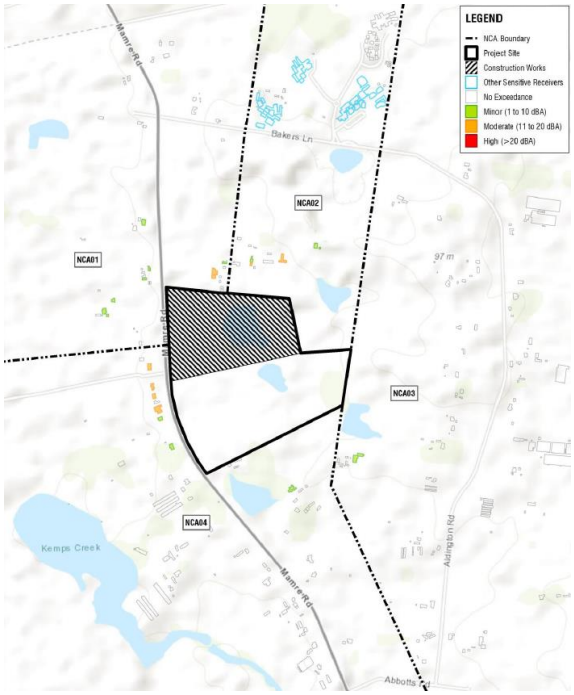


Picture 16 Typical Works

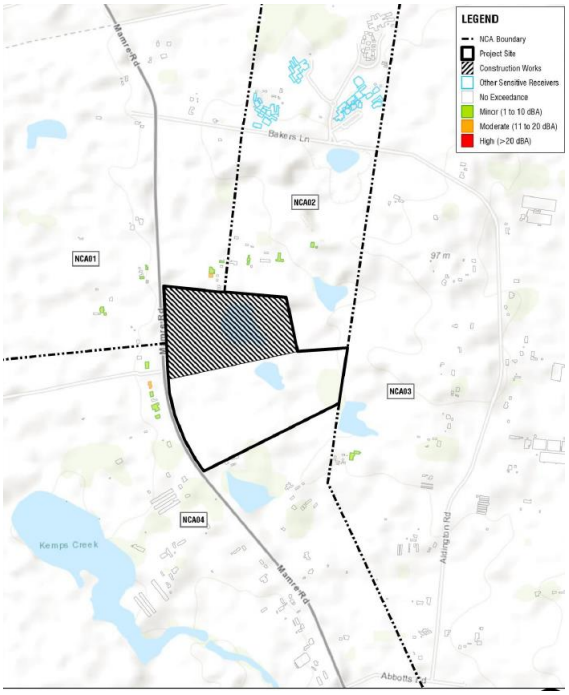
Source: SLR

Stage 1 infrastructure works would be limited to the northern half of the site and site access roads. The worst-case predicted noise impacts for these activities are generally ‘minor’ or ‘moderate’ for the nearest sensitive receivers as shown in **Figure 40**.

Figure 40 Stage 1 Worst-case Airborne Noise Impact – Noise Intensive Bulk Earthworks



Picture 17 Peak Works



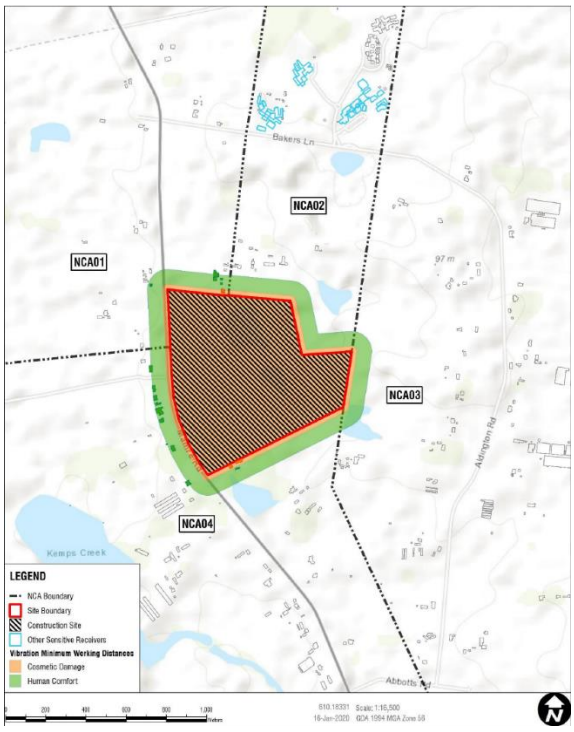
Picture 18 Typical Works

Source: SLR

Construction Vibration Impacts

Vibration intensive items of plant proposed for use during construction of the development would include rockbreakers and vibratory rollers. These items of equipment are proposed to be used primarily during enabling works and bulk earthworks.

Figure 41 Receivers within Construction Vibration



Source: SLR

Figure 41 shows that there is one residential receiver (in NCA04) and two commercial shed structures (in NCA01 and NCA04) that may be within the minimum working distances for cosmetic damage should rockbreaking or vibratory rolling works be required at the site boundaries closest to these receivers.

For human comfort vibration, a total of ten residential receivers and nine commercial shed structures (in NCA01 and NCA04) may be within the minimum working distances should rockbreaking or vibratory rolling works be required at the site boundaries closest to these receivers.

Various construction noise and vibration mitigation measures can be implemented during construction phase to mitigate measures where noise management levels are exceeded. These mitigation measures are outlined in **Section 5.4.3** below.

Should the need for out of hours works arise, the works will be conducted in accordance with an approved Out of Hours protocol to be prepared, submitted and approved as part of the Construction Environmental Management Plan (CEMP) prior to commencement of the works.

Construction Phase Road Traffic Noise Impacts

The construction road traffic (heavy vehicles and employee vehicles) is anticipated to access the site via Mamre Road, travelling from the Great Western Highway or M4 Motorway in the north, or Elizabeth Drive in the south.

During fill importation works, peak construction vehicle movements are expected to be approximately 400 heavy vehicles and 200 light vehicles per day.

During Stage 1 infrastructure works, peak construction vehicle movements are expected to be approximately 100 heavy vehicles and 200 light vehicles per day.

There is predicted to be an increase in noise level of 0.5dB during fill importation and less than 0.5dB during stage 1 works phase.

The proposed construction traffic is predicted to result in a minimal increase in the overall traffic noise levels along the construction vehicle routes to the development.

Note that this is assessment is based on the peak vehicle movements and peak hour traffic, as this was the only data available at the time of this assessment. During the rest of the daytime period when existing vehicle volumes are lower, increases in overall traffic noise levels due to construction traffic have the potential to be marginally higher than those outlined.

Operational Noise Impacts

Assessment of the operational phase acoustic impacts were assessed having regard to

- Noise Policy for Industry (NPFI) for noise emanating from the site, and
- The EPA's *Road Noise Policy* (RNP) for operational traffic on public roads.

Concept Masterplan

During the operational stage the fully operational masterplan is predicted to exceed the relevant LAeq noise criteria at a number of residential receivers in all NCAs during all periods, except in NCA03 during the daytime. Under standard weather conditions, exceedances of the LAeq criteria are predicted at up to three residences in NCA01, five residences in NCA02, one residence in NCA03, and six residences in NCA04. This is further exacerbated under noise-enhancing weather conditions, which affects 14 additional residences.

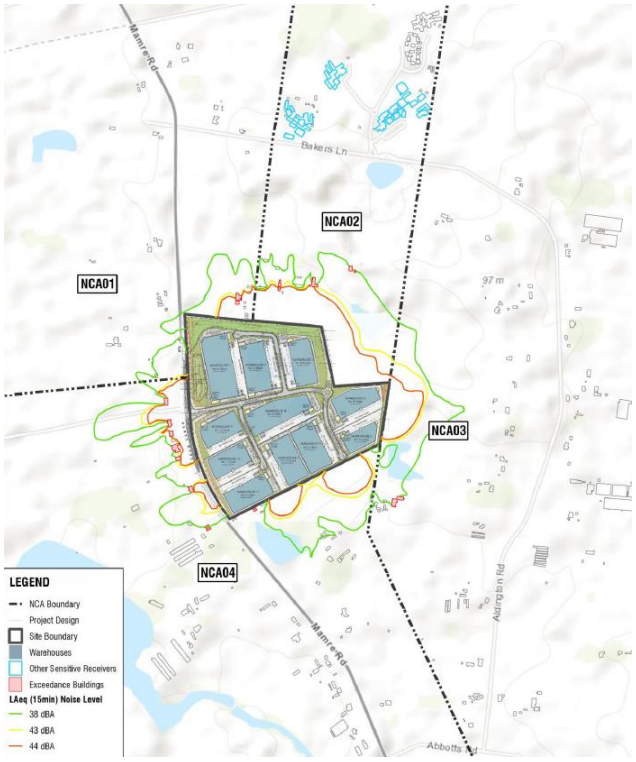
No exceedance of the relevant LAeq noise criteria is predicted at the schools or childcare centre in NCA02 during any periods under standard or noise-enhancing weather conditions.

Reasonable and feasible operational noise mitigation and management measures should be considered to minimise noise impacts at the receivers where the LAeq criteria is predicted to be exceeded. These mitigation measures are outlined in **Section 5.4.3** below.

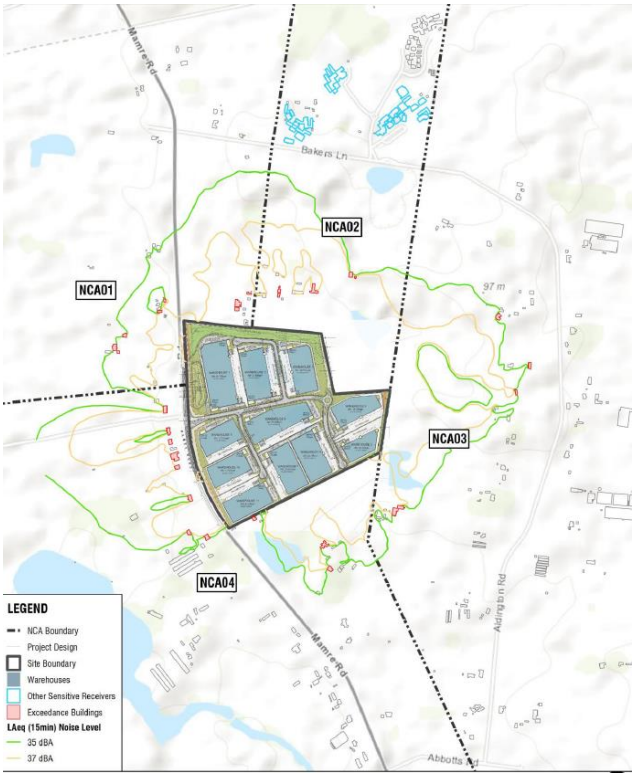
At the majority of residences where exceedance of the screening levels is predicted, the predicted maximum noise levels are below the levels that would be considered to have potential to cause sleep disturbance. At the nearest residential receivers in NCA01 and NCA04, the predicted maximum noise levels have the potential to be above the levels that may awaken people but are below the level likely to affect wellbeing.

While the maximum noise levels from the development are predicted to exceed the sleep disturbance screening level, it is unlikely to result in sleep disturbance at the majority of residences due to the existing maximum noise levels from road traffic on Mamre Road. The potential for sleep disturbance would be limited to the nearest residences to the development which are not already affected by existing high maximum events from Mamre Road. These receivers are generally located to the north of the proposed development in NCA02 and to the south in NCA03 and NCA04.

Figure 42 Predicted Noise Levels – Concept Masterplan



Picture 19 Day/Evening – Standard Weather Conditions



Picture 20 Day/Evening – Noise Enhancing Weather Conditions

Source: SLR

Stage 1 Development

The operational LAeq noise levels from Stage 1 development are predicted to exceed the relevant LAeq noise criteria at a number of residential receivers in NCA02, NCA02, and NCA04 during all periods, and in NCA03 during the night-time under noise enhancing weather conditions.

Under the standard weather conditions, exceedance of the LAeq criteria is predicted at up to two residences in NCA01, four residences in NCA02 and four residences in NCA04. Under noise-enhancing weather conditions, exceedances will affect 7 additional residential receivers.

No exceedances of the relevant LAeq noise criteria are predicted at schools or the childcare centre in NCA02 during any periods under standard or noise-enhancing weather conditions.

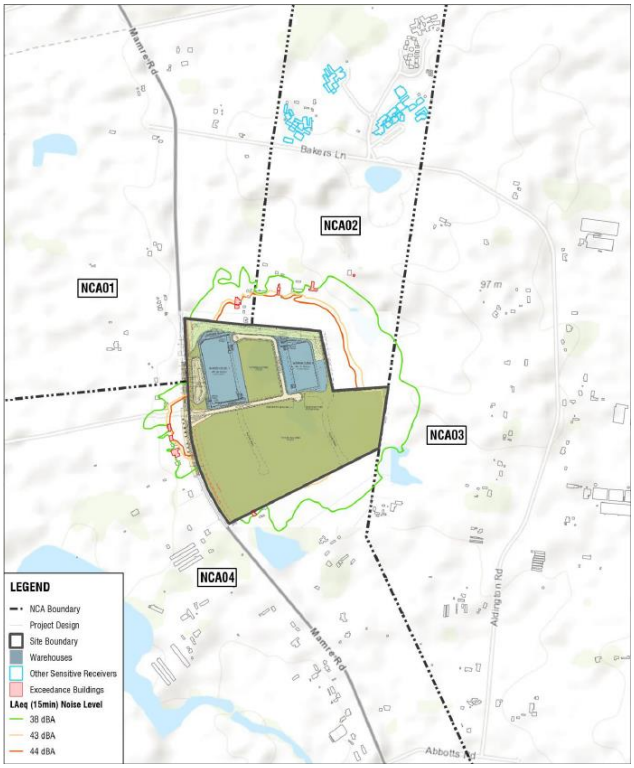
Reasonable and feasible operational noise mitigation and management measures should be considered to minimise noise impacts at the receivers where the LAeq criteria is predicted to be exceeded. These mitigation measures are outlined in **Section 5.4.3** below.

Similar LAmax noise levels to those predicted for the masterplan development are predicted for Stage 1 development in NCA01, NCA02, and NCA04, with lower levels predicted in NCA03. The number of events would be fewer for the Stage 1 development than the masterplan development in line with the reduced number of vehicle movements.

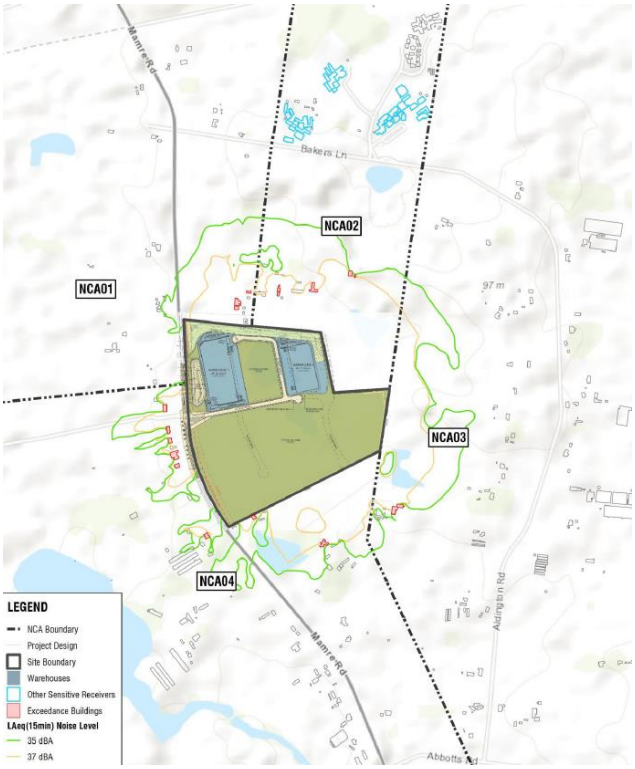
In summary, while the maximum noise levels from the Stage 1 development are predicted to exceed the sleep disturbance screening level, they are unlikely to result in sleep disturbance at the majority of residences due to the existing maximum noise levels from road traffic on Mamre Road. The potential for

sleep disturbance would be limited to the nearest residences to the Stage 1 development which are not already affected by existing high maximum events from Mamre Road. These receivers are generally located to the north of the proposed development in NCA02 and to the south in NCA03 and NCA04.

Figure 43 Predicted Noise Level – Stage 1 Development



Picture 21 Day/Evening – Standard Weather Conditions



Picture 22 Day/Evening – Noise Enhancing Weather Conditions

Source: SLR

Cumulative Operational Phase Noise Impacts with Other Industry

To account for cumulative noise from the development with existing industrial premises in the area, the recommended amenity noise level is reduced by 5 dBA to give the project amenity noise level. The project amenity noise level is used in conjunction with the project intrusiveness noise level to determine the Project Noise Trigger Levels (PTNLs) for operational noise from the development.

As such, the cumulative noise impacts from the development with existing industrial noise sources in the area have been accounted for with the adoption of the project amenity noise levels in the assessment of operational noise impacts. The cumulative noise impact is therefore considered to be acceptable.

Off-Site Operational Phase Road Traffic Noise Impacts

The operational road traffic (heavy vehicles and employee vehicles) would access the site via the new intersection on Mamre Road, travelling from the Great Western Highway or M4 Motorway in the north, or Elizabeth Drive in the south.

Existing peak traffic volumes on Mamre Road (from 2018) have been compared to future peak traffic volumes on Mamre Road for 2026 provided in the TIA by ASON Group.

The assessment of road noise generated by the entire AIE found that the project would result in a minor increase of 0.6dB from that generated by the existing (2018) road noise level, and would be less than 0.5dB below the anticipated noise level of the expected future (2026) road traffic.

In all the assessed scenarios, an increase of greater than 2 dB is not predicted, and as such, mitigation is unlikely to be required for off-site operational road traffic noise.

Typical maximum noise levels from heavy vehicles on Mamre Road associated with the development would be consistent with the existing level of maximum noise events from heavy vehicles on Mamre Road. While the number of events would increase in line with the number of trucks accessing the development, it is noted that the changing land uses in the area (such as development of the Western Sydney Aerotropolis), along with the proposed Mamre Road Upgrade and Mamre Road Precinct rezoning would be likely to have a much greater effect on the number of heavy vehicles on Mamre Road.

5.4.3. Mitigation and Management

Operational Noise Mitigation and Management Measures

The typical hierarchy for mitigation and management of industrial noise sources is as follows:

- Reducing noise emissions at the source (ie noise source control),
- Reducing noise in transmission to the receiver (ie noise path control), and
- Reducing noise at the receiver (ie receiver control).

Potential options for mitigating and managing sources of operational noise may include the combination of several measures, such as:

- Reducing peak 15-minute heavy vehicle movements across the development by staggering delivery/pickup times.
- Reducing peak 15-minute light vehicle movements across the development by staggering shift change times for employees.
- Minimising the concurrent use of forklift and other mobile plant outside the warehouses (ie in hardstand area) and/or limiting their use to the less sensitive daytime and evening periods.
- The use of quieter mobile plant options, such as electric forklifts instead of gas-powered forklifts.
- Locating fixed mechanical plant away from the most-affected sensitive receivers, such as ground-level locations instead of rooftop locations, and/or shielded behind the warehouse/office structures.
- Best management practice – such as switching vehicles and plant off when not in use, no yelling/swearing/loud music onsite, education of staff and drivers regarding noise impacts, regular maintenance of plant and equipment to minimise noise emissions, use of silent or non-tonal reverse alarms instead of tonal alarms, minimising use of reverse alarms by providing forward manoeuvring where practicable.

Analysis was undertaken of the noise reduction impact of a number of the above measures which demonstrated that reductions in noise impacts can be achieved with a combination of the noise source controls nominated above.

Noise Path and At-Receiver Control

Noise path control is typically in the form of noise barriers and/or noise mounds. Barriers and mounds work best when located close to the noise source or closer to the receiver. As the receivers surrounding the development are generally isolated residences on large private lots, construction of noise barriers or mounds close to receivers would unlikely be feasible.

Noise barriers of varying heights were modelled around the development, generally either on the site boundary or adjacent to the access roads (where the roads are closest to the boundary). Reductions in noise levels were predicted at some receivers adjacent to noise barriers, however, the assessed noise barriers were generally not effective at mitigating noise impacts at the most-affected receivers. This is generally due to restrictions in the location of the noise barrier (such as near the main site access road where a barrier could not be constructed across the roadway) or due to the height difference between the receiver locations and the noise sources (such as NCA02 and NCA03 where the receivers are much higher than the site and a noise barrier would provide insufficient screening).

As such, it is unlikely that noise barriers or mounds would be considered reasonable and feasible to mitigate noise impacts in most locations of the development. Therefore, noise barriers and mounds are not proposed in this SSD DA.

At-receiver mitigation measures can be utilised to reduce noise impacts where residual noise impacts are present after implementation of feasible and reasonable noise source and path controls, or where those controls are not considered to be feasible and reasonable.

At-receiver mitigation typically involves using architectural treatments such as thicker glazing and doors or upgraded facade constructions to achieve appropriate internal noise levels. Architectural treatments are more effective when they are applied to masonry buildings than lightly clad timber frames structures, and caution should be taken before providing treatments to buildings in a poor state as they may not be effective.

Identification of residual noise impacts and receivers eligible for consideration of at-receiver noise treatments would be undertaken during the detailed design stage after consideration of any noise source and path mitigation and management measures.

Construction Noise and Vibration Mitigation Measures

Due to the nature of construction works, it is inevitable that there will be impacts where construction is near to sensitive receivers. A list of potential mitigation and management measures is provided below, which could be applied to the project to minimise the impacts.

- Management Measures
  - Implementation of any project specific mitigation measures required
  - Implement community consultation or notification measures
  - Site inductions
  - Behavioural practices
  - Verification
  - Attended vibration measurements
  - Update Construction Environmental Management Plans
  - Building condition surveys
- Source controls
  - Construction hours and scheduling
  - Construction respite period during normal hours and out-of-work hours
  - Equipment selection
  - Plant noise levels
  - Use and siting of plant
  - Plan worksites and activities to minimis noise and vibration
  - Reduce equipment power
  - Non-tonal and ambient sensitive reversing alarms
  - Minimise disturbance arising from delivery of goods to construction sites
  - Engine compression breaks
- Path controls
  - Shield stationary noise sources such as pumps, compressors, fans, etc.
  - Shield sensitive receivers from noisy activities
- Receptor control
  - Structural surveys and vibration monitoring

Specific strategies would be determined as the project progresses and detailed in the Construction Environmental Management Plan for the project before any works begin. This plan provides a detailed

assessment of the potential impacts from the work and defines the site specific mitigation and management measures to be used to control the impacts, particularly where evening or night-time works are required.

5.4.4. Conclusion and Recommendations

When evaluating the noise impacts associated with the proposed development it is important to consider the changing land use of the surrounding area. The development site and nearby sensitive receivers are part of the Broader WSEA which will be impacted by the following current and future major developments:

- Mamre Road Precinct,
- Western Sydney Airport,
- Western Sydney Aerotropolis, and
- Mamre Road Upgrade.

