

State Environmental Planning Policy No. 59 – Central Western Sydney Economic and Employment Area

EMPLOYMENT LANDS PRECINCT PLAN



LOT 11 PRECINCT

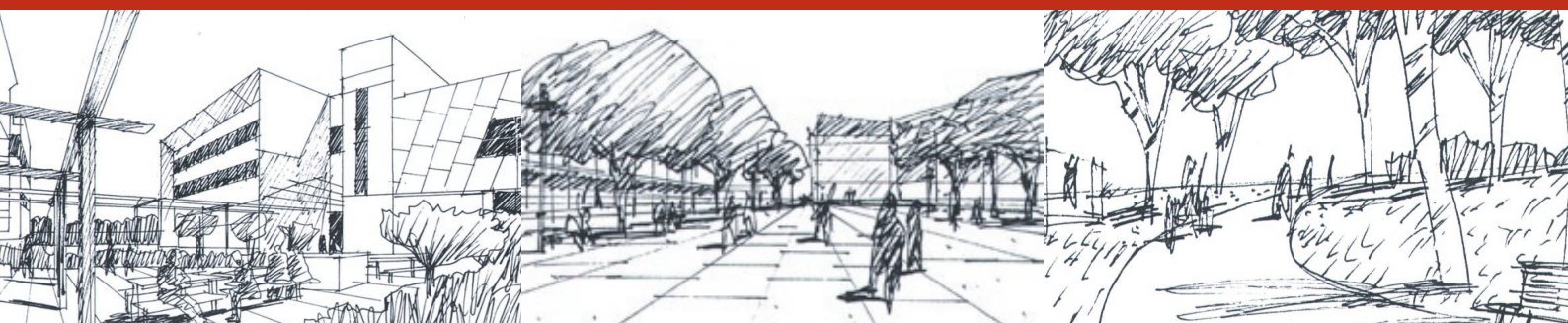


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Section 1

INTRODUCTION

1.0 Introduction

1.1 Declaration

The *Lot 11 Precinct Plan* outlines the provisions relating to development of the Lot 11 Precinct of *State Environmental Planning Policy No. 59 – Central Western Sydney Economic and Employment Area*. The Precinct Plan was adopted by Council on 12 October 2005, and came into force on 8 November 2005.

1.2 Background

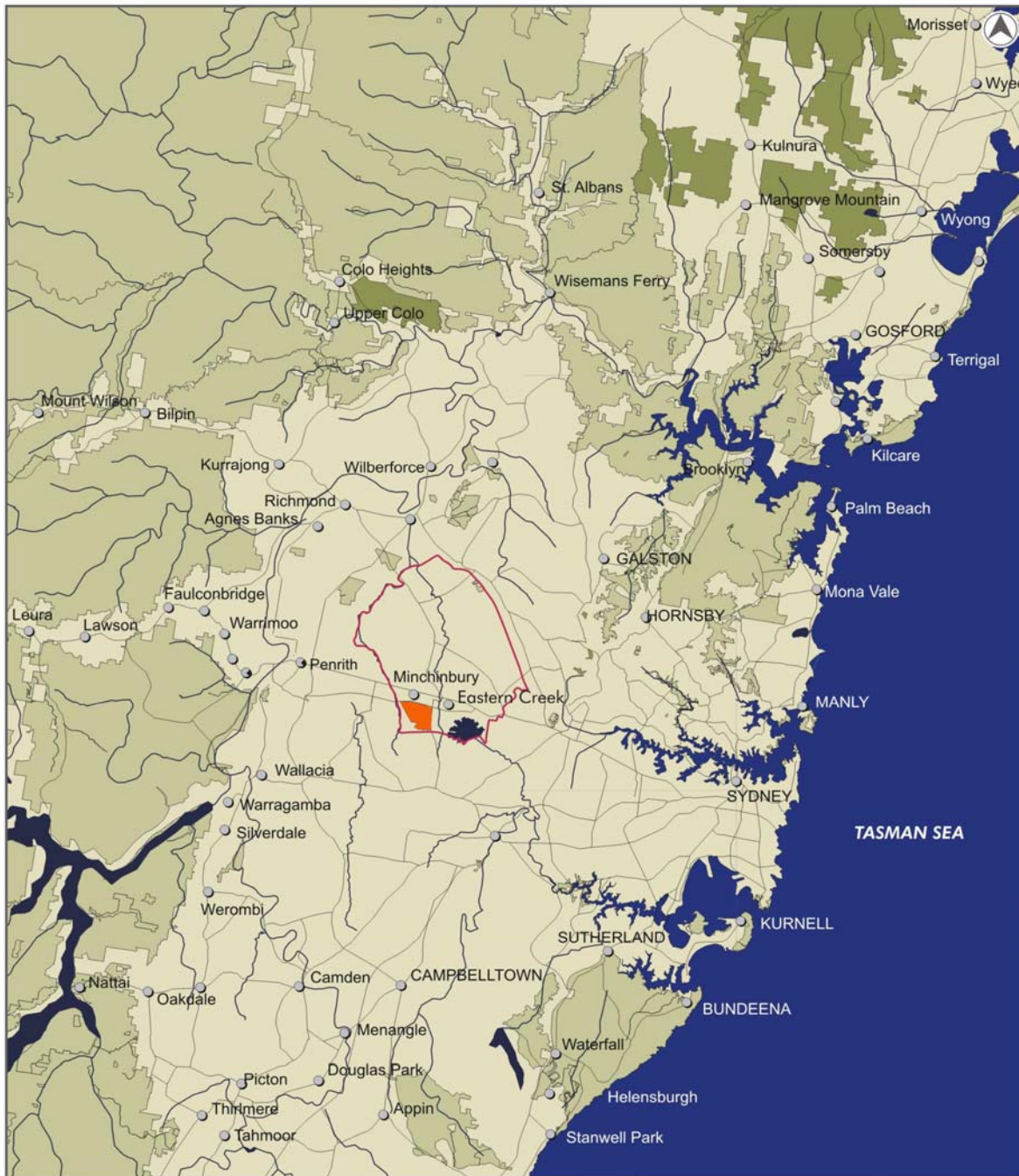
This Precinct Plan has been prepared in accordance with the provisions of *State Environmental Planning Policy No 59 – Central Western Sydney Economic and Employment Area* ('SEPP 59') for land identified as the Lot 11 Precinct.

The Lot 11 Precinct was included within the provisions of SEPP 59 as an Employment zone upon gazettal of Amendment No 6 to the SEPP on 2 July 2004. On 9 December 2004 the Minister declared the land within the Lot 11 Precinct to be a Release Area within the meaning of Clause 11 of SEPP 59.

The Precinct comprises 58.87 hectares and is strategically located on the corner of the M4 Motorway and Wallgrove Road, in close proximity to the intersection of the M4 Motorway with the Westlink M7.

The site adjoins the Eastern Creek Precinct of SEPP 59, which is zoned Employment and comprises a total area of approximately 640 hectares. The Minister released land in the Eastern Creek Precinct in 3 stages. Separate Precinct Plans cover those release areas.

