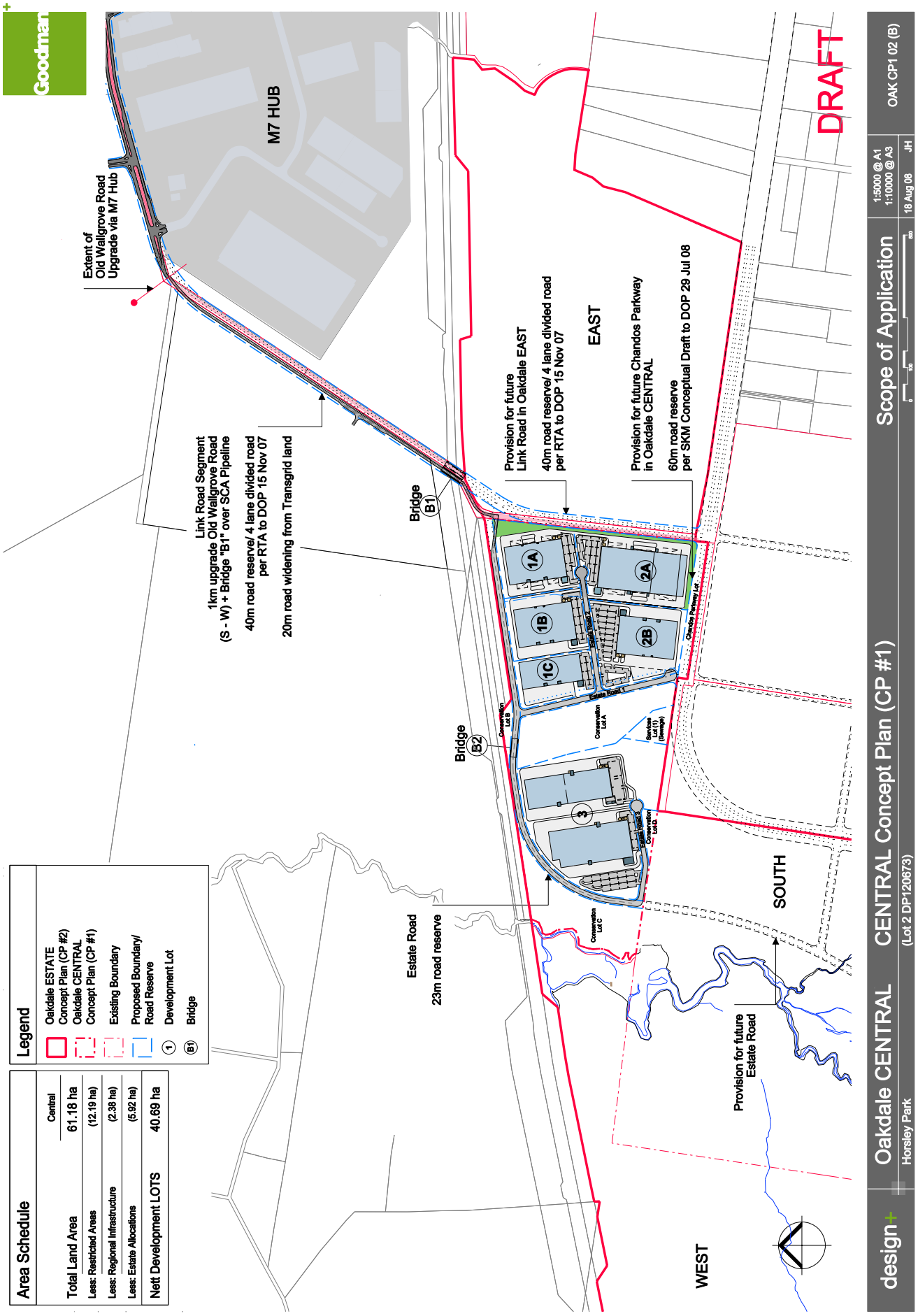

Figure 17 – Approved Oakdale Central Concept Plan
Source: Goodman Pty Ltd

To the west of the site

The western boundary of the site is formed by Ropes Creek. Ropes Creek is a tributary of South Creek, part of the Hawkesbury Nepean River system. Ropes Creek flows in a northerly direction to the confluence with South Creek approximately 13.5 kilometres north-west of the site in the suburb of Ropes Crossing.

Beyond the creek is land zoned for employment purposes, within the Erskine Park Employment Area which is currently under construction.

To the north-west of the site is the residential suburb of Erskine Park which is shown in **Figure 18**.

Figure 18 – Residential development to the north-west

2.9 Summary of Site Opportunities and Constraints

The site presents the following opportunities and constraints.

Site Opportunities

- The site is predominantly flat to gently sloping with the exception of the northern part of the site;
- No significant vegetation exists on the site;
- The site does not require remediation;
- Once constructed, the proposed and approved new regional roads will make the site highly accessible from both the M4 and M7 once constructed; and
- The site is suitably zoned for employment uses.

Site Constraints

- Large electricity easements run across the site and constrain development on those parts of the site – roads, parking, storage and access are permitted but no buildings; and
- E2 conservation zones cross the site and require setbacks for bushfire protection which reduces the land available for development.

3.0 Planning Framework and Context

3.1 Relevant Legislation

3.1.1 Environmental Planning and Assessment Act 1979

Part 3A of the EP&A Act outlines the process for considering major project applications. In particular it outlines:

- What development comprises a major project;
- The matters which the Minister must take into account when assessing a major project application;
- Information which must be submitted with a major project application;
- The environmental assessment requirements for approval;
- Public exhibition of major project applications;
- Assessment report procedures; and
- Appeals under Part 3A.

The proposed development meets the objectives of the Act in that it:

- involves the orderly and economic use and development of land;
- comprises a sustainable form of development; and
- will not generate any adverse significant impacts on the environment.

3.1.2 Threatened Species Conservation Act, 1995

The *Threatened Species Conservation Act 1995* (NSW) (TSC Act) identifies and protects threatened and endangered species, populations and ecological communities. The objectives of the Act include:

- conserving biological diversity and promoting ecologically sustainable development;
- preventing the extinction and promoting the recovery of threatened species, populations and ecological communities;
- protecting critical habitats; and
- encouraging the conservation of threatened species, populations and ecological communities.

A Flora and Fauna assessment undertaken by Whelan Insites is discussed further in **Section 6.8** and included at **Appendix D**.

3.1.3 National Parks and Wildlife Act, 1974

The *National Parks and Wildlife Act 1974* (NSW) (NPW Act) provides the primary basis for the legal protection and management of Aboriginal sites and relics within NSW. The NPW Act requires amongst other things:

- consultation with the DECCW prior to development to determine the existence of items of Aboriginal heritage;
- consultation with local Aboriginal groups; and
- consent to disturb or destroy Aboriginal heritage sites/items.

Any land containing Aboriginal cultural heritage impacted by future development would normally be subject to an application for 'consent to destroy' under Section 90 of the NPW Act. Pursuant to section 75U of the EP&A Act, as the Project is being determined under Part 3A, NPW Act approval would not be required, however the usual requirements under the NPW Act in relation to the management of indigenous heritage would still apply.

An Aboriginal archaeology assessment has been undertaken by Godden Mackay Logan and is included at **Appendix F**.

3.1.4 Rural Fires Act 1997 (NSW)

Amongst its objectives, the *Rural Fires Act 1997* (NSW) (RF Act) seeks to prevent, mitigate and suppress bush and other fires. Section 75U of the EP&A Act removes the requirement for a bushfire safety authority to be issued under Section 100B of the RF Act for projects determined under Part 3A. Nonetheless, the Project does not include subdivision for a residential purpose and is not a 'special fire protection purpose' under the RF Act.

The RF Act is supplemented by detailed bushfire protection planning guidelines in the form of Planning for Bushfire Protection 2006 and specifies relevant asset protection zones and design standards for certain types of development. The document has a focus on residential development and specific APZ's therein, however, all development on bushfire prone land must consider the aims and objectives of the document.

Blacktown Council has not identified the site as being bushfire prone land. Notwithstanding, a Bushfire Assessment has been prepared by Australian Bushfire protection Planners and is included at **Appendix G**.

3.2 Strategic Planning

3.2.1 NSW State Plan

The NSW State Plan was released in November 2007. It sets key strategic priorities for the NSW Government and is to be used to guide decision making and resource allocation. Of relevance to this application is the priority relating to 'Growing Prosperity Across NSW' which includes activities that promote productivity and economic growth, including rural and regional NSW.

The relevant actions in the State Plan are:

- *Working with local businesses to keep jobs and investment in NSW and side by side with Invest Australia to promote Sydney and regional NSW as first-rate business destinations.*
- *Reducing turn around times and increasing the certainty of expected timeframes for major development assessment approvals.*
- *Protecting employment land in existing areas and fast tracking zoning and availability of serviced industrial land to meet the needs of business growth across the State.*

The proposed development assists the NSW Government in achieving the above actions that they are committed to in that it will:

- provide a significant investment in the NSW economy; and
- provide a significant number of new jobs in Western Sydney.

The economic and employment benefits of the project are discussed in more detail at **Section 6.14** of this report.

3.2.2 Sydney Metropolitan Strategy

The Sydney Metropolitan Strategy was introduced by the NSW State Government in 2005 to provide a broad framework to manage growth in Sydney until 2031. One of the key aims of the Metropolitan Strategy is to create more jobs in Western Sydney.

3.2.3 Draft North West Subregional Strategy:

The Draft North West Subregional Strategy was prepared by the NSW State Government to translate the Metropolitan Strategy actions to a local and subregional level. The strategy sets the following employment and housing targets for the subregion:

- additional 130,000 jobs
- additional 140,000 dwellings

Of the 130,000 jobs to be created in the North-West Subregion, 45,000 are to be created within the Blacktown LGA.

The strategy nominates the site as being within the *Western Sydney Employment Hub* which is expected to:

- generate up to 36,000 jobs; and
- meet demand for new economic activities and a range of Employment Land sites in Western Sydney, with forecasts showing that new land for industrial purposes in proximity to the M7 Motorway will be required in the mid to long term.

3.2.4 Employment Lands for Sydney Action Plan 2007

The Employment Lands for Sydney Action Plan was released in 2007 and builds upon the findings of the high level Employment Lands Task Force. Key Action No. 2 of the Action Plan is 'Release more employment lands' and the site is identified within the Action Plan as 'proposed employment lands'.

The strategy states:

"Detailed planning will ensure a range of lot sizes to encourage diversity of economic activities for the growing residential population and workforce in the surrounding areas."

This Concept Plan forms the detailed planning of the site and will deliver a range of lot sizes and new employment opportunities within Western Sydney in accordance with the objectives of the Action Plan.

The Ropes Creek Employment precinct will provide between 1,600 and 3,250 new jobs from the developable land generated in the Concept Plan (assuming a job generation rate of 20 – 40 jobs per developable hectare).

3.3 Environmental Planning Instruments

This section summarises the relevant State and Regional Environmental Planning Instruments and policies that apply to the site. The following planning instruments and planning policy documents are of key relevance to the proposed development:

- State Environmental Planning Policy (Major Development) 2005;
- State Environmental Planning Policy (Western Sydney Employment Area) 2009;
- State Environmental Planning Policy (Infrastructure) 2007;

- State Environmental Planning Policy No. 55 – Remediation of Land; and
- Blacktown Development Control Plan 2006.

3.3.1 State Environmental Planning Policy (Major Development) 2005

The Major Development SEPP identifies development that is of State significance. Clause 6 of the Major Development SEPP identifies that development, that in the opinion of the Minister for Planning is development of a kind referred to in Schedule 1 (Classes of Development), is declared to be a project to which Part 3A of the EP&A Act applies.

Pursuant to Clause 6 of the Major Development SEPP, the Minister for Planning formed the opinion that the proposed Stage 1 development meets the criteria in Schedule 1, Group 4, clause 12 of the SEPP, having satisfied himself that the development is a "distribution or storage facility" with a capital investment of more than $30 million.

Subsequently, the Director General's Environmental Assessment Requirements for the project were issued on 13 August 2010.

3.3.2 State Environmental Planning Policy (Western Sydney Employment Area) 2009

In August 2009, the State Environmental Planning Policy (Western Sydney Employment Lands) 2009 (WSEA SEPP) was gazetted, which provides consistent zoning and development control provisions to facilitate development of the WSEA for the purposes of employment and industry.

The site is located within Precinct 6 – Ropes Creek. It is part zoned IN1 – General Industrial and part zoned E2 – Environmental Conservation (See **Figure 19**) and a proposed regional road is shown running through the site.

The Tables of Compliance at **Appendix H** provide a detailed assessment of the proposal's compliance with the relevant provisions of the SEPP.

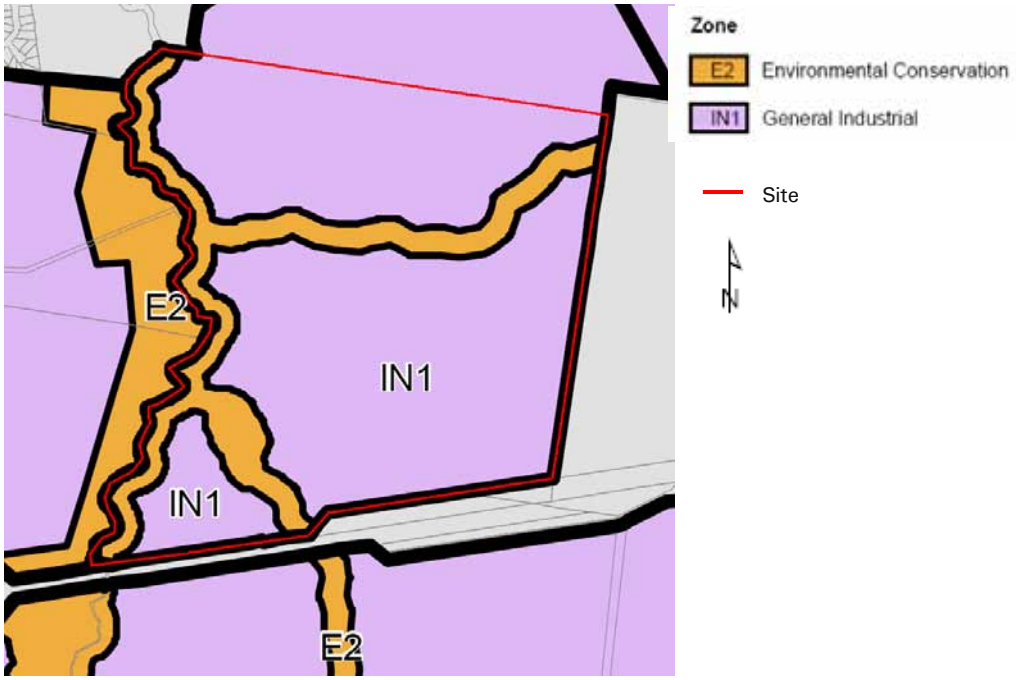

Figure 19 – Site Zoning
Source: NSW Department of Planning (WSEA SEPP)

3.3.3 State Environmental Planning Policy (Infrastructure) 2007

As access will ultimately be from a Classified Road (once constructed) Clause 101(2) is relevant. Clause 101(2) of the Infrastructure SEPP requires that, prior to approval, the consent authority must be satisfied that:

(a) Where practicable, vehicular access to the land is provided by a road other than the classified road, and

(b) The safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of:

(i) The design of the vehicular access to the land, or

(ii) The emission of smoke or dust from the development, or

(iii) The nature, volume or frequency of vehicles using the classified road to gain access to the land, and

(c) The development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.

An assessment of the proposed road design is provided at **Appendix I**. All of the proposed lots will be accessed via local roads and not the north-south regional road.

The proposed development is identified as traffic generating development within Schedule 3 of the Infrastructure SEPP as it is defined as "industry" with a floor area in excess of 5,000m^2.

Clause 104 of the Infrastructure SEPP requires that for development applications, for development described within Schedule 3, the consent authority:

(a) Give written notice of the application to the RTA within 7 days of after the application is made, and

(b) Take into consideration

(i) Any submission that the RTA provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, the RTA advises that it will not be making a submission), and

(ii) The accessibility of the site concerned, including:

(A) The efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and

(B) The potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk by rail, and

(iii) Any potential traffic safety, road congestion or parking implications of the development.

A Traffic Assessment has been prepared by Halcrow Pty Ltd and is provided at **Appendix I** which will be referred by the DoP to the RTA for comment in accordance with the requirements of the SEPP.

3.3.4 State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. It requires that a consent authority must not consent to the carrying out of any development on land unless it has considered whether the land is contaminated, and if the land is contaminated whether or not the land can be made suitable for the proposed use.

Consulting Earth Scientists has undertaken an assessment of the site and has determined that it is or can be made suitable for the proposed use. Their report is included at **Appendix E**.

3.3.5 Blacktown Local Environmental Plan 1988

This environmental planning instrument does not apply to the site.

3.3.6 Blacktown Development Control Plan 2006

Whilst local Development Control Plans do not apply to development assess under Part 3A of the Act, a detailed assessment of compliance with this document is provided in the Tables of Compliance at **Appendix H**.

4.0 Concept Plan

The Concept Plan establishes the vision and planning and development framework which will be used by the consent authority to assess future development proposals within the Ropes Creek Employment Precinct. Concept Approval is being sought for the following:

- Site layout and developable areas;
- Regional road connections;
- Indicative project staging; and
- Project application guidelines.

The Concept Plan is described below. The Concept Plan drawings are included at **Appendix B**.

4.1 Site Layout

The site generates 81.3 hectares of developable area[1]. **Figure 20** provides an indicative lot and road layout of how the site might be developed, however the eventual lot sizes may vary depending on the market and occupant requirements. A minimum lot size of 1,500m^2 has been provided within the design guidelines for the precinct (see **Appendix J**).

The lots have been designed such that they are of a suitable size to accommodate a warehouse building and can be accessed via a local road. Where lots are affected by an electricity easement the buildings will be orientated such that parking or other similar land uses can be positioned within the easement with the buildings located outside of the easement.

A service centre has been positioned within the middle of the precinct. The site chosen to accommodate the service centre will have high visibility along Regional Road 1, and being located adjacent to the E2 conservation zone will also provide an opportunity to create an associated outdoor amenity area for employees within the Precinct.

The Ropes Creek Corridor has been separated into a single lot so that the corridor can be managed and maintained by one entity. The east-west E2 zoned land will be contained within the development lots and will be the responsibility of the relevant landowner.