The intent of the recent rezoning of the Mamre Road Precinct is for the site and surrounding landholdings to be redeveloped for a range of industrial purposes. The sensitive receivers predicted to be impacted by the development are located on land which has been rezoned to IN1 General Industrial, which would likely result in the eventual redevelopment of these properties for industrial-related employment uses. It is noted that the impacted sensitive receivers on the eastern side of Mamre Road are all located on landholdings under option or control by institutional developers, with intentions to redevelop these lands for industrial and warehouse and distribution uses in accordance with the Mamre Road Structure Plan. Those impacted sensitive receives on the western side of Mamre Road will experience noise levels which are commensurate with the existing road noise levels generated by truck movements along that roadway.

In addition, the development is also located in the ANEF 20 contour for the future Western Sydney Airport. The ANEF contour indicates areas which may be impacted by aircraft noise and considers existing and future airport developments. The land surrounding the AIE, including some of the sensitive receivers, is also impacted by the maximum noise levels associated with aircraft flyovers from the operation of the future airport. In addition, the NSW Government has enacted Ministerial 9.1 Directions to prevent additional sensitive receivers from locating within the ANEF 20 contour. The likeliness of sensitive receivers intensifying around the development is unlikely.

Development of the Western Sydney Aerotropolis would likely result in significant changes to the acoustic environment of the area as the existing rural agriculture uses will transition into major employment hubs for the region.

Finally, the Mamre Road Upgrade will increase background noise in the vicinity of the development with an increase in traffic movements across the Precinct.

While operational noise mitigation and management measures are recommended to be investigated further for the development, it is recommended that the changing land use and associated acoustic environment be considered when evaluating the reasonableness and feasibleness of any such measures. The combination of mitigation measures outlined above will minimise the impact of acoustic pollution to neighbouring sites. Given the strategic context of surrounding lands and mitigation measures, it is concluded the proposed development can be supported on the site.

5.5. TRAFFIC AND ACCESS

5.5.1. Overview

A Transport Impact Assessment (**Appendix K**) has been prepared in respect of the AIE proposal. Key objectives of the Traffic Impact Assessment are as follows:

- To establish that the development of the Site further to the Stage 1 Proposal is compliant and consistent with the access, traffic and parking principles outlined in the site-specific DCP submitted as part of this SSD DA.
- To establish that the trip generation of the Stage 1 Proposal and the Estate can appropriately be accommodated by completed/committed upgrades to the local road network.
- To demonstrate that there is an appropriate and sustainable provision of car parking across the Site.

- To demonstrate that the proposed access driveways, internal roads, car parks and service facilities can provide a design compliant with the relevant Australian Standards.
- To demonstrate that the construction of Stage 1 can be undertaken in an efficient and safe manner, and that construction vehicles can be appropriately accommodated by completed/committed upgrades to the local road network in the short term.

5.5.2. Existing Features and Conditions

Road Network

The existing/proposed road network surrounding the AIE includes the following key elements:

- Mamre Road is an arterial road which runs north-south between the Great Western Highway and M4, and Elizabeth Drive respectively. In the vicinity of the Site, Mamre Road provides one traffic lane in each direction and has a posted speed limit of 80km/h.
- Erskine Park Road is a sub-arterial road which generally runs north-south between the Great Western Highway and M4, and Mamre Road respectively. It also links east to the M7 via Lenore Drive. Erskine Park Road provides two traffic lanes in each direction, and has a posted speed limit of 70km/h.
- Bakers Lane is a local access road that runs east-west (to the east of Mamre Road) and currently provides access for a number of rural residential, educational and aged care facilities. Bakers Lane provides one traffic lane in each direction and has a posted speed limit of 60 km/h, with School Zone restrictions (40km/h during school peaks) adjacent to the Trinity Primary School and Emmaus College.
- Elizabeth Drive is a sub-arterial road that runs east-west between the Hume Highway and M7, and Mamre Road and The Northern Road respectively. In the vicinity of Mamre Road, Elizabeth Drive provides 1-2 traffic lanes in each direction, and has a posted speed limit of 80km/hr.

Transport for NSW Road Network Upgrades

Stage 1 of the Mamre Road Upgrade between the M4 and James Erskine Drive is currently funded and forecast for completion in 2024. Stage 2 of the Mamre Road Upgrade between James Erskine Drive and Kerrs Road is not currently funded and timing is not yet confirmed. The objectives of the Mamre Road upgrade are:

- Meeting the future transport demand associated with the Western Sydney Aerotropolis and Western Sydney Airport;
- Reducing future road transport costs by improving corridor performance;
- Improving liveability and sustainability and support economic growth and productivity by providing road capacity for projected freight and general traffic volumes;
- Improving road safety in line with the NSW Road Safety Strategy;
- Improving the quality of service, sustainability and liveability by providing facilities for walking and cycling and future public transport needs;
- Delivering good urban design outcomes; and
- Minimising environmental and community impacts.

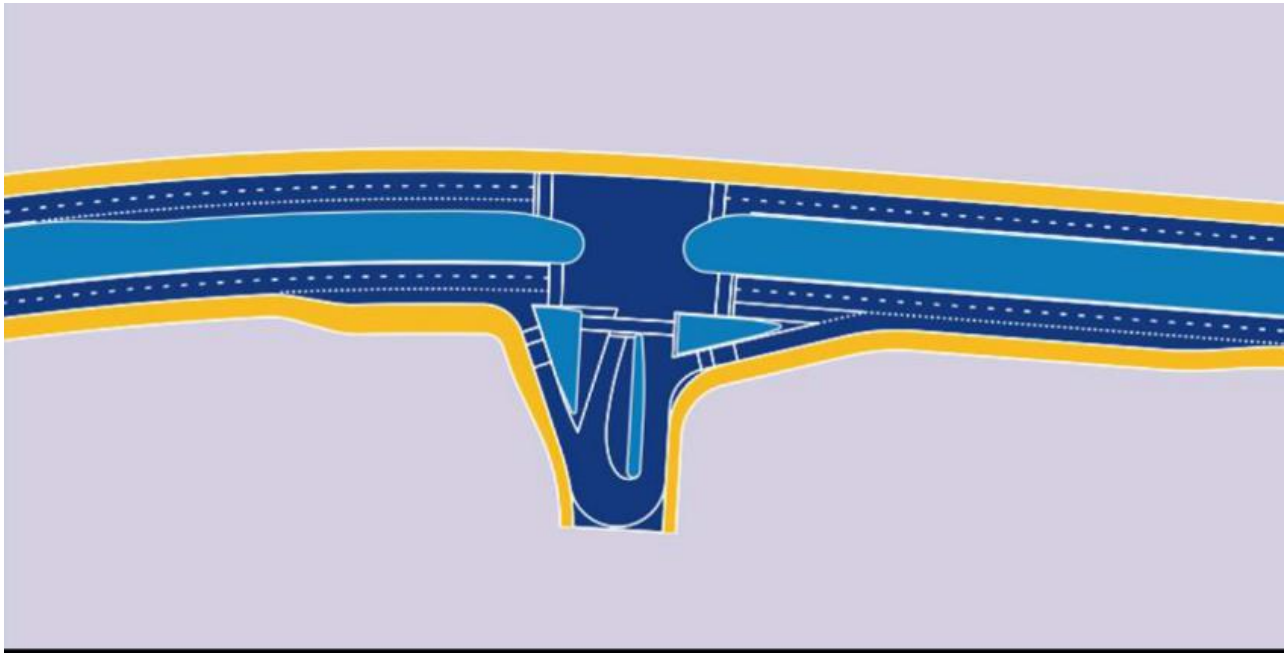
The Mamre Road upgrade will comprise the following key infrastructure:

- A typical cross section that includes:
  - 2 traffic lanes in each direction with a wide central median between the M4 Motorway and Kerrs Road;
  - Provisions for the central median to provide third traffic lane in each direction to meet growing demand; and
  - Shared bicycle and pedestrian paths to promote active transport.
- New or upgraded intersections including:

- Signalised U-turn facilities at key intersections in the short term pending full development of the area
- A new signalised intersection with turn-around facility at Abbotts Road;
- A new signalised intersection between Abbotts Road and Bakers Lane;
- An upgrade of the signalised intersection at Bakers land with provisions for U-turn and local access;
- An upgrade of the signalised intersection at Erskine Park Road;
- An upgrade of the signalised intersection at James Erskine Drive, with provision for future access to development on the western side of Mamre Road;
- Left in/ left out access at Mandalong Close;
- Left in/ left out access at McIntyre Avenue;
- A new signalised intersection at Luddenham Road;
- A new signalised intersection at Solander Drive; and
- An upgrade of the signalised intersection at Banks Drive.

The strategic design of the Mamre Road upgrade indicates a future signalised intersection immediately adjacent to the site (refer to **Figure 7**). The intersection works will be undertaken as part of the Stage 1 component of the subject SSD DA.

Figure 44 Mamre Road Upgrade at Site



Source: Roads and Maritime Services

Public Transport

The AIE is not currently serviced by public transport services. Improvements to public transport connectivity within the WSEA are expected to occur as development progresses and new infrastructure is delivered into the future.

Active Transport

There is very little active transport infrastructure within the Precinct at this time. The Mamre Road Precinct Discussion Paper cites ongoing discussions with local Councils and Transport for NSW to deliver a cycle network connecting the Precinct to existing urban areas, the future Aerotropolis and WSEA. In this regard, the primary active transport corridor is expected to be designed around Mamre Road itself, with Mamre Road Upgrade proposing a shared path along its full length, and cycle path branding along creek links and into the central portions of the Precinct.

5.5.3. Potential Impacts

AIE Estate Development

To assess the acceptability of the traffic impacts of the AIE proposal, traffic modelling undertaken on the basis of the proposed AIE development produced projected peak and daily traffic volumes are detailed in **Table 29**. The trip rates used in the Traffic Impact Assessment have been agreed by Transport for NSW.

Table 29 Traffic Generation

SSD DA Proposal	GFA (m^2)	AM Trip Rate	AM Trips	PM Trip Rate	PM Trips
Concept Masterplan (Fully Built Out)	251,040	0.23	577	0.24	602
Stage 1 (Lot 1 Only)	36,720	0.23	84	0.24	88
Stage 1 (Lot 3 Only)	21,535	0.23	50	0.24	52
Stage 1 (Combined)	58,255	-	134	-	140

Source: Ason Group

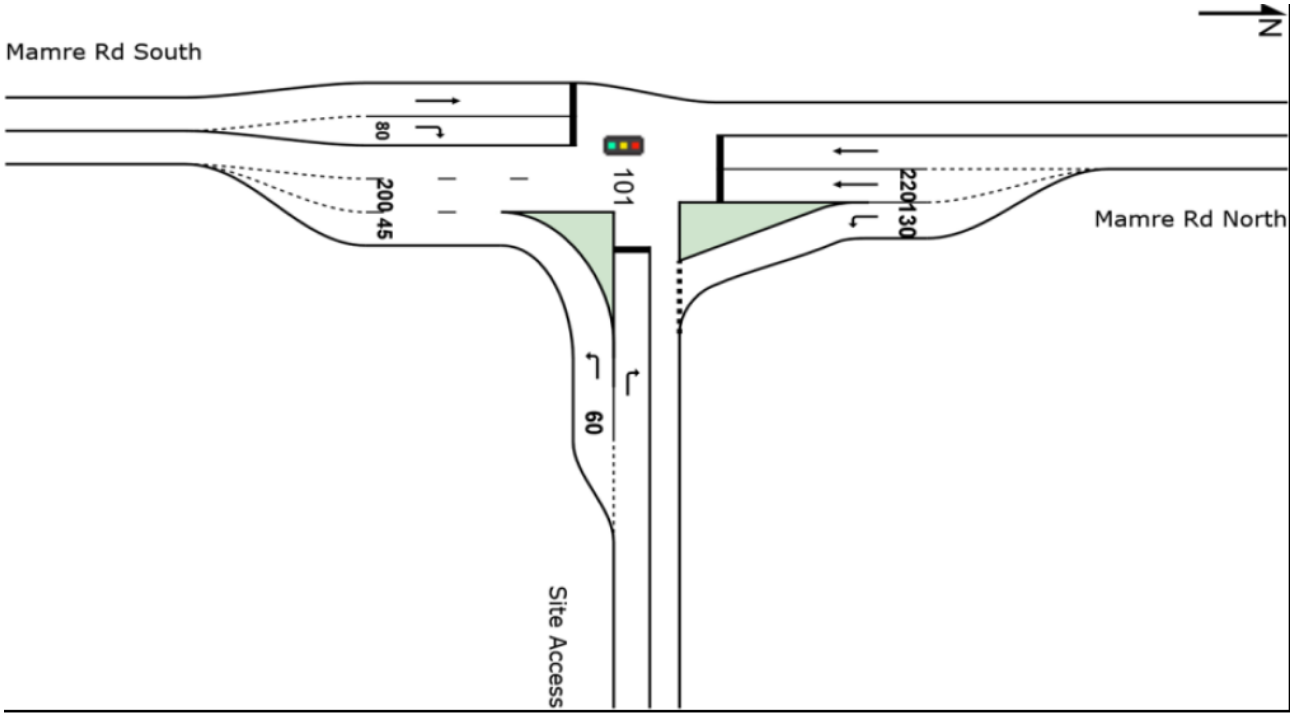
In addition to the forecasted trip generation within the site, there is a potential for additional vehicles from adjacent sites to use the Mamre Road intersection. This would result in an order of 1,037 – 1,082 vehicles per hour (vph) with the following breakdown:

- 460 vph exiting the Precinct from adjacent sites via the intersection in the AM peak; and
- 480 vph exiting the Precinct from adjacent sites via the intersection in the PM peak.

With this level of traffic volume, an intersection at Mamre Road would be warranted. Refer to **Figure 45** for the proposed 2026 intersection design. The 2026 intersection design was assessed using six scenarios:

- Scenario 1: Stage 1 - 60% of trips to/from the north in both peak periods.
- Scenario 1a: AIE - 60% of trips to/ from the north in both peak periods.
- Scenario 2: Stage 1 - 60% of trips to/from the south in both peak periods.
- Scenario 2a: AIE – 60% of trips to and from the south in both peak periods.
- Scenario 3: Stage 1 - 50% of trips to the north and 50% of trips to the south in both peak periods.
- Scenario 3a: AIE – 50% of trips to the north and 50% of trips to the south in both peak periods.

Figure 45 Stage 1 2026 interim Intersection Design Requirements



Source: AT&L

The SIDRA modelling identified the following level of service using the different scenarios at 2026.

Table 30 Base 2026 + Stage 1 Intersection Operations

Distribution Scenario	Peak Period	Level of Service	Average Delay(s)	Degree of Saturation
60% North	AM	A	6.5	0.703
	PM	A	7.3	0.647
60% South	AM	A	7.4	0.709
	PM	A	6.2	0.631
50% North and 50% South	AM	A	7.0	0.710
	PM	A	6.6	0.645

Source: Ason Group

Regardless of the trip distribution, the intersection will operate at a level of service A with AIE Stage 1, with small delays and satisfactory operation for both AM and PM. The longest queue was found on Mamre Road North approach, with the maximum queue of 100m found in the PM peak in Scenario 1.

Table 31 Base 2026 + AIE concept masterplan Intersection Operations

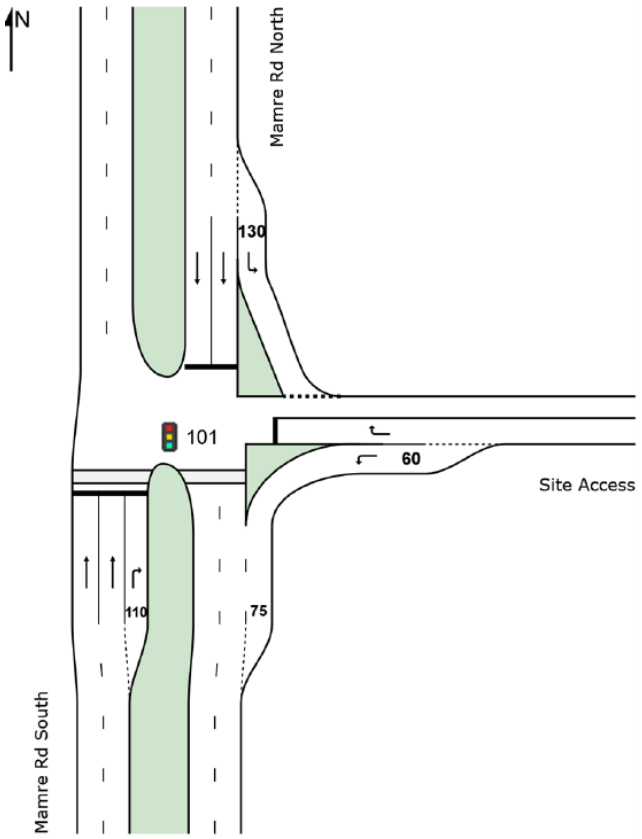
Distribution Scenario	Peak Period	Level of Service	Average Delay(s)	Degree of Saturation
60% North	AM	B	15.7	0.827
	PM	B	23.3	0.861
60% South	AM	B	16.8	0.852
	PM	B	17.2	0.783
50% North and 50% South	AM	B	16.4	0.844
	PM	B	17.5	0.788

Source: Ason Group

Regardless of the trip distribution, the intersection will operate at a level of service B with the entire AIE concept masterplan, with small delays and satisfactory operation for both AM and PM. The longest queue was found on Mamre Road North approach, with the maximum queue of 180m found in the PM peak in Scenario 1.

Finally, the interim signalised intersection has been specifically designed to allow for the future upgrade of the intersection to the Transport for NSW currently preferred ultimate design, which is shown diagrammatically at **Figure 46**. It is noted that this design may be revised in the future to the current Transport for NSW modelling of the whole Precinct, but any such revisions are anticipated to be compatible with the Stage 1 design shown at **Figure 45**. The interim signalised intersection design matches the Mamre Road Strategic Design along the eastern verge. The western verge is designed within the existing Mamre Road reserve. The future Mamre Road upgrade on the western verge is subject to land acquisition from Transport for NSW. The interim signalised intersection to service AIE is not subject to land acquisition on the western verge and has been designed, and will be finalised, in consultation with Transport for NSW.

Figure 46 Mamre Road and Site Access Ultimate Design



Source: Ason Group

Table 32 Potential Traffic and Transport Impacts

Issue	Considerations	Potential Impact/Response
Concept Masterplan		
Site Access	▪ Alignment/integration with existing and planned external road networks ▪ Appropriate and timely access available to service the development.	▪ Access to the AIE would be via a interim signalised connection to Mamre Road which would be delivered as part of this proposal. ▪ The delivery of Mamre Road intersection will align with the overall Mamre Road upgrade and its requirements on the eastern verge and will not impact the delivery of the ultimate western verge (subject to land acquisition by Transport for NSW). ▪ Proposed access driveways to individual warehouse buildings have been designed in accordance with

Issue	Considerations	Potential Impact/Response
		the relevant requirements of AS 2890.1 and AS 2890.2.
Intersection Performance	▪ SIDRA intersection analysis used to measure future intersection performance. ▪ Full details of SIDRA analysis provided at **Appendix K**.	▪ Traffic modelling of the proposed AIE Concept Proposal indicates trip generation of 577 – 602 vph at 100% development. ▪ SIDRA modelling notes the interim signalised intersection with 100% of AIE would result in a level of service B – *Good with acceptable delays and space capacity.*
Stage 1 – Estate Works		
Estate Road Design	▪ The AIE Estate Roads must comply with relevant Australian Standards and accommodate access by the maximum-sized vehicles, being B-doubles	▪ All roadways and associated intersections have been designed to accommodate the maximum size vehicles (B-double trucks) requiring access. ▪ The internal road and car park design of all buildings comply with the requirements of AS 2890.1 and AS 2890.2.
Construction Traffic	▪ Expected peak construction	▪ Earthworks and local infrastructure – 100 – 600 truck movements per day accessing AIE via Mamre Road. ▪ A Construction Management Transport Plan (CMTP) has been prepared to manage the movements to and from the site during construction and is attached at **Appendix K.** ▪ Construction traffic will not adversely impact the local road network.
Stage 1 – Development		

Issue	Considerations	Potential Impact/Response
Access and intersections	▪ All traffic generated within the AIE must be accessed via Mamre Road intersection.	▪ Traffic modelling demonstrates that the intersection at Mamre Road will operate at a satisfactory level of service A – *Good operation* based on the proposed intersection design in 2026.
Traffic Generation	▪ Traffic generated by the proposed Stage 1 development was assessed using TfNSW advised generation rates of the following: – 0.23 trips per 100m^2 in AM – 0.24 trips per 100m^2 in PM – 2.91 trips per 100m^2 per day.	▪ Forecast traffic generation for the proposed Stage 1 Development is 134 – 140vph.
Parking	▪ On-site parking provided at a minimum rate of 1 space per 300m^2 of warehouse GFA, 1 space per 40m^2 of office GFA, and 1 space per 10m^2 of café seating area in accordance with the draft AIE DCP. ▪ Development with more than 50 car parking spaces are to provide a minimum of 2% of this parking for disabled parking, designed in accordance with AS 2890 Part 6: Off-street parking for people with disabilities.	▪ Stage 1 DA will require a total of 260 parking spaces. The Stage 1 Proposal provides a total of 322 parking spaces. ▪ The design of all car parking areas will be provided in accordance with the relevant Australian Standards including AS2890.1 and AS 2890.6.
Circulation, Access and Loading	▪ Site requires unrestricted B-double access ▪ Relevant Australian Standards to be applied to design of all access, circulation, servicing and loading areas	▪ Internal configuration of car parking and loading areas comply with relevant requirements of AS 2890.1 and AS 2890.2.

5.5.4. Mitigation and Management

Assessment of key issues with regard to access and road infrastructure indicates that there would be no need for external road upgrades as a result of the proposed AIE development outside those already planned and committed. Further, the access arrangements under the Concept Masterplan and Stage 1 Development integrate with the external road network. No further mitigation measures are required with respect to access and infrastructure.

A Construction Management Transport Plan has been prepared and is attached at **Appendix K**. The following measures are recommended to minimise the potential traffic impacts associated with the proposed development:

- Traffic control would be required to manage and regulate construction vehicle traffic movements to and from the Site during construction.
- All vehicles transporting loose materials will have the load covered and/or secured to prevent any items depositing onto the roadway during travel to and from the Site.
- All vehicles are to enter and depart the Site in a forward direction, with reverse movements to occur only within the Site boundary.
- All contractor parking is to be wholly contained within the site; and
- Pedestrian and cycle traffic along the site frontage will be managed appropriately at all times.

5.5.5. Conclusion and Recommendations

Strategic and detailed traffic analysis undertaken in respect of the AIE proposal has considered the broader traffic environment in the vicinity of the estate, the road infrastructure upgrades planned within the wider WSEA network, the traffic likely to be generated by AIE development and the access, design and parking rates adopted under the AIE proposal.

The analysis has shown that the proposed AIE Concept Masterplan and Stage 1 development are supportable with respect to access, transport and traffic.