The Lot 11 Precinct Plan will further the planning process for the development of the SEPP 59 employment lands at Eastern Creek. The Precinct Plan has been prepared in accordance with the provisions of SEPP 59 and in consideration of precinct planning on adjoining lands with SEPP 59.

**KEY**

- Blacktown Local Government Area
- SEPP 59 Employment Lands
- State Forest
- National Parks

Figure 1 – Regional Context

1.3 Purpose

1.3.1 Aim

This Precinct Plan aims to reinforce the provisions of SEPP 59, by providing guidelines for the detailed planning and development of the Lot 11 Precinct.

1.3.2 Objectives

The objectives of this Precinct Plan are to:

- (a) promote economic growth and employment opportunities within Central Western Sydney; and
- (b) ensure the orderly provision of infrastructure and services; and
- (c) provide a safe and efficient stormwater management system that minimises stormwater impacts on the environment; and
- (d) ensure ecologically sustainable development that takes an active approach to anticipating and preventing damage to the environment; and
- (e) minimise the impact of development on areas of high biodiversity, archaeological significance, and heritage; and
- (f) ensure the traffic and public transport needs for the Precinct are achieved; and
- (g) ensure the best possible urban design outcomes are achieved; and
- (h) ensure the community service needs of the working population are met; and
- (i) allow for the provision of adequate open space for the use and enjoyment of the working population; and
- (j) ensure the provision of high quality landscaping throughout the Precinct.

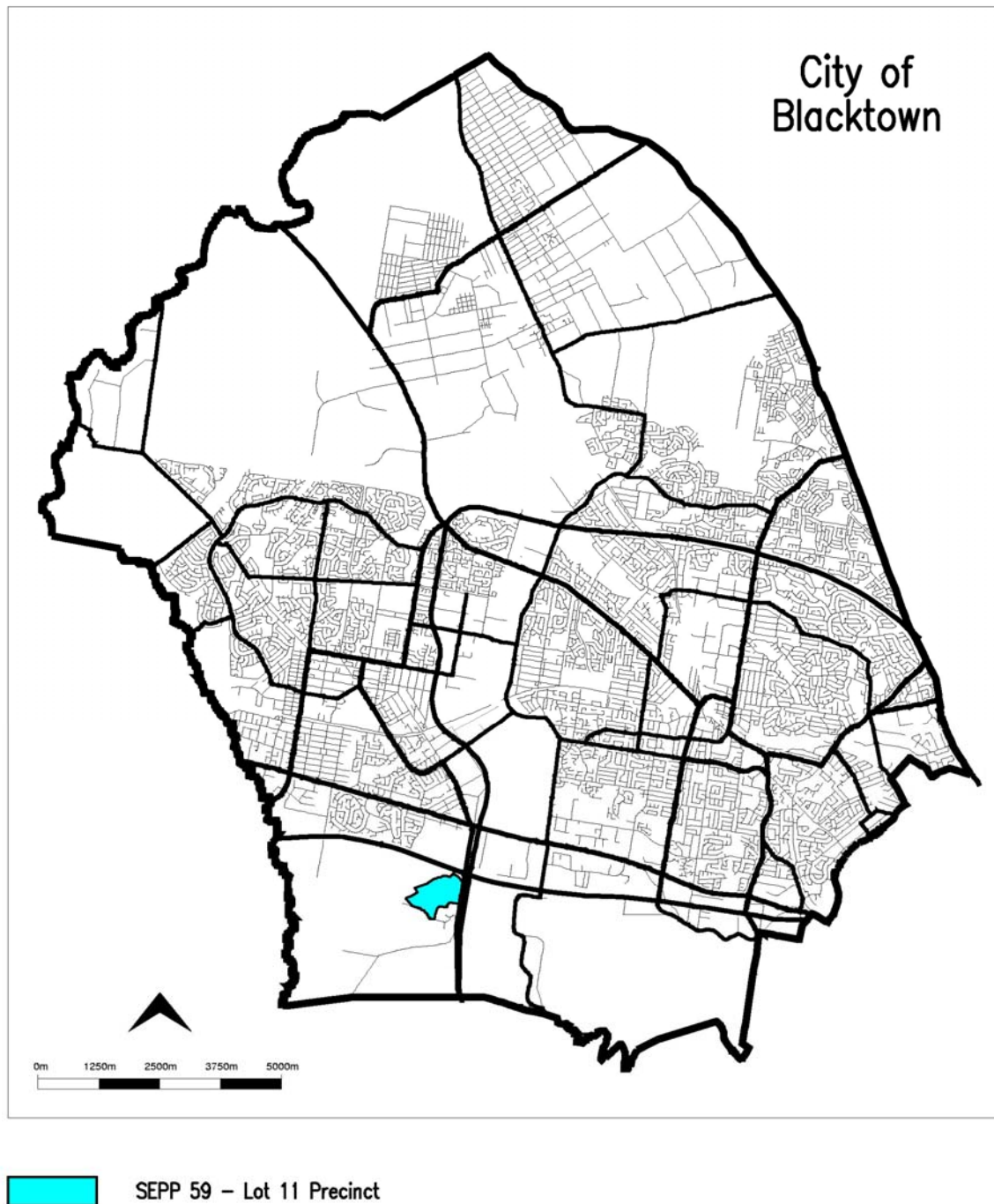


Figure 2 – Local Context

1.4 Structure

The Precinct Plan is divided into the following sections. Applicants are required to refer to each of these sections prior to preparing a Development Application. Applicants are encouraged to discuss their proposal with Council officers prior to lodgment of a Development Application.

- Section 1 – Introduction
- Section 2 – Development Concept
- Section 3 – Economic Development and Employment
- Section 4 – General Services
- Section 5 – Stormwater Management
- Section 6 – Environmental Management
- Section 7 – Biodiversity
- Section 8 – Heritage
- Section 9 – Traffic and Transport
- Section 10 – Urban Design
- Section 11 – Community Services
- Section 12 – Open Space
- Section 13 – Landscaping
- Section 14 - Appendices

1.5 Relationship to other Planning Instruments

This Precinct Plan supplements the provisions of SEPP 59 by providing written information, maps and diagrams that outline the provisions relating to the development of land within the Lot 11 Precinct. Applicants are required to have regard to the provisions of SEPP 59 and the provisions this Precinct Plan.

1.6 Land to Which this Plan Applies

The Plan applies to land on the south western corner of the M4 Motorway and Wallgrove Road, Eastern Creek, as shown on the map below. The legal description of the land is Lot 11 in Deposited Plan 1025320.