The following setbacks are provided within the Concept Plan layout:

- 20m building setback from regional roads
- 7.5m building setback from local roads
- 24m setback from Ropes Creek Riparian Corridor (north-south E2 zone) and 10m setback from east-west E2 zones

1 Developable area has been calculated in accordance with the RTA definition of Net Developable Area as applied to the former SEPP 59 road contributions. Note:

(1) The area of regional road has been excluded for the entire 40m width;
(2) The area of local roads has been included for their entire 21.5m width;
(3) The E2 zone has been excluded because no development (other than for road purposes) is permitted;
(4) Building line setbacks are all included,
(5) There is no land set aside for public purposes;
(6) There is no flood liable land outside the (already excluded) E2 zone that will not be developable (i.e. will be rendered developable by filling as required);
(7) The area affected by the electricity easements is included, however the areas around the stanchions have been excluded (assumed 750m^2 per stanchion). It is noted in certain circumstances this land may not be developable

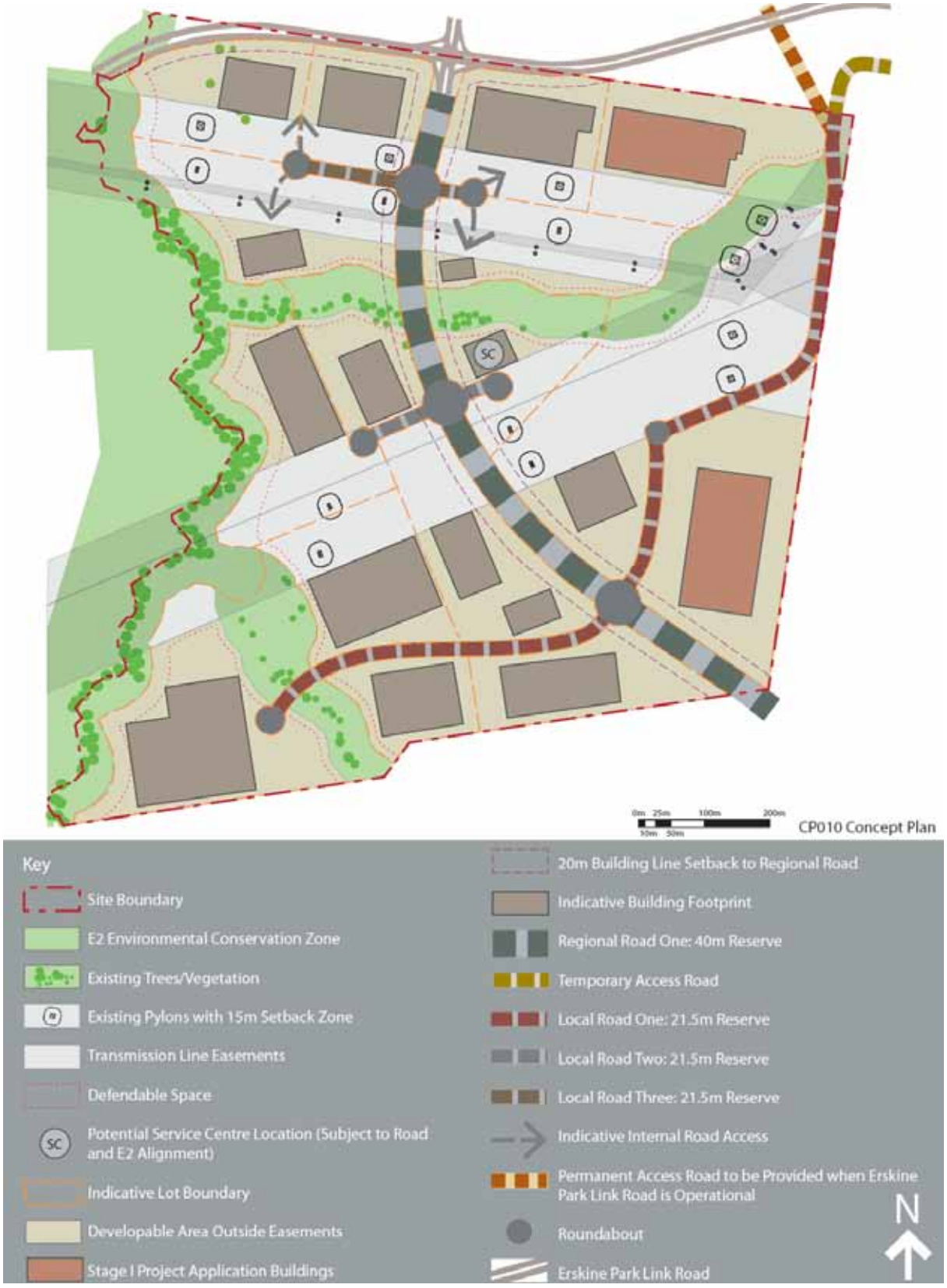

Figure 20 – Ropes Creek Employment Precinct Concept Plan

Figure 21 – Regional Road 1 Section

Figure 22 – Local Road Section

4.2 Regional and Local Road Connections

The WSEA SEPP identifies a regional road running north – south through the site (to be known as Regional Road 1). Since the SEPP was gazetted, the RTA has undertaken further work on the design of the road network in the WSEA and has determined the entry and exist points into the site. Regional Road 1 is positioned in accordance with design provided by the RTA and will have a width of 40m with a 20m building line setback on either side. The road will provide either two lanes in both directions or one through lane and one parking lane in both directions, with a 3m wide shared pedestrian cycle path provided on one side of the road and a 1.5m wide pedestrian path on the other.

Jacfin has had detailed discussions with the RTA, who has agreed to a second access to the Ropes Creek Employment Precinct near the eastern boundary of the site at a four way intersection as identified on the Concept Plan at **Figure 21**.

Three local roads are also proposed on the site. These will all have a road reserve of 21.5m providing a single lane and a parking lane in both directions, a 3m shared pedestrian / cycle path on one side of the road and a 1.5m pedestrian path on the other side of the road. All of the proposed roads are able to accommodate B-double truck movements. Road sections of Regional Road 1 and Local Road 1 are provided in **Figure 21** and **22** respectively and a road circulation plan is provided at **Figure 23**. Full size drawings are included at **Appendix B**.

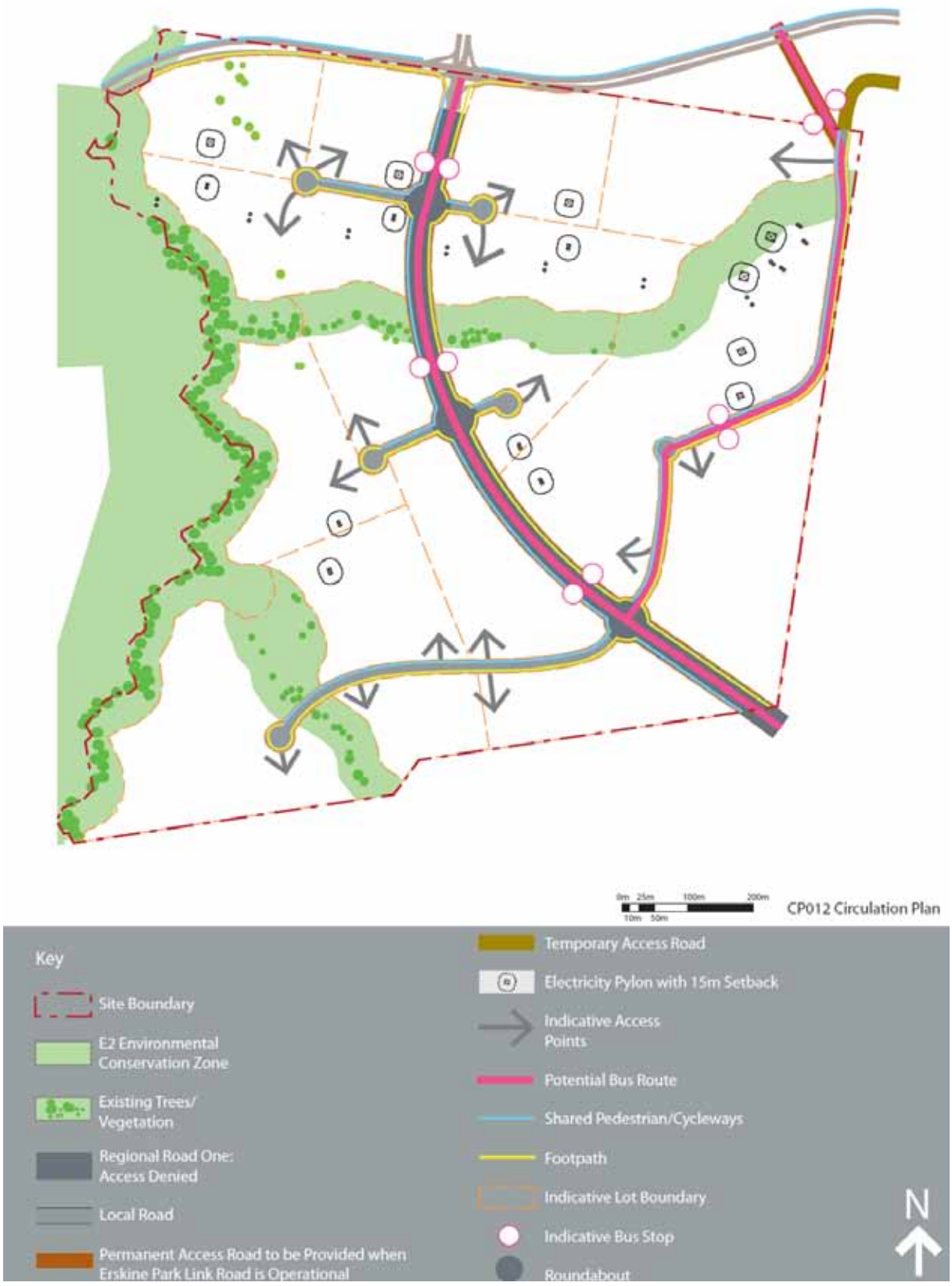

Figure 23 – Road Circulation Plan

4.3 Indicative Project Staging

An indicative staging plan is included at **Appendix B** and in **Figure 24**. As can be seen it is expected that the site will be developed in five stages, with the first stages occurring in the eastern and southern parts of the site and the final stages occurring in the central and northern parts of the site. The proposal is to construct and lease (not sell) the proposed buildings and the actual staging will be dependent on market conditions and the requirements of the tenants. The staging is not dependent of external road upgrades as all the regional roads have sufficient capacity to accommodate the development. The factors influencing the present indicative plan are:-

Stage 1

- Is the location closest to the existing Jacfin Eastern Creek development.
- Provides lots closest to the source of the existing services and road access as well as longer term exposure to the Erskine Park Link Road.
- Provides early and most cost effective access and services to the southern area of the site which is the best industrial land and has broad areas with the least development constraints.
- Adjoins the proposed north south link road connection at the south eastern corner of the site with Old Wallgrove Road (OWR).

Stage 2

- Allows development of the most attractive development land with the least development constraints.
- Roads and services can be readily extended from Stage 1.
- Potential for short access to OWR and proposed link road.

Stage 3

- Roads and services can be readily extended from the Erskine Park Link Road. Access to Stage 3 could be provided from Stages 1 and 2 if Erskine Park Link Road not complete.
- Offers sites with exposure to Erskine Park Link Road.

Stage 4

- Takes advantage of the roads and services extended from the Erskine Park Link Road in Stage 3.
- Access could be provided from Stages 1 and 2 if Erskine Park Link Road not complete.
- Offers sites with exposure to the Erskine Park Link Road.

Stage 5

- Completes the site development.

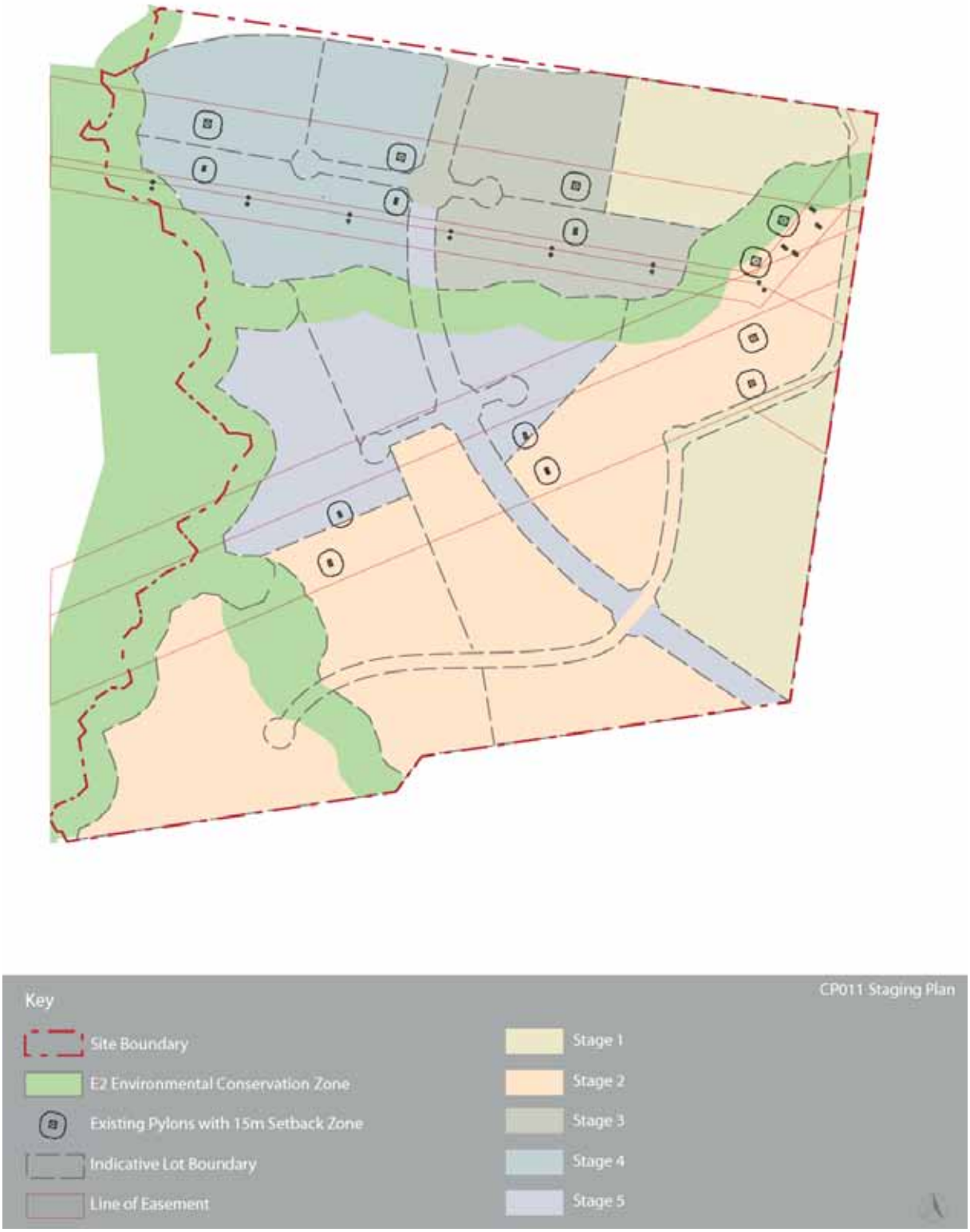

Figure 24 – Indicative Staging Plan

4.4 Site Infrastructure

Water Supply

The site will be supplied by the extension of a DN 150 watermain from the existing watermain in Old Wallgrove Rd via the temporary access road and the local road in the Precinct. The water supply can be linked in the future to an extension of the existing main along Old Wallgrove Road to serve other land to the south by a DN 150 main near the junction of Old Wallgrove Road and the Sydney Water Supply Pipeline.

Sewage

It is proposed to extend approximately 1700 metres of gravity sewer from the existing sewer draining to the Eastern Creek Submain to the high point on the eastern side of Old Wallgrove Road, north of the Water Supply Pipeline, and pump to this point from a Sewage Pumping Station located near Ropes Creek to which all of the ultimate subdivision would drain. The rising main from this S.P.S. will be located in future roads and Old Wallgrove Road. These works would be required

when capacity is no longer available in the existing sewer in Eastern Creek Drive or at the direction of Sydney Water.

Electricity, Gas & Communications

Electricity connections will be made to the existing zone substation at Eastern Creek. A feeder to the site will be installed within the temporary access road. Gas connection will be made to the existing gas supply at the intersection of Old Wallgrove Road and Burley Road as required by operators. Connections will also be made to the existing communications facilities within Old Wallgrove Road.

The location of these services is provided in **Figures 25** and **26**.

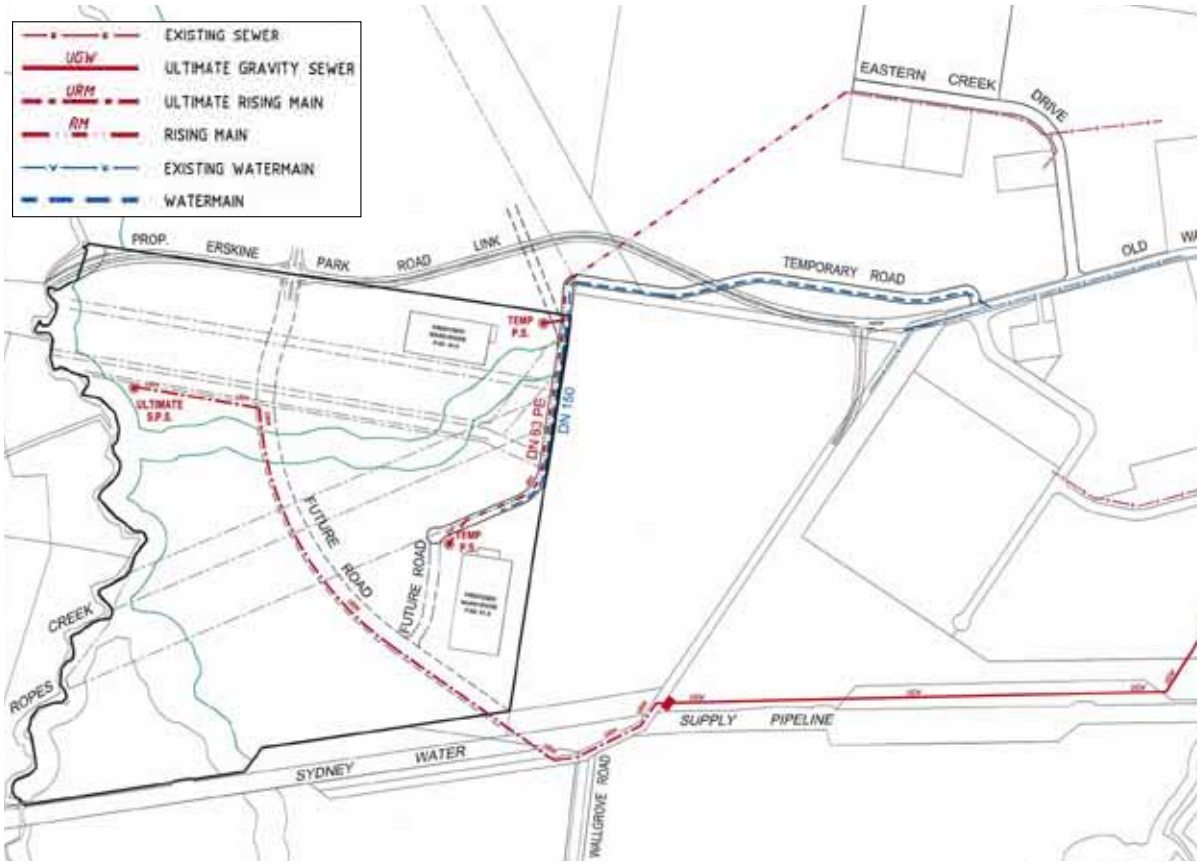

Figure 25 – Location of water and sewer infrastructure
Source: Brown Consulting Engineers

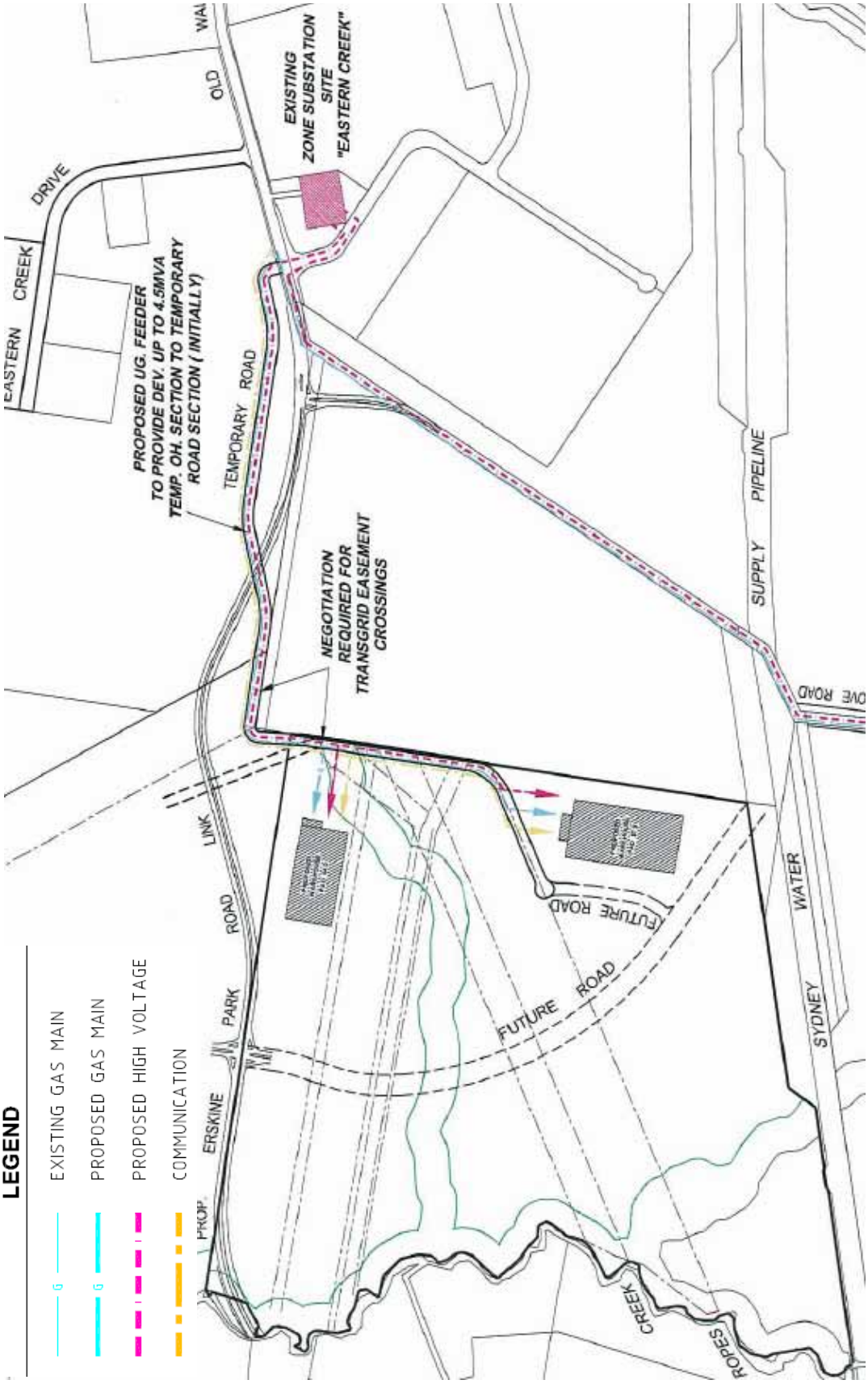

Figure 26 – Location of Electricity, Gas and Telecommunication Services
Source: Brown Consulting Engineers

4.5 Project Application Design Guidelines

In accordance with the requirements of Clause 18 of the WSEA SEPP design guidelines have been prepared for the Precinct which will provide direction and requirements for the design of future project applications (warehouses) on the site. The guidelines are included at **Appendix J** and cover, but are not limited to, the following issues:

- Subdivision
  - minimum lot size of 1,500m^2.
- Site Coverage
  - maximum site coverage of 65%.
- Setbacks:
  - 20m from the North South Regional Road and the Erskine Park Link Road;
  - 7.5m from Local Roads;
  - 5m for a secondary setback to a Local Road on a corner allotment; and
  - 15m from electricity pylons.
- Built form
  - Buildings are to exhibit architectural merit, diversity of design, environmental sustainability and quality of materials;
  - Entries to buildings should be clearly visible to pedestrians and motorists and be integrated into the form of the building; and
  - Optimising building orientation and siting to natural elements such as topography, wind and sunlight, and to maximise energy efficiency.
- Access, Parking and Loading
  - All development is to be accessed from a local road, unless otherwise approved;
  - Truck access, manoeuvring and loading areas are to be separated from car parking areas;
  - All internal two-way roadways are to have a minimum width of 7m;
  - Parking is to be provided in accordance with the following rates:
    - Office: 1/40m^2 GFA
    - Factory: 1/100 GFA first 100m^2 then 1/200m^2 GFA (includes Office component)
    - Warehouse: 1/300m^2 GFA + 1/40m^2 office
- Landscaping
  - Development should include landscaped setback frontages that are distinctive but well integrated with, and contribute positively to the public streetscape character;
  - Trees are to have a minimum height if 1m at the time of planting; and
  - Copse of trees should be planted within the dedicated landscape areas in front of the building where large areas of the building facade are exposed to the street.