5.6. WATERWAYS AND RIPARIAN AREAS

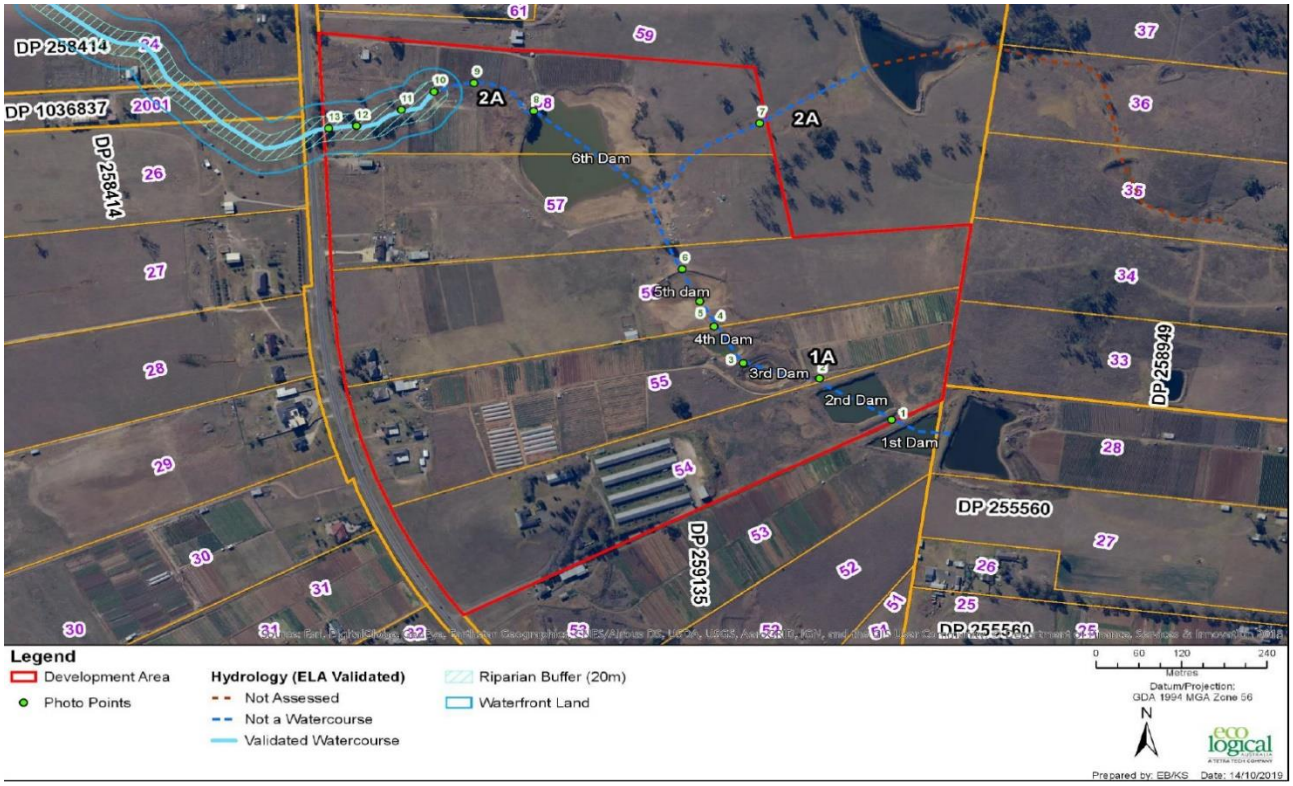
5.6.1. Overview

A riparian assessment has been prepared by Ecological Australia (**Appendix Q**). The assessment identifies two unnamed watercourses with the site: a 1st order watercourse in the south east of the site and a 2nd order watercourse in the north of the site. These watercourses are tributaries of South Creek within the Hawkesbury-Nepean catchment. In addition, there are also five farm dams, most of which have limited riparian and/or fringing vegetation surrounding them and poor aquatic habitat values.

The 1st order watercourse passes through five farm dams and has no indicative features of a waterway (such as defined bed and banks or geomorphic features such as erosion or deposition). The 2nd order watercourse passes through one farm dam. **Figure 47** shows the NRAR mapped and Ecological Australia validated watercourses on the site.

Figure 47 Watercourses

Picture 23 DPI Watercourse

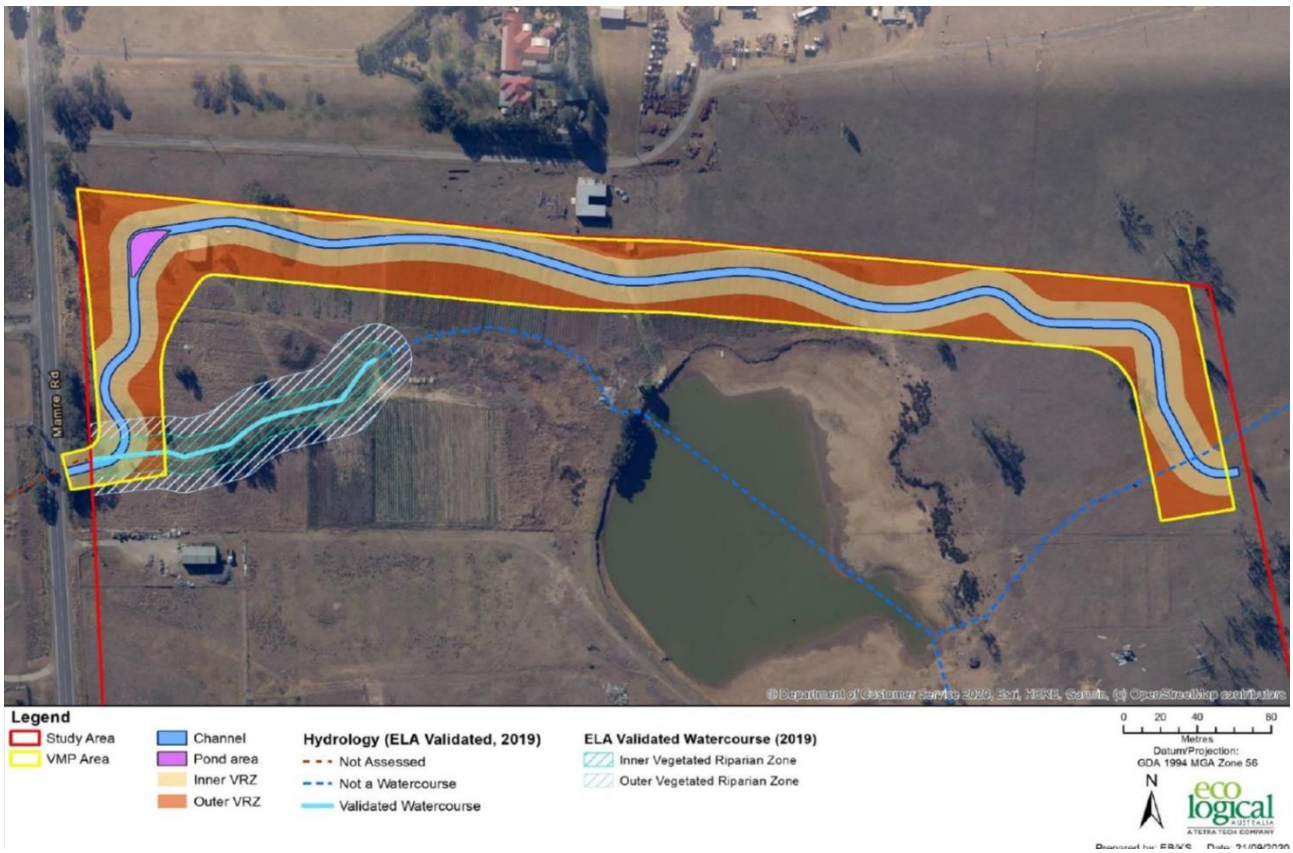


Picture 24 Validated Watercourse

Source: Ecological Australia

The proposed development will involve the removal of the 2nd order watercourse currently located towards the northern part of the site and the construction of a channel at the northern extent of the site as a replacement waterway (**Appendix Q**). It will also involve the removal of five farm dams within the site.

Figure 48 Proposed location of new vegetated channel



Source: Ecological Australia

Farm Dams

The farm dams within the subject site are not connected to any watercourses that meet the definition of a 'river' under the *Water Management Act 2000*, nor do they provide good habitat for aquatic fauna due to the lack of instream and fringing vegetation and woody debris. Therefore, it is proposed to remove all five farm dams within the site. Further discussion on the decommission of farm dams is provided at **Section 5.7.3** below.

5.6.2. Potential Impacts

Surface Erosion and Sedimentation

Any clearing of vegetation or earthworks within the existing riparian zone of the second order watercourse could result in lack of soil stability. This may cause surface erosion (sheet and gully erosion) and transportation of sediment overland into the downstream waterway of South Creek. Impacts may include increased water turbidity, which could harm fish, and disrupt light penetration through the water column and impact on primary (plant) production, with flow on effects through the food web.

As the main channel of South Creek is located approximately 1.4km downstream of the development and the water in the channel was not flowing, it is unlikely that any construction activities in the development area would impact on the health and condition of the main South Creek channel.

Degradation of water quality

There is a potential for sediment and waste material generated as part of the construction activities to enter the waterway. This would increase the turbidity of the water and potentially introduce chemicals to the creek, ultimately degrading the water quality not only in the immediate works area but also in downstream environments.

Weed Invasion

Where disturbance from construction associated with the proposed masterplan results in bare ground or increased sunlight penetration into currently vegetated riparian areas, there is the potential for invasion of exotic flora species. The movement of construction vehicles in and around the riparian area can also act as a vector for weed propagules. Impacts include introduction of new weeds to the area and extended penetration of weeds into native juvenile plants, harbouring of feral animals and alteration of vegetation structure and riparian function.

Polluted Surface Water Runoff

In areas where the proposed development includes the construction of new car parks, roads and other impervious surfaces, there is an increased risk of motor vehicle oils, litter and warmer surface water entering the creek. Subsequent impacts may include water quality issues (heavy metals, oil and grease pollution from vehicles), inorganic clogging of aquatic habitats (litter/ rubbish) and destruction of macroinvertebrate communities (warm water inflows). Another impact common in urban areas is when mass leaf drops from deciduous street trees wash into the creek. Large amounts of non-native leaves deposited in a short period of time create water quality issues during decomposition. These leaves are also not a suitable food resource for macroinvertebrates, which prefer slow-decomposing native leaves that are evenly deposited throughout the year.

Relocation of Watercourse

The proposed vegetated channel construction and removal of the 2nd order watercourse within the development area is not in line with the *Guidelines for Controlled Activities on Waterfront Land* (NRAR, 2018). In this case, the principles of the *Water Management Act 2000* (WM Act) can guide activities that are to take place on the waterfront land and be used to provide a merit-based assessment of the proposed development.

The water management principles of the WM Act are the following:

Generally

- *water sources, floodplains and dependent ecosystems (including groundwater and wetlands) should be protected and restored and, where possible, land should not be degraded, and*
- *habitats, animals and plants that benefit from water or are potentially affected by managed activities should be protected and (in the case of habitats) restored, and*
- *the water quality of all water sources should be protected and, wherever possible, enhanced, and*
- *the cumulative impacts of water management licences and approvals and other activities on water sources and their dependent ecosystems, should be considered and minimised, and*
- *geographical and other features of Aboriginal significance should be protected, and*
- *geographical and other features of major cultural, heritage or spiritual significance should be protected, and*
- *the social and economic benefits to the community should be maximised, and*
- *the principles of adaptive management should be applied, which should be responsive to monitoring and improvements in understanding of ecological water requirements.*

Controlled activities

- *the carrying out of controlled activities must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and where possible, land must be rehabilitated, and*
- *the impacts of the carrying out of controlled activities on other water users must be avoided or minimised.*

The removal of the 2nd order watercourse and construction of a vegetated channel on the northern boundary of the development area allows for a protected, rehabilitated watercourse to be established. In its current state, the 2nd order stream within the development area is devoid of aquatic habitat and lacking in native riparian species apart from a few *C. glauca* trees in one area alongside the bank. As a dedicated waterway managed under a VMP, this vegetated channel will become a protected waterway within the new development area which is marked improvement on the current position of the 2nd order watercourse, as it

receives no observable maintenance, contains scattered litter and is not providing any form of habitat connectivity for aquatic or terrestrial fauna.

The construction of the vegetated channel would allow for the increase in the amount of native vegetation within the development area, which will significantly improve the amenity and habitat values of the area. The current 2nd order watercourse is surrounded predominately by exotic flora species, whereas the vegetated channel would be fully vegetated with native species and maintained for the period as specified in the VMP prepared for the development area (refer **Appendix P**).

A new riparian area will be constructed totalling 3.33ha, comprising a 4.75m wide channel that is approximately 0.41 ha, an inner vegetated Riparian Zone of approximately 1.58ha and an outer Vegetated Riparian Zone of approximately 1.34ha.

The existing 2nd order watercourse is approximately 180m long and its riparian corridor covers an area of approximately 0.75ha. The new channel to be constructed would be approximately 3.33ha. This increase in channel length and size of riparian area represents a significant increase in the amount of waterfront land within the development area and creates a larger area to be maintained as a vegetated riparian zone and a continuous vegetated corridor, providing the east-west connectivity that was otherwise provided (in a limited manner) by the mapped linear E2 zoning within the site. The overall riparian area will comprise a 4.75m wide channel that is approximately 0.41 ha, an inner vegetated Riparian Zone of approximately 1.58ha and an outer Vegetated Riparian Zone of approximately 1.34ha.

While the removal of the 2nd order watercourse is a controlled activity, there would be no impacts to other water users downstream, as mitigation measures described below would be incorporated into the design, construction and ongoing management of the site.

Consistency with WSEA SEPP Amendment

The objectives of the land zoned E2 are to protect, manage and restore areas of high ecological, scientific, cultural and aesthetic values. The proposed realignment of the 2nd order watercourse and establishment of a vegetated channel is in accordance with the objectives of the E2 zone. However, the proposed location of this realigned channel and parts of the proposed warehouses are not in line with the location of this zoning. The realigned channel will be in line with the E2 zoning where it enters and leaves the site.

There is 2.5 ha of area zoned as E2 Environmental Conservation in the site. The proposed new channel will create an area managed for environmental conservation that is 3.33ha, including a 4.75m wide channel, which is more than the area in the E2 zone on the site.

WSEA SEPP Clause 33H Earthworks

Prior to any earthworks commencing on site, an Erosion and Sediment Control Plan would need to be developed and implemented, to ensure that there is not detrimental impact on environmental functions and processes within the site as well as downstream.

The proposed watercourse realignment works have been designed with consideration for drainage patterns of the whole site, as well as downstream environmental properties. Therefore, the proposed works are unlikely to disrupt or have detrimental effect on existing drainage patterns within the site or downstream.

The realignment of the 2nd order watercourse requires filling of the existing waterway and construction of a new, realigned channel. To ensure there are no adverse impacts on waterways, the existing watercourse should be used as a clean water diversion channel while works on the new channel are being undertaken. Installation and maintenance of erosion and sediment controls are also required. This would reduce the likelihood of sediment entering the existing watercourse and impacting on water quality.

WSEA SEPP Clause 33L Stormwater, water quality and water sensitive urban design

The proposed development will include installation and ongoing maintenance of Water Sensitive Urban Design (WSUD) components such as biofiltration swales. This will ensure that once the development is completed and during the ongoing operation of the AIE, stormwater management systems will be integrated into the landscape and allow for improvement of water quality within the site.

Realignment of the 2nd order watercourse will allow for instream habitat features (such as pool, riffle and run sequences) to be constructed, ultimately increasing the areas of aquatic habitat within the watercourse, where instream habitat features are limited.

While the proposed development will include realignment of the existing watercourse and removal of existing riparian vegetation, it will also allow for an increase in the area of managed riparian vegetation, as the VMP prepared for the site requires the new riparian corridor to be fully vegetated, allowing for rehabilitation and restoration of riparian land. This vegetation will also be maintained over the course of the implementation of the VMP, allow for continual suppression of exotic species and replacement planting where required.

5.6.3. Mitigation Measures

Construction Environmental Management Plan

A CEMP is to be prepared prior to commencement of any construction works to address measures required to be implemented prior to, during, and after works to minimise impacts on the environment. This CEMP should include a Sediment and Erosion Control Plan, prepared in accordance with *The Blue Book – Managing Urban Stormwater: Soils and Construction* and implemented prior to works with the aim of achieving an outcome of 'no visible turbid plumes migrating through the waterway'. The CEMP must include, as minimum, the locations and types of erosion and sediment controls to be erected within and adjacent to the existing waterway and the new vegetated channel.

Required features of new vegetated channel

The channel is to be constructed from material that is conducive to the ongoing stability of the waterway. It is recommended that rough cut sandstone blocks are used as part of the construction materials as these can create habitat within the bank as well as provide roughness to the channel which will slow down the flow and reduce the chance of erosion within the waterway.

The new vegetated channel is to have a riparian zone adjacent to it and along both banks of the channel that is planted out with natives which are diagnostic species of the endangered ecological community, River-flat Eucalypt-forest in all the vegetative strata. The dense planting will not only provide habitat for fauna within the area but will also provide additional stability to the banks of the channel and a filter for runoff which may contain excess nutrients.

Construction of the vegetated channel needs to also replicate habitat variety and micro-habitats, including riffles, runs, pools, fringing reeds, riparian vegetation, natural shading, variable depths, variable widths, large woody debris and a variety of gravel, pebble, cobble, and boulder substrate in order to provide microhabitats for fauna and invertebrates.

Initial weed control would be required to limit the impact of the widespread weed species that are currently growing onsite. The riparian zones will require ongoing maintenance to ensure areas remain relatively weed free.

A VMP addressing and including the above measures has been prepared for the site which covers the vegetated channel and dictates management strategies appropriate for the site (refer to **Appendix P**).

The first phase of revegetation would include primary weed control which can be achieved through mechanical removal, hand removal and where appropriate, broadscale herbicide application. Creek banks lacking native cover would require revegetation works to provide immediate stabilisation. Species to be utilised and the density required are outlined in **Appendix P**.

Water quality protection measures are recommended for use where the construction-related activities require:

- Clearing of groundcover (grasses, herbs and shrubs, including exotic species) to bare earth.
- Clearing of any native vegetation or mechanical weed removal within the riparian buffer zone.
- Construction of any permanent car parks and roads.
- Temporary staging areas, compounds and storage areas of oils and chemicals.
- Wastewater discharge points, including pumping of groundwater from any below-ground excavation and vehicle wash down bays.

Key protection measures suitable to mitigate the activities above include:

- Gross Pollutant Traps to capture litter from car parks and roads.
- Sediment fences to slow overland flow and trap sediments created from surface erosion.

- Identify opportunities for re-use of water from any on-site dewatering activities including dust suppression.

Aquatic fauna is required to be protected during construction activities including the decommissioning of the farm dams. An appointed aquatic ecologist should possess the following licenses/permits:

- Section 37, *Fisheries Management Act 1994* issued by NSW Department of Primary Industry – Fisheries
- Animal Research Authority, issued by the Secretary's Animal Care and Ethics Committee.

If fauna is to be relocated on site, the following permits would be required:

- Section 120, *National Parks and Wildlife Act 1974* (for amphibians, birds and reptiles) issued by DPIE – Environment
- Section 121 *National Parks and Wildlife Act 1974* (for the landowner but the ecologies may act as an agent).

Conclusion

The Riparian Assessment concludes that the 1st order stream did not meet the definition of a watercourse and the 2nd order stream was in poor quality. The proposed development seeks remove the 2nd order stream and create a new vegetated channel, which provides a superior outcome for flora and fauna due to the increase in native vegetation and inclusion of habitat features of aquatic and terrestrial fauna. The mitigation measures outline the requirements needed to ensure the vegetated channel provides the optimal habitat for flora and fauna. It also outlines procedures to protect fauna via onsite and offsite relocation during the decommissioning of the farm dams. With these mitigation measures in place, the proposed AIE Concept Masterplan and Stage 1 development are acceptable in respect to riparian impacts and will result in a significantly improved outcome on the site for waterway management, and flora and fauna biodiversity.

5.7. OTHER ISSUES

5.7.1. Geology and Soils

The underlying geology and soils on the site are described in **Section 2** of the EIS and in more detail in the geotechnical report at **Appendix Z**. Based on the geotechnical investigations undertaken, the underlying geology on the site is described as follows:

- Topsoil – Silty Clay, Depth 0.0 to 0.3m.
- Fill – Clay, Depth 0.0 to 4.5m.
- Natural Soil – Clay and Silty Clay, Depth 0.1 to 4.5m.
- Bedrock – Shale, Depth 1.0 to 6.5m.

In addition to a study of the site geology, the following geotechnical investigations were conducted:

- Salinity

  The majority of soils on site are classified as "non-saline to moderately saline", except for one sample. This sample was located in an area identified as fill area.

- Corrosivity/Aggressivity

  The completed soil sulphates and pH testing identified the exposure classification for concrete piles in the soil to be mild. In addition, the soil chlorides, resistivity and pH testing identified the exposure to steel pipes in the soil to be non-aggressive.

- Sodicity

  Sodicity provides the measure of likely dispersion of wetting and shrink/swell properties of soil. The test results identify a range between 5.6% to 53.4%, which indicates soils range from sodic to highly sodic.

- Acid Sulphate Soils

  The site is not mapped within an area covered by the Acid Sulphate Soil Risk Map. The risk of acid sulphate soils is considered low within the site.

The site shows no visible indications of salinity, erosion and other forms of land degradation. Potential salinity issues would be managed in accordance with a Salinity Management Plan which would form part of the CEMP for the proposal. The excavation of the topsoil, fill, natural soil and bedrock units is expected to be achievable using conventional earth moving equipment with minor rock breaking. The following mitigation measures are recommended to ensure the geology remains stable during construction and operational phases including:

- Permanent and temporary batters, and
- Retaining walls.

These mitigation measures have been incorporated into the overall design of the proposed development. Therefore, the analysis has shown that the proposed AIE Concept Masterplan and Stage 1 development are supportable in respect to geology and soils.

Ground Water Management

The Ground Water Management Plan (**Appendix Y**) identifies any risks to ground water associated with the proposed works. The investigation found groundwater is unlikely to be intersected during the construction and operation stages. However, in the even that groundwater is intersected during Stage 1 of the redevelopment works, the following management measures should be applied.

Management Measures - During construction

A review of the known redevelopment construction strategy indicates the only possibility of encountering groundwater would be due to the construction depth of the service trenches. In this unlikely event, the following management measures are recommended.

- Pump groundwater from the excavated service trench,
- Monitor volume of extracted groundwater,
- Monitor groundwater quality of the extracted groundwater,
- Monitor groundwater in the existing groundwater wells around the site.

Ground water re-use options, subject to meeting the adopted groundwater quality guidelines are outlined below.

- Dust suppression,
- On-site irrigation,
- Wheel washing,
- Topping up neighbouring dams,
- Discharge to the on-site sediment basin.

If, however, the intersected groundwater does not meet the water quality criteria adopted it must be managed appropriately. Groundwater treatment or disposal options are outlined below.