Figure 3 – Aerial Photo of SEPP 59 Precincts

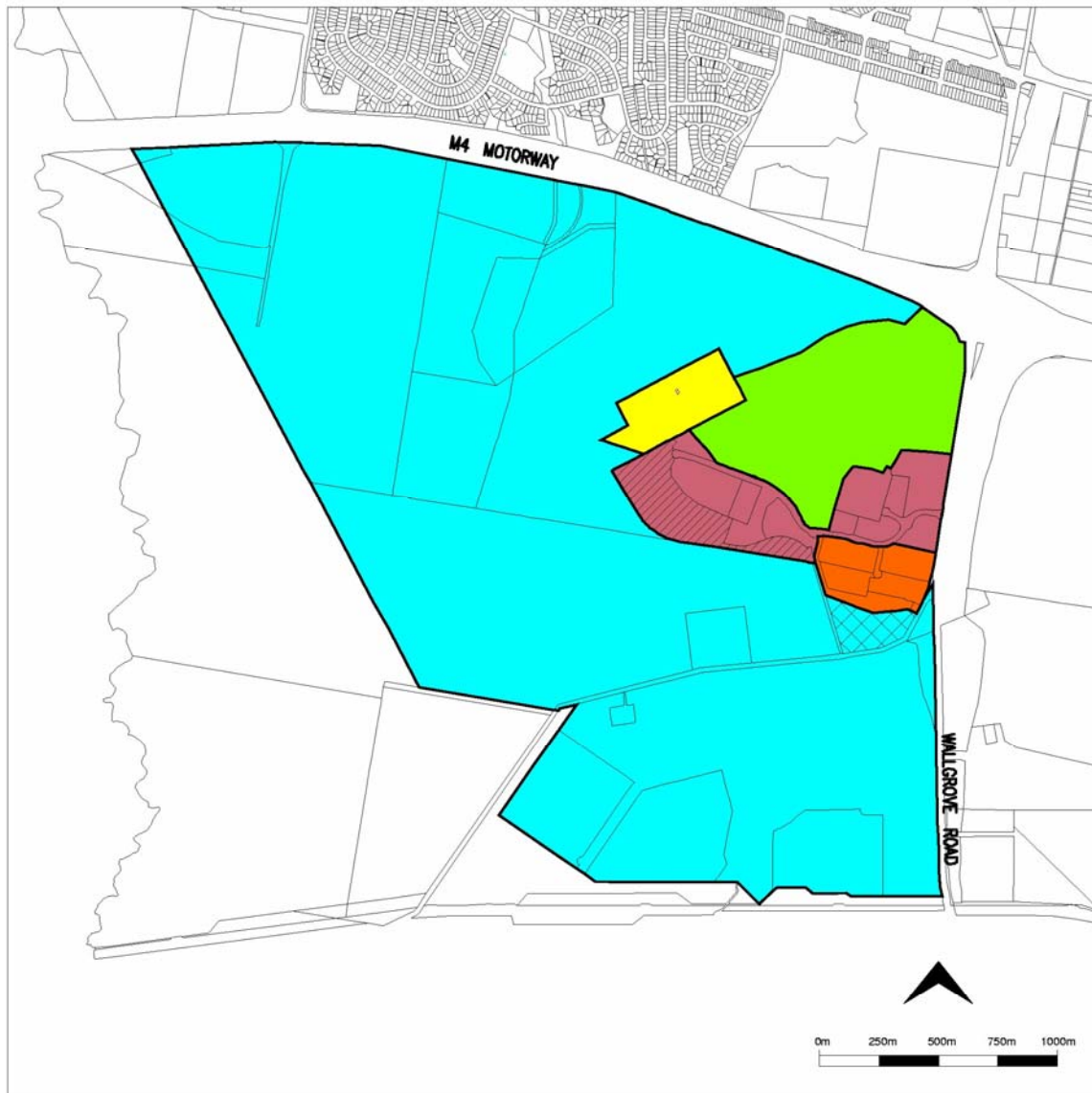
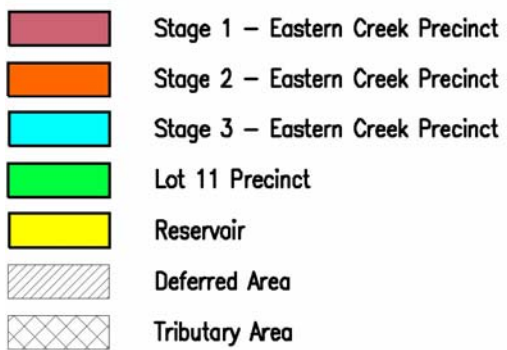


Figure 4 – SEPP 59 Release Areas

Section 2

DEVELOPMENT CONCEPT

2.0 Development Concept

2.1 Site Context

2.1.1 Regional Context

The Lot 11 Precinct is strategically located at Eastern Creek in Central Western Sydney, approximately 35 kilometres from the Sydney CBD. The Precinct is prominently located on the corner of the M4 Motorway and Wallgrove Road, where the M4 Motorway intersects with the Westlink M7 Motorway. Accordingly, the Precinct will have access to the regional road network, and the shared regional cycle and pedestrian pathways.

2.1.2 Local Context

The immediate locality is characterised by a variety of land uses. The land to the north of the M4 Motorway comprises an animal quarantine station, lawn cemetery and crematorium, and the Minchinbury residential area. The land to the west and south forms part of the Eastern Creek Precinct, which is also zoned Employment under the provisions of SEPP 59.

The land to the east of Wallgrove Road is incorporated in *Sydney Regional Environmental Plan No 31 – Regional Parklands* that forms a north-south green belt, which aims to provide high quality open space, a range of recreational opportunities and a visual and physical break between areas of urban development.

A number of other employment generating areas are proximate to the site. The Huntingwood and Arndell Park industrial areas are located approximately two kilometres to the east and the Minchinbury industrial area is located approximately two kilometres to the west.

2.2 Site Characteristics

A broad overview of the existing characteristics of the site is provided below.

2.2.1 Existing buildings and infrastructure

The site was developed as a themed amusement park in the mid 1980s, known as Australia's Wonderland (later renamed Wonderland Sydney). The park included a range of rides, amusements and live entertainment, with ancillary retail and dining outlets at the time of opening and was later expanded to include a water park, a wildlife park and an outback themed area, in addition to a range of rides and attractions within the original amusement park boundaries. The park ceased operations on 26 April 2004.

2.2.2 Access and parking

The amusement park had two large expanses of customer car parking, in addition to a smaller staff car parking area and bus/coach parking area on the southern and south western portions of the property.

Access to these car parks has been modified over time. The previous access to the staff car park and bus/coach parking area was closed to facilitate the development of the adjoining site. Further, the development of Wonderland Drive has modified the main access road, with the provision of a roundabout on the southern boundary of the site, providing access to the large expanses of hardstand parking areas.

2.2.3 Topography

The topography of the site is undulating, sloping generally from the northwest and southwest to the north and east. The high point of approximately 85 metres AHD is located in the western portion of the site, in close proximity to the existing water reservoir on the adjoining lot. The low point of approximately 55 metres AHD is located in the north eastern corner of the site, adjacent to the intersection of the M4 Motorway and Wallgrove Road.

2.2.4 Vegetation

The previous development of the site as an amusement park resulted in significant impacts on the original vegetation. The residual woodland, located in two small areas in the north western portion of the site, was originally Grey Box Woodland, however, the previous partial clearing, underscrubbing, rubbish dumping and incursion of weeds has resulted in impacts to the extent that only the canopy is representative of the original vegetation community. The remainder of the site comprises the former amusement park and is dominated by planted specimens, both native and exotic.