- Signage
  - Signage is to relate to the use occurring on the respective property; and
  - signage is not to have a detrimental impact on the visual character of the site and surrounding area.

The guidelines will have a similar status to a Development Control Plan (DCP). Future applications will need to demonstrate compliance with the relevant objectives of the Design Guidelines.

4.6 Capital Investment Value

A QS certificate has been prepared by Northcroft (Australia) Pty Ltd for the Concept Plan. Northcroft estimate that the total development of the Ropes Creek Employment Precinct Concept Plan will generate a Capital Investment Value of approximately $290,280,000 (**Appendix P**), of which approximately $55,983,000 will be invested in the Stage 1 development (see **Section 5.12**).

5.0 Stage 1 Project Application

This Project Application (PA) seeks approval for the following works:

- Subdivision;
- Bulk earthworks;
- Installation of services;
- Construction of a temporary and permanent access road; and
- Construction of two warehouse buildings with associated offices, car parking and landscaping.

A detailed description of each component is provided below.

5.1 Subdivision

It is proposed to subdivide the site into the following four lots:

- Lot 1 – Warehouse Building 1
- Lot 2 – Warehouse Building 2
- Lot 3 – Ropes Creek Riparian Corridor
- Lot 4 – Residual Land

It is proposed that the subdivision of Lot 3 will facilitate the future protection and maintenance of the Ropes Creek corridor in this location. A draft subdivision plan is included at **Appendix L**.

5.2 Warehouse Building 1

Warehouse Building 1 is located along the eastern boundary in the south-eastern corner of the Ropes Creek site.

The building will have a total Gross Floor Area (GFA) of 24,920m^2 comprising 23,100m^2 of warehouse GFA and 1,820m^2 of office GFA. The warehouse component of the building will be 210m long, 110m wide and 13.7m high. The office component will be two storeys high (8.85m), 18m wide and 59.4m long.

The building has a north/south orientation with on-grade docks positioned along the eastern and western facades of the building. The on-grade docks will be covered by an awning.

The following external materials are proposed:

- Pre-cast painted concrete panels;
- Metallic feature cladding;
- Profiled metal sheet roofing; and
- Metallic feature strips with louvres.

Separate vehicular entrances are proposed for the staff car parking area and truck servicing areas. Trucks will circulate around the warehouse in a clockwise direction entering from the north-east and existing from the north-west of the site.

A total of 122 car parking spaces are provided for staff. An overflow parking area is also nominated for 37 additional cars.

Architectural Plans of the proposed building are provided at **Appendix M**. A perspective of Warehouse Building 1 is provided in **Figure 27** and the general layout of the building is provided in **Figure 28**.

Figure 27 – A perspective of Warehouse Building 1
Source: MNIA Architects

Figure 28 – General Layout of Warehouse Building 1
Source: MNIA Architects

5.3 Warehouse Building 2

Warehouse Building 2 will be located in the north-eastern corner of the Ropes Creek site.

The building will have a total Gross Floor Area (GFA) of 17,550m^2 comprising 16,200m^2 of warehouse GFA and 1,350m^2 of office GFA. The warehouse component of the building will be 180m long, 90m wide and 13.7m high. The office component will be two storeys high (8.85m), 15.8m wide and 46.8m long.

The following external materials are proposed:

- Pre-cast painted concrete panels;
- Metallic feature cladding;
- Profiled metal sheet roofing; and
- Metallic feature strips with louvres.

Separate vehicular entrances are proposed for the staff car parking area and truck servicing areas. Trucks will circulate around the warehouse in a clockwise direction entering from the south and existing from the north of the site.

Ninety-Three (93) car parking spaces are provided for staff. An overflow parking area is also nominated for 25 additional car spaces.

Architectural Plans of the proposed building are provided at **Appendix M**. A perspective of Warehouse Building 1 is provided in **Figure 29** and the general layout of the building is provided in **Figure 30**.

Figure 29 – A perspective of Warehouse Building 2
Source: MNIA Architects

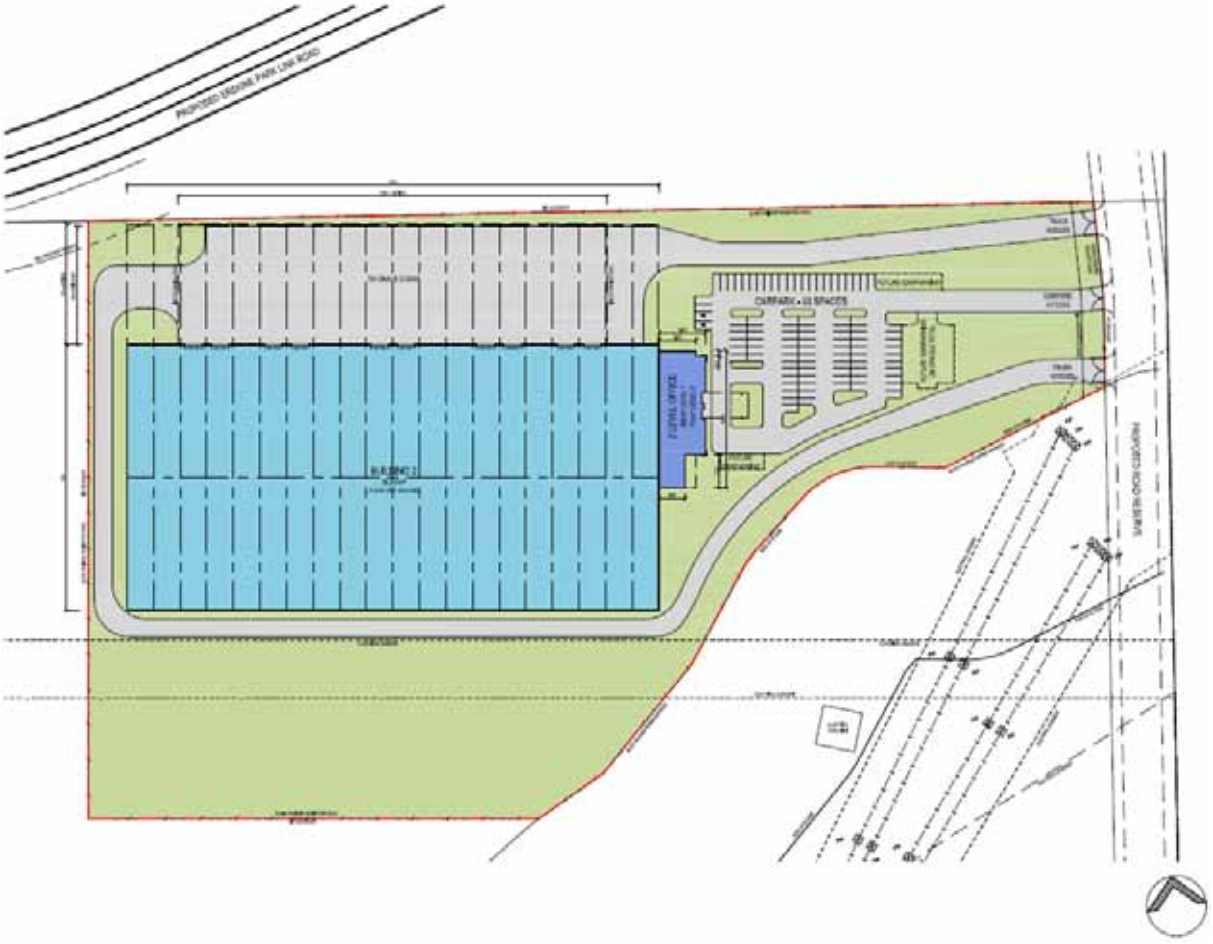

Figure 30 – General Layout of Warehouse Building 2
Source: MNIA Architects

5.4 Road layout and access

The Stage 1 Project Application seeks consent for the construction of a temporary access road from Old Wallgrove Road to the site. The temporary road will have a 21.5m road reserve with a 13.5 wide carriageway. It has been designed in accordance with Blacktown City Council guidelines and will cater for B-Double truck access.

The application also seeks consent for the construction of a permanent road within the site. The access road (known as Local Road 1) is proposed from the north-eastern corner of the site and will run southwards along the eastern boundary of and will then travel south-west, terminating in a cul-de-sac. The road reserve has a width of 21.5m and will cater for B-double access. Jacfin has had detailed discussions with the RTA who has agreed to an intersection of the permanent road with the new Erskine Park Link Road (EPLR) and a crossing of the EPLR by the temporary road which will be available until access to the permanent road is available from the EPLR. The connection to the EPLR will be constructed at the same time as the EPLR.

Civil Engineering drawings of the proposed access road are included at **Appendix N**.

5.5 Bulk Earthworks

Earthworks have been designed to minimise disturbance to natural ground levels while achieving a balance in cut/fill volumes (refer to civil drawings at **Appendix N** and **Figure 31**).

Figure 31 – Areas of cut and fill

Earthworks Warehouse Building 1

The pad for the proposed building and associated site works for vehicle manoeuvring, car parking and stormwater control is proposed at RL61.0 as shown on drawing 103 at **Appendix N**.

A 1800mm by 1000mm box culvert is proposed to collect runoff from the adjacent Transgrid site.

A retaining wall is to be constructed on the eastern and western boundaries with design heights ranging between 1m and 1.7m high as shown on drawing 402 at **Appendix N**.

The earthworks have been designed to achieve cut and fill balance. The earthwork cut to fill volume is calculated at 43,000 cubic metres. The acquired topsoil not required for landscape purposes will be stockpiled on land outside the Stage 1 area. Batters and / or retaining walls will be used to match the site pad level with adjoining land levels. Batters and retaining walls will be designed in accordance with the design guidelines.

Earthworks Warehouse Building 2

The pad for the proposed building and associated site works for vehicle manoeuvring, car parking and stormwater control is proposed at RL64.0.

A retaining wall is required along the northern boundary with a maximum height of 7.2 meters. It is expected that this wall will be reduced in height following the Erskine Park Link Road works as the ground levels of the proposed link are similar to those proposed for Warehouse Building 2.

The earthworks have been designed to achieve cut and fill balance. Earthwork calculations suggest 46,000 cubic metres is the amount of cut to fill. The acquired topsoil not required for landscape purposes will be stockpiled outside the Stage 1 area.

5.6 Installation of Services

A services plan has been prepared by Browns Consulting and is included at **Appendix K**. Water, electricity and gas will be located in the temporary access road and will be connected to existing services in Old Wallgrove Road.

As the two warehouses proposed for Stage 1 will have relatively low rates of sewage discharge from amenities, these can be serviced by a small domestic holding tank and pump on each site with DN 63 PE rising mains laid to discharge to the existing sewer located in Eastern Creek Drive. This type of installation is usually limited to a pumping rate of 2 litres/sec. and would be catered for by the capacity of the sewer at Eastern Creek Drive. On construction of the ultimate SPS, these pumps and rising mains would be disconnected and the sites would drain by gravity to the ultimate S.P.S.

5.7 Hours of Operation

Approval is sought for 24 hour operation, 7 days a week.

5.8 Landscaping

Clouston Associates Pty Ltd has prepared landscape schemes for each of the warehouse buildings. The landscape plans are included at **Appendix O** and **Figures 32** and **33**. The landscape schemes have been designed to reflect the predominant rural character of the locality, containing various low scale grasses and shrubs. The schemes also account for the scale of the proposed warehouse development and accordingly include groups of trees which will grow to a similar height of the warehouse buildings.

Warehouse Building 1

At the northern boundary of the site a Port Jackson Fig Tree will planted which will act as a marker to the entrance of the development.

A 20m landscape zone has been established between the regional road reserve and the proposed building. This will be planted with Pennisetum alopercuriodes `Nafray' which will maintain the rolling hillside character of the site. The edge of the site will be defined by consistent rows of Grevillia rosmarinifolia `Nana'. Three copse of `Magenta Cherry' will be planted within the southern landscape area which will have a mature height of approximately 15m. The proposed trees will break up the apparent built form of the building as viewed when entering the Ropes Creek Employment Precinct from the south.

The car park entry and parking area will be defined by a perimeter planting of canopy trees. The plantings will be wholly contained within the perimeter planting beds to contain the tree litter. A mixture of native grasses and ground covers will also be planted within the planting beds to provide additional interest to the island.

An area of paving and turf has been provided to the north-western corner of the office for staff. The location has been chosen as it provides district views. Shrubs have been proposed along the northern edge of the area so as to screen the staff breakout area from the carpark.

A black palisade fence will also be erected around the perimeter of the property.

Warehouse Building 2

At the eastern entry point to Warehouse Building 2 a Holly Oak will be planted to act as a marker to the entrance of the development.

Bands of native grasses and shrubs are proposed within the eastern and southern landscape zones which will provide interest and maintain the rolling hillside character of the precinct, whilst at the same time maintaining views towards the E2 zone.

The car park entry and parking area will be defined by a perimeter planting of canopy trees. The plantings will be wholly contained within the perimeter planting beds to contain the tree litter. A mixture of native grasses and ground covers will also be planted within the planting beds to provide additional interest to the island.

An area of paving and turf has been provided to the south-eastern corner of the office for staff. The location has been chosen as it provides district views. Shrubs have been proposed along the northern edge of the area so as to screen the staff breakout area from the carpark.

A black palisade fence will also be erected around the perimeter of the property.

Figure 32 – Warehouse Building 1 landscaping scheme
Source: Clouston Associates

Figure 33 – Warehouse Building 2 landscaping scheme
Source: Clouston Associates

5.9 Waste Management

Waste will be collected from each warehouse by a private contractor on an as needs basis. A Waste Management Plan will be prepared by the company occupying the site prior to occupation of each warehouse (refer to the Statement of Commitments at **Section 7** of this report). This will ensure that the Waste Management Plans are specific to the operations of the occupant and as such are likely to be more effective than if a generic waste management plan were to be prepared.

If storage of hazardous materials is required a hazard assessment will be undertaken prior to occupation of the building. A commitment to this effect is made at the Statement of Commitments at **Section 7** of this report.

5.10 Signage and Lighting

Separate applications will be lodged in the future for signage and lighting to suit the requirements of the occupiers of the warehouses. A commitment to this effect is made at **Section 7** of this report.

5.11 Works Packaging

Work packages have been identified to permit occupation of the two warehouse sites independently and prior to the completion of all the works. The work packages proposed are:

- Construction of the temporary road from Old Wallgrove Road to join with the proposed permanent Local Road 1;
- Construction of the permanent link road from the EPLR to the site;
- Construction of Local Road 1 from the north-eastern corner to just south of the truck access of Warehouse 2;
- Construction of Local Road 1 from the southern truck access of Warehouse 2 to the cul-de-sac south adjacent to Warehouse Building 1;
- Construction of Building 1; and
- Construction of Building 2.

If the Department is of the mind to approve the application it is requested that the conditions of consent be worded in such a way so as to facilitate the staged certification of the project (i.e. to allow interim occupation certificates to be issued for one warehouse in the scenario that the second warehouse is still under construction).

5.12 Capital Investment Value

A QS certificate has been prepared by Northcroft (Australia) Pty Ltd for the project which demonstrates that the proposed development has a Capital Investment Value of $55,983,000 (**Appendix P**). This is broken down into the following elements:

- Warehouse Building 1 + Infrastructure Works - $30,537,000
- Warehouse Building 2 + Infrastructure Works - $19,446,000
- Consultants Fees - $6,000,000

5.13 Future Applications

Future applications will be lodged for the fit-out and operation of the proposed Stage 1 warehouse buildings. Key issues which are specific to the operation of each warehouse will be dealt with in the future applications, including:

- Land use;
- Signage;
- Lighting;
- Storage of hazardous materials (if required); and
- Odour control (if required).

6.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the Project, including site wide cumulative impacts and site specific impacts for each Project Application. It addresses the matters for consideration set out in the Director-General's Environmental Assessment Requirements (DGRs).

The draft Statement of Commitments at **Chapter 7** complements the findings of this section.