- Treatment for turbidity,
- Treatment for pH,
- Treatment for saline groundwater, and
- Disposal.

Management Measures - Post construction

Since groundwater is unlikely to be intersected by the development, and groundwater will not be extracted for beneficial use during the construction and operational phases, it is considered that there will be no ongoing impacts to the local hydrogeological regime.

5.7.2. Contamination

A Phase 1 and Phase 2 Contamination Assessment has been prepared for the subject site by JBS&G and Arcadis respectively. Refer **Appendix S** and **Appendix T**. The Phase 1 Preliminary Site Investigation identified the source of the potential contamination were associated with the following storage, handling and uses on the site:

- Pesticides/herbicides used in former and current market gardens.
- Potential biological impacts from livestock/poultry farming.
- Potential use of hazardous building materials (asbestos, lead based paints, PCBs) in historic and current site structures resulting in localised impacts to soil in proximity to the location of site structures.
- Potential hydrocarbon and pesticide contamination from the storage of materials and consumables at various locations across the site area (former and current sheds).
- Fill materials of unknown origin.
- ACM in irrigation lines (conduits).

The Phase 1 investigation collected soil samples from 38 locations across the site. The results of the samples summarised below.

- BTEX, PAH, PCBs and OCP/OPP concentrations were below the laboratory Limit of Reporting (LOR) and adopted assessment criteria.
- Zn concentrations in surface soil samples (0.0-0.1 mgbl) at HA01, HA06, HA08, HA13 and HA18 and Cu concentrations in HA01 (0.0-0.1 mgbl) exceeding the EIL. The PSI noted the heavy metal contamination was generally associated with existing structures or areas of stored anthropogenic materials. The heavy metal contamination was noted to pose a potential (unacceptable) risk to ecological receptors on the site but does not pose a risk to human health.
- Elevated TRH concentrations at HA15 in the surface samples (0.0-0.1 mgbl) exceeded the NEPM management limits and adopted ESLs for TRH faction C10-C16 and C16-C34
- Two representative fragments of fibre sheet board collected from site structures did not test positive for detectable asbestos.
- However, trace level friable asbestos fines (Chryostile) was identified at HA13.

Following the Phase 1 investigation, it was recommended to undertake a Phase 2 Detailed Site Investigation to fully understand the extent of contamination on the site and recommend mitigation measures to appropriately dispose of the contamination. The Phase 2 findings were the following:

Soil

- Exceedances of adopted Tier 1 criteria were limited to Benzo(a)pyrene at MW02_2.0 along F2 and C_{10} – C_{16} at location HA15B. The Benzo(a)pyrene result was marginally above the adopted ESL for commercial/industrial sites.
- The highest F2 result at HA15B was an order of magnitude against the guidelines, that being 1,360 mg/kg against a guideline of 170 mg/kg.
- The C_{10} – C_{16} results at HA15B was 50% higher than the guidelines, that being 1,400 mg/kg against a guideline of 1,000 mg/kg.
- Sample location HA15B is recommended for further investigation and/or management.
- Sample locations SO01 and SO03 reported concentrations of ZN above the EIL, being 970 mg/kg and 300 mg/kg respectively, against a guideline value of 215 mg/kg.
- The sampling program undertaken at the locations identified in the PSI as exceeding the EIL indicated the following:
  - HA01B – vertical delineation of Zn achieved
  - HA06B – vertical delineation of Zn achieved

  - HA18B – vertical delineation of Zn achieved
  - Hand augering was unable to be completed at HA13 due to the livestock; and
  - Hand augering could not be completed at location HA08 to refusal on dense geology.
- No exceedance of other adopted site assessment criteria were present.
- Indicative waste classification for fill, soils and sediment encountered during intrusive works indicate that the fill material may be suitable for disposal at CT1 'General Solid Waste' (GSW) under the NSW EPA Waste Classification Guidelines, with the exception of the following samples where elevated concentrations were observed:
  - SO01 – exceeding GSW guidelines for Ni.
  - MW02_2.0 – exceeding GSW guidelines for Benzo(a)pyrene
- Further sampling and leachability study of these locations may reduce the classification of these samples to within GSW GT1.

Dam Sediments

- Arsenic and Pb concentrations in two primary and one triplicate sediment sample (DS01, DS02 and QA5) marginally exceeded the interim sediment quality 'low' guidelines by less than one standard deviation.
- Nickel concentrations in DS05 were approximately two times ISQG-low assessment criteria, indicating the sediment may pose a potential risk.
- No exceedance of the HIL and EIL industrial/commercial assessment criteria was recorded, indicating the risk posed by the sediment is low.

Surface Water

- The high pH of Dam 03 coincides with visually observed pollution from plastics and on site farm materials. Downgradient dams, Dam 01 and 02, are lower in pH yet still exceed the adopted default trigger values.

Groundwater

- The groundwater has a moderate EC (14,068 to 21,256µS/cm) and maintains a neutral to slight acidic pH.

PACM

- No PACM was observed on roads or open paddocks.
- No asbestos contaminated material was identified in soils at sampled locations.
- ACM was detected at the following locations:
  - ACM was reported within a building examined as part of the HAZMAT survey
  - Fragments of PACM on surface soils surrounding buildings reported detectable asbestos.
  - Fibre board sheeting (intact) dumped on site did not report to contain asbestos.
  - ACM was identified at Lot 54.
  - Chrysotile and/or amosite asbestos was detected samples collected at ASB01 (Lot 58), ASB02 (Lot 58) and ASB04 (Lot 57) however to friable fibres were reported.

Recommendations/Mitigation Measures

Based on the findings of the report, there was no gross or substantial contamination identified at the site. To confirm the suitability of the site from a contamination perspective for the proposed development as an industrial estate, the following will be required:

- Further investigation or management/remediation of the F2 contamination identified at HA15B;

- Further investigation or management/remediation of the Zn contamination identified at HA06, HA08, HA13 and HA18;
- The removal of identified surface ACM on Lot 54, Lot 57 and Lot 58 along with the issuing of a validation report; and
- Appropriate management of asbestos during the building demolition.

Recommendations/ mitigation measures for the site are the following:

- Develop a Remediation Action Plan (RAP) for asbestos, Zn and F2 contamination identified, unless the risks can be managed via other measures. The RAP may include provision to managing building footprint validation. A RAP has been prepared for the proposed development, refer **Appendix PP**.
- Surface asbestos requires removal by a licenced asbestos removal contractor and a clearance certificate issued by an appropriately qualified occupational hygienist. The works should be undertaken after the demolition of on site structures which may contain ACM.
- In the event that buildings are to be demolished, appropriate management of inbuild asbestos will be required. It is recommended to have asbestos removed from the buildings prior to demolition.
- An unexpected finds protocol to be implemented during works on site. The unexpected finds protocol is to include visual and/or analytical assessment of the materials below the building footprints after demolition.
- Structures on site and waste material is to be assessed as part of a HAZMAT survey and an asbestos register developed for the site to identify current and potential sources of contamination during development works.
- A Construction Environmental Management Plan (CEMP) will be delivered for the proposed works at the site. The CEMP is to include findings of the Phase 2 report to appropriate management the risk identified in the CSM.
- On-site surface water is to be measured after a significant rainfall event and compared to the observations in the Phase 2 report, to assess the potential contributions (surface material leaching, groundwater impact, evaporation) to observed water quality for dam de-watering purposes.
- Additional sediment sampling is recommended to be conducted once dams have been dewatering appropriately characterise the material.

The Phase 1 and Phase 2 reports demonstrate appropriate mitigation measures can be implemented to remove any contamination present on the site. An unexpected finds protocol has been prepared and is attached at **Appendix V**. This document outlines the actions which must be implemented in the event that potentially contaminated materials, waste, or asbestos is unexpectedly encountered during bulk earthworks and material importation at the site.

In addition, the implementation of a RAP does outline a safe protocol to ensure appropriate measures are taken to remove any contamination present on the site. With these mitigation measures in place, the proposed AIE Concept Masterplan and Stage 1 development are acceptable in respect to contamination.

5.7.3. Site Contamination Audit

A site contamination audit was conducted by Ramboll Australia Pty Ltd (**Appendix PP**) to provide an independent review by an EPA Accredited Auditor of the suitability and appropriateness of a remedial action plan as defined in Section 4(1)(b)(v) of the *NSW Contaminated Land Management Act 1997* (CLM Act).

The scope of the audit included review of the following reports:

- Preliminary Site Investigation.
- Dam Decommissioning Study.
- Unexpected Finds Protocol.
- Imported Fill Protocol.
- Hazardous Material Survey.

- Detailed Site Investigation.
- Remedial Action Plan.

Based on the information presented in the reports and observations made on site, and following the decision-making process for assessing urban redevelopment sites in NSW EPA *Guidelines for the NSW Site Auditor Scheme (3rd Edition) (2017),* the Auditor concluded that the site can be made suitable for the proposed 'commercial/industrial' use if remediated in accordance with the following RAP:

- 'Remedial Action Plan, Aspect Industrial Estate, Mamre Road, Kemps Creek, NSW 2178 – Rev 4 Final', Arcadis, 15 October 2020

The nature and extent of contamination has been broadly characterised for the purpose of developing the remediation framework. The remediation framework provided in the Remedial Action Plan acknowledges that building footprints are required to be assessed after demolition and prior to bulk earthworks with additional remediation and validation being undertaken if required. These works are proposed to be completed as pre-commencement works.

The site is large and there may be unidentified structures such as buried pipes containing asbestos, further areas of filling or waste burials. The unexpected finds protocol at **Appendix W** is considered adequate to manage the associated risks.

It is recommended that interim reports documenting the following are prepared for Auditor review prior to commencing bulk earthworks:

- Assessment of building footprints and identification of any additional areas requiring remediation.
- Validation of the dam sediments for reuse on site prior to placement.
- Validation of the identified remediation area.

The competent implementation of the Remedial Action Plan, along with the Dam Decommissioning Study, Unexpected Finds Protocol and Imported Fill Protocol, should be adequate to render the site suitable for the proposed use. Successful validation will be required to confirm this along with appropriate management and assessment of any unexpected contamination finds and confirmation that imported materials are suitable for use. It is recommended that an Audit be completed at the completion of works assessing the suitability of the site for the proposed land use.

5.7.4. Farm Dams

The site has five farm dams which are proposed to be decommissioned. Arcadis has prepared a Dams Dewatering Report which outlines the requirements to dewater and decommission the dams located at the site (**Appendix W**). This report will form part of an overarching CEMP that will manage the environmental considerations during the construction phase.

It is recommended the decommissioning of all on-site dams is undertaken in sequence with water transferred between the dams for storage. The ultimate decommissioning sequence will be in part dictated by the water management requirements of the site and the redevelopment plan of works schedule. Subject to the staging of site works, dams can be decommissioned in sequence commencing with Dam 05 to Dam 01.

Since the dams are constructed on a natural watercourse, it is recommended that the current creek is realigned, and surface water runoff is directed into this artificial water course to reduce inflow to the dams. Once the dams are removed surface water runoff would naturally discharge into Kemps Creek which is consistent with pre dam conditions. Bunding would also be installed around the dams during decommissioning in accordance with the NSW hydrology "Blue Book" (Landcom 2004).

Preliminary water quality testing of the dam water indicates the water would be suitable for a number of on-site re-use options such as wheel washing, on-site irrigation, dust suppression, topping up neighbouring dams or discharge into sedimentation basins. Once the dams are dewatered the voids will be infilled.

The Dams Dewatering Strategy outlines the appropriate steps to dewater dams and infill with sedimentation. It demonstrates the farm dams can be safely removed, through the implementation of a CEMP. Therefore, the steps outlined support the Concept Masterplan and Stage 1 Development.

5.7.5. Stormwater and Drainage

Existing Hydrology

The Civil Report at **Appendix G** outlines the existing hydrology and proposed stormwater network for the site.

The majority of the site falls from the east to the corner of the northern and western boundary. The high point of the site is located on the eastern boundary and is approximately at RL70.5m. This catchment discharges from the Site into the road reserve before draining west underneath Mamre Road in existing culverts at RL 39.9m.

The remaining small catchment in the south west corner of the site falls from approximately RL 67 to the west towards Mamre Road. This catchment is captured in a swale to the east of Mamre Road and drains to the west into the existing pipes on the western boundary of the site.

Design Considerations

The design of the stormwater system for AIE aims to match post-development flows as close as possible to pre-development flows across the site to ensure that downstream catchments will not be adversely affected in terms of flooding.

The stormwater management system for the estate has been designed in consideration of the specifications of the approved stormwater infrastructure. All estate level stormwater drainage for the AIE development is designed to comply with the following:

- Penrith City Council Design Guidelines for Engineering Works; and
- Penrith City Council (PCC) Water Sensitive Urban Design (WSUD) Policy December 2013; and
- C3 Water Management DCP.

Key standards and requirements of the AIE stormwater management system include:

- The estate-based basin will serve the development as detention and bioretention basins. The basin will be designed to comply with PCC standard WSUD requirements.
- All drainage in the road reserves will be dedicated to PCC and be designed to PCC specifications.
- All stormwater drainage within the lots will be the responsibility of the individual property owners.
- OSD is to be sized to ensure that for all rainwater events up to and including the 1:100ARI event, that new developments do not increase stormwater peak flows in any downstream areas.
- OSD is to mitigate post development flows to pre-development flows for peak Average Reoccurrence Interval (ARI) events.
- All OSD basins have been designed with a 3.0m wide stabilised access road along the berm to ensure maintenance vehicles can access the entire exterior of the basin.
- WSUD to achieve target reductions:
  - 85% Total Suspended Solids (TSS)
  - 60% Total Phosphorus (TP)
  - 45% Total Nitrogen (TN)
  - 90% Gross Pollutants (GP)
- Finished Floor Levels (FFL) of proposed buildings within the AIE to have a minimum 500mm freeboard to 100 year overland flows.
- Rainwater tanks are desirable for re-use for irrigation, toilet and other non-potable water uses. Rainwater tank size is determined in accordance with the Penrith City Council C3 Water Management DCP to meet 80% of non-potable demand for irrigation and toilet flushing.

Water quality would be preserved during construction and operations on the site through the implementation of standard erosion and sediment control measures as shown in plans at **Appendix F** and maintain WSUD

reduction targets as outlined above. As the rehabilitated vegetation areas matures, the vegetated channel will continue to improve with the subsequent benefits for water quality.

5.7.6. Flooding

A Flood Risk Assessment and Flood Impact Assessment have been prepared by Cardno and is included at **Appendix AA** and **Appendix BB** respectively.

Flood Risk

The extent of the 1:100 ARI under existing conditions is shown in **Figure 49** and effectively follows the existing farm dams within the site.

Hydrological modelling of the South Creek catchment was undertaken in 2015 at the catchment scale by Worley Parsons, based on ARR1987 IFD. This study identified the critical storm burst duration for South Creek downstream of Bringelly Road to be 36 hours.

A local hydrological model was created to assess runoff under benchmark conditions and to facilitate the assessment of impacts of the proposed development.

Prior to progressing the hydrological assessment, it was determined that the combined capacity in 8 farm dams, including dams outside of our site, is just under the criterion for classification as a regional farm dam system and on that basis the farm dams have been ignored when assessing “Benchmark Conditions”.

Hydrological assessments were undertaken using both ARR1987 and ARR2019.

- Design rainfall and storm burst patterns were obtained from ARR1987 for 2yr ARI, 5 yr ARI, 100 yr ARI, 200 yr ARI and 500 yr ARI events. The Probable Maximum Precipitation was estimated using The Estimation of Probable Maximum Precipitation in Australia.
- For the 2yr ARI, 5 yr ARI, 100 yr ARI, 200 yr ARI and 500 yr ARI events the adopted initial rainfall loss = 15mm and continuing rainfall loss = 1.5mm/h. For the PMF the adopted rainfall losses were an initial loss = 1mm and a continuing loss – 0mm/h.
- Design rainfall and storm burst patterns were obtained for ARR2019 from the ARR Data Hub for 50%, 20%, 1%, 0.5% and 0.2% AEP events.
- For the 50%, 20%, 1%, 0.5% and 0.2% AEP events the adopted initial burst rainfall loss varied while a constant continuing rainfall loss = 2.3mm/h was adopted.
- The modelling determined the estimated 5 yr, 100 yr, 200 yr, 500 yr and PMF flood levels and extent, depths, velocities and hazards under Benchmark Conditions from which to assess the overall flood impact of the future development scenario.

Flood Impact

The flood impact assessment was informed by the assessment of design flood levels, velocities and hazards under Benchmark Conditions as described in the Flood Risk Assessment.

Three basin conditions were modelled initially to determine the preferred scenario to mitigate the impact of the development based on the ARR 1987 conditions.

The assessment of flooding under Stage 1 was undertaken by modifying the local TUFLOW model of Benchmark Conditions to represent the planned earthworks and development as follows:

- The DEM was updated based on the proposed platform levels, proposed roadworks and swales
- The roughness zones under Stage 1 were mapped.
- The swale diversion system was included in the model
- It was assumed that the three Mamre Road culverts (1.85m x 0.77m) would be partially blocked and that only two of the three culverts would convey floodwaters.
- Scenario 2 basin conditions were adopted to maintain compatibility with the 2015 South Creek flooding assessments which were based on ARR1987.

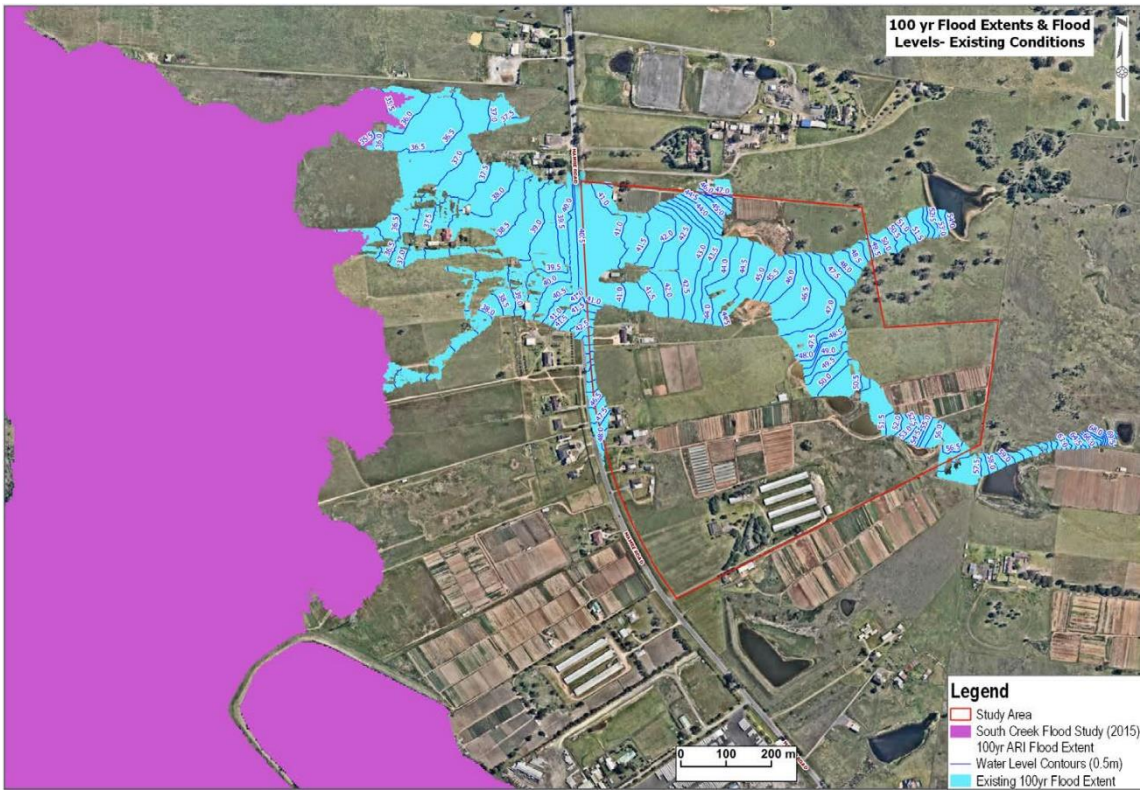
- Inflows into the TUFLOW model were exported from the hydrological model and input at the locations of the sub catchment outlets. The basin was not explicitly modelled rather the outflow from the basin was input just downstream of the basin.
- The downstream boundary condition was a free outfall. The flood extent in South Creek was overlaid over the results of the local TUFLOW model to identify where mainstream flooding takes over from overland flows.

The concept details of the proposed AIE respond to the flooding risks by separating upstream runoff from local internal runoff and implementing the following measures:

- capturing upstream runoff just inside the site boundary and conveying this via a swale to the head of the extended riparian corridor which conveys the combined upstream runoff from the southern and eastern drainage lines to the existing Mamre Road crossing in all events up to the 100 year ARI event; and
- directing all runoff from within the Stage 1 development to a dual purpose basin in order to mitigate the impacts on the rate of runoff in all events up to the 100 year ARI event and to mitigate impacts on stormwater quality. The basin has been sized on the ultimate conditions when all stages of development of the industrial estate have been completed ie. It is planned to construct the full basin under Stage 1.
- For post development extent of the 1:100 ARI, refer to
-
-

Figure 50 below. For flood level impacts and flood velocity impacts, there was negligible impacts on downstream properties during the 2 year ARI, 5 year ARI, 100 year ARI, 200 year ARI and 500 year ARI. In the PMF event, there were modest increases in flood levels and velocities experienced in downstream properties.

Figure 49 Extent of Flooding on AIE (Pre-Development)



Source: Cardno

Figure 50 Extent of Flooding on AIE (Post-Development)

Source: Cardno

The estimated impact of the proposed AIE on 2 yr ARI, 5 yr ARI, 100 yr ARI, 200 yr ARI and 500 yr ARI flood levels and velocities and PMF levels and velocities were assessed. These assessments demonstrate negligible adverse impacts on flood levels and velocities downstream of Mamre Road in the 2 yr ARI, 5 yr ARI, 100 yr ARI, 200 yr ARI and 500 yr ARI events. In a PMF modest increases in the flood velocities are experienced downstream of Mamre Road.