2.2.5 Water features

A number of man made water features exist across the site that were developed in association with landscaping of the amusement park, including a series of low level watercourses that drain towards two dams in the north eastern corner of the property.

It is understood that during the operation of the amusement park, a pump system in the larger dam in the north eastern corner of the site, redirected water back to the high point in the western corner of the site to enable constant recirculation of water through the ornamental streams.

2.3 Staging of Development

The development of the entire Precinct could occur over a 5 year period. The staging represents the longest anticipated timeframe for redevelopment of the Precinct, which would need to comply with the principles and guidelines set out in this Precinct Plan.

The staging and timing of employment lands is dependent on:

- (a) the market for employment lands;
- (b) the removal of the existing theme park facilities; and
- (c) infrastructure provision.

The development of employment lands is planned to progress from the south and east of the Precinct to the north and west. This staging suits the location and construction of infrastructure to support development of the Precinct.

2.4 Concept Plans

A series of concept plans have been developed to provide a visual representation of the development that could potentially be achieved on the site, in accordance with the development controls provided in the Precinct Plan. The concept plans include:

- (a) site concept;
- (b) site layout; and
- (c) site perspective.

It should be noted that the concept plans are indicative only and do not provide any approval, implied or otherwise, for the future development of the site. Any future development of the site will be subject to obtaining the appropriate development consent from Council.



Figure 5 - Indicative Site Concept

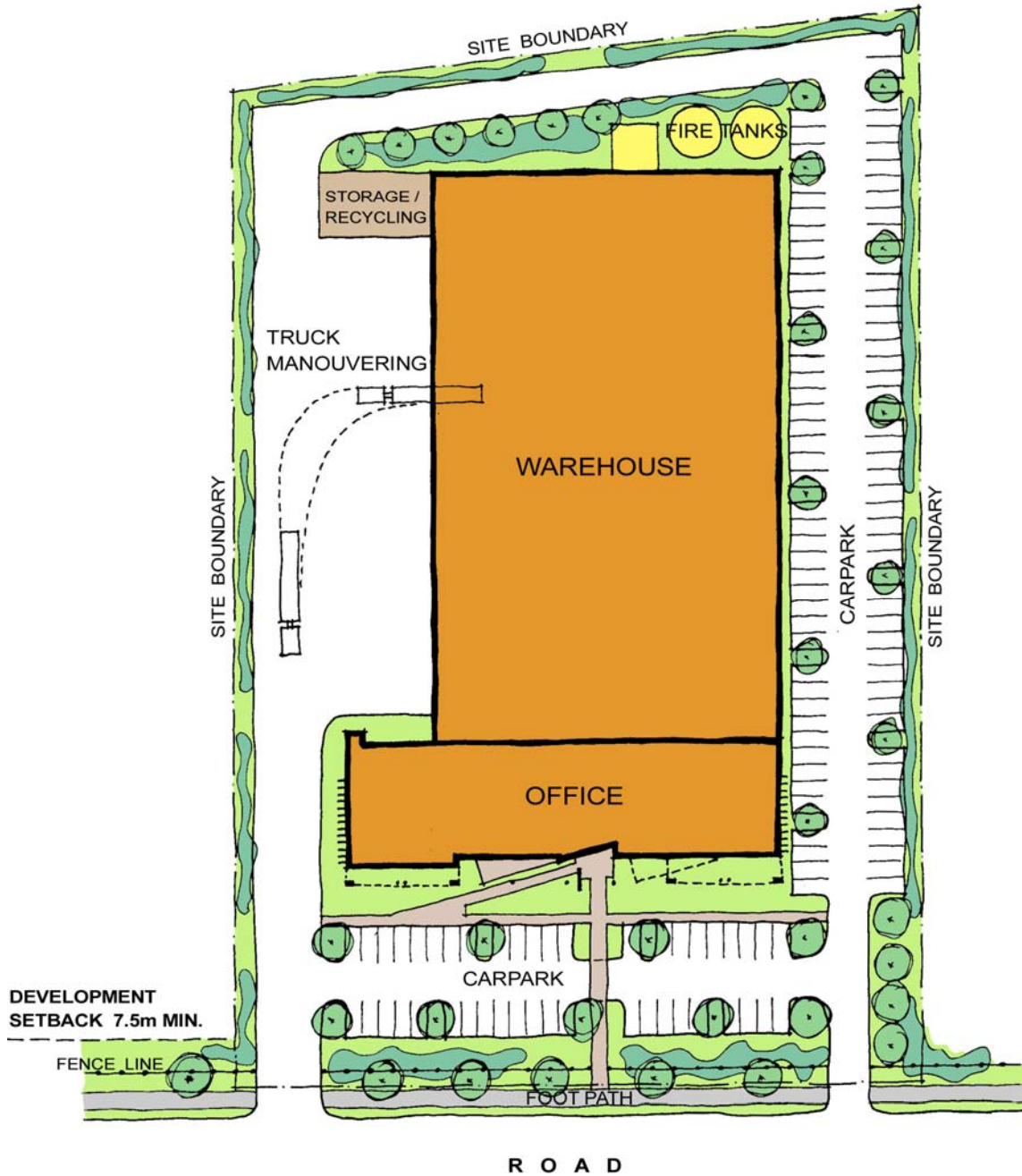


Figure 6 - Indicative Site Layout



Figure 7 - Indicative Site Perspective

Section 3

ECONOMIC DEVELOPMENT AND EMPLOYMENT

3.0 Economic Development and Employment

3.1 Economic Context

Employment forecasts predict a growth of 30,500 jobs over the 2001-2026 period in the Blacktown LGA. Key contributors to this growth include the service sector, particularly retail trade, property and business services, education, health and community services, in addition to (and of relevance to Eastern Creek) transport and storage, and the manufacturing sector, namely the manufacture of food products, chemicals, basic metals and materials, and machinery and equipment. Blacktown is also likely to accommodate growth from elsewhere in Western Sydney as it holds a significant proportion of the available employment lands in the region.

There is a large pool of labour in Western Sydney that Eastern Creek can draw upon. The area suffers from skill shortages in particular areas, a large unskilled workforce, and struggles to retain graduates. The SEPP 59 employment lands offer an opportunity to overcome some of these issues through a targeted approach to investment and working with the labour force to match their skills to the needs of investors.

The development of the Lot 11 Precinct has the potential to expand the local job stock, thus contributing towards a greater level of self-containment in the area, yielding positive implications economically, socially, and environmentally.

3.2 Drivers of Economic Growth

3.2.1 Macro Economic Level

There are a number of factors driving demand and location of employment land in Sydney and more specifically Blacktown. The key drivers of employment growth include:

(a) Population growth

Western Sydney is expected to experience considerable population increase over the next few decades. Population projections indicate that Blacktown will rise to 339,000 by 2026. This figure is 82,636 above the 2001 population, an increase of 32%. This growth will be a key driver of employment growth, and employment lands will need to be able to cater for this growth.