6.1 Director General's Requirements

The Director General's Requirements (DGRs) for the project were issued on 13 August 2010 (refer **Appendix A**). **Table 1** provides a summary of the individual matters listed in the DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 1 - Director General's Environmental Assessment Requirements

Director General's Requirements	Location
General Requirements	
Executive Summary	Page vi
Site Analysis	Section 2
Description of the proposed development	Sections 4 and 5
Risk Assessment	Section 6.18
Assessment of key issues & potential impacts	Section 6
Draft Statement of Commitments	Section 7
Conclusion and justification of suitability of the site for proposal	Section 8
Statement of Validity	Page v
Quantity Surveyor's Certificate	Appendix P
Key Issues	
Strategic and Statutory Context	
▪ detailed justification for the proposal and suitability of the site to be developed	Section 6.17
▪ demonstration that the proposal is generally consistent with:	
- SEPP (WSEA) 2009	Chapter 3, Section 6.2 and Appendix H
- any relevant DCPs	Section 6.2 and Appendix H
- NSW State Plan, Metropolitan Strategy and draft subregional strategy	Chapter 3
- justification for any inconsistencies	Appendix H
Site Layout and Design	
▪ details of subdivision of the site, including site coverage, lot sizes and positioning of lots	Section 4 and Appendix B
details of how the proposed layout and development of the project would be undertaken to minimise potential impacts on nearby sensitive receivers	Section 6
▪ details of a DCP	Section 4.5 and Appendix J
Transport, Access and Parking	
▪ Details of traffic volumes likely to be generated during construction and operation	Section 6.4 and Appendix I
▪ An assessment of the predicted impacts of this traffic on the safety and capacity of the surrounding road network in the short and long term, and an assessment of the cumulative impact of traffic volumes	Section 6.4 and Appendix I

Director General's Requirements	Location
▪ Details of the consistency of the project with the Government's design for the new Erskine Park Link Road and all connector roads between Mamre Road and the M7/M4, and the corridor/s identified in the Government's Draft Structure Plan for the area	Section 6.4 and Appendix I
▪ Details of any proposed road upgrades	Section 4.2, Section 6.4 and Appendix I
▪ Access, including detailed consideration of various access options and justification for the proposed location of the main access points	Appendix I
▪ Details of the availability of non-car travel modes and measures to encourage greater use of these travel modes	Section 6.4 and Appendix I
Infrastructure Requirements	
▪ Detailed written and graphical representation of the infrastructure required on site	Section 4.4 and Appendix K
▪ The identification of the infrastructure upgrades that are requires off-site to facilitate the orderly and economic development of the project, and a description of the arrangements that would be put in place to ensure these upgrades are implemented in a timely manner and maintained	Section 4.4 and Appendix K
▪ A description of how the provision of infrastructure both on and off site would be co-ordinated and funded to ensure the necessary infrastructure is in place prior to the details development of the site	Appendix K
▪ Maintaining access to public utility infrastructure	Appendix K
Planning Agreement / Developer Contributions	
▪ Arrangements that would be made to provide, or contribute to the provision of, the necessary local and regional infrastructure required to support the proposal	Section 6.15
Noise and Vibration	
▪ Including an assessment of construction, operation and traffic noise	Section 6.10 and Appendix S
Heritage	
▪ Including Aboriginal and non-Aboriginal	Section 6.7 and Appendix F
Flora and Fauna	
▪ Including an assessment of any impacts on critical habitats, threatened species, populations or ecological communities and their habitats in the region.	Section 6.8 and Appendix D
▪ Details of measures to enhance and protect any riparian zones, including setbacks	Section 4.1, Section 6.8 and Appendix D
Soil and Water	
▪ Water supply and efficiency	Appendix K
▪ Erosion and sediment controls during construction	Section 6.13 and Appendix Q
▪ Proposed stormwater management system	Section 6.3 and Appendix Q
▪ Assessment of any potential offsite drainage or flooding impacts	Section 6.3 and Appendix Q
▪ Consideration of the potential for rainwater harvesting	Section 6.3 and Appendix Q
▪ Waste water disposal	N/A no waste water disposal is proposed
▪ Soil salinity	Section 6.5 and Appendix R
▪ Contamination	Section 6.6 and Appendix E

Director General's Requirements	Location
Visual	
▪ Detailed description (including photomontages) of the measures to be implemented to:	
- Ensure the project has a high design quality and is well presented	Section 4.5, Section 6.11 and Appendix J
- Manage the bulk and scale of the buildings	Section 4.5, Section 6.11 and Appendix J
- Minimise the visual impact of the project, particularly from any nearby residential properties	Section 4.5, Section 6.11 and Appendix J
▪ A detailed landscaping scheme	Section 5.8 and Appendix O
▪ A signage and lighting strategy	Section 5.10
Energy Efficiency	
▪ An assessment of energy use on site	Section 6.12
▪ Measures to be implemented to ensure the proposal is energy efficient	Section 6.12
Air Quality and Odour	
▪ Details of dust monitoring undertaken during bulk earth works and construction	Section 6.13 and Appendix Q
Hazards	
▪ Storage and use of hazardous materials	Section 5.9
▪ Fire risk and management	Section 6.9 and Appendix G
Waste	
▪ During construction and operation	Section 5.9, and Section 6.13
Consultation	Section 6.14

6.2 Compliance with EPIs

A detailed assessment of the proposal's compliance with the relevant provisions of the WSEA SEPP is provided at **Appendix H**. In summary the proposal is consistent with the WSEA SEPP in the following ways:

- The development complies with the prescribed zoning of the land (See **Figure 34**);
- The proposed road linkages are consistent with the RTA's Erskine Park Link Road design and the Regional Road design contained in the WSEA SEPP;
- The Concept Plan establishes appropriate development principles for the site which will ensure the development occurs in a logical, environmentally sensitive and cost-effective manner; and
- The proposal conserves and rehabilitates areas that have high bio-diversity value.

Design guidelines have been prepared for the precinct which incorporate the relevant provisions of the Blacktown DCP. An assessment of the proposals compliance with the Blacktown DCP is provided at **Appendix H**.

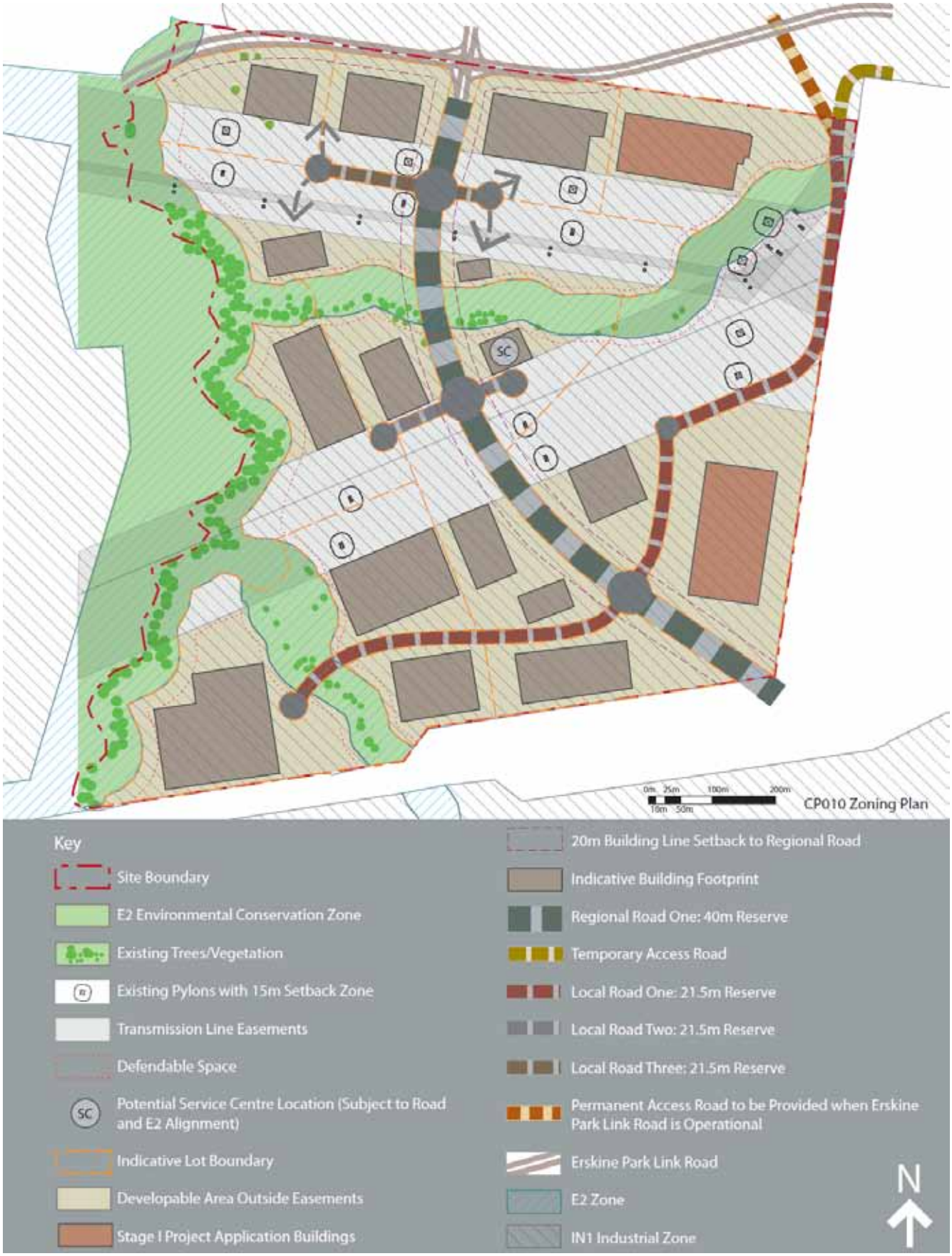

Figure 34 – Concept Plan with zoning overlayed

6.3 Stormwater Management and Flooding Assessment

Brown Consulting Engineers has prepared a Stormwater Management and Trunk Drainage Strategy (see **Appendix Q**) for the Precinct as described below.

6.3.1 Flood Assessment

Ropes Creek Catchment & Existing Flood Extents

The Ropes Creek Employment Precinct is located within the Ropes Creek Catchment. Ropes Creek is a tributary of South Creek which forms part of the Nepean River System. Ropes Creek flows in a northerly direction and has a catchment of 2122hectares at the location of the proposed Employment Precinct.

Using the SOBEK hydraulic modelling program, Brown Consulting Engineers were able to determine the existing 100 year flood extents of the tributaries within the proposed Employment Precinct. The 100 year ARI flood levels vary from RL57m AHD in the location of the existing farm dam to RL48mAHD at the downstream boundary of the site. The 100 year flood extent is shown in **Figure 35** and the preliminary flood hazard is shown in **Figure 36**.

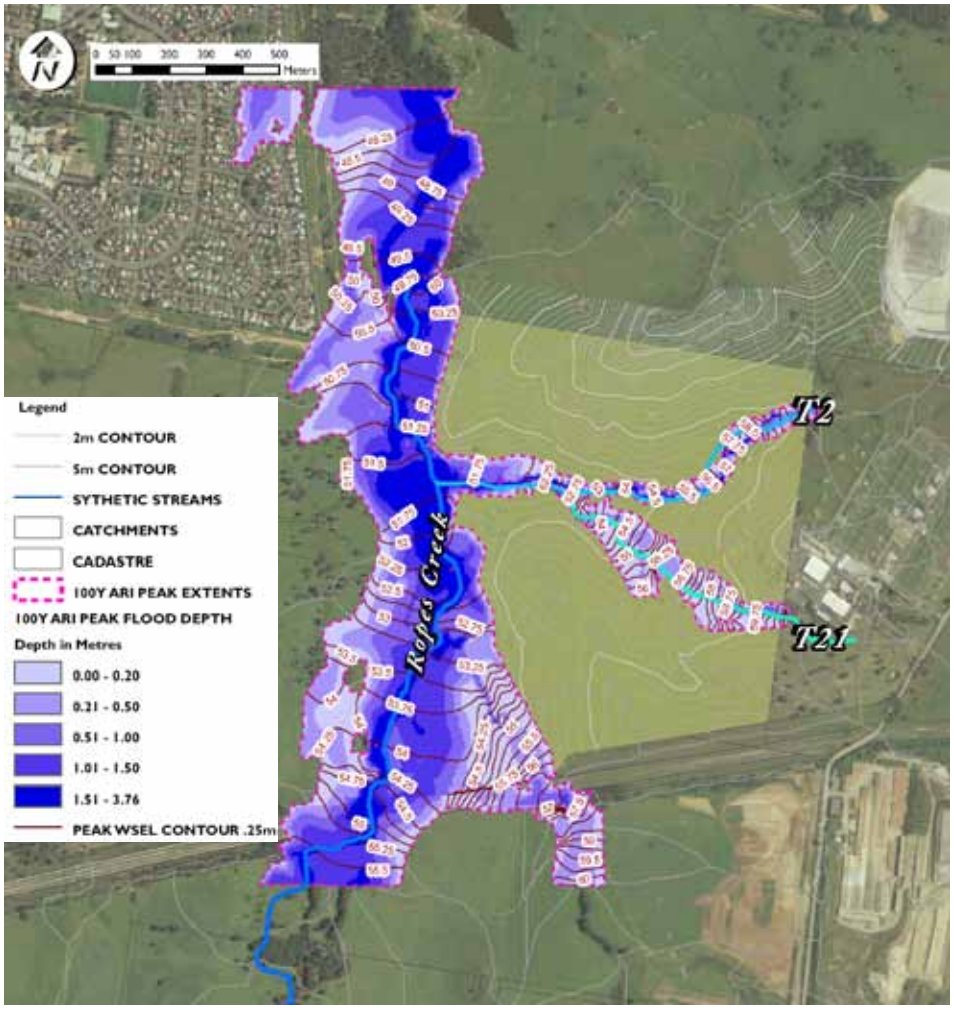

Figure 35 - 100 Year ARI Peak Flood Extents Existing Conditions
Source: Brown Consulting Engineers

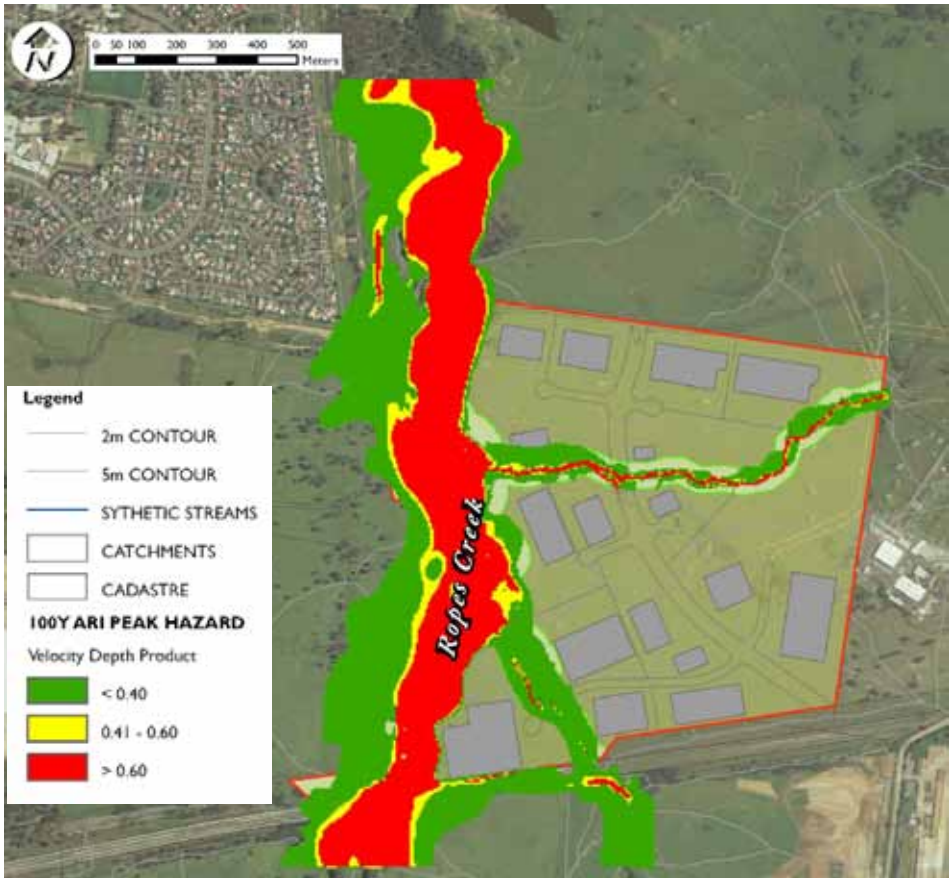

Figure 36 - 100 Year ARI Peak Hazard Existing Conditions
Source: Brown Consulting Engineers

Preliminary Developed Flood Extents

Following the analysis of the existing flood conditions, Brown Consulting Engineers undertook an analysis of the proposed concept plan. The results of the analysis are shown in **Figures 37** and **38** and demonstrate that all of the proposed lots are capable of accommodating development above the 1 in 100 year ARI.

Brown Consulting Engineers has recommended that all of the proposed floor levels of the warehouse buildings should be a minimum of 500mm above the 100 year ARI flood level. All of the proposed roads will be above the 100 year ARI level.

Flow Rates

Flow rates for the existing and proposed conditions were analysed by Brown Consulting. Storm durations from 5 minutes to 12 hours were analysed, with the total runoff from the Ropes Creek Employment Precinct for the 20 year and 100 year recurrence interval presented.

The results of the assessment show that detention will be required to bring the post development flows to pre development flows. A commitment has been made which requires future applications to demonstrate that flow rates will be the same or less than that currently existing, see **Section 7** of this report.

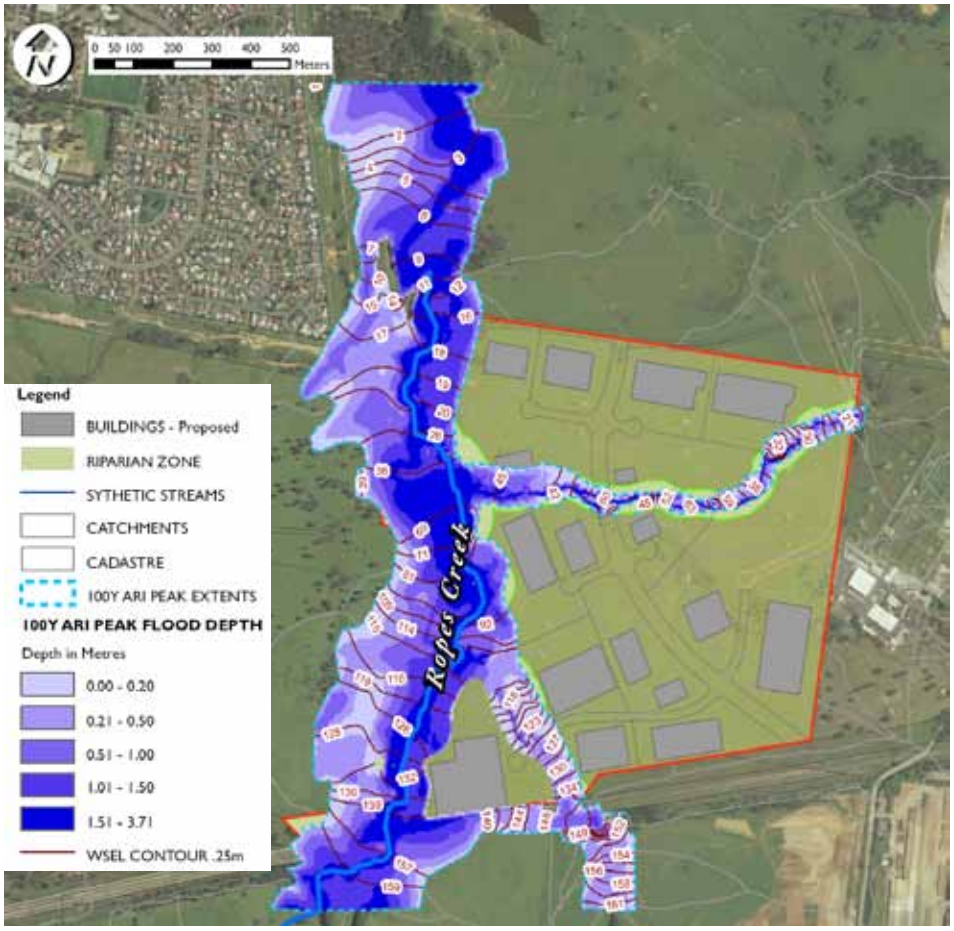

Figure 37 - 100 Year ARI Peak Flood Extents Proposed Conditions
Source: Brown Consulting Engineers

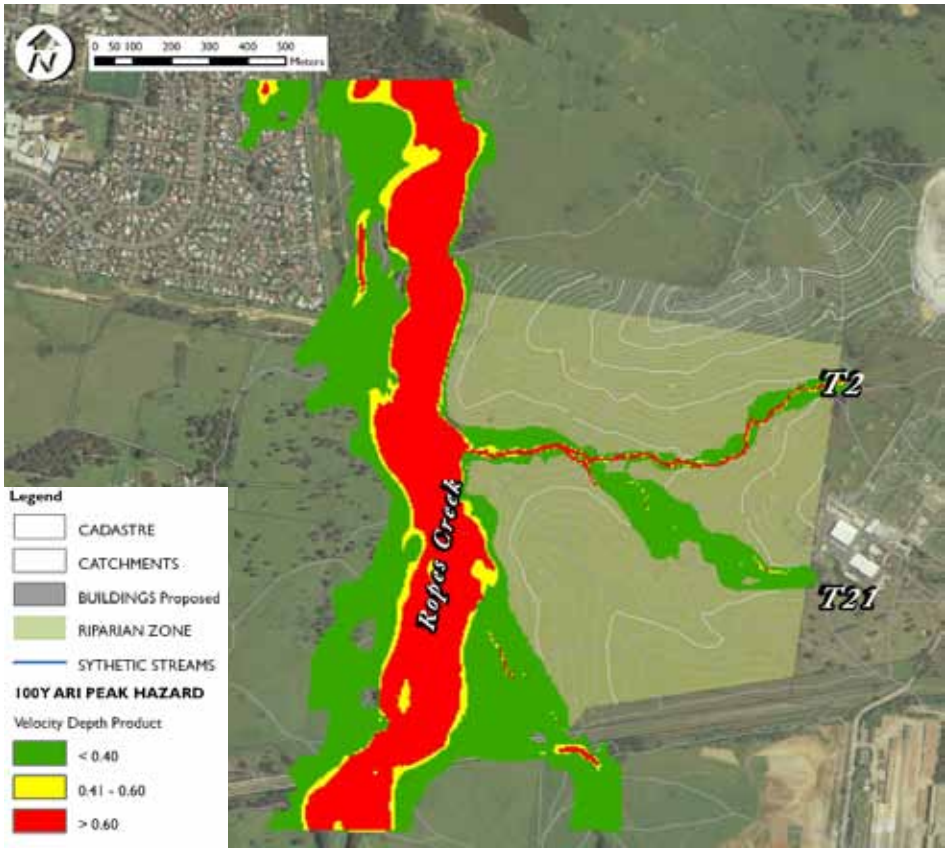

Figure 38 - 100 Year ARI Peak Hazard Proposed Conditions
Source: Brown Consulting Engineers

6.3.2 Stormwater Management

Lot Drainage

Runoff from the development area for storms up to the 20 year ARI will be collected by the following systems:

- For the car and truck parking/ manoeuvring areas, a combination pit and pipe and swale system discharging to a number of bioretention basins around the site. This water is then discharged into existing drainage lines.
- The roof water will be directed to rainwater harvesting tanks, to detention basins and from there will be discharged into existing drainage lines.