5.7.7. Heritage

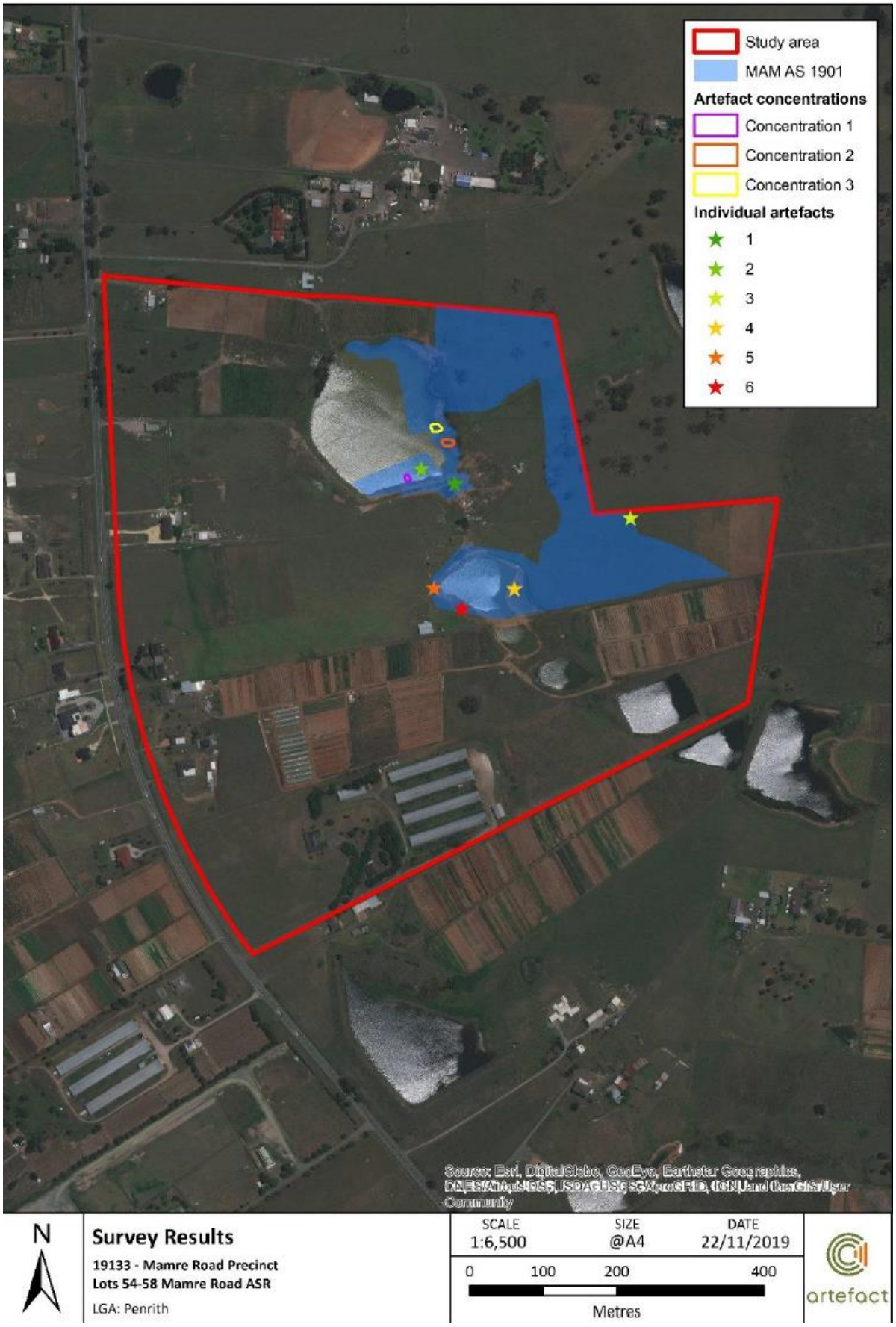
Indigenous Heritage

A Aboriginal Cultural Heritage Assessment Report (ACHAR) has been undertaken in respect of the AIE proposal and is included in **Appendix M**. The objectives of the ACHAR are the following:

- Assess the Aboriginal cultural heritage values of the study area, including archaeological and community cultural values, and the significance of identified values.
- Identify Aboriginal cultural heritage values that may be impacted by the proposed works, including consideration of cumulative impacts, and measures to avoid significant impacts.
- Ensure appropriate Aboriginal community consultation in the assessment process.
- Identify any recommended further investigations, mitigation and management measures required.

The archaeological survey of the study area identified five artefact concentrations, ranging in size from 15 artefacts in concentration to three artefacts in concentration, and six isolated artefacts.

Figure 51 Survey Results



Source: Artefact Heritage

Consultation

Aboriginal community consultation was undertaken in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponent 2010 (DECCW 2010b). Letters and emails were sent on 1 October 2019 to the following organisations to request the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places within Kemps Creek:

- Greater Sydney Office of Environmental and Heritage.
- Deerubbin Local Aboriginal Land Council.
- The Registrar, Aboriginal Land Rights Act 1983.
- National Native Title Tribunal.
- NTSCORP.
- Penrith City Council.
- Greater Sydney Local Land Services.

An advertisement was placed in the Koori Mail on 9 October 2019. The advertisement invited all Aboriginal persons and organisations who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the study area to register their interest by 23 October 2019.

A copy of the test excavation methodology and draft ACHAR was circulated to registered Aboriginal parties (RAP) for comment. All parties supported the methodology, draft ACHAR and agreed with the recommendations.

Archaeological Survey

The aims of the archaeological survey were to:

- Record the landform, general soil information, surface conditions and vegetation conditions encountered during the survey and how these impact on the visibility of objects.
- Record any Aboriginal objects observed during the survey.
- Define the boundaries of any Aboriginal sites and area of PAD based on landmarks and historical maps.
- Reinspect previously identified Aboriginal sites and areas of archaeological potential within the study area.
- Identify areas of disturbance which may have impacted the presence of intact soils and archaeological features.
- Undertake consultation with Deerubbin LALC to discuss the proposal, undertake archaeological survey and discuss the intangible cultural heritage values to the study area.
- Collect information to ascertain whether further archaeological investigation is required.

The survey resulted in the identification of 21 surface artefacts, in addition to the 13 surface artefacts identified during the site inspection. The site contained five artefact concentrations ranging in size from 15 artefacts in concentration 1 to three artefacts in concentration 5. The site also included six isolated artefacts.

Archaeological Test Excavation

Archaeological test excavations were conducted within MAM AS 1901 in June 2020. The test excavation recovered 25 artefacts from the 15.5m^2 that was excavated across the site resulting in an artefact density of 1.61 artefacts per m^2. The highest concentration of artefacts was retrieved from the open space excavation at A3, which yielded a total of 13 artefacts, 52% of the total site assemblage. As a result, A3 was considered to be an artefact concentration, with a density of 8.67 artefacts/m^2. It was concluded that fluvial processes were unlikely to have resulted in the deposition of the artefact concentration at A3 and that the deposit was likely to be of high archaeological integrity. The artefacts recovered from the remainder of the site were considered to be representative of a background scatter.

The total artefact count for Mamre Road Artefact Scatter 1901 is 60 artefacts, with 35 surface artefacts identified during the previous site survey. Overall, it was found that the MAM AS 1901 consists of a low-density artefact scatter that contains six isolated surface artefacts, four surface artefact concentrations and one subsurface artefact concentration. It was concluded that the assemblage represented opportunistic artefact manufacture rather than the mass manufacture of artefacts associated with permanent occupation.

Potential Impact

The bulk earthworks across the study area would result in total removal or modification of the ground within the study area. This would result in the total removal of all identified Aboriginal objects and artefact concentrations within the study area. As a result, the impacts associated with the proposed works would result in a total loss of Aboriginal objects and artefact concentrations within the study area.

Mitigation and Management

The following mitigation measures have been identified:

- Surface collection

  To prevent the unnecessary destruction and loss of archaeological material located on the ground surface, the RAPs should be given the opportunity to conduct a surface collection of Aboriginal objects across the mapped extent of MAM AS 1901.

- Construction Environment Management Plan and unexpected finds procedure

  A CEMP and accompanying unexpected finds procedure will provide a method to manage potential heritage constraints and unexpected finds during construction works. Aspects of site area protection that should be included in the CEMP include an unexpected finds procedure. If Aboriginal objects are identified during construction, would should stop immediately and Deerubbin LALC, Heritage NSW,DPC and an archaeologist should be contacted to identify and record the objects.

- Discovery of human remains

  If any human remains are discovered and/or harmed in, on or under the land the following actions must be taken:

  – Do not further move or disturb these remains

  – Immediately cease all works at a particular location

  – Secure the area so as to avoid further harm to the remains

  – Notify the NSW police

  – Notify Heritage NSW, DPC on the Environment Line (131 555) as soon as practicable and provide any available details of the remains and their location

  – Not to recommence any work at the particular location unless authorised in writing by Heritage NSW, DPC

- Changes to the proposed works

  Any changes made to the proposal should be assessed by an archaeologist in consultation with the RAPs. Any changes that may impact on Aboriginal sites not assessed as part of the proposal may warrant further investigation and result in changes to the recommended management and mitigation measures.

- Management of Aboriginal Objects

  It is proposed that Aboriginal objects recovered from the test excavation program will be reburied within the study area, outside the proposed impact area. Consultation with the RAPs regarding this approach will be conducted as part of the Aboriginal stakeholder review of the ACHAR. The proponent would need to identify a location that will not be impacted by the proposed works for consideration by the RAPs. An Aboriginal Site Recording Form must be forwarded to the AHIMS Registrar with information on the location and depth of reburial.

- Salvage excavation

The artefact concentration should be subject to a salvage excavation program to record the full extent of the intact artefact concentration. The aim of salvage excavations would be to mitigate impacts by further investigating the areas of high density identified during test excavation. Targeted salvage would be an appropriate mitigation measure based on the lack of integrity identified across the wider site extent and the lack of ability to reduce proposed impacts associated with future use.

Conclusion

The ACHAR identified one Aboriginal site, MAM AS 1901 in the study area. The MAM AS 1901 includes a low density, subsurface artefact assemblage and an artefact concentration, in additional to the previously recorded surface features. The MAM AS 1901 is assessed as being of moderate archaeological significance.

The proposed works will impact MAM AS 190 and result in a total loss of value. However, implementation of mitigation measures above will ensure these artefacts can be relocated for conservation purposes. Therefore, with the implementation of the mitigation measures, the proposed development is deemed appropriate for the site.

Non-Indigenous Heritage

A Non-Aboriginal Heritage Impact Statement has been prepared by Artefact and is included at **Appendix N.** The assessment sets out the historical context of the land, and a built and non-indigenous archaeological assessment of the site and proposal.

The assessment found that:

- There are no sites within or near the study area which are included on the Commonwealth Heritage List.
- There are no sites within or near the study area which are included on the National Heritage List.
- There are no State Heritage Register (SHR) listed items within the vicinity of the study area.
- There are no s170 register listed items within the study area.
- There is one listed heritage item within 300 metres of the proposed development:
  - ‘Bayley Park – House’ (*Penrith Local Environmental Plan 2010*, Item No. 104)

The overall site has nil-low potential to contain archaeological resources that would reach the local significance threshold and be considered ‘relics’ under the *Heritage Act 1977* (amended 2009). There are no listed or unlisted heritage items or elements of significant fabric located within the site. The proposal would have negligible impact on archaeological relics.

Impact to Bayley Park – House (Penrith LEP, Item 104)

The proposal would not involve works that would encroach into the curtilage of Bayley Park – House, which is located approximately 290 metres south of the study area. There would be no direct impacts to the curtilage or significant fabric associated with the heritage item.

Bayley Park house is set back approximately 360 metres from Mamre Road and is encircled by large mature pine trees on each side, which have created a privacy screening from the house. Currently extant on the Bayley Park site is a hard surface which is housing large storage containers. The combination of large trees and shipping containers has entirely obstructed view corridors from the proposed development and from Mamre Road to the homestead. It is likely that there are no view lines from Bayley Park House towards the study area.

The proposed works would be visible from the eastern curtilage of Bayley Park-House, facing Mamre Road, and would result in a significant change to the rural character and setting of Kemps Creek when viewed from Bayley Park.

The proposed works would result in neutral physical impacts and a minor visual impact to Bayley Park - House.

Mitigation and Management

The following mitigation and management measures are recommended:

- New vegetation planting should be placed within the setback from Mamre Road and retain the extant native vegetation to mitigate and reduce impacts to the rural character of the area.

- A Photographic Archival Recording should be prepared to record the proposal area and significant view lines prior to commencement of works.
- Appropriate heritage interpretation media should be considered for inclusion within the proposed café or in other suitable areas throughout the proposal and would satisfy the objectives of the Penrith DCP. A Heritage Interpretation Strategy should be prepared by a suitably qualified heritage consultant, followed by a subsequent Heritage Interpretation Plan.
- In subsequent phases of the project, detailed information regarding depths of ground disturbance and bulk earthworks should be further assessed in an Archaeological Research Design (ARD). An ARD must be prepared prior to ground disturbance or earthworks.
- The Non-Aboriginal Heritage Impact Statement assessed Stage 1 designs only. Additional heritage assessment and/or consistency assessment(s) must be undertaken for future design stages and/or redesign of Stage 1 works to ensure consistency.
- If unexpected archaeological finds are discovered during the proposed work, the Roads and Maritime *Standard Management Procedure: Unexpected Heritage Items* (2015) must be followed. Heritage NSW, DPC would be notified of the discovery of a relic in accordance with Section 146 of the *NSW Heritage Act 1977*. In areas where a permit to impact 'relics' under the Heritage Act is in place, a heritage consultant and Roads and Maritime would need to determine consistency of the unexpected find with existing approvals and advise if a notification to Heritage NSW,DPC would be required.

Conclusion

The Non-Aboriginal Heritage Impact Assessment determined the site has nil-low heritage potential for non-Aboriginal heritage items. Outside of the site, there is one item of local significance within 300m of the proposed development. This site is heavy screened via mature trees and building structures. The impacts to this heritage item would be minor. However, the report recommended mitigation measures to minimise the impact on the Bayley Park House including landscaping along Mamre Road. This mitigation measure has been incorporated into the overall design with the proposed development incorporating a 20m landscaped setback along Mamre Road. With these mitigation measures in place, the proposed Masterplan and Stage 1 development are acceptable in respect to non-Aboriginal Heritage.

5.7.8. Air Quality

The air quality impacts of the proposed development have been considered in the context of the construction and operational activities at the estate as documented in the Air Quality Impact Assessment at **Appendix DD**.

Localised Impacts of Existing Sources of Air Emissions

Products of combustion

The main existing sources of products of combustion identified in the local air shed are exhaust emissions from local traffic in the area. Given the similar level of urban development between the site and St Marys AQMS, any air impacts due to local traffic can be assumed to be captured within the background levels monitored by the St Marys AQMS. On this basis, ambient concentrations of gaseous air pollutants can be expected to be well within the relevant ambient air quality criteria, while concentrations of PM_{10} and $PM_{2.5}$ may be elevated at times due to regional events.

Nuisance Dust

The construction of Kemps Creek Industrial Estate and Oakdale West Estate can potentially affect the short term air quality at the site. The potential for dust to be emitted during the demolition/construction phase will be directly influenced by the nature of the activities being performed at any given time. Generally, the activities that are most likely to lead to short-term emissions of dust, include:

- Concrete cutting and breaking up of the existing road/ footpath surfaces,
- Grading,
- Loading and unloading of materials,
- Wheel-generated dust from trucks travelling on unpaved surfaces, and
- Wind erosion of exposed surfaces.

Temporary elevations in local dust levels are most likely to occur when construction activities are undertaken during periods of low rainfall and/or windy conditions. The impact of elevated dust emissions is dependent upon the potential of particulates to become and remain airborne prior to being deposited as dust or experienced as an ambient particulate concentration.

The publicly available information indicates that the construction of Kemps Creek Industrial Estate and Oakdale West Estate is likely to be undertaken and completed during 2020. The AIE site is still going through the development application process, and its construction and operations are unlikely to coincide with the construction of Kemps Creek Industrial Estate and Oakdale West Estate, therefore reducing the likelihood of cumulative impacts.

Elizabeth Drive Landfill

The dispersion modelling for the Elizabeth Drive Landfill showed that 2 ou odour contour levels were predicted approximately 600m north of the Elizabeth Drive Landfill. The site is approximately 2,600m away, therefore it is concluded that the likelihood of odours from Elizabeth Drive Landfill being detected is extremely low.

Poultry Farms

There are four poultry farms in the vicinity of the site:

- 365 Luddenham Road – 3,000m,
- 879 Mamre Road – 175m,
- Abbots Road, Kemps Creek – 1,500m, and
- Western Road, Kemps Creek – 2,500m.

There is a potential for odour impacts across the site, as result of the existing poultry farm operations located across the road. A number of semi-rural residential properties already exist in the general vicinity of 879 Mamre Road. There are limited to no odour complaints associated with this poultry farm.

The proposed development is industrial, which can be expected to be less sensitive to odour impacts. Workers are also unlikely to be present around the clock, compared to residential receptor where human receptors are potentially present all the time.

Further, the site has been zoned IN1 General Industrial under the WSEA SEPP in June 2020. This rezoning may result in these poultry farm ceasing operations as the area transitions to high order employment.

Potential Sources of Air Emissions during Construction Operations

The main air quality issue associated with construction works relate to emissions of fugitive dust. The potential for dust to be emitted during the construction works will be directly influenced by the nature of activities being performed at any given time. Generally, the activities that are most likely to lead to short-term emissions of dust include:

- Grading,
- Loading and unloading of materials,
- Wheel-generated dust and combustion emissions from construction equipment,
- Wheel-generated dust from truck travelling on unpaved surfaces, and
- Wind erosion of exposed surfaces.

Temporary elevations in local dust levels are most likely to occur when construction activities are undertaken during period of low rainfall and/or windy conditions. The impacts of elevated dust emissions are dependent upon the potential for particulate concentration.

Where diesel-powered mobile machinery and vehicles are being used, localised elevations in ambient concentrations of combustion-related pollutants may also occur, however any potential for the relevant impact assessment criteria for these pollutants to be exceeded at surrounding sensitive areas will be minimal.

The risk assessment indicates there is a low risk of adverse dust soiling and human health impacts occurring at the off-site sensitive receptor locations if no mitigation measures were to be applied to control emission during the earthworks, construction, and trackout phases of the works.

Potential Sources of Air Emissions during Warehousing Operations

During the operational phase, the main source of air emissions would be products of fuel combustion and particulate matter (associated with brake and tyre wear as well as re-entrainment of road dust) associated with the trucks and other vehicles entering or leaving AIE, or idling at the site during loading/unloading operations.

The operational emissions will be of a similar nature to existing emissions from traffic on Mamre Road and other road connecting the industrial operations of the area. The scale and magnitude of emissions from the AIE site is anticipated to be significantly lower compared to the estimated annual average daily traffic on Mamre Road. The scale of operations, the potential impact of the AIE site on local sensitive receptors is concluded to be neutral for all receptors.

Mitigation and Management

The following mitigation and management measures are listed below. Not all these measures would be practical or relevant to the proposed AIE. Therefore a review of recommendations should be performed, and the most appropriate measures to be adopted as part of the CEMP.

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary.
- Display the head or regional office contact information.
- Development and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority.
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when requested.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.
- Perform daily on-site and off-site inspections where receptors (including roads) are nearby to monitor dust, record inspection results and make the log available to the local authority when asked.
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results and make an inspection log available to the local authority when requested.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Plan site layout so that machinery and dust causing activities are located away from receptors as far as possible.
- Erect solid screens or barriers around dusty activities or the site boundary that is at least as high as any stockpiles on the site.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Cover, seed or fence stockpiles to prevent wind erosion.
- Ensure all on-road vehicles comply with relevant vehicle emission standards where applicable.
- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.

- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from loading shovels and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Avoid bonfires and burning of waste materials.
- Avoid scabbling (roughening of concrete surfaces) if possible
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate control measures are in place.
- Use water-assisted dusty sweeper(s) on the access and local roads to remove, as necessary, any material tracked out the site.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of material during transport.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

Conclusion

The air quality for both operational and construction phases was determined to be neutral or low impact to surrounding sensitive receptors. Through the implementation of the proposed mitigation measures above the proposed AIE Concept Masterplan and Stage 1 development are deemed acceptable in respect to air quality.

5.7.9. Bushfire

Australian Bushfire Protection Partners Pty Ltd has reviewed the proposed development scheme in light of the requirement of Planning for Bushfire Protection 2019.

The Penrith Council Bushfire Prone Land Map indicates that the site and adjacent lands contains Category 2 Bushfire Prone Vegetation. Refer map extract at

Figure 52.

Figure 52 Penrith Council Bushfire Prone Land Map extract

Source: ABPP & Penrith City Council

As this site is classified as bushfire prone land, Section 4.14 of the Environmental Planning and Assessment Act requires that the proposed development complies with the requirements of Planning for Bushfire Protection 2019 with respect to the protection of persons, property and the environment from the danger that may arise from a bushfire.

The aim of Planning for Bushfire Protection 2019 is to '*provide for the protection of human life and minimise impacts on property from the threat of bushfire while having due regard to development potential and protection of the environment*'.

Defendable Spaces / Asset Protection Zones

Defendable Spaces/Asset Protection Zones [APZs] have been assessed for the future industrial development in accordance with *Planning for Bushfire Protection 2019* and Australian Standard A.S. 3959 – 2009 (using effective slope and predominant vegetation communities).

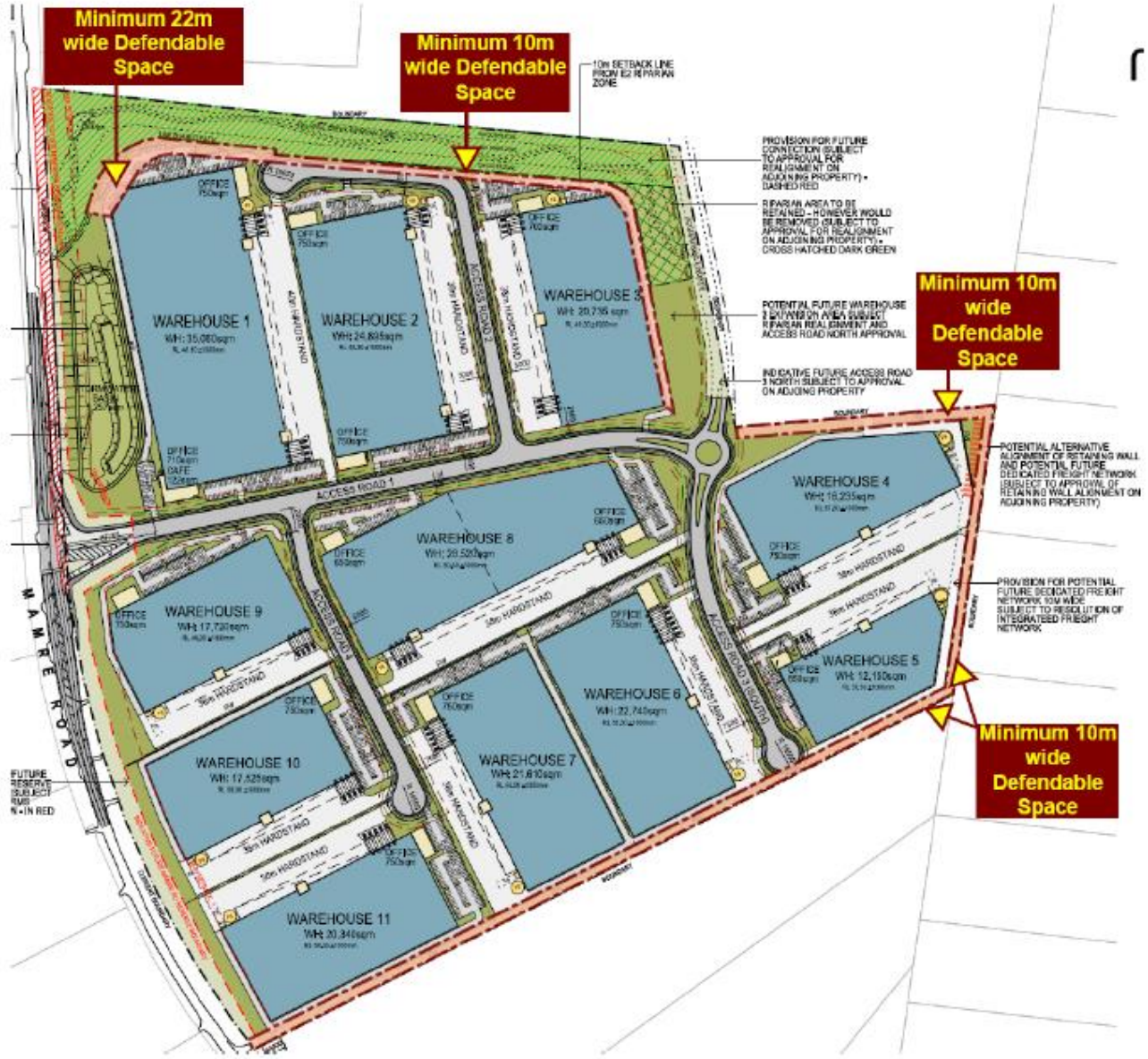
The assessment is based on the predominant vegetation on the adjoining land being grassland and the vegetation within the realigned creek corridor consisting of River Flat Eucalypt Forest is reclassified as low hazard 'rainforest'.