(b) Globalisation

The liberalisation of the global trading environment, the increase in the levels of global trade and capital investment, and production factors such as the reshaping of production through technological change are all factors impacting upon the competitiveness of the subregional economy.

(c) Connectivity

Blacktown's location in Central Western Sydney and the offer of Eastern Creek in terms of motorway connectivity, access to the market and supply network, proximity to an international airport and Port Botany are all key considerations in the current and future location decisions of industry.

(d) Technology

The impact of improvements on supply-chain dynamics is changing the demand for employment land and its geographical distribution. With increased inventory in motion rather than at rest, floorspace for storage purposes can be expected to fall, whilst floorspace for the transfer of goods should increase.

(e) Decentralisation of activity from Sydney

The manufacturing, utilities, and distribution sectors, in particular, are being 'pushed' away from the inner areas of Sydney through intense development pressure. Areas such as Western Sydney and South West Sydney are increasingly under scrutiny as a potential firm location.

(f) Labour market trends

Increasing participation of the female labour force, the growth of part-time work, changing occupational structures, the growing importance of small businesses, and the growth of home-based work are all factors reshaping the supply and demand for labour.

3.2.2 Micro Economic Level

At a more 'micro' level, the main factors influencing the location of employment-generating activity in the Sydney Greater Metropolitan Region are:

- (a) the price (cost) of space;
- (b) proximity and accessibility to markets;
- (c) proximity and accessibility to suppliers;
- (d) access to appropriately qualified and skilled labour supply;
- (e) local transport connectivity;
- (f) sufficient space for the efficient layout of activities;
- (g) flexibility for expansion or contraction;
- (h) adequate zoning flexibility to cater for future expansion or diversification;
- (i) quality of the local environment; and
- (j) the availability of local services and facilities to meet the needs of the labour force.

These are relatively generic locational factors. Particular industries will have additional factors they consider when choosing a location. Understanding these influences is important in developing the 'infrastructure' of the local economy, and in planning initiatives to grow employment. An understanding of factors influencing the demand for employment lands is important in developing the Precinct.

3.3 Labour Market Characteristics

Key socio-economic indicators for Blacktown which informs the ability of the LGA to capture employment opportunities include:

- (a) population growth of 21% over the 1991- 2001 period (44,654 in absolute terms);
- (b) a large labour pool characterised by high levels of full-time employment and a high labour force participation rate;
- (c) high unemployment (7.7%) relative to the Sydney SD average (6.1%);
- (d) Western Sydney is a relatively integrated labour market, with most residents of Blacktown working in the LGA, Penrith, or Parramatta;
- (e) the workforce has upskilled over time, with the proportion of residents aged 15+ holding a bachelor degree or above has increased from 4.1% in 1991 to 9.6% in 2001. However, the proportion of residents with no qualifications is high at 57.2% relative to Sydney SD (48.7%);
- (f) there is a below average proportion of managers/administrators, professionals, and associate professionals. In contrast, intermediate workers, elementary workers, and labourers are overrepresented in the local area relative to Sydney SD and NSW;
- (g) key employment sectors include manufacturing, retail, wholesale trade, and transport and storage; and
- (h) emerging industries include knowledge-based consultancy, emerging chemical/pharmaceutical research, and smart environmental services.

3.4 Projected Employment and Economic Growth

Based on the anticipated development of this Precinct for transport and storage and manufacturing with ancillary offices, the assessment of the employment benefits found that the Precinct had the potential to create 9,331 jobs, including 3,158 people directly employed on the site, 2,583 indirect jobs in supplying businesses and 3,590 jobs by the induced effect of additional spending in the region. Based on a developable land area of approximately 50 hectares, the direct jobs on site will yield an employment density of approximately 63 jobs per hectare.

The jobs created by the development of the site would help to reduce the level of unemployment across the region. Opportunities for training and apprenticeships during the construction phase and the ongoing operational phase could also be provided.

Further, the assessment estimated that, when fully developed, the site would generate around \$457 million in gross output and \$240 million in value added, of which some \$140 million would flow into the Western Sydney Region economy through salaries and wages.

3.5 Objectives

- (a) Establish a high quality industrial Precinct that provides diversity in employment opportunities and economic development to benefit Blacktown and Central Western Sydney.
- (b) Provide a range of development consistent with the provisions of SEPP 59 and having regard to the location of the site in close proximity to the junction of the M4 Motorway and the M7 Motorway.
- (c) Provide for a range of community services that service the daily convenience needs of the local workforce and visitors, and the needs of local businesses and activities.
- (d) Enhance the skill of the local workforce through the provision of appropriate facilities for the training of apprentices, and ongoing training and development.
- (e) Contribute to the increased levels of skill matching with the local workforce.
- (f) Development should aim to achieve an employment density target of 63 jobs per hectare in order to achieve the overall projected on-site employment forecast of 3,158 jobs for the whole Precinct.

3.6 Controls

- (a) Land uses within the Precinct must be in accordance with the range of permissible land uses listed in SEPP 59.
- (b) High quality industrial and manufacturing / high technology industries, warehouse and distribution centres, and research and development activities are strongly encouraged.
- (c) Office space is permitted where it is ancillary to and associated with a use permitted within the zone under the provisions of SEPP 59.
- (d) Community services are permitted where they are intended to service:
 - (i) the daily convenience needs of employees and visitors within the local area and may include shops, restaurants, professional or personal services and the like; or
 - (ii) the needs of employees within the local area, including child care centres, recreation areas and the like; or
 - (iii) the needs of businesses and organisations within the vicinity of the land and may include business services, clubs, conference and meeting facilities and the like.
- (e) Consideration should be given to the development of an apprentice training centre within the Precinct that is integrated with community services.
- (f) A Development Application for a new building or major additions to an existing building is to provide details of the number and type of jobs anticipated to be created on the site as a result of the proposed development.