Trunk Drainage Design

Figure 38 shows the preliminary basin locations and stormwater masterplan for the Ropes Creek Employment Precinct which will manage 100 year ARI flows to pre-development rates from the catchment, thereby ensuring no increase in peak flows at Ropes Creek upstream or downstream of the Precinct.

Five detention basins are proposed within the precinct which will collect stormwater flows from collection areas (also shown in **Figure 39**). The basins will be designed with a bioretention system in the base, and with extended detention above. Gross Pollutant Traps (GPTs) will be installed at the inlets of the detention basins for litter control. The outlet of the basins will be sized to meet Blacktown City Council's current design requirements of attenuating the 100 year ARI flows.

Since the preparation of the stormwater management strategy, Blacktown Council has developed new guidelines which require the stormwater management facilities to be located on privately owned lots and not on a regional basis as is currently proposed for the Ropes Creek Precinct. Whilst the design can be amended to reflect Councils new guidelines, Browns are of the opinion that the management system proposed would deliver a better outcome due to the following aspects which detract from individual onsite detention:

- The performance of the stormwater system is dependent upon adequate maintenance of the facilities by landowners and research has shown that this is not effective; and
- On lot facilities do not allow for the management of road runoff.

The Proponent would therefore welcome the opportunity to discuss this issue further with the Department and Council to develop the best stormwater management outcome for the site.

Figure 39 – Stormwater Masterplan and preliminary basin locations
Source: Brown Consulting Engineers

Water Quality

Stormwater is proposed to be managed through the installation of GPTs and bioretention basins on the site. Each Project Application will need to demonstrate compliance with the targets provided in **Table 2**.

Table 2 – Water Quality Targets for the Precinct

Water Quality Pollutant Removal	Target (%)
Gross Pollutants	90
Total Suspended Solids	85
Total Phosphorous	65
Total Nitrogen	45

Source: Brown Consulting Engineers

Stage 1 Project Application

The following drainage infrastructure will be constructed as part of the Stage 1 works:

- A 3600 x 1400 culvert under Local Road 1 where it crosses the E2 zone;
- A 1800mm x 1000mm culvert from the eastern retaining wall of Building 1 through the site to the cul-de-sac of Local Road 1 where a swale will be provided leading to the existing dam on the site;
- Construction of Detention Basin 1 (Existing onsite dam):
  - Total area 2,300m^2
  - Total bio-retention area 1,400m^2
  - Total volume 1,100m^3

- Construction of Detention Basin 4:
  - Total area 1,600m^2
  - Total bio-retention area 1,000m^2
  - Total volume 700m^3

With the above infrastructure in place, the proposed development will manage 100 year ARI flows to pre-development rates or less. Brown Consulting also advise that installation of the bio-retention filter media, as outlined above will also ensure that the treated water meets the required GCC water quality requirements (listed in **Table 2** above).

6.4 Traffic and Transport

Halcrow was commissioned to undertake a Traffic Impact Assessment of the proposed development. Halcrow's report is included at **Appendix I** and is summarised below.

Site Access

Access to the site will be obtained via a temporary road which will be constructed as part of the Stage 1 scope of work and accessed from Old Wallgrove Road (see Section 5.4). This access road will be used until such time as the Erskine Park Link Road is constructed. The road will be constructed to Blacktown Council's road design standards as shown on the Civil drawings at **Appendix N**.

Traffic Generation

During the detailed planning for the Erskine Park Link Road the RTA produced morning and peak traffic forecasts for use in the determination of intersection capacity needs. Halcrow has used these RTA forecasts for the purposes of formulating traffic forecasts for the proposed development (both Concept Plan and Stage 1 Project Application) – 15 vehicle trips per hectare of developable area per peak hour.

However, Halcrow's survey of the Coles distribution warehouse at Eastern Creek in June 2008 (traffic generation rate of 5.3 – 6.3 vehicles per hectare per hour) and Penrith Council's assessment of development with the Erskine Park Industrial area suggest that the RTA's traffic planning rate may be conservatively high and if so, that the area as planned may have capacity to accommodate more development than the initial expectation.

In determining implications of the Ropes Creek Employment Precinct, Halcrow has assumed the following:

- The site is developed to its full potential; and
- Regional road connections are constructed as shown in **Figure 40**.

Table 3 provides the two-way peak hour traffic volumes.

Table 3 – Future two-way peak hour traffic volumes

Link	Future Peak Hour (total) Traffic Flows (vph)	Future Daily (total) Traffic Flows (vpd)	Future Daily (Commercial) Traffic Flows (vph)	Future Peak Hour (Commercial) Traffic Flows (vph)
SEPP Road (between Erskine Park Link Road and Road Three)	1217	8196	14	50
SEPP Road (between Road Three and Road Two)	952	6412	111	39
SEPP Road (Road Two and Road One)	802	5401	93	33
SEPP Road (between Road One and Old Walgrove Road)	351	2364	41	14
Road One (between SEPP Road and Link Road)	31	209	4	1

Source: Halcrow

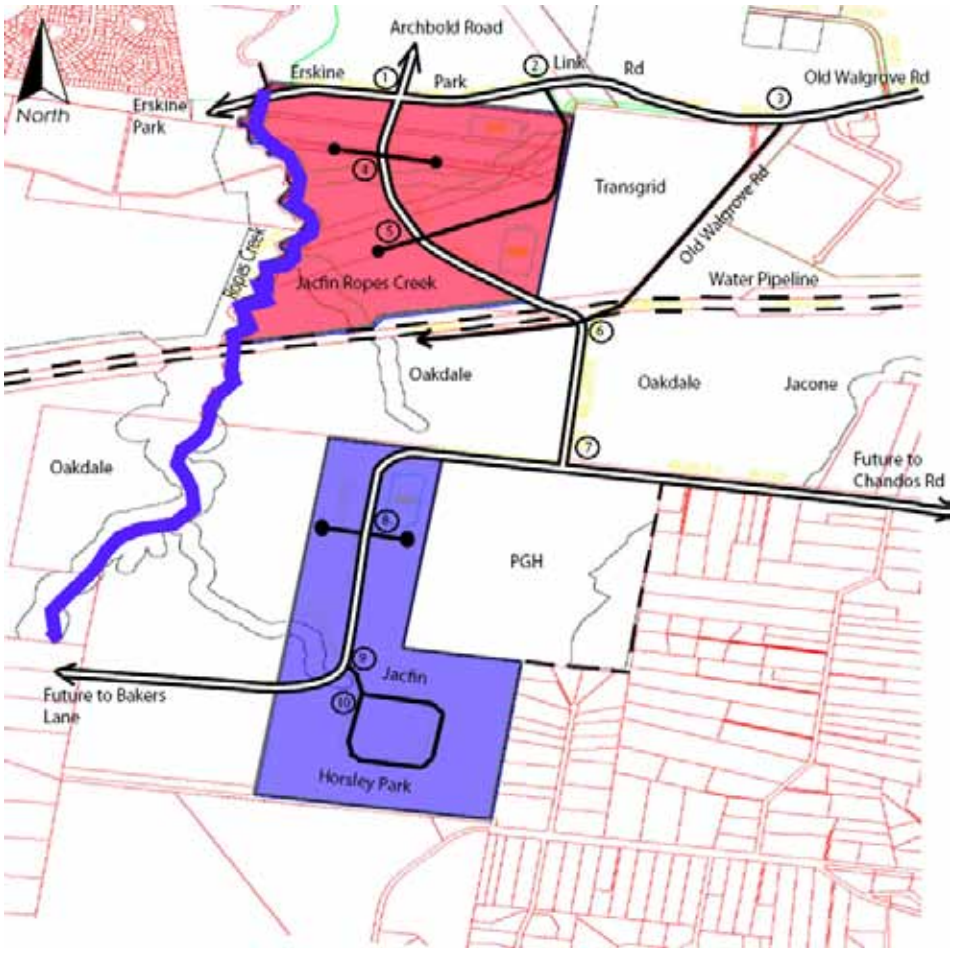

Figure 40 – Regional road network
Source: Halcrow

The RTA's Guide to Traffic Generating Development provides the following Level of Service (LOS) criteria for development (**Table 4**).

Table 4 - Level of Service (LOS) criteria

Level of Service	Average Delay per Vehicle (secs/veh)	Signals and Roundabouts	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays; Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Extra capacity required	Extreme delay, traffic signals or other major treatment required

Source: Halcrow

Using the SIDRA intersection analysis program, Halcrow was able to determine the intersection requirements and performance. **Table 5** provides the result of the analysis and shows that the proposed roundabout intersections will operate at a good to satisfactory level and that the proposed road network is capable of accommodating both internally generated and through traffic. Halcrow has compared the operation of the internal intersections and found that both traffic signals and roundabouts would operate satisfactorily, however they recommend that roundabouts be implemented as these would afford more flexibility in terms of traffic access, have reduced ongoing operating costs and would moderate traffic speeds.

Table 5 – Intersection Analysis Results

Intersection	Control	Morning Peak		Evening Peak	
		Av Delay	LOS	Av Delay	LOS
Link Road / Old Wallgrove	Signals	14	A	49	D
Link Road / Eastern Access	Signals	13	A	20	B
Link Road / Archbold Extn. Access	Signals	39	C	56	D
Old Walgrove Road / Roberts Road / Temporary Access	Priority	43	D	17	B
North Internal Intersection	Roundabout	14	A	12	A
Middle Internal Intersection	Roundabout	14	A	12	A
South Internal Intersection	Roundabout	11	A	12	A

Source: Halcrow

Construction Traffic

It is anticipated that typical daily flows during construction would be similar to if not less than operational traffic generation of the proposed development.

Peak construction traffic generation will occur during concrete pours and bulkearthworks should material be required to be removed or imported to the site. At these periods it is anticipated that some 20 trips per hour (10 in / 10 out) would occur. These details would be confirmed and assessed as part of a Construction Traffic Management Plan (see **Section 6.13**).

Parking

Parking requirements for each site will be highly dependent on the number of employees and on the nature of the operation of the tenant. In view of this, it is proposed to allow the provision of a proportion of spaces as sealed parking and designate an undeveloped area of the site in which additional parking could be provided if there was a demonstrated need.

In determining the appropriate parking provision rate for the site, Halcrow has considered the rates prescribed by the RTA, Blacktown Council and Penrith Council all of which are significantly different and reflect the wide variety of parking demands that industrial and warehouse developments can exhibit.

In light of the above, Halcrow has proposed the following rates:

- Office: 1/40m^2 GFA
- Factory: 1/100 GFA first 100m^2 then 1/200m^2 GFA (includes office component)
- Warehouse: 1/300m^2 GFA + 1/40m^2 office

Applications will also nominate overflow parking to allow increased parking supply if required, which will increase rates to:

- Factory: 1.3/100m^2 GFA
- Warehouse: 1/200m^2 GFA + 1/40m^2 GFA for office

The above rates are similar to those which have been adopted at the nearby Oakdale development and other warehousing developments recently approved by the Minister for Planning.

Sustainable Transport

Regional Road 1 and the proposed temporary access road will be suitable for use by buses. The roads will allow buses to circulate within the site or to pass through the site to/from the land south of the pipeline. Bus shelters will be provided at suitable locations.

It is proposed to provide a shared cycle/pedestrian path on the verge on one side of Regional Road 1 and Local Road 1. These will connect pedestrians and cyclists to the proposed cycleway along the Erskine Park Link Road and to future cycle and pedestrian routes in the Horsley Park area once developed.

Within each warehouse development shower and change facilities will be provided for staff. A provision rate of 1 bicycle parking space per 10 cars spaces is proposed.

Initially while traffic volumes on the access road are low, bicycles will share the road carriageway with other traffic. In future a shared cycleway will be constructed along the verge once peak hourly traffic volumes are forecast to reach about 300 vehicles per hour.

Stage 1 Project Application

Halcrow has reviewed the proposed design and layout of warehouse buildings 1 and 2. They consider that the proposed access and internal road layout comply with all relevant standards and note in particular that:

- The proposed road reserve would accommodate a 13.5 metre wide road pavement which will facilitate satisfactory two way vehicle access (including articulated vehicles) to and from the sites.
- The internal design complies with the requirements of AS 2890.1, Off-street car parking and AS 2890.2, Off-street commercial vehicle facilities.

- Both sites incorporate a one-way clockwise flow-through system which is safe and efficient and provides sufficient clearances to accommodate a B-Double articulated truck operating with a 12.5 metre radius turn.
- Extensive internal queuing capacity is provided for both sites.
- In accordance with AS 2890.2, cars and trucks are provided with separate access driveways and are separated internally, providing maximum safety for both car drivers and pedestrians.
- Available sight distances at all driveways will be satisfactory, subject to the road verge being landscaped with appropriate species.
- The parking bays and aisles comply with the requirements of AS 2890.1 and 2890.6, Off-street parking for people with disabilities.

With regard to traffic generation, the two warehouses together are expected to generate 186 trips per hour during the morning or evening peak periods. Halcrow notes that the local road that will serve the two sites will easily be able to accommodate the relatively low traffic volume. Halcrow considers that the volume is sufficiently low that proposed traffic signals at the intersection of the local road with Erskine Park Link Road would not be needed at this initial stage of the development.

The parking proposed is consistent with the rates proposed as part of the Concept Plan application as demonstrated in **Table 6**. Halcrow considers that the parking spaces provided for both of the warehouse buildings will more than adequately accommodate the parking demands of the proposed development for both staff and visitors.

Table 6 – Stage 1 Project Application Parking Provision Rates

Use	Rate	Warehouse 1		Warehouse 2	
		required	provided	required	provided
Warehouse	1/300m² GFA	77	77	54	59
Office	1/40m² GFA	45.5	45	33.8	34
Total		122.5	122	87.8	93
Warehouse (Overflow)	1/200m² GFA	115.5	115	81	84
Office (Overflow)	1/40m² GFA	45.5	44	33.8	34
Total		161	122 +37 = 159	114.8	93 + 25 = 118

Source: Halcrow

6.5 Geotechnical Investigation

Earthworks and Site Preparation - Stage 1 (Buildings 1 and 2)

Earthworks will be required to create level building platforms for Buildings1 and 2. As such, Consulting Earth Scientists Pty Limited (CES) was commissioned to undertake a Preliminary Geotechnical Investigation (**Appendix R**) for Lot 5 DP262213 to provide geotechnical information on the subsurface soil and groundwater conditions, preliminary earthworks and site preparation advice and information on issues such as soil salinity and soil aggressivity.

Fieldwork was undertaken in mid-July 2010 and involved drilling five (5) boreholes on site. Soil samples taken during the fieldwork were analysed by SGS Australia Pty Limited. Ground conditions observed in the boreholes typically comprised topsoils underlain by alluvial and residual soils over shale bedrock of the Wianmatta group. This is summarised in **Table 7**.

Table 7 – Summary of subsurface condition model

Geotechnical Unit	Depth to base of unit (mbgl)	Thickness	Description
1. Topsoil		0.1 to 0.2	Clay
2. Alluvium	0.4 to 2.7	0.4 to 2.55	Clay or Sandy Clay
3. Residual Soil	1.2 to 5.9	0.4 to 3.2	Sandy Clay or Gravelly Clay
4a.Weathered Shale	2.6 to 7.55	1 to 2	Interbedded Shale and Sandstone
4b. Moderately Weathered to Fresh Sandstone and Shale	Drilled to a maximum depth 14.7	-	Interbedded Shale and Sandstone
4c. Volcanic Breccia	11.2	2.3	Volcanic Breccia

Source: Consulting Earth Scientists

Once vegetation and topsoil are removed for construction then Units 2 (Alluvium) and 3 (Residual Soils) will be exposed, which will have poor trafficabilty characteristics when wet. The mitigation measures for the Concept Plan site and the Stage 1 building sites are discussed below.

Excavation

Excavations into Unit 2 and Unit 3 should stand at temporary slopes of 1.5H:1V. CES advises that permanent batter slopes will begin to deteriorate if left exposed and should be treated against erosion using shotcrete, vegetation, geotextile or similar treatments to prevent this. Where there is insufficient area available to form unsupported batters, Units 2 and 3 will require support and/or retaining walls. Permanent batter slopes in Units 4b and 4d may be constructed vertically but should be assessed by a geotechnical practitioner for stability. These faces may require localised application of shotcrete, rock bolts or other stabilisation as recommended.

Pavement Bearing

Unit 2 and Unit 3 soils have a medium to high plasticity and are considered a poor bearing stratum for pavements without modification. CES recommends that either pavement bearing capacity could be improved through either subgrade improvement through lime stabilisation or subgrade replacement at suitable levels for pavement bearing.

Groundwater issues

Groundwater was encountered in all boreholes during testing between levels of 2.1 metres below ground level (mbgl) and 5.3mbgl at the interfaces between Units 2 and 3 and Units 3 and 4. As such, it is expected that groundwater will be encountered in excavations below 2mbgl, particularly after heavy rain periods. In cuttings not significantly below groundwater level seepage is expected to be controllable by conventional sump drainage at the toe of excavations. This drainage would be connected to the site building drainage.

Foundations

Preliminary allowable bearing pressures have been calculated for pad and strip footings and it is noted that Unit 2 and Unit 3 soils have a significant potential for volume change on wetting and drying which may influence the suitability of this type of footing. Open bored piles could be adopted where the depth to rock exceeds the practical excavation depths for strip and pad footings, and it is expected that appropriate capacity piling rigs should be able to penetrate to Unit 4b (Moderately Weathered Rock). Such footings may require temporary liners through Units 2 and Unit 3 if groundwater seepage occurs.

Slab on ground construction may be used given adequate consideration of Unit 2 and Unit 3 shrinkage and swelling, moisture conditioning and employment of a good quality sub-base of crushed rock.

Soil Dispersion Potential

The results of Emerson classification indicate that Units 2 (Alluvium) and Unit 3 (Residual Soil) are both considered Class 5, and are not anticipated to be dispersive.

Acid Sulphate Soils

The acid sulphate soil field screening indicates that acid sulphate soils are not likely to be present on the site.

Soil Aggressivity

Soil aggressivity testing of Units 2 (Alluvium) and Unit 3 (Residual Soil) found that these soils may be considered non-aggressive to concrete and steel as per AS2159-1995 (Piling- Design and Installation).

Soil Salinity and Sodicity

Field screening for salinity levels within Units 2 and Unit 3 indicate that these soils are typically moderately to slightly saline. One exception was a sample taken from a low lying area of the site which tested to be highly saline, with a low percentage of exchangeable sodium. This finding indicated that problems associated with saline soils may occur within low-lying areas of the site. Saline and Sodic Soils are characterised by slow rates of water infiltration, poor water and nutrient transport within the soil, restricted vegetation growth and severe surface crusting. These effects can be mitigated through a number of measures including minimising stormwater infiltration, use of gypsum or lime, retention of existing vegetation and planting and the provision of damp proof membranes under slabs and foundations.

Once the requirements for the proposed development are defined in subsequent project applications it is recommended that further assessment of the soil in low-lying areas of the site is carried out to assess whether or not a Salinity Management Plan is necessary. Mitigation measures to deal with any saline soils present on the site are outlined in the report and included in the Statement of Commitments at **Section 7**.

Geotechnical Constraints

The results of the geotechnical fieldwork identified the following geotechnical constraints:

- Low California Bearing Ratio (CBR) values for Unit 2 (Alluvium) and Unit 3 (Residual Soils) indicates a poor foundation for roads and pavement, and therefore subgrade improvement such as lime modification or subgrade replacement will be used where necessary to address this.
- Areas of cutting will require drainage at the toe of excavations and connection to the site drainage system;
- Unit 2 (Alluvium) and Unit 3 (Residual Soil) soils indicated a high potential for significant change in moisture content (i.e. reactive soils) however these soils are not considered to be aggressive to concrete or steel as per AS2159-1995 (Piling- Design and Installation).
- There is a possibility of Saline Soils being present in low-lying areas, and mitigation measures to address this are proposed in the report.

Compliance with the recommendations of the CES Geotechnical Investigation Report is ensured through the Statement of Commitments (**Section 7** of this report).

6.6 Contamination Assessment

Consulting Earth Scientists Pty Limited (CES) were commissioned to undertake a Stage 1 Preliminary Site Investigation of Lot 5 DP262213 in order to identify any contaminants present on site and determine whether remediation work is necessary to make the site suitable for the development proposed (see **Appendix E**).