The NSW Rural Fire Service's requirement for industrial buildings is to provide a setback from the bushfire prone vegetation which will minimise flame contact on a building.

Table A1.12.5 of *Planning for Bushfire Protection 2019* identifies that a minimum defendable space width of 8.0 metres is required to prevent flame contact on the future industrial buildings from a grass fire on the surrounding properties. The available defendable space proposed in the AIE masterplan is 10 metres, allowing adjoining buildings to be constructed to BAL 29 standards. This requirement will remain until such time that the adjoining land is developed and the grassland hazard is removed.

A 22.0 metre wide defendable space width is recommended to the rehabilitated River Flat Eucalypt Forest (Rainforest) in the realigned second order stream in the north-western corner of the site. This width of defendable space is provided for in the design. Refer Figure 53 below.

Figure 53 Plan of Defendable Spaces



Source: Australian Bushfire Protection Planners Pty Ltd

Management strategies to be implemented include:

- 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;
- Utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to building;
- Trees and shrubs should be maintained in such a manner that tree canopies are separated by 2 metres and understorey vegetation is not continuous [retained as clumps].

Construction Measures

Table 1 in the Bushfire Assessment report details construction standards that must apply to buildings exposed to bushfire hazard In addition, the following measures are to be implemented:

- The downpipe / stormwater system to the internal box gutters shall be sized to provide a self flushing of combustible materials from the roof/gutter. This shall include increased fall in the box gutter/s to the sumps;

- Access doors [PA and Vehicle] to the buildings shall be fitted with seals that seal the bottom, stiles, and head of the door against the opening/frame to prevent the entry of embers into the building. Particular attention shall be given to the gap at the head of the curtain of the roller doors, where mohair type seals can be used;
- External timber doors shall be fitted with a stainless steel/Colorbond kick plate of 400mm high on the outside of the door;
- External glazed doors and windows shall comply with the requirements for glazing less than 400mm above finished ground level; paths / pavement and elevated roofs;
- Any external vents, grilles and ventilation louvres shall have stainless steel mesh with a maximum aperture of 2mm square fitted to prevent the entry of embers into the building or be fitted with a louvre system which can be closed in order to maintain a maximum aperture or gap of no more than 2mm.
- Roof ventilators shall be fitted with stainless steel flymesh [2mm aperture] to prevent the entry of embers into the building or be fitted with a louvre system which can be closed in order to maintain a maximum aperture or gap of no more than 2mm.

Access Standards for Firefighting Operations

Vehicular access to the proposed Aspect Industrial Estate will be provided from Mamre Road.

The proposed internal access roads will be constructed to provide heavy rigid and articulated vehicle access to each of the proposed buildings. This internal road network provides suitable access for fire-fighting appliances similar to NSW Rural Fire Service Category 1 Tankers and Fire & Rescue NSW Composite and Aerial Appliances.

Fire Appliance access shall be provided to the perimeter of each lot, either by a perimeter road or by vehicular access to the future buildings or parking areas incorporated into the defendable space setback.

Access to the bushfire prone vegetation shall be provided either by a perimeter road or by vehicular access to the future buildings or parking areas that are incorporated into the defendable space setbacks.

These access roads are provided around the development lots in the proposed design.

Water Supplies for Firefighting Operations

A reticulated water supply for potable water supply and fire hydrants is to be extended into the site.

The fire-fighting water supply to the new buildings shall comply with the Building Code of Australia [BCA] and A.S. 2419.1 – 2005.

Electricity and gas supplies will be laid underground and therefore address the performance standard of Chapter 4 of *Planning for Bushfire Protection 2019.*

Emergency Management for Fire Protection / Evacuation

The new buildings located adjacent to the bushfire hazard are unlikely to be subject to a fire event that may necessitate evacuation of the buildings.

Due to the low bushfire risk there is no requirement for the preparation of a specific Bushfire Evacuation Plan or a Bushfire Management Plan for the estate.

Bushfire Hazard Management

Management of the Defendable Spaces within the development shall comply with the following:

- Maintain a clear area of low cut lawn or pavement adjacent to the buildings; Utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to building;
- Keep areas under shrubs and trees raked and clear of combustible fuels;
- Trees and shrubs should be maintained in such a manner that tree canopies are separated by 2 metres and understorey vegetation is not continuous [retained as clumps]. This is provided for in the landscape design.

Summary

Table 33 below summarises the extent to which the development conforms to the aims and objectives of Planning for Bushfire Protection 2019.

Table 33 Planning for Bushfire Protection 2019 Summary Compliance

Bushfire Protection Measure	Compliance with the aim and objectives of Planning for Bushfire Protection 2019
Defendable Space setbacks/construction standards to future industrial buildings	The combination of a Defendable Space and construction standards to the future industrial buildings located adjacent to the bushfire hazard addresses the requirement that the occupants are afforded adequate protection from exposure to a bushfire and that the buildings will not be exposed to material ignition.
Access for fire-fighting operations	The proposed public access roads comply with the specifications of Appendix 3 of *Planning for Bushfire Protection 2019* and provide satisfactory emergency access for fire-fighting appliances. Access for fire-fighting operations to be provided to the perimeter lots adjoining the bushfire hazard [located within the Defendable Space setback]. Positive Covenant to be recorded on title of each lot located adjacent to the bushfire hazard for access for firefighting operations.
Water supplies for fire fighting	Hydrant supply to be installed in accordance with AS 2419.1 – 2005.
Management of the fire protection measures, including the defendable spaces	Each lot owner responsible for the maintenance of the recommended fire protection measures and provision of the perimeter fire access road. Positive Covenant to be recorded on title of each lot.
Emergency Management	Owners of buildings shall address protocols for the management of staff and site facilities during bushfire occurrences

Source: ABPP

The assessment has found that the proposed development complies with the aim and objectives of *Planning for Bushfire Protection 2019* and the deemed to satisfy requirements of Section 8.3.10 of *Planning for Bushfire Protection 2019* – Buildings of Class 5 to 8 and Class 10 of the Building Code of Australia in respect to the provision of asset protection zones [defendable spaces], access and water/utilities, subject to the measures identified in **Table 33** above.

5.7.10. Mineral Resources

The closest extractive activities to the AIE are approximately 3km to the east at the CSR site. The proposed AIE development would not impact on the CSR operations, including the method of extraction.

It is considered that AIE is unlikely to hold unidentified mineral resources. The clay/shale underlying of the site is of a nature and quality that is commonly occurring in the local area and as such is not in short supply. The development of the AIE would sterilise the recovery of any clay/shale resources underlying the site. However, as extractive industries are prohibited on the site and surrounding lands under the WSEA SEPP, the potential for recovery of this material has been effectively removed. Further, the potential for development of the clay/shale development resources on the site would be low as:

- The quality of the clay/shale resource is average;

- Existing operators Austral are well positioned to receive clay/shale resources from the evacuation of waste cells associated with the construction of major infrastructure projects such as the Sydney Metro Greater West.

5.7.11. Ecologically Sustainable Development

Energy Efficiency

Resource efficiency is a consideration at every stage of the industrial development process. The principles of sustainable design have been incorporated into the development of the AIE Concept Masterplan and detailed development within Stage 1 has been informed by consideration of passive building design measures and building material selection as described in the Architectural Plans at **Appendix C** and **Appendix D,** and the Energy Efficiency Report at **Appendix CC**.

The development gives strong consideration to potential environmental impacts by reducing these through application of best practice design and processes such as the many ESD commitments and initiatives. The documented initiatives to be implemented include:

- Buildings to be net positive for carbon emissions where determined by Mirvac to be appropriate,
- On-site renewable energy production – 100kW Solar System per building,
- Electric car and truck charging future provisioning,
- Energy Efficient lighting systems (internal and external),
- Controls of lighting systems,
- Façade thermal performance/ building thermal mass,
- Natural ventilation to a significant portion of the warehouse floor area,
- Solar gain reduction/ shadings,
- Efficient HVAC system equipment (office spaces), and
- Explore opportunities to reduce embodied energy reduction associated with construction material selection.

Any further concerns will be addressed through development of a CEMP that incorporates mitigation measures to ensure that environmental impacts to the site are minimised during construction. Once the new development is under activity, operational guidelines, best practice procedures and appropriate monitoring and control measures will be designed by the building owner.

Warehouse Areas

The warehouse floor area represents approximately 95% of the total Stage 1 Gross Floor Area and as such is responsible for the significant component of energy consumption. A number of initiatives are proposed to reduce greenhouse gas emission and environmental impacts associated to the warehouse component on the development. These include:

- Energy Efficient lighting systems (internal and external);
- Controls of lighting systems, including zoned switching, motion sensors and time clocks/lighting sensors as appropriate;
- Natural ventilation of the warehouses, except where for function reasons this is not practicable (i.e. potential refrigeration rooms, freezer rooms or other spaces with conditioning required for functional reasons);
- Roof ventilators are proposed to provide effective air changes to the space. This reduces the build-up of heat in the space and encourages air circulation, thus increasing occupant thermal comfort. This also helps control humidity in the space, reducing concerns of mould in the space.
- Encouraging natural lighting where possible through application of translucent roof materials across the warehouse roofing components. This reduces reliance on artificial lighting and supports an energy efficient design.

Office Areas

The office area has been analysed for a number of different design elements and configurations. These include:

- Energy Efficient lighting systems (internal and external);
- Controls of lighting systems, including zoned switching, motion sensors and time clocks/ lighting sensors as appropriate;
- High thermally performing glazing and general façade materials – to meet NCC 2019 Section J requirements;
- Increased mechanical equipment performance;
- Zoned mechanical systems (centre/perimeter);
- Wider temperature control band.

By combining all the above elements within the office design, there is a potential for the office energy consumption to be reduced significantly in comparison to a standard office space.

Water Efficiency

A variety of water efficiency measures can be applied to the proposed development. These best practice water efficiency measures implemented to reduce water consumption include:

- Water efficient fixtures and fittings (WELS rating),
- Water efficient appliances (WELS rating),
- Rainwater harvesting and reuse,
- Water use metering and monitoring, and
- Selection of native and low water plants and trees.

Indoor and Outdoor Environmental Quality

Internal Environmental Quality and occupant comfort is a key consideration in the warehouses' design. Initiatives being contemplated which would improve overall occupants' comfort and internal environmental quality include:

- Preference for reflective roof sheeting,
- Application of translucent skylights,
- Increased natural ventilation, and
- Outdoor amenity area.

Building management

The project design and built form will seek to respond to the ongoing environmental challenges of urban development and ensure the project implements a range of ESD initiatives aimed at improving ongoing building management including:

- Building commissioning and tuning procedures,
- Smart metering, and
- Water saving and quality provisions.

Conclusion

Ecologically Sustainable Design continues to be a driving consideration in the ongoing development of AIE. The ESD initiatives outlined are intended to be used as a guide for the development. The specific initiatives that will be installed across the precinct will be determined through the development application stage of each individual building and will be subject to feasibility analysis, including that of the final use and layout. For the Stage 1 development, the following initiatives are proposed:

- Buildings to be net positive for carbon emissions where Mirvac determine to be appropriate,
- On-site Renewable Energy Production – 100kW Solar System per building,
- Environmental outcome equivalent to a 5 Star Green Star (Design & As-Built tool) standard,
- Smart metering,
- Electric car and truck charging future provisioning,
- Rainwater harvesting and reuse,
- National ventilation to a great portion of the warehouse floor area, and
- Embodied Energy reduction associated with construction material selection.

Through implementing the above ESD initiatives, the Stage 1 development demonstrates its ability to meet sustainability initiatives set by the strategic plans and the WSEA SEPP. As development progresses beyond Stage 1, Mirvac will work with the assessing authority in determining which of the above initiatives can be implemented through the subsequent stages.

5.7.12. BCA & Fire Engineering

Blackett Maguire + Goldsmith have undertaken a review of the warehouse building designs against the deemed-to-satisfy (DtS) provisions of the Building Code of Australia 2019 (BCA). The buildings comprise Class 5 Office and Class 7b warehouse buildings, with a rise in storey of 2 for each building.

Arising from the review, the proposed development can readily achieve compliance with the relevant provisions of the BCA. Where compliance matters are proposed to comply with the Performance Requirements (rather than the DtS Provision) the development of a Performance Solution Report will be required prior to the issue of the Construction Certificate.

Table 34 details fire safety measures that are required for the new building works. Fire safety measures identified with double asterix (**) are the subject of proposed Performance Solutions.

Table 34 Fire Safety Measures

Statutory Fire Safety Measure	**Design/ Installation Standard**
Alarm Signalling Equipment	AS 1670.3 – 2018
Automatic Fire Suppression Systems **	BCA Spec. E1.5 & AS 2118.1 – 2017
Building Occupant Warning System activated by the Sprinkler System	BCA Spec. E1.5. Clause 8 and / or Clause 3.22 of AS 1670.1 – 2018
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2018
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8; and AS 2293.1 – 2018
Fire Doors	BCA Clause C2.12, C2.13 and AS 1905.1 – 2015 and manufacturer's specification
Fire Hose Reels	BCA Clause E1.4 & AS 2411 – 2005
Fire Hydrant Systems **	BCA Clause E1.3 & AS 2419.1 – 2005
Fire Seals	BCA Clause C3.15, AS 1530.4 – 2014 & AS 4071.1 – 2005 and manufacturer's specification

Statutory Fire Safety Measure	Design/ Installation Standard
Lightweight construction	BCA Clause C1.8 & AS 1530.4 – 2014 and manufacturer's specification
Mechanical Air Handling Systems	BCA Clause E2.2, AS/NZS 1668.1 – 2015 & AS 1668.2 – 2012
Paths of Travel **	EP&A Regulation Clause 186
Perimeter Vehicular Access **	BCA Clause C2.4
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001
Smoke Hazard Management Systems **	BCA Part E2 & AS/NZS 1668.1 – 2015
Warning & Operational Signs	Section 183 of the EP&A Regulation 2000, AS 1905.1 – 2015, BCA Clause D3.6 E3.3

Source: BM+G

CORE Engineering Group has prepared a Fire Safety Strategy (FSS) for the Estate (**Appendix HH**). Performance solutions are proposed to account for the below items which cannot otherwise satisfy the DtS Provision of the BCA.

- C2.4 - Vehicular Perimeter Access over adjoining lease boundaries
- D1.4 – Extended travel distances to the nearest exit within warehouse buildings
- D1.5 – Distances between alternative exits within the warehouse buildings
- D1.10 – Egress paths on adjacent lots
- E1.3 – External hydrants positioned beneath awnings
- E1.5 – Sprinkler booster locations
- E2.2 – Manual smoke clearance system installed in lieu of an automatic smoke exhaust system.

The FSS provides a holistic summary of the fire and life safety measures anticipated to be necessary in developing the above listed Performance Solutions. These measures include passive and active fire protection systems, egress provisions, occupant first aid firefighting, fire brigade intervention, and future building management provisions.

In addition to the above, the FSS provides guidance for the design and application of fire safety measures. It highlights specific design considerations for a range of fire safety measures that will undergo analysis as par the Fire Engineering Report to ascertain whether the relevant Performance Requirements of the BCA are satisfied. The list below is not exhaustive.

- Passive fire protection including external wall combustibility, FRLs and construction type.
- Vehicular perimeter access to accommodate all Fire & Rescue NSW appliances, including
  - provision for perimeter access on western side of Lot 2 over the adjoining Lot 1
  - provision of perimeter access on the south-western side of Lot 6 over the adjoining Lot 7
  - provision for parts of the perimeter vehicular access around the warehouses is in excess of 18m from the external wall of the buildings.
  - registration of a restriction on use easement (Section 188 instrument) with the Department of Land and Property Information to maintain the access path clear of stored goods and accessible by the fire brigade at all times

  - Provision of gates in the security line between lots provided to enable access to egress doors and fire hydrants from the hardstand.
  - All gates, security fencing and boom gates should be readily openable by the fire authorities, via a variety of nominated methods.
  - Load bearing capacity and vehicle swept path compatibility with fire brigade vehicle requirements.
- Egress provisions including an evacuation strategy and detailed travel distance solutions
- Fire fighting equipment including number and location of fire hydrants on each lot, fire hose connections, hydrant boosters, hose reels, sprinkler systems and fire control centre.
- Smoke hazard management including minimum requirements for a manually operated smoke clearance system
- Emergency lighting, and
- Building management procedures.

The Fire Safety Strategy will inform the detailed design of the building and the fire safety measures required to meet the Performance Solutions of the BCA.

Mitigation Measure

- Ensure building works comply with DtS or Performance Solutions of the BCA, incorporating Fire Engineering solutions where required.

5.7.13. Waste Management

A Waste Management Plan (WMP) prepared by MRA Consulting for the first stage of the AIE including demolition and construction phase, and operational phase waste minimisation and management. The WMP is included at **Appendix Y**. The WMP complies with Council's guidelines and with all relent statutory requirements.

Demolition and Construction Phase Waste Management

Demolition Waste

Waste generated during demolition phase will be associated with the

- demolition of five single storey residential dwellings, eleven sheds and associated ancillary structures,
- removal of vegetation and earthworks, and
- dam dewatering and decommission.

The anticipated volume of demolition material is detailed in **Table 35**. It sets out options for materials re-use, recycling and disposal where applicable. All materials are intended to be sent to a suitable, licenced landfill or resource recovery facility. The below has been informed by requirements of Penrith DCP.

Table 35 Demolition Waste Materials

Waste Type	Quantity	Reuse	Recycling	Disposal	Method for reuse, recycling and disposal
Concrete	2,600m^3	✓	✓		On site: separates to enhance resource recovery. Reuse: on site for filling or under gravel carpark. C&D Processor: crushing and recycling for recovered products.

Waste Type	Quantity	Reuse	Recycling	Disposal	Method for reuse, recycling and disposal
Bricks / Pavers	560m^3	✓	✓	-	On site: cleaned and separated for reuse or to enhance resource recovery. C&D Processor: recovery for reuse where possible, crushing and recycling for recovered aggregate products.
Timber	N/A	✓	✓		On site: to be separated wherever possible to enhance resource recovery. C&D Processor: recovery and recycling for recovered product (e.g. mulch) or organics processing.
Insulation material	400m^3	✓			Reuse: retuned to supplier or manufacturer for reuse.
Metal (ferrous and non-ferrous)	<5m^3		✓		On site: to be separated wherever possible to enhance resource recovery. C&D Processor: metals recovery and recycling.
Plasterboard	80m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible or replacement for gypsum in landscaping.
Glass	<5m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. Aggregate for concrete production. Glass recycler: recovery and recycling.
Fixtures & fittings	5m^3	✓	✓		Reuse: secondhand building materials. C&D Processor: recovery and recycling.
Floor coverings	30m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. C&D Processor: recovery and recycling.

Waste Type	Quantity	Reuse	Recycling	Disposal	Method for reuse, recycling and disposal
Garden organics	10m^3	✓	✓		Garden organics resulting from the removal of vegetation and trees. Onsite: Woodchipped for use in landscaping. Organics Processor: storage on-site (from minor excavations) processing for recovered product.
Mixed recyclables	<2m^3		✓		Commercial contractor: recycling of paper, cardboard and mixed material containers (plastic, metal, glass).
Residual waste	15m^3			✓	Separate recyclables where possible and disposal at principal licensed waste facility.
Hazardous / special waste (eg spills and contaminated wastes)	Unknown			✓	It is possible that asbestos bearing material may be disturbed or removed during demolition works. Appropriate management methods specified by a licensed asbestos and site hygienist should hazardous be found at the site.

Source: MRA Consulting

Construction Waste

Table 36 below describes the estimated waste quantities during construction and excavation phases of the Stage 1 project and details the intended management methods for material types expected to be generated throughout construction.

Table 36 Construction waste generation estimate

Waste Type	Quantity	Reuse	Recycling	Disposal	Method for reuse, recycling and disposal
Excavated material	Approx. 500,000m^3	✓	✓		On site: stockpiled at the site for later use in back filling activities. Reuse: It is expected that over 150,000m^3 will be required for backfilling at the site. Excess material can be taken offsite for use as fill material if it meets the relevant Resource Recovery orders/exemptions. Recycling: excess material can be taken to a suitably qualified facility for

Waste Type	Quantity	Reuse	Recycling	Disposal	Method for reuse, recycling and disposal
					processing and blending with compost products. Any contaminated material will require remediation either on or offsite, treatment or disposal at a suitably qualified landfill.
Concrete	1,200m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. C&D Processor: crushing and recycling for recovered products.
Bricks / pavers	<20m^3	✓	✓	-	On site: cleaned and separated wherever possible for reuse or to enhance resource recovery. C&D Processor: recovery for reuse where possible, crushing and recycling for recovered aggregate products.
Timber	<10m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. Reuse: Surplus and offcut material returned to manufacturer for reuse. C&D Processor: recovery and recycling for recovered product (e.g. mulch) or organics processing.
Metal (ferrous and non-ferrous)	50m^3		✓		On site: to be separated wherever possible to enhance resource recovery. Reuse: Surplus and offcut material returned to manufacturer for reuse. C&D Processor: metals recovery and recycling.
Plasterboard	120m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. Reuse: Surplus and offcut material returned to manufacturer for reuse where possible or replacement for gypsum in landscaping.