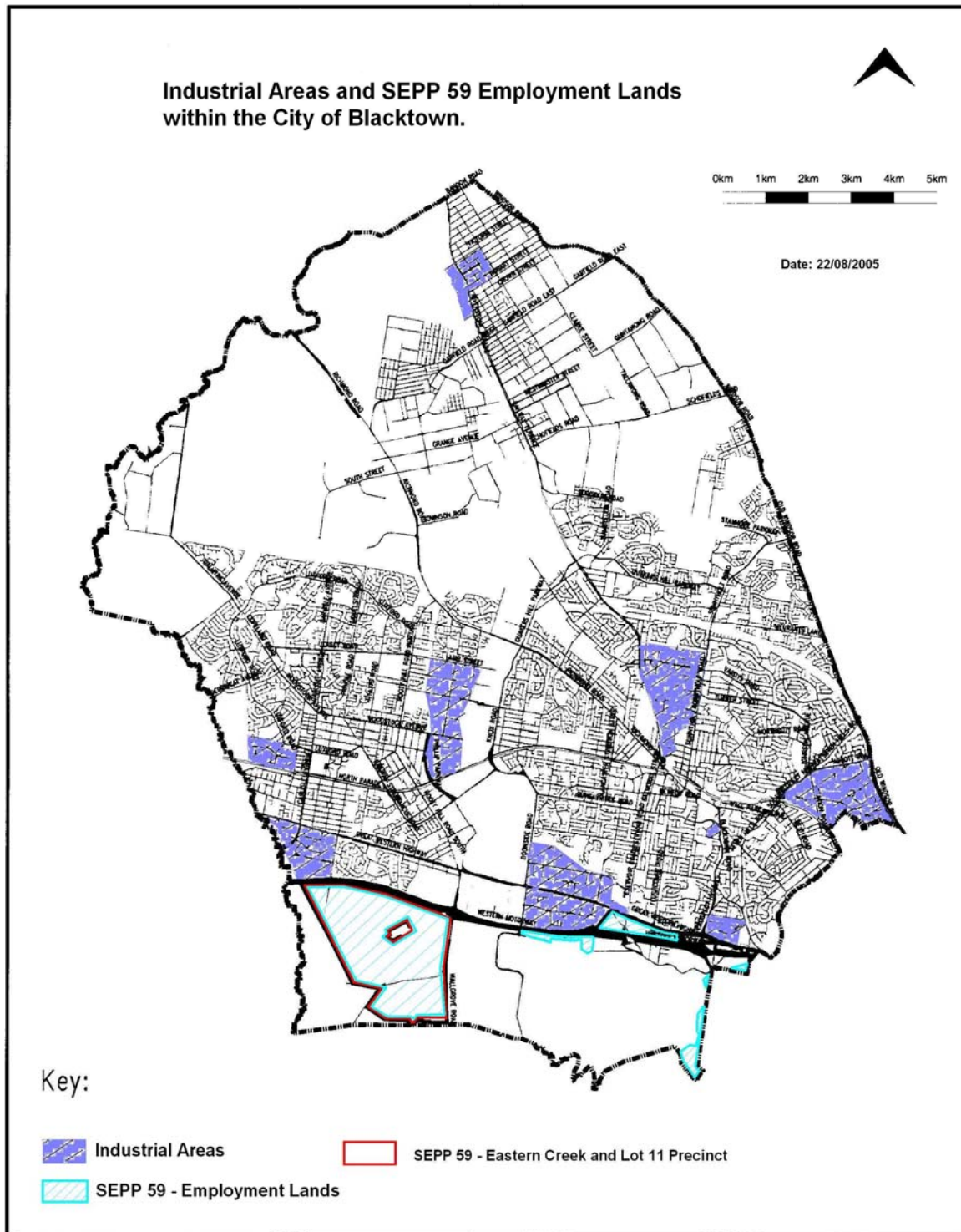


Figure 8 – Industrial Employment Lands within Blacktown

Section 4

GENERAL SERVICES

4.0 General Services

SEPP 59 contains guiding principles that require the timing, location and design of the development to have regard to the orderly provision of infrastructure and services. SEPP 59 requires the preparation of a general services plan.

The general services plan for the Lot 11 Precinct is concerned with the provision of water, sewerage, electricity, gas and telecommunications infrastructure. Consideration of servicing this Precinct also needs to consider servicing of the adjoining Eastern Creek Precinct to ensure that the short-term provision of services do not inhibit the long-term ability to balance the costs for future infrastructure.

4.1 Water Services

Depending on the timing of development within the SEPP 59 lands, the capacity of the relevant water and wastewater systems may be limited or not available. The Lot 11 Precinct has existing usage rights to utilise limited water and sewerage system capacity designed for the previous land use. However, redevelopment of the Precinct requires a new servicing strategy.

The servicing strategy for the Eastern Creek Precinct includes the future redevelopment and servicing of the Lot 11 Precinct. It is technically feasible to provide services to the Lot 11 Precinct by upgrading and augmenting the relevant systems. Some of the required infrastructure to service the Precinct will also service adjoining areas.

4.1.1 Potable Water

(a) Existing supply and usage rights

At present, limited bulk water capacity (existing usage rights) is available for the redevelopment of the Lot 11 Precinct. The former Theme Park was supplied with water via a 200mm diameter main from the Minchinbury bypass main, and was a temporary private supply. The 200mm main served a private pump station that used to supply the Theme Park. This main is not available to supply water to the redevelopment of Lot 11 Precinct for industrial development. The previous private servicing arrangements will not continue. The existing 200mm main will be required to be decommissioned once the Precinct is developed.

The new water supply to the redevelopment of the Precinct will have to come from a main at Wonderland Drive when capacity is available. The existing capacity to service a maximum of 17 hectares is only a bulk water allocation for the initial development of the

site, but a connecting (lead in works) water main needs to be provided from the reservoir and site reticulation works.

(b) Water Allowance and Design Standards

Based on the usage pattern/average consumption for the Theme Park, the maximum area of land that could be serviced from existing capacity (usage right) is 17 hectares, below RL 72m AHD, for light industrial, warehouse and transport depot type development. This bulk water availability is determined by Sydney Water based on its Table 10A 'light industrial' design allowance of 66kl/ha/day. Given the nature of development to be proposed, and/or may occur in the long term, the standard 'light industrial' design allowance rate of 66kl/ha/day (Maximum Day Demand) has been adopted.

The availability of aforesaid capacity is based on the provision of services to those developments that have essentially low demand for water and low discharge to the sewerage system. If water-intensive development takes place, the area of land that can be serviced from the existing capacity will be less than 17 hectares. Maximum water supply allowance per hectare/day for the given land use cannot be accrued for future use.

The water supply to the proposed subdivision of initial development will need to be from a link main off the 375mm diameter new outlet main from the reservoir. This 375mm pipeline is required to be laid within the public access road for the Eastern Creek Precinct.

(c) Required New Major Infrastructure

Servicing of the whole Precinct will be available when a second 40ML surface and a 4ML elevated reservoir, Water Pumping Station and associated pipe works are constructed at Sydney Water's Minchinbury Reservoir site. Sydney Water will fund and construct the new 40ML surface reservoir, but developers are to fund and construct the 4ML elevated reservoir and associated works. Sufficient capacity for servicing the redevelopment of the Precinct have been considered in the planning and design of the reservoirs, however developers of the Precinct will be required to fund the proportional cost (based on the pure net hectare served) of the elevated reservoir, pumping station and associated pipe works as recovery charges.

The elevated reservoir is required to service land above RL 72m AHD, however, when both the new reservoirs are in operation, most of the land within the Precinct will be serviced from the elevated reservoir.

Developers of the Precinct will be required to fund and construct trunk water mains, extend and/or amplify existing mains, and all required reticulation works. Water mains to be laid initially will need to be designed to service full development of the Precinct.

(d) Required Road Layout for Water Main Construction

The staging of development is important for efficient water main design and sizing. Water reticulation mains will not be laid within the footway but within the road reserve. As such, the design of the public roads will need to take this into consideration.

The temporary 250mm main at Wonderland Drive does not have sufficient capacity for the additional 17 hectares of development within the Precinct. Water capacity will not be adequate in the Wonderland Drive main until completion of the 375mm main from the reservoir to service land within the Eastern Creek Precinct. Construction of this main and other mains will be in accordance with the final road pattern for the Eastern Creek Precinct.