The desktop review for the Stage 1 Preliminary Site Investigation included a review of land title, ownership and Council records, historical aerial photographs, mapping data and the available hydro geological information for the site. This review found that the site has historically been used as grazing land for cattle and horses since the early 1900's, with no sheep, stock drips or crops present on the site at any time. Historical records obtained from Blacktown City Council and the DECCW show that there have been no records of site contamination or acid sulphate soils affecting the site. As such it was concluded that the most likely source of any possible contaminants was likely to have been from application of pesticides/herbicides to livestock.

Fieldwork involved sampling of soil from twenty-five (25) grid locations and four (4) specifically targeted locations across the site, with samples taken from between 0.1 to 0.5 mbgl. These samples were analysed by Envirolab Service Pty Ltd and Australian Laboratory Services Pty Ltd. Results found that levels of potential contaminants including heavy metals, hydrocarbon compounds (TPH, BTEX and PAH), pesticides (OCP), Polychlorinated Biphenyls (PCB) and asbestos in each of the samples were below the adopted site assessment criteria for commercial/industrial land use. Based on observations of site topography and field investigation results, CES found that the presence of significant volumes of fill was considered unlikely.

The CES Stage 1 Preliminary Site Investigation found that with regard to soil contamination, the site is suitable for the proposed industrial/commercial development without need for any remediation works to be carried out.

6.7 Heritage

Godden MacKay Logan (GML) has prepared an Heritage Impact Assessment for the proposed project. Their report is included at **Appendix F** and is summarised below.

There assessment has been carried out in accordance with the following guidelines:

- DECCW Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation;
- NSW Heritage Manual; and
- Burra Charter.

6.7.1 Indigenous Heritage Assessment

Consultation

Under the Aboriginal Land Rights Act 1983, the subject land falls within the administrative boundaries of Deerubbin Local Aboriginal Land Council (DLALC). GML has consulted with DLALC during the preparation of the report and also invited the organisation to attend the field survey.

GML has undertaken the initial consultation stages, including the placement of an advertisement on 28 July in the Koori Mail inviting stakeholders to register their interest and sending letters of invitation to the relevant bodies. To date the following organisations have registered their interest:

- Deerubbin Local Aboriginal Land Council (DLALC);
- Darug Aboriginal Cultural Heritage Assessments (DACHA);
- Darug Land Observations (DLO);
- Darug Aboriginal Landcare Incorporated (DALI); and
- Yarrawalk.

Copies of the Heritage Impact Assessment have been sent to the above organisations for comment and amendments to the assessment report will be made as relevant and submitted to the Department of Planning as part of the response to submissions / Preferred Project Report.

Desktop Review

A desktop review of the Aboriginal Heritage Information Management System (AHIMS) revealed that the site contains six previously recorded sites (see **Figure 41**) comprising four artefact scatters, one isolated artefact and one Potential Archaeological Deposit (PAD).

Within a 4km x 4km search of the subject land, 46 Aboriginal sites were identified and in a 10km x 10km search area approximately 300 Aboriginal sites were identified. Many of these sites have been recorded as a response to the development of the surrounding area for residential, industrial and road projects.

In carrying out their desktop review GML also had regard to various archaeological assessments that have previously been prepared for sites in the nearby area. The outcomes of theses reports were used to inform the field investigations undertaken and also the recommendations of the assessment.

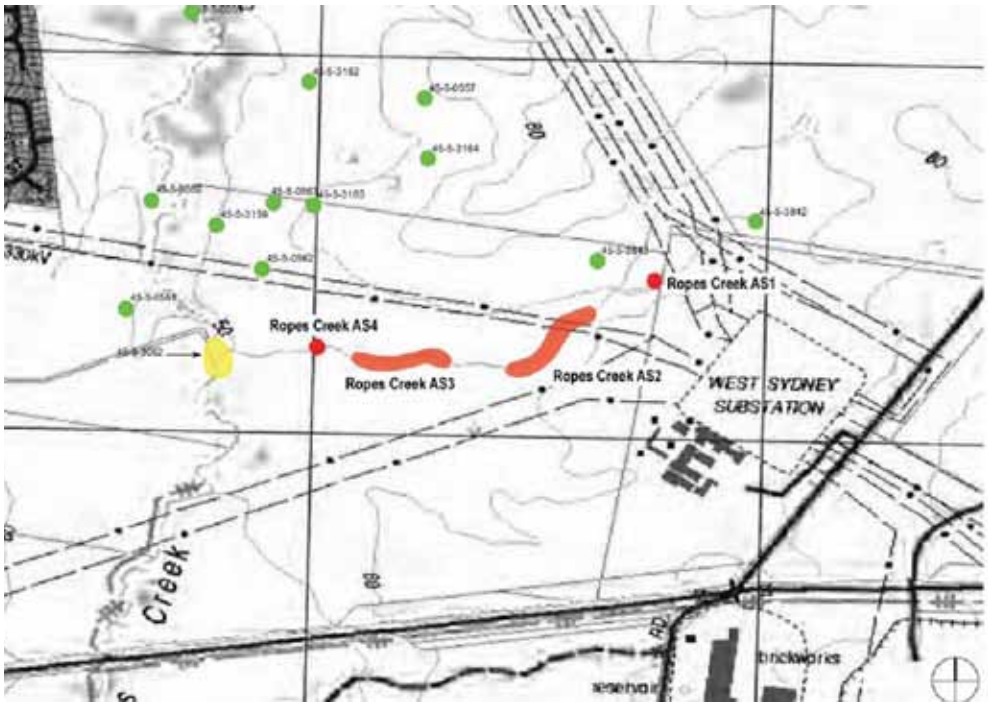

Figure 41 – Location of previously recorded sites as mapped from AHIMS
Source: Godden Mackay Logan

Field Survey

Standard archaeological field survey techniques were employed during the site survey. Due to the dense grass cover over the fields a pedestrian survey was undertaken. The field team began with attempting to relocate previously recorded sites and then focussed their attention on drainage lines, creeks, slopes and hilltops where artefacts would be more likely to occur, and areas of exposure such as dam banks, vehicle and animal tracks.

The land was surveyed in the following five areas:

- Ropes Creek corridor;
- Other creek lines on the property;
- Northern boundary / ridge line in the north of the precinct ;
- Middle section of the site between the E2 zoned creeklines; and
- Southern section of the site, south of the southern E2 creekline.

The results of the field investigation are summarised in **Table 8**. GML considers that due to the existence of the previous sites and artefacts located during the investigation the precinct is sensitive for Aboriginal archaeological material and more artefacts may exist on the surface or in subsurface deposits within the site.

Table 8 – Results of heritage field survey

Survey Area	No. of previously recorded sites	Number of new sites	Potential for Archaeological Deposits (PADs)
1	2 – none were relocated	None	Creekline, floodplain and surrounding lower slopes have high potential for PADs
2	1 – not relocated	18 stone artefacts, including silcrete, chert and basalt artefacts, were located on the eroded banks along the length of the largest creekline.	Creekline, floodplain and surrounding lower slopes have high potential for PADs
3	3 – 2 were relocated	None	Moderate potential for PADs due to low ground surface visibility and proximity to permanent water.
4	None	None	Low to moderate potential for PADs given past land disturbance in this unit.
5	None	None	Moderate potential for PADs given past land disturbance in this unit.

Source: GML

6.7.2 Concept Plan Assessment and Recommendations

GML recommends that Indigenous community consultation should continue in accordance with the document `Aboriginal cultural heritage consultation requirements for proponents 2010' produced by DECCW. The Heritage Impact Statement has been referred to the relevant organisations who have registered their interest in participating in the assessment process and additional surveys will be undertaken if required.

The significance of Aboriginal cultural heritage is generally assessed under four criteria commonly applied in Aboriginal cultural heritage management. These criteria are based primarily on the standards outlined in the ICOMOS Burra Charter, which is generally considered to set best practice standards for the management and conservation of places of cultural significance within Australia and also in accordance with the National Parks and Wildlife Service 'Aboriginal

Cultural Heritage Standards and Guidelines Kit'. The four criteria are discussed further below. It is noted that this is a preliminary significance assessment which will be finalised once the consultation process has been completed.

- Cultural value:

Unmodified natural features in the landscape can signify sacred sites/places of significance. As such they are archaeologically invisible and can only be identified with the aid of Aboriginal interpretation. If such sites are still remembered by local Aboriginal communities, they hold particular cultural significance to Aboriginal people. Furthermore, sites of significance are not restricted to the period prior to contact with Europeans. Often events related to the contact period may be important to the local Aboriginal community. If these events relate to a specific place in the landscape, then that place (i.e. the site) may become sacred or highly significant to the local Aboriginal community.

Until this process has occurred, GML cannot determine the cultural value of the site. The assessment report has been sent to the Aboriginal groups which registered interest in the Aboriginal Assessment of the site. Any response received as part of the consultation process will be submitted as part of a response to submissions / Preferred Project Report.

- Scientific / archaeological / research value:

The artefact scatters previously identified on the subject land are described on the site cards as containing few artefacts and are of generally low integrity due to previous disturbance and erosion. The scientific significance of the PAD is currently unknown without further investigation. The four newly recorded artefact scatter sites (Ropes Creek AS 1-4) located as part of the current assessment were found eroding out of the natural drainage line bank and are generally considered to have low integrity and low research potential. These artefacts may, however, represent larger deposits of buried archaeological material; however this cannot be ascertained without further investigation.

- Aesthetic value:

The Aboriginal Cultural Heritage Standards and Guidelines Kit recommends that archaeologists do not make an aesthetic significance judgement of Aboriginal sites or places because of the subjective nature of this type of assessment. As such, no assessment was made of the sites under this criterion.

- Educational value:

The educational value of the sites is considered low, as they are not considered to hold much value for educational or interpretative purposes.

Development of the Ropes Creek Employment Precinct has the potential to impact on the artefacts located during the field survey and also the previously recorded sites. In light of this, GML recommends that the areas of archaeological potential be managed by either:

- the preparation of an Aboriginal Heritage Management Plan (AHMP) prior to the commencement of future development within the precinct beyond the Stage 1 Project Application area; or
- the undertaking of an Aboriginal Heritage Impact Assessment on a project by project basis prior to the commencement of each project.

A commitment regarding the above recommendations is made in the Statement of Commitments at **Section 7** of this report.

6.7.3 Stage 1 Project Application Assessment and Recommendations

Building 1

This building is to be located in an area that has been nominated as having low to moderate archaeological potential. GML recommends that a representative from the local Aboriginal community should monitor initial earthworks at this location down to artefactually sterile layers.

Building 2

This building will be positioned on the previously recorded site which has been found to be disturbed through the ploughing and mulching of the vegetation in this location. GML recommends that permission be sought to disturb / destroy the site given its low integrity and low scientific value.

To mitigate this impact, GML recommends that the artefacts should be collected and initial earthworks at this location be monitored by a representative from the local Aboriginal community down to artefactually sterile layers. Agreement should also be reached with the local Aboriginal community to find a suitable safe location for the storage of the artefact.

If other Aboriginal objects are located during monitor works, GML recommends that works cease and that a suitably qualified archaeologist be called in to assess and document the finds. A commitment to this effect has been made in the Statement of Commitments at **Section 7** of this report.

6.7.4 Non-Indigenous Heritage Assessment

A desktop review of Council's records and the State Heritage Register has found that there are no listed heritage items on the site and that the site is not located within a Conservation Area.

GML undertook a desktop review and a site visit to determine whether the site presented any potential non-indigenous heritage significance. The study revealed:

- There are no standing structures or landscape features which would be considered to have heritage significance;
- The limited occupation and development on the site within its non-indigenous history is unlikely to have resulted in any substantial archaeological evidence that could be associated with specific activities or phases of the site's history; and
- The site is considered to have little or no historical archaeological potential, other than for generic or incidental evidence associated with its agricultural use, due to the historic use of the site for stock grazing and the fact that there is little recorded development on the site.

Given the above, GML considers it unlikely that the site contains any archaeological evidence relating to non-Indigenous occupation. If such evidence is discovered during site works, the Proponent will notify the Department of Planning.

6.8 Biodiversity, Flora and Fauna

In order to determine if the site contained any significant flora or fauna and if any specific mitigation measures are required in terms of biodiversity, Whelans Insites was commissioned to undertake a Flora and Fauna Impact Assessment (**Appendix D**). In preparing their report, Whelans Insites undertook a dedicated survey of the subject site for flora and fauna on 23rd July 2010. Whelans Insites has also referred to the results of previous investigations of the site that they have undertaken in 2008 and 2010 as well as reports which have been prepared for various sites in the general vicinity of the Ropes Creek Precinct.

Existing Vegetation

The Ropes Creek Precinct supports four vegetation types:

- Community 1 – Low closed grassland (Pasture), which occupies approximately 93% of the site;
- Community 2 – Disturbed and degraded riparian woodland in the E2 zones, which is confined to Ropes Creek and the lower (eastern) part of the northern drainage line and upper (southern) part of the south-western drainage line on the site (occupying a total of 1.64ha));
- Community 3 – Highly degraded drainage lines, along the upper part of the northern drainage line and along the small drainage line in the south-eastern part of the site (occupying a total of 2.69ha); and
- Community 4 – Artificial freshwater wetland, which occupies the three farm dams in the central and south-western parts of the site (occupying a total of 0.7ha).

With regard to Community 2, Whelans Insites noted that the vegetation within the E2 zones running east/west across the site support vegetation bands that are narrow, discontinuous and highly degraded. The canopies of this vegetation are sparse due to historic clearing and grazing and has a foliage cover of <10%. As such Whelans Insites consider that the vegetation is of little ecological functionality or value and that their inclusion in the E2 zone is not warranted.

The vegetation along these drainage lines was mapped by The National Parks and Wildlife Service (NPWS) as being Alluvial Woodland. Whelans Insites notes that the vegetation in parts exhibits some of the floristic characteristics of the Endangered Ecologically Community (EEC) known as River-flat Eucalypt Forest on Coastal Floodplains (REFCF) and/or Swamp Oak Floodplain Forest (SOFF) but do not consider it to be part of either of those EECs as the site is not a "coastal" floodplain. Notwithstanding the disagreement regarding the classification of this vegetation, the proposal will retain the vegetation as it is located within the E2 zone.

With regards to the small area of Shale Plains Woodland in the north-western corner of the precinct (as depicted by the NPWS vegetation mapping) Whelans Insites disagrees that this constitutes Cumberland Plain Woodland (CPW), which is an EEC, because of the levels of disturbance, lack of native ground cover layer and the lack of an ecosystem.

Whelans Insites considers that the vegetation along Ropes Creek and along the tributary in the south-western corner of the site comprise disturbed examples of Alluvial Woodland (EEC) with several variations. Parts of the riparian woodland along Ropes Creek have been modified and subject to ongoing lopping and maintenance beneath the electricity transmission line, but the remainder of the riparian woodland has a tree canopy of 10-20m in height and variable understorey and shrub layer, although somewhat weed infested.

Whelans Insites notes that the vegetation which could be considered an EEC is predominantly located within the E2 zoned land and is to be retained under the current proposal.

No threatened flora species were recorded on the site and there are no relevant `endangered populations' of any plant species in the locality.

Fauna and Fauna Habitat

As the site is predominantly cleared, it is a small section of disturbed riparian woodland which presents a potential habitat.

The farm dams provide some habitat opportunities for wetland, wading and aquatic species, such as the Pacific Black Duck, Maned Duck, Hoary-headed Grebe, Dusky Moorhen and Purple Swamphen. These are widely distributed, and common to abundant, species regularly recorded through the Sydney Basin.

The farm dams also provide habitat opportunities for some frog species such as the Common Eastern Froglet, the Striped Marsh Frog and Peron's Tree Frog.

There are a few hollow-bearing trees located within the paddocks in the north-western corner of the site which provide potential habitat for a number of native fauna species, including microchiopteran bats.

Whilst on site, Whelans Insites identified the following fauna:

- 38 native fauna species;
- 36 bird species, or which 3 are introduced pest species;
- 2 amphibian species; and
- 2 reptile species, although it is likely a number of reptile species would occur on occasions during appropriate seasons.

No threatened fauna species have been recorded on the site or on adjacent lands. Whelans Insites believes that this is because the site does not provide significant habitat or resources for any threatened fauna species due to the highly disturbed condition of the vegetation on the site.

Impact Assessment and Recommendations

Whelans Insites considers that the proposed development is unlikely to generate adverse impacts of any relevance or concern. This is because areas of potential `bio-diversity value' are located within the E2 zone which will be retained and protected under the current scheme. The existing farm dams on the site will be reconstructed and new habitats will be formed with the introduction of addition bioretention dams on the site. The proposed development is thus likely to improve `biodiversity values' at this location.

The proposal will result in the loss of a few hollow bearing trees in the north-west corner of the site. In order to mitigate this impact Whelans Insites has recommended that a Hollow-bearing Tree Protocol is implemented which will inert alia salvage tree-hollows from hollow bearing trees that need to be removed and will relocate such salvaged tree-hollows into the E2 conservation zoned land.

In order to ensure the proposal has a positive impact on the biodiversity value of the site, Whelans Insites has made the following recommendations:

- the management of stormwater discharge rates and water quality from the development area, both during construction activities and following completion and occupation of the site, according to current 'best practice' principles (as proposed by Brown Consulting 2010);
- the implementation of 'Water Sensitive Urban Design' principles in the development, including the capture and re-use of stormwater runoff, the treatment of water to be discharged from the development, and minimisation of the use of potable water for other purposes;

- the use of sediment fences and other appropriate control measures during construction activities to manage erosion and sediment discharge or the discharge of other contaminants;
- the use of detention basins within the proposed development to provide supplementary habitat in addition to that in the reconstructed the artificial farm dams which need to be removed by inter alia:
  - the design of features to ensure that some or all of the detention basins remain as permanent ponds (other perhaps than during major droughts);
  - construction of the detention basins with varying depths and substrate slopes to provide a variety of aquatic and sub-aquatic features;
  - the planting of detention basins with native sedge, reed and rush species to provide habitat and shelter for wetland birds and amphibians; and
  - the provision of relevant adjacent features (such as logs and rock piles) to provide resources for amphibians within and adjacent to the detention basins;
- the implementation of a management regime during the construction process to ensure that no waste (including building rubble, garbage, contaminants, fuels, oils, paints or other chemicals) is discharged from the construction area, and that all such waste and contaminants are contained within the construction footprint and are appropriately managed;
- the retention of the vegetation in the E2 Conservation Zone to allow natural regeneration without the adverse impact of grazing cattle in order to facilitate the long-term viability of native flora and fauna which do or could utilise the site; and
- implementation of a Hollow-bearing Tree Protocol which includes inter alia;
  - the 'dismantling' by professional tree experts of hollow-bearing trees in order to salvage tree-hollows, wherever possible;
  - the placement of salvaged tree-hollows on either existing large trees to be retained within the E2 Conservation Zone or on wooden poles adjacent to existing trees within the E2 Conservation Zone;
  - alternatively, the placement of salvaged tree-hollows on the ground as hollow log habitat where erection within the E2 Conservation Zone is not practical; and
  - the use of artificial nest boxes to replace tree-hollow which cannot be salvaged.

A commitment has been made in the Statement of Commitments at **Section 7** of this report which requires future applications to demonstrate compliance with the above recommendations.

With regard to the Stage 1 Project Application it is noted that no native trees or shrubs will require removal for the two industrial buildings. The construction of Local Road 1 will traverse part of the E2 zone, however Whelans Insites notes that at this location, the tributary is highly modified and degraded, and consists merely of a narrow channel with steep eroding banks and stands of Spike Rush. Subject to compliance with the above management measures, Whelans Insites considers that the Stage 1 application will not have any adverse `bio-diversity' impacts.

6.9 Bushfire Risk Assessment

A Bushfire Protection Assessment (**Appendix G)** has been prepared by Australian Bushfire Protection Planners Pty Limited (ABPP) in order to assess any protection measures required for the Ropes Creek Employment Precinct Concept Plan and Stage 1 Project Application.

The Blacktown Bushfire Prone Land Map does not identify the Ropes Creek riparian corridor as bushfire prone vegetation. However the opposite of Ropes Creek is confirmed as being bushfire prone as shown in **Figure 42** and a site inspection by ABPP confirmed that the Ropes Creek riparian corridor should be identified as Category 1 Bushfire Prone Vegetation.