Waste Type	Quantity	Reuse	Recycling	Disposal	Method for reuse, recycling and disposal
Glass	<10m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. Reuse: Surplus and offcut material returned to manufacturer for reuse where possible. Glass recycler: recovery and recycling.
Fixtures and fittings	<5m^3	✓	✓		On site: reuse wherever possible or return to manufacturer. Reuse: Surplus and offcut material returned to manufacturer for reuse where possible. C&D Processor: recovery and recycling.
Floor coverings	<10m^3	✓	✓		On site: to be separated wherever possible to enhance resource recovery. Reuse: Surplus and offcut material returned to manufacturer for reuse where possible. C&D Processor: recovery and recycling.
Packaging (used pallets, pallet wrap)	4,000m^3	✓	✓		Reuse: returned to manufacturer for reuse where possible. On site: to be separated wherever possible to enhance resource recovery. C&D processor: recycling of timbers and plastic.
Garden organics	20m^3	✓	✓		Minimal garden organic waste from landscaping. Organics Processor: Storage on-site (from minor excavations) processing for recovered product (e.g. mulch or other blended recovered fines) or organics treatment.
Recyclable containers	<5m^3		✓		Commercial contractor: recycling.

Waste Type	Quantity	Reuse	Recycling	Disposal	Method for reuse, recycling and disposal
Paper / cardboard	50m^3		✓		Commercial contractor: recycling of fibres with segregation of paper, cardboard or other streams.
Residual waste	50m^3			✓	Separate recyclables where possible and disposal at principal licensed waste facility.
Hazardous / special waste (eg spills and contaminated wastes)	Unknown		-	✓	Appropriate management methods specified by a licensed asbestos and site hygienist should hazardous or special waste be found at the site.

Source: MRA Consulting

Waste Contractors and Facilities

The WMP details appropriate contractors and facilities for off site waste disposal, recycling or landfill depending on the management method to be used for the waste stream. Waste removed from the site will be transported to these contractors for recycling or disposal.

Site Documentation

The WMP will be retained on-site during the demolition, excavation and construction phases of the development, along with other waste management documentation (e.g. contracts with waste service providers).

Responsibility for the WMP, waste documentation and processes during the excavation and construction phases will be with the site manager or builder.

A logbook that records waste management and collection will be maintained on site, with entries including:

- Time and date;
- Description of waste and quantity;
- Waste/processing facility that will receive the waste; and
- Vehicle registration and company name.

Waste management documentation, the logbook and associated dockets and receipts must be made available for inspection by an authorised Council Officer at any time during site works.

Operational Phase Waste Management

Ongoing waste management requirements for the site will result of the daily operation of multiple industrial units, ancillary offices and a café. Waste storage and management areas will be separate for each building. Centralised waste storage areas for each building will be located and maintained such that they are easily accessible by building tenants and waste collection vehicles for servicing.

Stage 1 of the proposed development comprises of two lots of industrial units each with ancillary office space. There will also be a café which will service the entire site.

Storage and Collection Options

With consideration to the waste generation rates detailed in Penrith DCP, and where the DCP is silent, the NSW EPA guidelines, **Table 37** sets out the expected waste storage and collection options for the industrial operations proposed in Stage 1 of the proposed development. Various options are provided which may be used depending on the requirements of the individual site tenants.

Table 37 Industrial Unit Waste Storage and Collection Options

Lot 1	Waste Stream	L/Week	Option 1	Option 2	Option 3
Warehouse 1	General Waste	25,564	1 x 6m^3 / collected 6 days per week	2 x 4.5m^3 / collected 4 days per week	10,000L compactor (5:1) / collected as required
	Co-mingled recycling	12,782	1 x 4.5m^3 / 4 days per week	1 x 3m^3 / 6 days per week	10,000L compactor (5:1) / collected as required
	Paper and cardboard	12,782	1 x 4.5m^3 / 4 days per week	1 x 3m^3 / 6 days per week	10,000L compactor (5:1) / collected as required
Warehouse 3	General Waste	15,018	1 x 6m^3 / collected 3 days per week	2 x 4.5m^3 / collected 4 days per week	10,000L compactor (5:1) / collected as required
	Co-mingled recycling	7,509	1 x 3m^3 / 3 days per week	1 x 4.5m^3 / 2 days per week	10,000L compactor (5:1) / collected as required
	Paper and cardboard	7,509	1 x 3m^3 / 3 days per week	1 x 4.5m^3 / 2 days per week	Cardboard baler
Café	General Waste	2,562	3 x 1,100L bins/ collected weekly	2 x 1,100L bins/ collected twice per week	-
	Commingled Recycling	854	1 x 1,100L bins collected weekly	1x 660L bin/ collected twice per week	-
	Paper and Cardboard	854	1 x 1,100L bins collected weekly	1 x 660L bin/ collected twice per week	-

Source: MRA Consulting

There is sufficient space on each individual lot or warehouse to accommodate their bin storage, compactor or cardboard baler on site. Actual requirements will be depending on the waste generated by the specific industrial tenant once known. With the presence of food waste, more frequent collections may be required to prevent odour generation.

Additional space for the storage of bulky waste items will be available within each tenancy, nearby the bin storage areas.

. Bulky waste collection vehicles will be similar in size to those that will provide waste collection for general waste and recycling and therefore, no additional access considerations are likely to be necessary for bulky waste collection access.

Waste Management Equipment

A range of bins will be utilised at the site for the management of different waste streams, details of which are stipulated in the WMP. All bins will be in accordance with AS4123.7-2006 mobile waste containers – colour, markings, and designation requirements. Private bins shall be labelled to identify the waste generator and site address.

Collection Method and Management Responsibilities

Based on the anticipated waste generation rates for the site, a private contractor will be required to collect waste generated at the site. Tenants will be responsible for engaging and maintaining a waste collection contract for the regular servicing of waste generated at each industrial unit and other relevant uses.

The WMP sets out the recommended arrangement for access and collection servicing for the site, including indicative travel paths on site for waste collection services. All waste collection is to occur on the individual industrial allotment and not in the Estate road network or from Mamre Road.

Site tenancy users will be responsible for general operation of waste management systems, maintaining waste management contracts, maintaining waste storage areas and associated waste contamination reduction.

Should any issues impacting on the operational efficiency, safety and suitability of waste management be identified, site users should inform their waste contractor to revise waste management procedures as necessary

The WMP sets out the specific items each tenant will be responsible for:

- Using this WMP to inform waste management operations, design and infrastructure;
- Providing educational materials and information to users outlining:
  - Waste management system and use/location of associated equipment,
  - Sorting methods for recycled waste, awareness of waste management procedures for waste minimisation, maximising recovery and reducing contamination of recyclables,
  - Improving facility management results (lessen equipment damage, reduce littering, and achieve cleanliness).
- Making information available to users, site staff and visitors about waste management procedures;
- Ensuring correct signage is installed and maintained in waste storage and service areas;
- Encouraging waste avoidance and achievement of resource recovery targets;
- Providing operational management for delivery of waste objectives;
- Holding a valid and current contract with licensed collector(s) for waste and recycling collection;
- Ensuring waste service providers access the site appropriately;
- Ensuring timing of waste collections does not clash with peak traffic periods in relation to general operation of the site tenancies;
- Organising waste, recycling and bulky pick-ups by elected contractor for the site (if not directly managed by site users);
- Organising, maintaining and cleaning the waste storage and service areas;
- Using contracts to define the allocation of responsibilities with cleaners and users;

- Monitoring any vermin and pest issues and arranging appropriate controls (traps or fumigating) and maintenance of doors or other points of potential entry;
- Ensuring all tenants do not prevent or impede correct access of the site for waste collection;
- Holding a valid and current contract with a licensed collector for any specialty waste disposal
- Allocating space for a dedicated and enclosed waste and recycling storage area for intermediate storage before disposal to designated waste storage areas;
- Disposing of waste and recycling at their designated building's waste storage area;
- Maintaining general cleanliness when using waste storage areas to prevent the occurrence of odour, vermin or amenity issues;
- Notify site management of waste storage use and efficiency should additional bins or services be required (that are covered under general waste arrangement as outlined in lease agreements);
- Notify site management hazards or damages related to the building waste storage areas, including but not limited to:
  - Damaged bins,
  - Illegally dumped items,
  - Apparent miss-use of waste storage areas (such as vandalism, contamination, etc), and
  - Odour, vermin or amenity issues.

The WMP also details requirements for

- Signage to promote resource recovery, waste minimisation safety and amenity follows the Australian Standard for safety signs for the occupational environment (Standards Australia 1994).
- Management measures to prevent pollution and maximise litter reduction
- The updating and keeping current of the WMP content and practices to reflect changes in legal requirements, developer or tenant waste patterns or to address unforeseen operational issues.
- Best practice methods to ensure waste management is completed safely and effectively

Mitigation Measures

- It is possible that asbestos bearing material may be disturbed or removed during demolition works.
- Appropriate management methods specified by a licensed asbestos and site hygienist should hazardous be found at the site.
- An unexpected finds protocol for contaminated waste materials has been prepared by Arcadis (**Appendix V**) which sets out the process and procedure for registration and management of contaminated material on the site.
- Compliance with the WMP for demolition, construction and operational phases of the project.

5.7.14. Aeronautical Impact

Landrum & Brown (Australia) Worldwide has prepared an Aeronautical Impact Assessment having regard to the proposed development's proximity to the future Western Sydney (Nancy Bird Walton) Airport (WSA). The full report is included at **Appendix FF**. The assessment considered the likely impact on

- Obstacle Limitation Surfaces (OLS)
- Draft PANS OPS Surfaces
- Possible impact upon air traffic control communications facilities, navigation aids and surveillance system coverage
- The impact of the development upon aviation requirements of Western Sydney Airport, and
- And consistency with the Western Sydney Aerotropolis Plan and Aerotropolis SEPP.

Obstacle Limitation Surfaces

The Aspect Industrial Estate is located beneath the Approach Surface to Runway 23R and the Take-Off Surface for Runway 05L. The height of the lowest of these surfaces above the site ranges from approximately 188 m AHD at Mamre Road to approximately 205 m AHD at the north eastern edge of the industrial estate. With building heights for the Estate projected to be beneath 100 m AHD there will not be any infringements of the OLS for Western Sydney Airport.

PANS OPS Surfaces

Draft PANS OPS surfaces relate to the Basic ILS surfaces and the Standard Instrument Departures (SID) for each runway which have been declared for the preliminary phase of the construction and operation of the airport.

The Basic ILS surfaces are very conservative and may be infringed if an assessment of the Obstacle Assessment Surfaces (OAS) or application of the Collision Risk Model determines a safe result for the overall obstacle environment surrounding the airport.

The lowest Basic ILS surfaces above AIE is related to the Runway 23 ILS and is at a height of 197 m AHD.

The SID procedures have PANS OPS surface determined by the Procedure Design Gradient (PDG) that is the minimum climb gradient that aircraft are required to perform to in order to ensure obstacle clearance during the initial climb after take-off.

The lowest SID PANS OPS surface above Mamre Road is 192 m AHD increasing to approximately 195 m at the north eastern boundary of AIE. With proposed building heights beneath 100 m AHD there will not be any infringements of the PANS OPS for Western Sydney Airport.

It is highly likely that any industrial estate activities, including construction crane activity to a height of approximately 15 m above any building within the estate will not infringe either the OLS or the PANS OPS surfaces above the estate due to the large margin above the proposed buildings.

Air Traffic Control Systems, Navigation Aids and Communications

The nearest ATC Surveillance equipment (Terminal Area Radar - TAR) is located at Cecil Park, approximately 5.7 km to the south east of the development site.

It is likely that a surveillance system will be installed on the WSA site to monitor and control aircraft and vehicular traffic on the surface of the airport. The AIE is located well beyond the airport boundary and will not impact the operation of such a surveillance system. The building and the cranes will not impact on ATC Surveillance systems.

Due to the site's distance from the closest navigation aid and communication facilities, the proposal will not have any impact upon their performance in relation to WSA.

Roof Top Exhaust Plumes

Exhaust plumes in excess of 4.3 m/s which exist in either OLS or PANS OPS surfaces can create sufficient turbulence to upset the stability of aircraft during take-off and landing operations. Any exhaust plume with a velocity in excess of 4.3 m/s from any vent on top of the building is unlikely to reach the height of the lowest PANS OPS or OLS which would trigger a referral to CASA.

ANEF Contours

The projected ANEF contours for Western Sydney Airport are described in the Western Sydney Airport Plan section 2.3.3 and Figures 14 and 15 of the Landrum & Brown report.

These show the ANEC contour levels for each particular stage of development of the airport and the particular runway in use. The highest ANEC contour is 25 < 30 which allows a "Light Industrial" or "Other Industrial" building type to be "Acceptable".

Operation of the proposed industrial land use will not be affected by the projected airport-related noise levels above the site.

Lighting & Reflectivity

At the Mamre Road side of the AIE, the closest point to WSA is 7.5 km from the centre of Runway 05L/23R and 7.7 km from the centre of Runway 05R/23L. The Aspect Industrial Estate does not lie within any of the light zones and therefore no special lighting requirements apply to the proposal.

The location of the proposed Aspect Industrial Estate is not in the immediate vicinity of any of the proposed runways at Western Sydney Airport and therefore any reflections from the estate are unlikely to cause a hazard greater than what already exists today.

Wildlife Strikes

NASF Guideline C – Managing the Risks of Wildlife Strikes in the Vicinity of Airports provides guidelines to manage the risk of collisions between wildlife and aircraft at or near airports where that risk may be increased by the presence of wildlife-attracting land uses.

The nature of the proposed Aspect Industrial Estate does not include dams, waterbodies, wastewater treatment plants parks or biodiversity conservation sites and as such is not considered to be an attractor to wildlife likely to increase the collision risk with aircraft overflying the estate.

The land where the Aspect Industrial Estate is planned to be located is currently farm allotments and open vegetation paddocks. The industrial estate will consume a significant amount of this grassland and farming activity, effectively reducing the amount of wildlife present in the area that could cause a hazard to overflying aircraft.

Assessment against the Aerotropolis SEPP

Clause 19: Aircraft Noise

The AIE is located within ANEF/ANEC contours that allow for the development of non-noise-sensitive areas. The proposed uses are compatible with 24 hour airport operations.

Clause 20: Building Wind Shear and Turbulence

The AIE is located outside of the Windshear Assessment Trigger Area and will not have any impact on turbulence at the Western Sydney Airport.

Clause 21: Wildlife Hazards

The AIE lies within an 8km wildlife buffer zone. The proposed uses on the site will not increase risk of wildlife strikes associated with Airport operations.

Clause 22 Wind Turbines

The AIE is located within the 30 kilometre zone for wind turbines. The proposed development does not seek construction of wind turbines.

Clause 23 Lighting

The AIE is located outside of the Lighting Intensity assessment areas.

Clause 24 Airspace Operations

The AIE does not penetrate the prescribed airspace for the Western Sydney Airport.

Clause 25 Public Safety

The AIE is located outside of the public safety area. Therefore, this clause does not apply.

Conclusion

The findings of the Aeronautical Impact Assessment is that the proposed Aspect Industrial Estate, with buildings to a proposed height of 63m AHD and temporary associated construction crane activity to approximately 80 to 100m AHD will not result in any impact upon Western Sydney Airport operations, on the safety of flight operations to/from the airport, on the regularity of flight operation at the airport and will not intrude into its Prescribed Airspace.

An assessment of the ANEF and ANEC noise contours shows that the projected noise levels above the Aspect Industrial Estate do not inhibit the development of the estate.The proposed AIE development is consistent with the Aerotropolis SEPP. No mitigation measures are identified to be further addressed in the construction or operational phases of AIE.

5.7.15. Social and Economic Impacts

A Social Impact Assessment (SIA) has been undertaken by Urbis to assess the potential social impacts arising from the proposed Concept Masterplan and Stage 1 development. It is included at **Appendix GG**.

Social impacts are those that impact on people's way of life, their culture, community, environment, health and wellbeing, personal and property rights, and their fears and aspirations.

Based on the local context the following individuals and communities are likely to be impacted by the proposed development:

- Local Aboriginal groups.
- Local residents in Kemps Creek, Mount Vernon, Luddenham and Win Creeks.
- Communities of nearby LGAs, and Western Sydney more broadly.
- Regular road users (such as road freight and delivery drivers).
- Local businesses in the vicinity of the site including Erskine Park Industrial Estate.
- Local schools and childcare centre on Bakers Lane.

These stakeholders have been consulted. The outcomes of these discussion are outlined in **Section 4** of this EIS.

A range of impacts were assessed against the Social Impact Assessment criteria without considering management measures. These included

- Aboriginal heritage.
- Noise impacts related to site operation.
- Amenity impacts related to construction.
- Provision of facilities and services to meet employee needs.
- Increased traffic and parking demand.
- Increased industrial land and employment opportunities.
- Changes to landscape character.

The last three issues above were assessed to have 'significant' impacts and were therefore further assessed having regard to potential mitigation measures to determine the level of residual impact.

Table 38 provides a summary of the potential social impacts associated with the proposal.

Table 38 Summary of Potential Social Impacts

Description of impact & Recommended mitigation measures	**Impacted groups**	**Overall impact rating and mitigation measures**
Increased traffic generation The existing site generates a very small number of trips during the AM and PM peak periods (and daily). The proposal will generate a significant increase in daily trip generation.	▪ Local residents ▪ Regular road users ▪ Local businesses ▪ Local schools and childcare centre	Long term neutral impact. **Mitigation measures:** ▪ NSW Government to upgrade Mamre Road between M4

Description of impact & Recommended mitigation measures	Impacted groups	Overall impact rating and mitigation measures
The Traffic Assessment found that significant upgrades are required at the intersection of Mamre Road and the site to appropriately accommodate the traffic generated by the completed estate. As part of planning for the Western Sydney Employment Area, NSW Government is proposing to upgrade Mamre Road between the M4 Motorway and Kerrs Road (south of the site). This will improve connection to the site.		and Kerrs Road, including new bus services and cycleways ▪ Encourage future tenants and operators of the site buildings to implement an active travel plan to encourage employees to use public and active transport. ▪ Undertake ongoing consultation with Roads and Maritime Services and Council as the Mamre Road Precinct develops to monitor intersection performance and make future adjustments if required.
Increased industrial land and employment opportunities There are currently no full-time employment opportunities provided on site. The proposal is expected to generate 607 construction jobs and 1,868 operational jobs. The Mamre Road Structure Plan identifies that the demand for industrial land across Greater Sydney is increasing. This increased demand is expected to continue due to the reliance on warehouse and logistic spaces for the e-commerce sector. The proposal provides 56.2ha of industrial land, which will positively contribute to the	▪ Local residents ▪ Penrith and Campbelltown LGA and broader Western Sydney community	Long-term high positive impact. **Mitigation measures:** ▪ Consider creating partnerships with local businesses to encourage local employment, preferably in both the construction and operational stages

Description of impact & Recommended mitigation measures	Impacted groups	Overall impact rating and mitigation measures
delivery of more industrial land in Greater Sydney.		
Changes to landscape character The site and neighbouring areas currently consist largely of cleared grass paddocks with some scattered vegetation, farm dams, sheds and other farm buildings. There are approximately 10 scattered residential dwellings fronting Mamre Road, including several on the site. There are no industrial uses currently located on the site. The nearest industrial area is the Erskine Business Park, which is located approximately 3km to the north and contains multiple warehouse and office spaces.	▪ Local residents ▪ Regular road users ▪ Local business ▪ Local schools and childcare centre	Long term moderate negative impact **Mitigation measures:** ▪ Design of industrial buildings to be compliant with the DCP controls, including height and setback from Mamre Road. ▪ Implementation of a dynamic geometric building facades to break up elevations and minimise the perceived bulk of development. ▪ Incorporation of multiple boundary landscaping treatments (including tree canopies, shrubbery and ground covers) to soften and screen the visual impact of the industrial structures, storage and paved surfaces from Mamre Road. ▪ Undertaking consultation with surrounding residents on Mamre Road.

Description of impact & Recommended mitigation measures	Impacted groups	Overall impact rating and mitigation measures
		▪ Encourage future Estate tenants or asset managers to include a maintenance plan or schedule for landscaping as part of a plan of management or building management plan so that trees and planting throughout the site are well managed and continue to enhance the built form. ▪ Implement further design changes as necessary depending on consultation outcome.

Source: Urbis

Based on the assessment, the proposal will result in some short term negative impacts associated with increased traffic. These impacts are likely to reduce over the longer term as Mamre Road upgrade is delivered and the road network adapts to the additional trip demand.

There will also be significant visual changes to the site, as well as the broader area. These impacts are likely to be higher in the short term and are expected to reduce over time as the community adapts to the presence of the new industrial area.

Overall, the negative impacts will be significantly outweighed by the long term positive impacts resulting from the creation of increased industrial land and employment opportunities for Western Sydney residents.

To reduce the negative impacts and maximise the positive impact of the proposal, the following mitigation measures should be implemented:

- Encourage future tenants and operators of the site buildings to impellent an active travel plan to encourage employees to use public and active transport.
- Undertake ongoing consultation with Roads and Maritime Services and Council to monitor intersection performance and make future amendments to the road network as required.
- Consider creating partnerships with local businesses to encourage local employment, preferably in both the construction and operational stages.
- Encourage future Estate tenants to include a maintenance plan or schedule for landscaping as part of a plan of management or building management plan so that trees and planting throughout the site are well managed and continue to enhance the built form.

The Social Impact Assessment has confirmed there will be short term negative impact associated with the proposed development. However, the strategic direction set for the site and the surrounding areas identifies it for future employment. As the surrounding area transitions, these impacts will reduce. The positive impacts such as meeting the 30-minute city vision and creation of new jobs outweigh the negative externalities created in the short term.

The mitigation measures proposed seek to take stakeholder on the development process for AIE. As demonstrated in **Section 4,** Mirvac is committed to ongoing engagement with stakeholder to ensure negative externalities during construction and operation are minimised, and that the proposed development contributes to the overall needs of Western Sydney.

5.8. RESIDUAL IMPACTS

The assessment of residual impacts of the AIE as part of the broader risk and impact assessment process as described in **Section 7** is outlined in **Table 39**.

Table 39 Residual Impact Assessment

Level of Impact	Definition and Criteria	Conclusion
Unacceptable	▪ Impact assessment demonstrates that the impacts of the proposal cannot be effectively managed through design or mitigation measures. ▪ Residual impacts would be significant and may not meet regulatory requirements and/or adopted guidelines and standards	**The development could not proceed as currently designed and proposed.**
Acceptable	▪ Impact assessment demonstrates that the impacts of the proposal can be effectively managed through design and/or mitigation measures. ▪ Residual impacts would not be significant and meet relevant regulatory requirements and/or adopted guidelines and standards. ▪ Ongoing management and monitoring would likely be required through construction or operational management plans.	**The development could proceed subject to the implementation of recommended mitigation measures.**
Minimal	▪ Impact assessment demonstrates that the impacts of the proposal would be minimal and manageable through design or mitigation measures. ▪ There would be no residual impact once recommended mitigation measures are implemented. ▪ Ongoing management and monitoring unlikely to be required.	**The development could proceed as currently designed and proposed.**

Level of Impact	Definition and Criteria	Conclusion
Negligible	▪ Assessment shows that the residual impacts of the proposal would be negligible.	**Development could proceed without further consideration of this issue.**

Table 40 summarises the likely residual impacts of the proposed AIE development once design responses and mitigation measures are applied.