(e) Sydney Water Developer Charges

Appropriate developer charges for the use of, and connections to, the existing Sydney Water infrastructure, and recovery of costs for developer-funded infrastructure will apply to the Precinct based on a reasonable and efficient proportional cost of the elevated reservoir, pumping station and associated pipe works. Sydney Water will determine the water supply capacity on a case-by-case basis as Development Applications are lodged for incremental development.

4.1.2 Objectives

To develop a water supply system that conforms to the requirements of Sydney Water and Blacktown City Council.

4.1.3 Controls

Sydney Water has a requirement to provide a minimum of 15m water supply pressure at all times within its operating licence area. Therefore, Sydney Water will supply water at the boundary of properties as follows:

- (a) up to RL 65m AHD elevation if connection is made only to the existing 150mm diameter water main in Wallgrove Road.
- (b) up to RL 72m AHD elevation if connection is made to the permanent existing Minchinbury outlet main within the Sydney Water's Minchinbury Reservoir site and linked to the existing 150mm diameter water main in Wallgrove Road.
- (c) all developable land within the Precinct can be serviced when new surface and elevated reservoirs, water pumping station, and required outlet and/or trunk water mains (600/750mm) are in operation.
- (d) the developer will be responsible for hydraulic assessment of the development, including fire fighting capability. On-site water storage, and/or booster pumps may be required to supplement the reticulated water supply, in particular for fire fighting purposes.
- (e) developer charges will be determined by Sydney Water upon receipt of each application for a Compliance Certificate for the various stages of development, pursuant to Section 73 of the *Sydney Water Act 1994*.
- (f) Sydney Water will issue a Notice of Requirements under Section 74 of the *Sydney Water Act 1994* detailing the conditions to be met including developer charges payable.
- (g) Development Applications will need to be referred to Sydney Water to determine whether sufficient water services are available, and Sydney Water's prior approval is required for any pipeline adjustment, and new connections to its existing mains.
- (h) During the construction and amplification of infrastructure works, the passage of heavy construction vehicles and machinery over the existing water mains will need to be protected. All affected mains in particular those under road crossings must be constructed of reinforced concrete encasing to ensure that services are not disrupted.
- (i) If any work is undertaken at or near the zone of influence of the 1050mm diameter water main supplying Minchinbury Reservoir from Water Pumping Station 184 in Wonderland Drive, protection by concrete encasement of the pipe will be the minimum requirements.

4.2 Sewerage Services

Since its operation in the mid 1980's, waste water generated from the disused Theme Park was pumped from a private sewerage pumping station ('SPS') owned and operated by the Theme Park owner to the west to Sydney Water's Rooty Hill sewer carrier. This carrier drains to Quakers Hill STP.

(a) Existing Maximum Flow Allowance

Currently, the maximum sewage flow allowed to Sydney Water's system from the Theme Park site is 6 litres/sec. This indicates the availability of a very restricted sewerage service for the redevelopment of the site. Although current sewage flow from the Theme Park is diverted to the interim SPS 690 at Stages 1 and 2 of the Eastern Creek Precinct, the allowable maximum limit of 6 litres/sec does not change. Therefore the total area of the Lot 11 Precinct which can be redeveloped is likely to be dependent on the availability of the existing sewerage system capacity.

(b) Eastern Creek Sewer Submain Section 3-5

Land within the Precinct can be connected and drained through gravity when the Eastern Creek Sewer Sub-main Section 3-5 (approximately 5 kms of trunk sewer carrier ranging between 750-1000 mm diameter) is in operation. Once this carrier is in operation, the interim SPS 690 at the Eastern Creek Precinct will be decommissioned, and all development connected to this gravity carrier, which will drain to the Quakers Hill STP.

(c) Ultimate Sewage Flow Allowance

Although capacity will be provided for approximately 40 developable hectares at 100 equivalent person ('EP')/hectare for servicing the Precinct, to utilise this asset the sewer connection needs to be extended to the Precinct as well as site reticulation works. Reticulation sewers are to be designed for 100 EP/hectare for industrial land.

As part of the Development Application process, the developer shall be required to apply for a Section 73 Compliance Certificate. This will enable Sydney Water to determine its firm requirements, and sewer capacity on a case-by-case basis for incremental development, and will issue a Notice of Requirements ('NOR'). Subject to the full compliance of all the requirements, including the payment of appropriate sewer DSP charges and recoverable amount for a new carrier, Sydney Water will issue the Certificate.

4.2.1 Objectives

Develop a sewerage system that conforms to the requirements of Sydney Water and Blacktown City Council.

4.2.2 Controls

- (a) Sewage flows from the development shall be limited to 6 litres/sec prior to the completion/operation of the proposed Eastern Creek Submain Section 3-5.
- (b) Development is required to consider the potential impact on downstream recipients of effluent, not only with respect to volume but effluent quality.
- (c) Commercial premises will be required to comply with Council's environmental health requirements and the most current version of Sydney Water Corporation's *Trade Waste Policy and Management Plan* to ensure that the trade wastewater is of a quality that can be treated, reused or disposed of in an environmentally sound manner.
- (d) Developer charges will be determined by Sydney Water upon receipt of each application for a Compliance Certificate for the various stages of development, pursuant to Section 73 of the *Sydney Water Act 1994*.
- (e) Sydney Water will issue a Notice of Requirements under Section 74 of the *Sydney Water Act 1994* detailing the conditions to be met including developer charges.
- (f) Satisfactory arrangements will need to be made with Sydney Water regarding the provision of sufficient sewer services to the Precinct. Prior Sydney Water approval is required for any connection to its existing systems.

4.3 Power

The current electrical services to the Precinct will not be sufficient to cater for full development, and ultimate development will depend on further provision of infrastructure by Integral Energy.

The first zone substation to be established off Old Wallgrove Road will be able to partially supply the Lot 11 Precinct via dedicated 11kV supply lines, however the entire development is unlikely to be supplied without the establishment of a second zone substation on the south west corner for the Precinct.

The existing 11kV supply lines will only partially supply the potential load for development of the Precinct. The existing supply will be used in the initial stage until a new zone substation can be established.

Electricity infrastructure in the area consists of:

- (a) high voltage transmission lines traversing Wallgrove Road, and the Austral Bricks property;
- (b) high voltage transmission lines to the Minchinbury Reservoir;
- (c) limited power supply to the Lot 11 Precinct as result of the former Wonderland Sydney Theme Park;
- (d) residential supply to the suburb of Minchinbury on the northern side of the M4 Motorway;
- (e) Sydney West Substation and transmission lines to the west of the site; and
- (f) street lighting circuits to the east of the site on Wallgrove Road.

The network typology for the Precinct requires the construction of a zone substation in order to provide adequate services for development. The location of the substations is indicated on the General Services Plan, and described as a 1 hectare zone substation on the northern side of Wonderland Drive, adjacent to the eastern boundary of the Minchinbury Reservoir. This substation will service development of the Lot 11 Precinct, and the northern and eastern portion of the Eastern Creek Precinct.