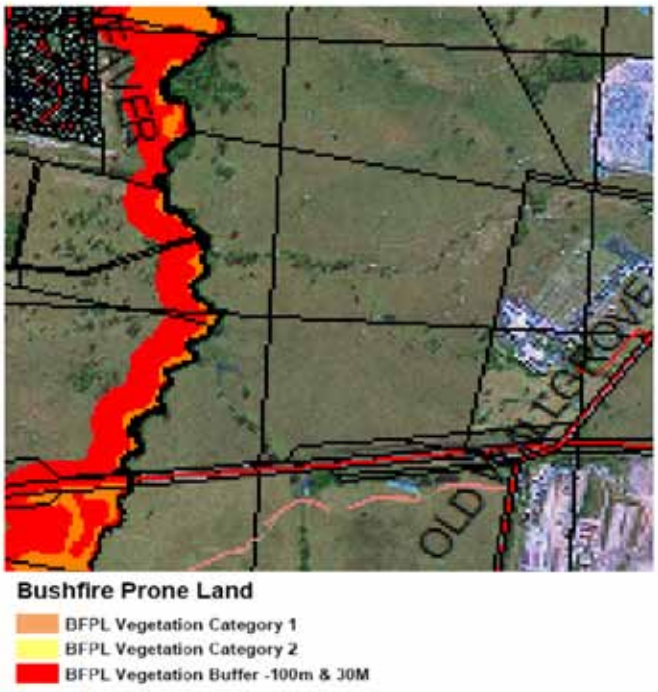

Figure 42 – Identification of Bushfire Prone Land
Source: Penrith City Council

Bushfire Risk to Ropes Creek Employment Precinct and Stage 1 Buildings

The development site currently contains vacant grazing land with scattered shade trees and high voltage transmission lines which traverse the site from the TransGrid Substation to the east of the development site. The E2-Environmental Conservation zones will be allowed to naturally revegetate and consequently over time this vegetation is likely to become bushfire prone vegetation. As part of the site management of this environmental corridor a setback is proposed which will ensure that bushfire risk is minimised.

Whilst many of the prescribed APZ's and construction standards within *Planning for Bushfire Protection 2006* (NSW Rural Fire Service) do not apply to industrial development (they mainly apply to residential), consideration of the requirements of this document have been considered in the Bushfire Protection Report and are summarised below.

Asset Protection Zones/ Defendable Space

The report identifies the surrounding vegetation, topography and available Defendable Space widths for the entire precinct and Buildings 1and 2.

The minimum Defendable Space identified for the Ropes Creek E2 corridor is 24 metres, and 10 metres for the remaining E2 conservation zones across the site. All of these Defendable Space setbacks are shown on the Concept Plan

(dashed orange line) and exceed the minimum 'flame zone' setback widths. The setbacks are measured from the edge of the E2 zone and as such do not encroach upon the environmental conservation land.

There are no mandatory Defendable Space setbacks required for Building No.1 as it is not located adjacent to current or future bushfire prone vegetation. Vegetation located on the neighbouring property to the east is grassland which is not considered to be bushfire prone.

Building No. 2 is located in close proximity to the E2 Environmental Conservation corridor at the south-eastern corner of the proposed building, and as such has been sited so as to provide a defendable space buffer which exceeds the minimum 'flame zone' setback widths and provides an area of Defendable Space suitable to the location of bushfire prone vegetation around the building.

Access for Fire Fighting Operations

A temporary road is proposed in the Stage 1 Project Application which will provide heavy vehicle access to Buildings 1 and 2 from Old Wallgrove Road. Future internal roads will be constructed to provide heavy rigid and articulated vehicle access to each building and will be suitable to the needs of NSW Rural Fire Service Category 1 Tankers and NSW Fire Brigade Composite and Aerial Appliances. Access to the bushfire prone vegetation in the E2 Environmental Conservation corridor will be provided in further stages of development, through either a perimeter trail or by vehicle access to future buildings and parking areas. A commitment to this effect is provided in the Statement of Commitments at **Section 7** of this report.

Water Supply

A reticulated water supply for potable water and fire hydrants is to be extended into the site. In addition, Buildings 1 and 2 will be required to provide onsite static water supply for structural fire suppression systems. These systems will be in compliance with the BCA and A.S. 2419.1-2005 (Fire Hydrant Installations).

Construction Standards for Buildings in Proximity of Bushfire Prone Vegetation

The future warehouse buildings for the proposed site are classified as Class 7 buildings under the Building Code of Australia (BCA), which contains general fire safety requirements for these types of buildings but no bushfire-specific standards.

The provision of adequate Defendable Space will ensure that potential flame distances between the E2 Environmental Conservation corridor and buildings is minimised so that radiant heat exposure to buildings is likely to be less than 40IW/m^2 in the course of any fire. All portions of buildings exposed to the hazard shall be constructed to the standards of BAL40 as defined by A.S. 3959-2009 (Construction of buildings in bushfire prone land). The report also makes the following recommendations for construction standards for buildings adjacent to bushfire prone vegetation:

- Operable windows, external vents, grilles, roof ventilators and ventilation louvres should be fitted with aluminium/stainless steel mesh flyscreens with a maximum aperture of 2mm, or be able to be closed to maintain a maximum gap of 2mm.
- Access doors should be fitted with full seals to prevent embers from entering the building.

There is no need to provide Defendable Space to Building 1 as it is not located adjacent to current or future bushfire prone vegetation, whilst setbacks of 10 metres from the E2 zone are recommended and achieved for Building 2.

Emergency Planning

Future buildings located adjacent to Ropes Creek may be subject to a fire event in the creek corridor that may necessitate an evacuation, and it is recommended in the report that these buildings include protocols for bushfire emergencies when they are developed.

Due to the low bushfire risk to the remaining buildings, including Buildings 1 and 2 there is no need for a specific Bushfire Evacuation Plan.

Fire Management Procedures to Minimise Risk to the E2 Conservation Zone Corridor

The management of the site landscape on any development lot including Defendable Space shall generally comply with the recommendations of *Planning for Bushfire Protection 2006* and *Standards for Asset Protection Zones.* Specifically these measures will include:

- maintaining a clear area surrounding buildings with suitable materials such as Scoria, pebbles, recycled crushed bricks and low cut lawn to reduce flammability;
- keep areas under shrubs and trees raked clear of combustible fuels;
- ensure separation distances of 2 metres between tree canopies to reduce the risk of fire spread within the corridor; and
- ensure understorey vegetation in retained as clumps and does not become continuous.

Recommendations and Commitments

The Bushfire Protection Assessment addresses all of the above issues in detail, and makes a number of recommendations in relation to lots within close proximity of the E2 zone. The recommendations are summarised below:

- That management of landscaped gardens, vegetation and Defendable Space within the site should remain the responsibility of the property owner and comply with *Planning for Bushfire Protection 2006, Standards for Asset Protection* and the recommendations of the ABPP Bushfire Protection Assessment.
- A Positive Covenant should be placed on the title of each lot with Defendable Space to ensure compliance with the management prescriptions for the Defendable Spaces detailed in the report.
- The construction standards recommended in the Bushfire Protection Assessment should be adopted for development of the site.
- All reticulated water supply and onsite static water supply tanks should be provided in compliance with the BCA and A.S.2419.1-2005 (Fire Hydrant Installations).
- Access to the bushfire prone land in the E2 Environmental Conservation corridor should be provided by either a perimeter trail or by vehicle access to future buildings and parking areas.

These recommendations are addressed in the Statement of Commitments at **Section 7** of this report

6.10 Noise Assessment

Wilkinson Murray has undertaken a Noise Impact Assessment (**Appendix S**) to determine if any acoustic mitigation measures are required for the development. The following sources of noise were assessed:

- Construction Noise;
- Traffic Noise; and
- Industrial / Operational Noise.

In undertaking their assessment, Wilkinson Murray had regard to the *"Interim Construction Noise Guideline"* and the *"NSW Industrial Noise Policy"* both of which are authored by the Department for the Environment, Climate Change and Water (DECCW).

Wilkinson Murray has identified the following noise receivers:

- Erskine Park Residences to the North (Residential Location A);
- Emmanus College and Retirement Village to the West (Residential Location B);
- Bakers Lane Residences to the West (Residential Location C);
- Greenway Place Residences to the East (Residential Location D); and
- Burley Road Residences to the south of the East Precinct (Residential Location E).

The above locations are shown in **Figure 43**.

Noise monitoring was conducted between Monday 19 July and Monday 26 July 2010. Noise loggers were placed at the following locations:

- Location 1 – 58 Weaver Street, Erskine Park (Receiver Area A)
- Location 2 – 20 Bakers Lane, Erskine Park (Receiver Areas B & C)
- Location 3 – 41-43 Greenway Place, Horsley Park (Receiver Areas D & E)

Figure 43 – Nearest residential receivers
Source: Wilkinson Murrary

The *NSW Industrial Noise Policy* (INP) recommends two criteria `intrusiveness' and `amenity' which are relevant for the assessment of noise.

The intrusiveness criterion requires that the LAeq noise level from the source being assessed, when measured over 15 minutes, should not exceed the Rating Background Noise Level (RBL) by more than 5dBA.

The amenity criterion sets a limit on the total noise level from all industrial noise sources affecting a receiver. Different criteria apply for different types of receiver (e.g. residence, school classroom); different areas (e.g. rural, suburban); and different time periods, namely daytime (7.00am-6.00pm), evening (6.00pm-10.00pm) and night time (10.00pm-7.00am).

The noise level to be compared with this criterion is the LAeq noise level, measured over the time period in question, due to all industrial noise sources, but excluding non-industrial sources such as transportation.

Where a new noise source is proposed in an area with negligible existing industrial noise, the amenity criterion for that source may be taken as being equal to the overall amenity criterion. However, if there is significant existing industrial noise, the criterion for any new source must be set at a lower value. If existing industrial noise already exceeds the relevant amenity criterion, noise from any new source must be set well below the overall criterion to ensure that any increase in noise levels is negligible. Methods for determining a source-specific amenity criterion where there is existing industrial noise are set out in the INP.

In this case, there is insignificant industrial noise existing in the area. Whilst there are quarries around Location E no significant noise was observed during a site visit. Traffic noise levels are unlikely to reduce in the future therefore the full amenity criteria are applicable.

Using the existing background noise levels (RBL) obtained from the above monitoring, Wilkinson Murray established the following noise goals for the project (**Table 9**).

Table 9 – Noise criteria for the project

Receiver Area	Time Period	RBL (dBA)	Intrusiveness Criterion LAeq,15min (dBA)	Project-Specific Amenity Criterion
A	Daytime (7am – 6pm)	34	39	55
	Evening (6pm – 10pm)	36	41	45
	Night time (10pm to 7am)	34	39	40
B & C	Daytime (7am – 6pm)	33	38	50
	Evening (6pm – 10pm)	34	39	45
	Night time (10pm to 7am)	33	38	40
D & E	Daytime (7am – 6pm)	32	37	50
	Evening (6pm – 10pm)	32	37	45
	Night time (10pm to 7am)	31	36	40

Source: Wilkinson Murray

Construction Noise

Using typical Sound Power Levels of plant likely to be used during earthworks and road building when the site is being established Wilkinson Murray was able to assess whether or not the proposed development would meet the required noise criterion or if mitigation measures are required.

The assessment revealed that the proposal will comply with the noise criteria except in Location A (Erskine Park residences) and only during the earthworks phase of the future development of the north-west corner of the site. However Wilkinson Murray notes that exceedances of construction noise criteria are quite common for construction projects and given the relatively short duration of construction work compared to the life of the development, some tolerance is usually expected.

Wilkinson Murray notes that the excavation works associated with the Stage 1 development are a sufficient distance from the residential dwellings at Erskine Park and will comply with the noise criteria set for the project at all locations.

In order to minimise acoustic impacts during construction, Wilkinson Murray has made the following recommendations:

- Construction activities that are likely to be audible at any residence must not occur outside the usual hours of 7.00am-6.00pm Monday to Friday and 8.00am-1.00pm on Saturday.
- Construction vehicles should not approach the site before 7.00am.
- Noisy activities such as earthworks in close proximity to residences should ideally be programmed to avoid early mornings and Saturdays. While this may not be always practical, consideration should be given to surrounding residential receivers when planning the construction program.
- Spoil quantities should be carefully considered to avoid truck movements to and from the site to provide additional fill or remove excess spoil.
- Diesel powered machines such as trucks, bobcats and excavators should be switched off if not required for more than a few minutes rather than left idling unnecessarily.
- Machines used on site should be maintained in good condition, particularly considering the exhaust system on diesel powered machines, to minimise noise emissions. Excessively loud machines should be repaired, modified or removed from the site.
- Sound pressure level measurements should be conducted on all plant prior to works beginning on-site.
- A representative from the construction contractor should be available to respond to questions and complaints from the community in a professional, considerate and timely manner.
- Reverse alarms should be controlled to the minimum sound level consistent with safety by replacing, shielding or relocating the alarm unit on noisy machines.

A commitment requiring the implementation of the above mitigation measures is included in the Statement of Commitments at **Section 7** of this report. Wilkinson Murray notes that the above recommendations will not necessarily result in the construction noise criteria being met at all times, although they will result in the lowest possible noise impacts consistent with efficient and safe construction work on the site.

Road Noise

The Erskine Park Link Road Network Road Concept Plan (MP06_0166) (Link Road Concept Plan) Notice of Determination requires the following information to be submitted with the future Project Applications for the construction of the link roads:

"Condition 3 – Future Assessment Requirements

- *Noise and Vibration*
  - *An assessment of operational road traffic noise and vibration impacts. Should criteria be exceeded, the assessment must consider all reasonable and feasible mitigation options;*
  - *For all aspects of the project (as relevant), describe construction noise and vibration impacts, considering all reasonable and feasible measures for minimising impacts; and*
  - *The assessment must take into account the following guidelines as relevant: Environmental Criteria for Road Traffic Noise (EPA, 1999), Environmental Noise Management Manual (RTA, 2001), Draft New South Wales Construction Noise Guideline (formerly published as chapter 171 of the EPA's Environmental Noise Control Manual), Assessing Vibration: A Technical Guideline (DEC, 2006."*

Wilkinson Murray notes that Halcrow's assessment of the likely traffic generation of the proposed employment precinct is consistent with that forecast by the RTA during the preparation of the Link Road Concept Plan. As such, there will not be any additional impact generated by the proposed development and a separate impact assessment is not required as the acoustic impacts of the regional road will be addressed by the RTA in the project application for the construction of the Erskine Park Link Road.

Industrial / Operational Noise

Operational noise associated with warehouse developments is usually generated by the following:

- Roof fans;
- Truck movements and associated reversing alarms;
- Dock activities, including loading and unloading of goods; and
- Air-conditioning and refrigeration plant.

The proponent is seeking 24 hour 7 day a week operation of the Precinct, the assessment of the proposal (included below in **Tables 10** and **11**) demonstrates that neither operational noise generated by fans, loading and unloading activities and the like or reversing truck alarms will exceed the noise criteria set for the project.

Notwithstanding that there are no expected exceedances, noise assessments will be submitted with each future project application which will detail the exact operations of the future warehouses. Should mitigation measures be required they will be detailed at the Project Application stage. A commitment to this effect is provided in the Statement of Commitments at **Section 7** of this report.

Table 10 – Predicted $L_{Aeq(15\ minute)}$ Operational Noise at Surrounding Residences

Receivers	Predicted Resultant Noise Levels at Residences (dBA)		Intrusiveness Noise Goal LAeq,15 min (dBA)	Compliance
	Calm Conditions	Wind Condition (1)		
A	35	29	39	Y
B	16	11	38	Y
C	16	11	38	Y
D	17	21	36	Y
E	24	29	36	Y

Source: Wilkinson Murray

Table 11 – Predicted Truck Reversing Alarm Noise Levels at Residences – dBA

Receivers	Predicted LAmax Noise Level – dBA		Sleep Disturbance Screening Criterion (dBA)	Compliance
	Calm Conditions	Wind Condition (1)		
A	45	40	49	Y
B	25	18	48	Y
C	24	18	48	Y
D	24	29	46	Y
E	32	39	46	Y

Source: Wilkinson Murray

Stage 1 Project Application

In order to assess the proposed Stage 1 warehouse buildings, Wilkinson Murray assumed the following `worst case' scenarios (**Table 12**). The assessment showed that the proposed warehouses will comply with the noise criteria set for the project due to the large separation distances between the warehouses and the nearest residential receivers, and consequently no further noise attenuation / mitigation is required.

Table 12 – Warehouse Operating Scenario

Plant Equipment	Warehouse 1 Number of Items	Warehouse 2 Number of Items	Description of Modelled Industrial Operations
Semi Trailer	6	4	Loading / Unloading, operating for a period of 15 minutes
Forklift	3	2	Operating for the entire 15 minute period
Semi Trailer	2	1	Truck turning (1 minute duration)
Roof Fans	5	4	Operating for the entire 15 minute period
Reversing	2	1	Each operating for 10 seconds

Source: Wilkinson Murray

6.11 Visual Impact Assessment

A Visual Impact Assessment has been prepared by JBA Urban Planning Consultants Pty Ltd (**Appendix T**). The report finds that the visual catchment of the site is dominated by electricity pylons and associated infrastructure which extend across the site to the Transgrid Substation to the east of the site.

Despite the site's open nature and lack of vegetation, the low elevation of the site, the future industrial use on surrounding sites and the lack of residential uses immediately adjacent to the site means that the vast majority of the site is of low visual sensitivity. A small portion of the site to the north is noted as being of moderate visual sensitivity due to its visibility from surrounding areas as shown in **Figure 44**.

The elevated area along the northern boundary is moderately sensitive due to its visibility from surrounding areas, including parts of the Erskine Park residential area. This area however will be bordered on two sides by the future industrial development outside the subject site.

The report finds that the proposed development is not expected to generate any adverse visual impacts on the surrounding environment, and that no specific mitigation is required apart from the application of the Development Design Guidelines (see **Appendix J**). Proposals for industrial development at this location follow the pattern of land use in the area and are appropriate given the minimal visual impact of the site.

In terms of reducing the impacts of the electricity pylons, poles and cables which stem from Transgrid land to the east, the report considers that the impact can be partly mitigated by the careful planting of low-level trees and the orientation of buildings. The Concept Plan demonstrates the placement of indicative buildings up against the line of easements. This can help reduce the amount of open space around the pylons and to a limited degree mitigate their impact from the street. Their height however means that no future development will comprehensively screen these pylons from public view altogether.

Figure 44 – Areas of visual sensitivity

6.12 Ecologically Sustainable Development

Worley Parsons has prepared a Sustainability Report for the project which is included at **Appendix U**. Warehouses and distribution centres are not generally high energy dependent compared to industrial and commercial uses as they do not require energy for high level lighting or manufacturing within the building. Notwithstanding the above, the proposal will incorporate design measures which will result in energy efficiency and savings on the site.

The proposed warehouse buildings will incorporate the following ecologically sustainable design features:

- rainwater harvesting and re-use for irrigation purposes;
- installation of energy efficient fixtures and fittings;
- bicycle parking and associated amenities, shared pedestrian/bicycle footpaths and bus stops so as to encourage more sustainable forms of transport;
- installation of bio-retention basins which will treat stormwater run-off from the site;
- balancing cut and fill requirements so as to minimise truck movements during construction and also the amount of materials to be transported to and from the site;
- use of recycled or sustainable materials where possible;
- encouragement of design which maximises natural light and ventilation; and
- planting of vegetation that has low water requirements.

In addition the above it is noted that the proposed development will result in the improvement of the bio-diversity values of the site through:

- rehabilitating the Ropes Creek Corridor;
- protection of the E2 zoned land;
- planting of new native trees and shrubs on the site; and
- creation of new potential habitat through the construction of bio-retention basins within the precinct.

6.13 Construction Management

A Construction and Environmental Plan (CEMP) will be prepared by the building contractor once appointed. The CEMP will be submitted to the Principal Certifying Authority for sign off and will address the following issues:

- Site Management;
- Air Quality;
- Noise and Vibration Management;
- Soil and Water Management;
- Construction Traffic Management;
- Waste and Hazardous Materials Management; and
- Protection of E2 zoned land.

A commitment to this effect is made in the Statement of Commitments at **Section 7** of this report.

With regard to construction waste management, waste will be taken from the site and sorted at a Recycling and Landfill facility. Waste types likely to be generated on the site include:

- General waste;
- Putrescible waste (lunch room waste from site personnel);
- Cardboard and white paper (amended plans and drawings);
- Bottles, cans and plastics; and
- Concrete, bricks, tiles, timber and gyprock.

The CEMP will build upon the Soil and Water Management and Air Quality measures outlined by Browns Consulting Engineers (**Appendix Q**) which include but are not limited to:

- Construction of cut-off drains to prevent clean water entering disturbed areas;
- Installation of silt fences and sedimentation basins around disturbed areas;
- Locating stockpiles as far away from public and residential areas as possible;
- Covering of stockpiled materials where possible;
- Wetting of disturbed areas during high wind events;
- Covering of loads;
- Restricting construction traffic to defined areas and speed limits;
- Dust monitoring – both prior to and during construction activities (installing dust deposition gauges at identified locations; daily and weekly visual surveillance of dust emissions, dust controls, plant emissions, meteorological daily data collection such as wind speed, rain temperature, humidity etc); and
- Minimisation of disturbed and exposed areas.