Table 40 Summary of Residual Impacts

Isssue/Constraint	Residual Impacts			Key Management Document
	Concept Proposal	Stage 1 Estate Works	Stage 1 Development	
Transport				
Regional and Local Transport Infrastructure				SSD Approval
Site access				SSD Approval
Traffic				CEMP/ OEMP
Urban Design and Visual				
Site Layout and Design				Concept Masterplan/ DCP
Development Controls				Concept Masterplan/ DCP
Visual Impact				Concept Masterplan/ DCP
Soils and Water				
Water Usage				OEMP
Soils				CEMP
Surface Water				CEMP
Groundwater				CEMP
Riparian Land				SSD Approval/ VMP
Flooding				SSD Approval
Stormwater/WSUD				SSD Approval
Water Quality				OEMP

Isssue/Constraint	Residual Impacts			Key Management Document
	Concept Proposal	Stage 1 Estate Works	Stage 1 Development	
Earthworks				CEMP
Mineral Resources				N/A
Infrastructure				
Capacity				SSD Approval
Delivery and Staging				SSD Approval
Other Environmental Issues				
Noise				CEMP/ OEMP
Air Quality and Odour				CEMP/ OEMP
Flora and Fauna				BOS/ BMP
Indigenous Heritage				CEMP
Non-Indigenous Heritage				CEMP
GHG and Energy				OEMP
Waste Management				CEMP/ OEMP

6. MITIGATION MEASURES

6.1. SUMMARY OF MITIGATION MEASURES

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 41** below. These measures have been derived from the impact assessment in **Section 5** and those detailed in specialist reports.

Table 41 Summary of Mitigation Measures

Issue	SSD DA Component	Mitigation and Management
Construction Management		
General Construction Management	Stage 1 Development	▪ A CEMP to be prepared for the AIE Stage 1 Development capturing standard and specific management and mitigation measures as described in the SSD DA, EIS and supporting technical documents.
Operational Management		
General Operational Management	Concept Masterplan Stage 1 Development	▪ An OEMP to be prepared for the AIE capturing standard and specific operational management and mitigation measures as described in the SSD DA, EIS and supporting technical documents.
Transport		
Construction Traffic	Stage 1 Development	▪ Preparation of a CTMP to form part of the CEMP addressing issues such as: – Track haul routes, delivery schedules and curfews; – Protocols for the management of construction traffic moving onto and off the site.
Urban Design and Visual		
Site Layout and Design	Concept Masterplan	▪ Future development of the AIE to proceed in accordance with the approved Concept Proposal and DCP.
Development Controls	Concept Masterplan	▪ Design and development controls to be established for

Issue	SSD DA Component	Mitigation and Management
		the AIE in the form of a DCP to guide future development on the site.
Visual Impact	Concept Masterplan Stage 1 Development	▪ Design and development controls to be established for the AIE in the form of a DCP to guide future development on the site. ▪ Landscaping of key interfaces including western boundary to minimise visual impact.
Soils and Water		
Water Usage	Stage 1 Development	▪ Rainwater tanks to be provided for each development site with size determined in accordance with the Penrith City Council DCP requirements. ▪ Irrigation and toilet flushing for development to be plumbed to rainwater tanks. ▪ Consideration to be given to other possible rainwater reuse opportunities such as truck washing. ▪ Measures and considerations for the minimisation of water use during construction and operation to be incorporated into CEMP and OEMP as relevant.
Soils	Stage 1 Development	▪ Mitigation measures inherent to the civil design of the proposal. ▪ Sediment and erosion control measures are proposed as detailed in **Appendix F** and **Appendix G**.
Salinity	Stage 1 Development	▪ A Salinity Management Plan to be prepared for the proposed development.

Issue	SSD DA Component	Mitigation and Management
		▪ Management measures described in the Salinity Management Plan to be adopted in the CEMP and OEMP as relevant.
Contamination	Stage 1 Development	▪ Identified areas of potential contamination to be subject to further investigation prior to the development of affected land. ▪ Adoption of unexpected finds procedure for hazardous and contaminated materials management and removal during demolition and excavation.
Earthworks	Stage 1 Development	▪ Civil design achieves appropriate site levels with minimal impact on hydrology. ▪ Import of fill to be managed in accordance with CEMP. ▪ Erosion and sediment control measures included in SSD DA package (**Appendix F** and **Appendix G**).
Mineral Resources	Concept Masterplan	▪ No mitigation required. Proposed development does not impact existing mining leases in the area.
Surface Water	Stage 1 Development	▪ Stormwater issues addressed through design measures incorporated into proposed development. ▪ Stormwater management system designed to meet the requirements of Penrith City Council's Engineering Works and WSUD guidelines, and relevant NOW guidelines. ▪ Detailed on-lot stormwater for future stages of the AIE to be

Issue	SSD DA Component	Mitigation and Management
		designed and assessed under future applications.
Groundwater	Stage 1 Development	▪ Methods and management of any required dam dewatering required, as outlined in **Appendix W**, during construction works to be detailed in the CEMP.
Flooding	Stage 1 Development	▪ OSD designed to ensure that development does not increase stormwater peak flows in downstream areas for events up to and including 1:100 year ARI. ▪ OSD designed to mitigate post-development flows to pre-development flows for peak ARI events. ▪ Finished floor levels to have a minimum 500mm freeboard to 100 year overland flows.
Water Quality	Stage 1 Development	▪ Erosion and sediment controls as detailed in **Appendix F** and **Appendix G** to be implemented through CEMP. ▪ Stormwater to be treated to compliant levels prior to discharge. ▪ Gross Pollutant Trap (GPT) to be installed within each development site on the final downstream stormwater pit prior to discharge. ▪ WSUD measures adopted to achieve target reductions for the AIE: – 85% Total Suspended Solids – 60% Total Phosphorus – 45% Total Nitrogen – 90% Gross Pollutants

Issue	SSD DA Component	Mitigation and Management
Infrastructure		
Capacity and Upgrades	Concept Masterplan	▪ Management of issues in respect of infrastructure capacity and upgrades is in the form of design responses described in **Section 2.5.6** of the EIS.
Delivery and Staging	Concept Masterplan Stage 1 Development	▪ Management of issues in respect of infrastructure capacity and upgrades is in the form of design responses described in **Sections 2.4.7** and **2.5.6.** ▪ Staging of development of the AIE would be aligned with infrastructure and services delivery.
Other Environmental Issues		
Flora and Fauna	Concept Masterplan Stage 1 Development	▪ Implementation of the Biodiversity Offset Strategy for the site. ▪ Preparation of a Biodiversity Management Plan for the site to inform the CEMP and OEMP as relevant to manage potential impacts to biodiversity during construction and operation. ▪ Restoration of retained areas of vegetation including riparian corridors and the Biodiversity Offset Area; ▪ Native grassland restoration to other areas of the site including road batters and outside batters of bio-retention basins; and ▪ Ongoing maintenance and management of these areas in accordance with the provisions of the Biodiversity Offset Strategy.

Issue	SSD DA Component	Mitigation and Management
Waterways and Riparian Lands	Concept Masterplan Stage 1 Development	▪ Realignment of creek to occur in accordance with design and management measures described in **Appendix P** including: – Revegetation to use appropriate native aquatic macrophyte and River-flat Eucalypt-forest species within the riparian area. – Ongoing management of riparian lands on the site to be in accordance with the Vegetation Management Plan (**Appendix P**).
Construction Noise	Stage 1 Development	▪ Construction hours to be limited to 7:00am – 6:00pm Monday to Friday and 8:00am – 1:00pm Saturdays. ▪ Where construction noise levels are predicted to be above the NMLs, all feasible and reasonable work practices are investigated to minimise noise emissions. ▪ If construction noise levels are still predicted to exceed the NMLs, potential noise impacts would be managed via site specific construction noise management plans. ▪ Construction works should be conducted during standard construction hours, with OOHW minimised as far as reasonable and feasible. ▪ Locations for vibration intensive equipment should be reviewed during the preparation of the site specific Construction Noise and Vibration Management Plans (CNVMP) for construction works adjacent to sensitive receivers.

Issue	SSD DA Component	Mitigation and Management
		▪ Further noise management measures to be incorporated into the CEMP as appropriate.
Operational Noise	Stage 1 Development	▪ Further assessment of potential operational noise impacts to be undertaken in respect to any operations proposed within the AIE with an atypical noise profile.
Air Quality and Odour – Construction	Stage 1 Development	▪ CEMP to include standard air quality control measures, contingency plans and response procedure and suitable reporting and performance monitoring procedures. ▪ CEMP to include standard odour mitigation measures for construction including keeping excavation surfaces moist, covering excavation faces and/or stockpiles, use of soil vapour extraction systems and regular monitoring of discharges as appropriate.
Air Quality and Odour – Operational	Stage 1 Development	▪ Further assessment of potential air quality impacts to be undertaken in respect of any specific operations proposed within the AIE with an atypical air emissions profile. ▪ Specific operations proposed within the AIE with the potential for generation of odour would be subject to further assessment.
Indigenous Heritage	Stage 1 Development	▪ Archaeological salvage excavation and monitoring to be undertaken in the presence of relevant Aboriginal stakeholders prior to ground disturbance and

Issue	SSD DA Component	Mitigation and Management
		excavation work in identified areas. ▪ Result of detailed archaeological excavation and any suitable salvaged materials to be managed in accordance with the NPW Act and direction from relevant Aboriginal stakeholders. ▪ Implementation of Unexpected Finds Protocol.
Non-Indigenous Heritage	Stage 1 Development	▪ Constructions works to cease should artefacts be uncovered during ground disturbance and DPC-Heritage notified. ▪ Implementation of Unexpected Finds Protocol.
Greenhouse Gas and Energy Efficiency	Stage 1 Development	▪ Future stages of development within the AIE would be subject to assessment in relation to energy efficiency and greenhouse gas emissions.
Waste Management – Construction	Stage 1 Development	▪ Detailed construction waste minimisation and management measures to be included in the CEMP as described in **Appendix Y**.
Waste Management – Operations	Stage 1 Development	▪ Detailed construction waste minimisation and management measures to be included in the OEMP as described in **Appendix Y**.

6.2. CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

The proposed AIE development would proceed in accordance with a detailed Construction Environmental Management Plan (CEMP) to be prepared for the site to capture both standard construction methodology, mitigation and management measures, and specific measures recommended for the AIE proposal by technical assessments and studies.

The standard construction methodology to be followed in respect of the proposed development includes:

- Diversion of “clean” water away from the disturbed areas and discharge via suitable scour protection.
- Provision of hay bale type flow diverters to catch drainage and divert to “clean” water drains.
- Diversion of sediment laden water into temporary sediment control basins to capture the design storm volume and undertake flocculation (if required).
- Provision of construction traffic shaker grids and washdown to prevent vehicles carrying soils beyond the site.
- Provision of catch drains to carry sediment-laden water to sediment basins.
- Provision of silt fences to filter and retain sediments at source.
- Where future construction and building works are not proposed, the rapid stabilisation of disturbed and exposed ground surfaces with hydroseeding.

The above measures would remain in place for the duration of the total construction period of each stage until such time as the individual development lots are completed. Regular inspection of erosion and sediment control measures and other construction mitigations would be undertaken by the site contractor in accordance with the protocols established under the CEMP.

The CEMP would be prepared prior to the commencement of construction works on the site.

6.3. OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

An overarching Operational Environmental Management Plan (OEMP) would be prepared for the AIE to guide the ongoing operations of the site once development is completed. This document would capture standard and specific operational management measures addressing issues such as:

- Control of noise and air emissions;
- Biodiversity and vegetation management;
- Management of water and waste;
- Emergency procedures and protocols;
- Engagement with adjoining landowners;
- Sustainability and energy efficiency;
- Compliance and approvals; and
- Environmental management and reporting.

The OEMP would be prepared prior to the commencement of operations on the site.

7. ENVIRONMENTAL RISK ASSESSMENT

The risk assessment process considers and prioritises issues against based on the criteria defined in **Section 5.8** and applies a ranking to guide the level of assessment required for that issue. The level of impact assessment corresponding to each of the risk categories is as follows:

- Key Issue – Requires detailed technical assessment to establish and quantify the extent of potential impact. Issue requires mitigation and management, and further analysis of residual impact.
- Other Issue – May require technical assessment to establish and quantify the extent of potential impact. Mitigation and/or management may or may not be required, alongside further residual impact assessment.
- Not Applicable – The issue is of no further relevance to the assessment of the proposal.

Table 42 Risk Descriptors

Risk and Constraint Category	Definition and Criteria	Priority of Impact Assessment
High	▪ Baseline analysis shows that issue is a key constraint and/or driver of design and/or layout ▪ Technical assessment indicates a high risk of significant impact ▪ Avoidance of specific/tailored mitigation or management measures are required to minimise the significance of the impact.	Key Issue
Moderate	▪ Baseline analysis shows that issue is a consideration for the Concept Masterplan and development, and may require a design response. ▪ Technical assessment indicates a moderate risk of significant impact. ▪ Potential impacts can be addressed through design responses and/or typical construction and/or operational management measures.	Key Issues
Low	▪ Baseline analysis shows that issue is relevant to inform the development but does not require a specific design response. ▪ Technical assessment indicates a low risk of significant impact. ▪ Management/mitigation may or may not be required through typical construction and/or operational management measures.	Other Issue
Negligible	▪ Baseline data shows that the issue is not relevant to the development and does not require further consideration.	No Impact Assessment Required.

The results of the risk assessment for the AIE proposal are shown below, with recommended mitigation measures adopted.

Table 43 AIE Risk Assessment

Issue/Constraint	Issues Prioritisation		Priority	EIS Reference
	Concept Masterplan	Stage 1 Development		
Transport				
Regional and local transport infrastructure			Key Issue	**Section 5.5**
Site Access			Other Issue	**Section 5.5**
Traffic			Other Issue	**Section 5.5**
Urban Design and Visual				
Site Layout and Design			Other Issue	**Section 2**
Planning Controls			Key Issue	**Section 3.2.8**
Visual Impact			Key Issue	**Section 5.2** **Appendix L**
Soils and Water				
Water Usage			Other Issue	**Appendix G**
Soils			Other Issue	**Section 5.7.1** **Appendix DD**
Surface Water			Other Issue	**Appendix G**
Groundwater			Other Issue	**Section 5.7.1** **Appendix G**
Riparian Land			Key Issue	**Section 5.6** **Appendix P** **Appendix Q**
Flooding			Other Issue	**Section 5.7.6** **Appendix AA** **Appendix BB**

Issue/Constraint	Issues Prioritisation		Priority	EIS Reference
	Concept Masterplan	Stage 1 Development		
Stormwater/ WSUD			Other Issue	**Appendix F** **Appendix G**
Water Quality			Other Issue	**Appendix F** **Appendix G**
Earthworks			Other Issue	**Appendix F** **Appendix G**
Mineral Resources			Other Issue	**Section 5.7.10**
Infrastructure				
Capacity and Upgrades			Other Issue	**Appendix G**
Delivery and Staging			Other Issue	**Appendix G**
Other Environmental Issues				
Noise			Other Issue	**Section 5.4** **Appendix EE**
Air Quality and Odour			Other Issue	**Section 5.7.8** **Appendix DD**
Flora and Fauna			Key Issue	**Section 0** **Appendix O**
Indigenous Heritage			Key Issue	**Section 5.7.7** **Appendix M**
Non-Indigenous Heritage			Other Issue	**Section 5.7.7** **Appendix N**
Greenhouse Gas and Energy Efficiency			Other Issue	**Section 5.7.11** **Appendix CC**
Waste Management			Other Issue	**Section 5.7.13** **Appendix Y**

Issue/Constraint	Issues Prioritisation		Priority	EIS Reference
	Concept Masterplan	**Stage 1 Development**		
Aeronautical Impact			Other Issues	**Section 5.7.14** **Appendix FF**
BCA/ Fire Safety			Other Issues	**Section 5.7.12** **Appendix HH** **Appendix II**

8. EVALUATION AND CONCLUSION

8.1. SUMMARY OF FINDINGS

This SSD DA seeks consent for the staged development of the AIE for an industrial and warehouse and distribution estate as part of the broader WSEA and Mamre Road Precinct. The SSD DA includes a Concept Masterplan to guide the future development of the estate and a Stage 1 development proposal that includes the delivery of essential infrastructure and services and the construction, fit out and use of buildings in certain lots.

The development of the AIE would generate:

- 239,440m^2 of industrial or warehouse or distribution floorspace to meet latent and projected market demand;
- 555 new construction jobs and 1,703 new operational jobs; and
- Over a million of direct investment in core infrastructure and services.

An assessment of the potential impacts of the proposal found that the key issues for further consideration were visual impacts, and management of flora and fauna. These issues were key considerations in the development of the Concept Masterplan for the site and design responses were incorporated to manage potential impacts to acceptable levels.

Other issues of relevance to the proposal including the management of surface and groundwater, soils and geotechnical issues, air quality and waste management were also assessed and mitigation measures established to manage potential impacts during construction and operation. These measures would be incorporated into a detailed CEMP and OEMP for the site to guide its future development and ongoing operation.

The proposal aligns with the strategic direction and objectives established for the site and surrounding lands under the WSEA SEPP and Mamre Road Structure Plan. The development responds to and aligns with its strategic context and presents a design solution that respects the important role of the site in providing a secure and reliable supply of employment land in the WSEA to meet project future demand over the next decade.

8.2. JUSTIFICATION FOR PROPOSAL

The WSEA has long been recognised as the sole focus for Sydney's long term future supply of industrial land. This is further emphasised through the delivery of the Western Sydney Airport and surrounding Aerotropolis. Greater Sydney's underlying topography combined with demographic and economic trends results that this part of Greater Sydney offers the only remaining supply of land for employment uses. Therefore its timely and efficient development and delivery of an appropriate mix of employment uses is paramount to Sydney's economy.

The AIE will respond to the critical shortage of serviced, zoned employment land as evidenced in numerous recent studies and help address previously highlighted concerns from industry regarding loss of investment to other state arising from a lack of suitable options and worsening affordability for occupiers.

The AIE would make a significant contribution to local employment opportunities in Western Sydney. Presently, 43% of the population in Western Sydney travel outside of the region everyday for work (compared to 22% in the Eastern City[1] and approximately 32% of the resident workforce is typically employed in an 'industry or manufacturing' occupation. [2]

Therefore the servicing and development of land in the Mamre Road Precinct is critical to ensuring a reliable pipeline of employment land to meet expected demand over the next decade.

The proposed staged development of the AIE as described in the EIS and SSD DA is justified on strategic, economic and environmental grounds. Key justification for the proposed development includes:

[2] ABS Deloitte and Corview

- Outcomes that support the strategic role and objectives of the AIE as part of the broader WSEA and Mamre Road Precinct.
- Outcomes that align with the future context and role of the WSEA and Western Sydney Aerotropolis as an economic hub for Greater Sydney.
- The delivery of critical infrastructure and services to the WSEA for the benefit of the broader area.
- Significant private sector investment in the area with direct and indirect benefits for productivity and the local economy.
- Generation of employment for the Western Sydney region, thus contributing to the 30-minute city vision set in the Region Plan.

8.2.1. Evaluation of Alternatives

The alternatives to undertaking the project include:

- Do nothing; and
- Development of the AIE under an alternative Concept Proposal design/layout.

Do Nothing

The 'Do Nothing' alternative would result in the land comprising the AIE remaining unplanned, serviced and undeveloped. The risk and results of this alternative include the following.

- Outcomes for the site that are contradictory or inconsistent with the strategic objectives, goals and direction of the Greater Sydney Region Plan – '*A Metropolis of Three Cities'*, Western City District Plan, draft Western Sydney Aerotropolis Plan, and Mamre Road Precinct Structure Plan.
- Failure to achieve the underlying objectives of the rezoning or the land as part of the WSEA, in particular the provision of a long term supply of industrial land to serve the needs of the Sydney market.
- Land use outcomes that are inconsistent with the aims of the WSEA SEPP.
- Potential unplanned, ad-hoc development of the AIE without a guiding Concept Proposal and without due consideration of the various constraints and opportunities of the site and its context.
- Suboptimal development outcomes for AIE in terms of efficiency, sustainability, design and feasibility.
- Failure to develop the AIE in a timely manner to align with market demand, potentially further contributing to a shortfall in the supply of serviced industrial sites in the short to medium term with subsequent impacts on economic productivity and employment in the region.
- Impacts upon planned local and regional road infrastructure, including risks to the delivery of important road intersection, leading to potential deficiencies in the WSEA road network and/or additional costs for the delivery of required infrastructure.
- Loss of potential local and regional contributions to critical infrastructure through the development contributions system.
- Loss of significant, direct private investment in new and upgraded public road infrastructure and substantial indirect investment in the local economy to the benefit of residents and businesses in Western Sydney.
- Loss of direct employment generating potential of the AIE, providing in the order of 555 new construction jobs and 1,703 operational jobs, and the wider potential of the broader Mamre Road Precinct which would deliver approximately 200,000 jobs for Western Sydney.

Due to the significance of the risks noted above, the 'Do Nothing' alternative was discounted in favour of a staged development option for the site.

Alternative Designs and Layouts

Multiple options (**Figure 4**) were prepared and analysed when considering the AIE Concept Master Plan. The following key design requirements have been considered in the preparation of the concept masterplan options:

- Location of signalised intersection at Mamre Road
- The realignment of riparian corridor to improve biodiversity and ecological values in accordance with Biodiversity Development Assessment Report (**Appendix O**).

In addition to the requirements listed above, the following key objectives have been considered in the preparation of the concept masterplan:

(a) Improve the biodiversity and ecological values of the area through the incorporation and restoration of riparian corridors within the site. Utilising landscape and urban design features to complement biodiversity values.

(f) Provide a rational, efficient road network which is integrated with the future local road network.

(g) Provide a development that enables integrated water management and enable stormwater infrastructure to be designed to have dual functions of water cycle management, recreation and amenity. Integrate water into the landscape and urban form to enhance ecological, visual, social, economic and cultural values.

(h) Provide contextually and economically appropriate design whilst mitigating earthworks requirements and retaining walls fronting public road reserves.

(i) Economic and orderly development catering for IN1 General Industrial user requirements for large regular shaped lots to enable flexibility to provision for a diverse range of customer requirements.

Table 1 provides an assessment against the objectives listed above. The assessment demonstrates that Option 5 has the best outcomes which respond to the site's existing conditions, meet NSW Government objectives, and provide for efficient layout to optimise the land for future tenant's needs.

Conclusion

The analysis of alternatives for Aspect Industrial Estate confirms the proposed development scheme (Option 5) and layout provides the best balance between development and environmental outcomes. It contributes to the industrial land shortfall, while providing opportunities for embellishment of flora and fauna habitats and providing a flexible design to enable integration into the broader Mamre Road Precinct.

8.3. RECOMMENDATIONS

The proposed Concept Masterplan and Stage 1 Development of the AIE has been considered and assessed in accordance with the requirements of the NSW EP&A Act as they apply to SSD. The EIS assesses matters prescribed under this Act and its Regulation and those matters identified in the SEARs for the proposal.

Based upon a balanced review of key issues and in consideration of the benefits and residual impacts of the proposal, the staged development of the AIE as proposed under the SSD DA is considered justified and warrants approval subject to the implementation of the management and mitigation measures described in EIS and nominated supporting documents.

9. DISCLAIMER

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