It will also build upon the Traffic Management measures outlined by Halcrow (see **Appendix I**) which include:

- Designation of truck parking areas, construction zones, crane usage, truck routes, etc;
- Nominating truck routes within the site to ensure trucks enter and leave the site in a forward direction unless accredited flag persons are in place to control traffic and pedestrians;
- Nomination of personnel (Building Contractor) who will maintain strict traffic management procedures to ensure the safety of the public road users utilising traffic wardens;
- Provision of openings in the construction fencing at the construction access driveways will be managed and controlled by qualified site personnel; and
- Installation of temporary warning signs and flashing lights will be erected adjacent to construction access driveways where appropriate.

6.14 Consultation

The Proponent and or members of the consultant team have consulted with the following authorities and agencies as set out below:

- Roads and Traffic Authority (several meetings have been held)
- Blacktown City Council (consulted on 18 August 2010)
- Sydney Water (consulted on 13 July 2010)
- Sydney Catchment Authority (consulted on 19 August 2010)
- NSW Office of Water (consulted on 19 August 2010)
- Transgrid (consulted on 7 October 2010)

The key issues raised during the above consultation and the proponents response are summarised in the **Table 13**. Documents / Minutes from the consultation undertaken are provided at **Appendix V**.

Table 13 – Summary of Consultation

Agency / Authority	Key Issues Raised / Discussed	Proponent's Response
Roads and Traffic Authority	Various discussions regarding location and design of Erskine Park Link Road (EPLR) and the connections from the EPLR into the site	▪ Agreement has been reached in relation to intersection design and road location in the vicinity of the site. ▪ Agreement has been reached regarding a second four-way intersection access off EPLR into the site at the eastern end of the site.
Blacktown City Council	Briefed council officers on project	▪ N/A
	Stormwater	▪ Advised that a stormwater management plan had been prepared. ▪ Bio-retention basins are proposed to be dedicated to Council
	E2 zones and setbacks	▪ Setbacks from riparian corridors within E2 zone ▪ Defensible areas for bushfire protection outside of E2 zone
	Regional Roads and Local Roads	▪ Temporary road connection to Old Wallgrove Road until such time as regional road is constructed ▪ All local roads to be constructed to Council's standards and requirements ▪ Regional roads in accordance with WSEA SEPP
	Parking	▪ Advised parking provision rate is consistent with RTA guidelines, however overflow parking can be provided if required by the tenant
	Staff Amenity Areas	▪ These are proposed for both Stage 1 warehouses
	Design Guidelines	▪ Advised that these would form part of the Concept Plan application and that all future applications will need to be consistent with the guidelines

Agency / Authority	Key Issues Raised / Discussed	Proponent's Response
Blacktown City Council	Contributions	▪ Advised that site will provide local infrastructure as works in kind ▪ The Proponent proposes to enter into a VPA with the Minister for Planning prior to the grant of an occupation certificate for any project approval ▪ The VPA will provide for a Regional Infrastructure contribution of $180,000 per developable hectare, subject to offsets for dedication of land for the regional road and construction of the regional road (see Section 6.15 of this report.
Sydney Water	Sydney Water advised that no infrastructure is planned within the nearby area that is suitable for use within the Precinct.	▪ The application proposes new infrastructure to service the proposed development. ▪ The Proponent will continue to consult with Sydney Water throughout the assessment and post approval, seeking the relevant approvals from Sydney Water as required
Sydney Catchment Authority	Main concern relates to the pipe crossings, advised that SCA had been in discussions with the DoP regarding the regional road system.	▪ Advised that the regional road layout has been designed to be consistent with the WSEA SEPP.
NSW Office of Water (NOW)	Advised that NOW will provide formal comment when the detailed submission from the DoP is received	▪ None required
Transgrid	Jacfin met with TransGrid representatives on 7 October 2010 and had various discussions regarding the subject development including the location and design of access roads and buildings. TransGrid advised of its investigation of the possible future need to acquire part of the subject land for expansion of the Sydney West Substation.	▪ The proposed access roads do not traverse any land owned by TransGrid. ▪ TransGrid's transmission lines are erected within an easement on Jacfin land. ▪ The proposed access roads allow sufficient access to TransGird's transmission lines and are consistent with the terms of the TransGrid easements over the subject land. ▪ Jacfin proposes to develop and lease (not sell) the subject land.

6.15 Contributions

Local Contributions

While the site is not subject to a Section 94 or 94A contributions plan, as set out in **Table 14** below, the proposed development makes provision for all necessary local infrastructure and will not require the provision of, or increase the demand for, public amenities and public services within the local area. Accordingly, a contribution towards local infrastructure is not warranted and there is no offer made to enter into a voluntary planning agreement in respect of local infrastructure contributions. The proposed approach to local contributions is consistent with that approved by the Department of Planning for the Oakdale development.

Table 14 – Local Infrastructure to be delivered under the Concept Plan

Infrastructure	Detailed Description
Internal Local Roads	▪ Dedication of land ▪ Construction of three local roads, all with a 21.5m road reserve ▪ Landscaping of road reserve
External Temporary Road	▪ Construction of a local road connection from Old Wallgrove Road to the site ▪ Road will be constructed with a 21.5 road reserve
Pedestrian and Cycle Paths	▪ Construction of 3m wide shared pedestrian and cycle path on one side of all local roads ▪ Construction of a 1.5m pedestrian path on the other side of all local roads
Stormwater Infrastructure	▪ Construction of stormwater bio-detention basins within the precinct which will manage 100 year ARI flows
Sewage	▪ Construction of a new connection to the Eastern Creek submain ▪ Construction of a new sewage pumping station on the site ▪ Installation of internal reticulation
Potable Water	▪ Construction of a new connection to existing services in Old Wallgrove Road ▪ Installation of internal reticulation
Electricity, Gas and Communications	▪ Construction of a new connection to existing services in Old Wallgrove Road ▪ Installation of internal reticulation

Special / Regional Contributions

Clause 29 of SEPP (WSEA) requires that a consent authority not consent to development on land within the WSEA unless "satisfactory arrangements have been made to contribute to the provision of regional transport infrastructure and services (including the Erskine Park Link Road Network)".

On 12 August 2009, the Premier of NSW announced that the NSW Government would impose a $180,000 state infrastructure charge per developable hectare in the WSEA. This announcement further stated that the state infrastructure charge levy across the whole of the SEPP (WSEA) area provides proponents with upfront certainty on the infrastructure costs they are asked to bear for development. However, no special infrastructure contributions (within the meaning of subdivision 4 of Division 6 of Part 4 of the EP&A Act) plan currently exists that incorporates the state infrastructure charge.

In the absence of a special infrastructure contributions plan, under section 93I of the EP&A Act, Jacfin offers to enter into a planning agreement with the Minister for Planning, prior to the grant of an occupation certificate, for any project approval which may be granted by the Minister for Major Project 10-0128 – Ropes Creek (Jacfin Approval).

The offer is conditional on the agreement providing that:

1. Jacfin contribute a monetary contribution maximum of $180,000 per developable hectare payable to the Minister for Planning for the provision of regional infrastructure within the broader Western Sydney Employment Area (Jacfin Contribution) in relation to the Jacfin Approval.
2. The planning agreement will exclude the operation of s94, 94A and 94EF of the EP&A Act.
3. If a Special Infrastructure Contribution (SIC) is determined under section 94EE of the EP&A Act that covers the land the subject of the Jacfin Approval:
   (a) prior to Jacfin making the Jacfin Contribution, Jacfin will pay the value of the SIC as if it had applied to the land the subject of the Jacfin Approval to the maximum amount of $180,000 per developable hectare; or
   (b) after Jacfin makes the Jacfin Contribution and the value of the Jacfin Contribution is more than the SIC, Jacfin will be entitled to repayment of that difference in amount within 60 days.
4. With the agreement of the Minister for Planning (or his delegate), Jacfin may provide regional infrastructure within the Western Sydney Employment Area in relation to the Jacfin Approval, or dedicate land for the provision of this infrastructure, and obtain a credit against the Jacfin Contribution (Jacfin Credit).
5. The value of the Jacfin Credit shall be determined by an independent person, and
   (a) in relation to the provision of regional infrastructure works, be based on the cost of providing the works; and
   (b) in relation to the dedication of land for the provision of regional infrastructure works, be calculated in accordance with the Land Acquisition (Just Terms Compensation) Act 1991 (NSW) as if that land had been acquired by compulsory acquisition.
6. The planning agreement will provide for the provision of suitable security (including in the form of works in kind) for the Jacfin Contribution.

With a developable area of 81.3 hectares, the development of the entire precinct will potentially generate a total contribution value of $14,634,000 - including monetary contributions, works-in-kind and the dedication of land.

A commitment to enter into a VPA for the Stage 1 Project Application is provided in the Statement of Commitments at **Section 7** of this report.

6.16 Economic and Social Benefits

The proposed development of the Ropes Creek Employment Precinct is expected to generate the following economic and social benefits:

- Generation of between 1,600 and 3,250 new jobs within Western Sydney;
- Investment of up to $290,280,000 in the NSW economy million in the NSW economy;
- Construction of sections of the new regional link road network;
- Construction of new local roads;
- Provision of $14,634,000 ($180,000 per developable hectare) in Regional Infrastructure Contributions; and
- Preservation of the Ropes Creek corridor.

6.17 Site Suitability and Justification for the Development

The site is considered suitable for warehouse use for the following reasons:

- it is appropriately zoned;
- of an appropriate size;
- generally clear of vegetation;
- does not require remediation; and
- will be highly accessible via the M4 and M7 motorways following the construction of the new regional road network.

The proposed development is considered justified for the following reasons:

- the proposed development will implement the aims and objectives of SEPP WSEA;
- the proposal will see the delivery of new jobs within Western Sydney;
- the proposal will deliver part of the new regional road infrastructure;
- the proposal will generate $14,634,000 ($180,000 per developable hectare) in Regional Infrastructure Contributions; and
- Ropes Creek will be protected and regenerated.

6.18 Environmental Risk Assessment

Approach

The Environmental Risk Assessment at **Table 16** for the site has been adapted from Australian Standard AS4369:1999 Risk Management and environmental risk tools developed by other organisations (summarised at **Table 15**). The Environmental Risk Assessment establishes a residual risk by reviewing the 'significance of environmental impacts' and the 'ability to manage those impacts'.

The significance of environmental impacts is assigned a value of between 1 and 5 based on:

- The receiving environment;
- The level of understanding of the type and extent of impacts; and

- The likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value of between 1 and 5 based on:

- the complexity of mitigation measures;
- the known level of performance of the safeguards proposed; and
- the opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Table 15 – Environmental rating risk matrix

Significance of Impact	Manageability of Impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 - Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 - Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 - Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 - High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 - Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Table 16 – Environmental risk matrix for project

Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures	Risk Assessment		
				Significance of Impact	Manageability of Impact	Residual Impact
Noise	C & O	▪ Increase in noise levels during construction ▪ Increase in noise levels as a result of 24 hour operation of the warehouses	▪ Installation of Noise Attenuation measures where required during earthworks; and ▪ Compliance with noise criteria established for the precinct during operation.	2	2	4 (Low / Medium)
Traffic	C & O	▪ Increased traffic on roads	▪ Provision of shared pedestrian cycleways and bus stops on the site so as to encourage the use of more sustainable forms of travel. ▪ Implementation of a Construction Traffic Management Plan	1	1	2 (Low)
Visual	O	▪ Visual impact of warehouses	▪ Implementation of Design Guidelines; ▪ Considered design and choice of materials; and ▪ Planting of appropriate landscaping.	2	2	4 (Low / Medium)
Heritage	C	▪ Damage to previously recorded and newly discovered Aboriginal artefacts	▪ Consultation with local Aboriginal groups and representatives ▪ Collection and relocation of listed artefacts and observation of initial earthworks by local Aboriginal community member within Stage 1 areas ▪ Submission of heritage impact assessments with future applications for later stages or preparation of an Aboriginal Heritage Management Plan	3	2	5 (Low / Medium))
Bio-diversity	C	▪ Loss of hollow-bearing trees as habitat ▪ Impact on water quality of Ropes Creek	▪ Implementation of a Hollow-bearing Tree Protocol ▪ Implementation of an Environmental Construction Management Plan which includes erosion and sediment control ▪ Implementation of a Stormwater Management Plan which proposes treatment of stormwater runoff	3	2	5 (Low / Medium))
Water Quality	C & O	▪ Deterioration of water quality in Ropes Creek	▪ Implementation of an Environmental Construction Management Plan which includes erosion and sediment control ▪ Implementation of a Stormwater Management Plan which proposes treatment of stormwater runoff	3	2	5 (Low / Medium))
Waste	C & O	▪ Generation of waste	▪ Implementation of business specific waste management plans	2	1	3 (Low)
Flooding	O	▪ Potential flooding of site during 1 in 100 year storm events ▪ Adverse impacts on Ropes Creek riparian corridor	▪ Implementation of a Stormwater Management Strategy ▪ Construction of bioretention basins ▪ Installation of rainwater storage tanks	3	2	5 (Low / Medium))
ESD	C & O	▪ Potential increase in emissions ▪ Increase in use of potable water	▪ Use of energy efficient fixtures and fittings ▪ Installation of rainwater storage tanks ▪ Provision of shared pedestrian cycleways and bus stops on the site so as to encourage the use of more sustainable forms of travel.	2	2	4 (Low / Medium)

Key: C – Construction, O: Operation

7.0 Project Draft Statement of Commitments

In accordance with the Director-General's Environmental Assessment Requirements, the proponent is required to include a Draft Statement of Commitments in respect of environmental management and mitigation measures on the site. **Table 17** outlines the commitments made by Jacfin Pty Ltd to manage and minimise potential impacts arising from the Concept Plan while **Table 16** outlines the commitments made in relation to the Stage 1 Project Application.

Table 17 – Draft Concept Plan Statement of Commitments

Subject	No.	Commitments	Timing
Construction Management	1	A Construction and Environmental Management Plan will be prepared for each project by the appointed building contractor and will be submitted to the Principal Certifying Authority for sign off. The CEMP will address the following issues: - Site Management; - Air Quality; - Noise and Vibration Management; - Soil and Water Management; - Construction Traffic Management; - Waste and Hazardous Materials Management; and - Protection of E2 zoned land	Prior to works commencing.
	2	The construction noise mitigation measures recommended by the Acoustic Consultant will be incorporated into the Construction and Environmental Management Plans for each project.	Prior to works commencing.
Geotech	3	Future Project Applications within the Precinct will demonstrate compliance with the recommendations of the Geotechnical Assessment in relation to: ▪ Bulk Earthworks; ▪ Structural Design; ▪ Ground Water Management; ▪ Acid Sulphate Soils; and ▪ Soil Salinity.	Details to be provided with the relevant Project Application(s).
Stormwater Management	4	Future Project Applications will demonstrate compliance with the targets in the Stormwater Masterplan and Trunk Drainage Strategy prepared by Brown Consulting Engineers.	Details to be provided with the relevant Project Application(s).
	5	Future Project Applications will demonstrate that: ▪ the project water quality targets will be met; and ▪ stormwater flow rates will be equal to less than the current existing flow rates.	Details to be provided with the relevant Project Application(s).
Waste Management	6	An Operational Waste Management Plan will be prepared for each of the warehouse buildings on the site.	Prior to the occupation of each warehouse.
Hazardous Materials	7	Should storage of hazardous materials be required by the occupants of either warehouse building, a hazardous materials assessment will be prepared.	Prior to the occupation of the relevant warehouse, if applicable

Subject	No.	Commitments	Timing
Bushfire Protection	8	Future Project Applications within the Precinct will demonstrate compliance with the recommendations of the Bushfire Consultant, in relation to: ▪ Access to the bushfire prone vegetation in the E2 Environmental Conservation corridor; ▪ Building setbacks; ▪ Building construction requirements; ▪ Landscape Maintenance; and ▪ Emergency Planning.	Details to be provided with the relevant Project Application(s).
Signage and Lighting	9	Future applications will provide detail on signage and lighting.	Details to be provided with the relevant Project Application(s).
Noise	10	Acoustic Assessments will be submitted with future project applications for each warehouse building detailing acoustic mitigation measures where required.	Details to be provided with the relevant Project Application(s).
Waste Management	11	An Operational Waste Management Plan will be prepared for each of the warehouse buildings on the site.	Prior to the occupation of each warehouse.
Biodiversity	12	A Hollow-bearing Tree Protocol prepared by a suitably qualified ecologist and will be implemented.	Prior to the removal of any trees within the Employment Precinct
Indigenous Heritage	13	An Aboriginal Heritage Management Plan will be prepared for the precinct or Aboriginal Heritage Impact Assessments will be submitted with future Project Applications.	Prior to the lodgement of any Project Application beyond Stage 1.
	14	Indigenous community consultation will continue in accordance with the document `Aboriginal cultural heritage consultation requirements for proponents 2010' produced by DECCW. The Heritage Impact Statement will be referred to the relevant organisations who have registered their interest in participating in the assessment process and additional surveys will be undertaken if required.	Prior to the submission of a Preferred Project Report or response to submissions whichever is appropriate.

Table 18 – Draft Stage 1 Project Application Statement of Commitments

Subject	No.	Commitments	Timing
Construction Management	1	A Construction and Environmental Management Plan will be prepared by the appointed building contractor and will be submitted to the Principal Certifying Authority for sign off. The CEMP will address the following issues: - Site Management; - Air Quality; - Noise and Vibration Management; - Soil and Water Management; - Construction Traffic Management; - Waste and Hazardous Materials Management; and - Protection of E2 zoned land.	Prior to works commencing.
	2	The construction noise mitigation measures recommended by the Acoustic Consultant will be incorporated into the Construction and Environmental Management Plans.	Prior to works commencing.
Waste Management	3	An Operational Waste Management Plan will be prepared for each of the warehouse buildings on the site.	Prior to the occupation of each warehouse.
	4	If required a Hazard Assessment for the storage of hazardous goods will be undertaken.	Prior to the issue of a Construction Certificate relating to the construction of a hazardous material storage facility.
Signage and Lighting	5	Future applications will be lodged providing detail on signage and lighting for Warehouse Buildings 1 and 2.	Prior to the occupation and use of each warehouse building.
Building Code of Australia	6	The Stage 1 warehouse buildings will comply with the relevant provisions of the Building Code of Australia.	Prior to issue of a Construction Certificate.
Heritage	7	The Aboriginal artefact in the Stage 1 Project Application area will be collected and agreement will be sought with the local Aboriginal community to determine a suitable safe location for the storage of the artefact.	Prior to earthworks commencing.
	8	Initial earthworks within the Stage 1 Project Application area will be monitored by a representative from the local Aboriginal community down to artefactually sterile layers. If other Aboriginal objects are located during monitor works cease and that a suitably qualified archaeologist be called in to assess and document the finds.	During initial earthworks.
Contributions	9	Jacfin will enter into an agreement with the Department of Planning as part of the Stage 1 Project Application, in accordance with Division 6 of Part 4 of the EP&A Act, to provide for regional infrastructure contributions, as outlined in Section 6.15 of the this report.	Prior to the issue of an Occupation Certificate.

8.0 Conclusion

The Ropes Creek Employment Precinct Concept Plan Application seeks approval for the following:

- Establishment of a new employment precinct comprising approximately 81 hectares of developable area;
- Location and design of new regional and local roads;
- Indicative project staging; and
- Design Guidelines for future project applications.

The concurrent Project Application seeks approval for the construction of Stage 1 of the Ropes Creek Employment Precinct, including:

- Subdivision;
- Bulk earthworks;
- Installation of services;
- Construction of a temporary and permanent access road; and
- Construction of two warehouse buildings with associated offices, car parking and landscaping.

This Environmental Assessment Report demonstrates that the proposed development is generally consistent with the relevant planning controls. In particular the proposal is consistent with State Environmental Planning Policy (Western Sydney Employment Area) 2009 which envisages the development of high quality employment land in Western Sydney which is highly accessible from both the M4 and M7.

The report details the appropriate mitigation measures that will be in place during the construction and operational phases of the development so as to minimise environmental and amenity impacts on surrounding development and residential amenity.

The proposal is expected to generate the following public benefits:

- Generation of up to between 1,600 and 3,250 jobs new jobs within Western Sydney;
- Investment of up to $290,280,000 in the NSW economy;
- Construction of sections of the new link road network; and
- Preservation of the Ropes Creek corridor.

The report demonstrates that the proposed Ropes Creek Employment Precinct (Concept Plan) and the Stage 1 warehouse developments (Project Application) comply with all relevant statutory requirements. Additionally commitments are made to mitigate any environmental impact that will result from the development. Accordingly, it is appropriate that the applications be approved.