The routes of supply that bring the main electricity feeders (132kV lines) from the Sydney West Transgrid Centre off Old Wallgrove Road to the zone substations need to be well-defined. Substantial assets are to be located along these routes of supply, i.e., 132kV reticulation systems and the easement corridors in which these assets will be located need to be determined based on activities associated with the development of

adjacent employment lands. The supply routes will be determined by Integral Energy based on the location, alignment and level of major roads within the Precinct.

Two independent routes of supply will need to be facilitated from the Sydney West Distribution Centre to the zone substation to be located within the south western corner of Precinct. The two routes of supply are required to ensure continuity of supply should one of the routes fail. This will provide an uninterruptible supply to the zone substation.

The Eastern Creek Substation will be located on Old Wallgrove Road, adjacent to the Sydney West Transmission Centre. This zone substation will have a 90MVA capacity. Supply to development within the Precinct can be facilitated from this zone substation via provision of 11kV supply lines, constructed within the existing public road corridor of Old Wallgrove Road and through easement corridors to the south. The Lot 11 Precinct Substation will have a similar capacity.

The zone substations will have a Firm capacity of 45MVA. The supply to developments will need to be facilitated from the zone substations via the provision of 11kV supply lines, constructed underground within the public road reserves. Easements will need to be created if timing requires the supply lines to be created prior to completion of public roads.

Should a number of users require higher demand, such as cold stores or manufacturing operations, capacity exists within the area of the zone substations to facilitate the addition of further transformers, up to a capacity of 135MVA.

Objectives

- (a) Ensure the safe and reliable provision of electricity; and
- (b) Ensure electricity supply meets the installation and operational requirements of the relevant service provider and the subsequent user demands.

Controls

- (a) Development is required to meet the requirements of the relevant service provider and Council, including Council's requirement for undergrounding of services.
- (b) Development shall be limited to the land with existing services capacity (subject to any temporary provision of electricity agreed with the relevant service provider), prior to the completion of the zone substation infrastructure to enable full development of the site.
- (c) Applicants are advised to consult with the relevant service provider regarding the location of existing services that may be affected by proposed works, either on site or on the adjacent public road(s).
- (d) Applicants will be required to obtain a certificate from the relevant service provider outlining their notification of arrangements for servicing the site, and advising that the provision of street lighting has been made available to the development.

4.4 Telecommunications

The site will be serviced by the Rooty Hill Exchange service area. This network is required to be extended from Wallgrove Road to provide infrastructure to the Precinct and adjacent development. During the early stages of development, conduits will be provided in shared trenches with the power authorities. As demand increases, cable infrastructure will be provided through these conduits to provide communications services to individual customers.

Specific requirements for development of the Precinct may mean that small cabinet infrastructure will need to be installed adjacent to the public road system, to facilitate distribution of the infrastructure. The physical dimensions of the cabinets that need to be installed are approximately 1.45 metres in height, 1.65 metres wide and 0.5 metres deep. Low voltage power would be required to serve these cabinet facilities.

Service assets can be provided in a timely and efficient manner. During the subdivision process, Telstra shall be contacted to coordinate the pre-provisioning of network infrastructure into land developments. Telstra provides an application service that confirms pre-provisioning for an estate. The reticulation is then installed during the subdivision development and a final Compliance Certificate is provided, indicating that facilities have been provided. It is intended that this process will be followed for the development of the Lot 11 Precinct.

Objectives

Ensure the supply of a telecommunications network that meets supplier and user demand.

Controls

- (a) The development is required to meet the installation and operational requirements of the network providers.
- (b) The development is required to meet Council requirements, including the undergrounding of services.
- (c) Infrastructure for the future provision of fibre optic cables is to be installed in all new subdivisions. Applications for subdivision are to indicate the location of piping for these services.
- (d) Applicants will need to obtain written clearance from a recognised telecommunications carrier stating that services have been made available to the development or that arrangements have been made for the provision of services to the development.

4.5 Gas

Gas supply is available to the Precinct via 3 lines:

- (a) main trunk line (7,000kPa) to the east of the site on the other side of Wallgrove Road;
- (b) secondary line (1,050kPa) to the east of the site on the other side of Wallgrove Road and Eastern Creek; and
- (c) a residential line (2,10kPa) to the north of the site on the northern side of the M4 Motorway.

Objectives

Ensure a safe and reliable gas supply.

Controls

Should natural gas be required, development is required to meet the installation and operational requirements of the relevant gas service provider.



-  Eastern Sewer Sub-catchment
Drains to Quakers Hill STP
via Eastern Creek Carrier
-  Northern Sewer Sub-catchment
Drains to Quakers Hill STP
via Link under M4
-  Western Sewer Sub-catchment
Drains to St Marys STP
via Ropes Creek Carrier
-  Elevated and Surface Reservoirs
-  Electricity Zone Substations
-  Sewer Carrier

Figure 9 – General Services Plan

Section 5

STORMWATER MANAGEMENT

5.0 Stormwater Management

The Precinct lies to the west of Eastern Creek, and is characterised by gently undulating terrain. Land within the Precinct falls from the northwest corner at RL 90m AHD to the northeast corner at RL 50m AHD. The Precinct is split by a ridgeline that runs from the northwest corner to the northeast and the majority of the site lies to the southeast of the ridgeline.

5.1 Overview

The Precinct is part of the South and Eastern Creek catchments, which in turn, are part of the Hawkesbury-Nepean catchment. These catchments are under considerable stress from a range of impacts associated with the Sydney conurbation. Blue-green algal blooms are a problem in South and Eastern Creeks, while destruction of riverine corridors, infestations of exotic weeds and excessive aquatic plant growth are considered typical of all urbanising catchments in the Hawkesbury-Nepean basin.

The conversion of the Precinct into urban land uses has the potential to place further stress on the receiving waters of Eastern Creek, Ropes and South Creek, and the Hawkesbury-Nepean River. The stresses could be changes in flow volumes, flood peak and durations, and changes in the loads of sediment, salts and other pollutants. In accordance with the principles of ESD, as far as drainage issues are concerned, it is desirable to maintain or enhance flows and water quality leaving the site, so as not to increase the stress on the Hawkesbury-Nepean River system.

5.2 Existing Watercourses and Catchments

There are a number of existing dams situated near the intersection of Wallgrove Road and the M4 Motorway which were built as part of the previous use of the Precinct as a theme park. The existing drainage system for the area consists of rural and developed catchments including roofed drainage and pavement drainage which are directed to a series of localised water courses which have been man made as part of the amusement park system. A series of low level water courses meander in numerous directions throughout the Precinct and in some cases via pools and riffles towards the existing dams.

5.2.1 South West Sub-Catchment

This catchment consists of predominantly hard surface carpark area with the upper reaches of the catchment being natural grass and tree lined. Part of this sub-catchment contains the upper reaches of the developed part of the former amusement park and contains a meandering creek, which discharges runoff below the surface towards the main outlet. The main outlet of the sub-catchment is the existing twin 3300 x 600mm high rectangle box culvert running below the existing access road.

5.2.2 South Sub-Catchment

This catchment is entirely hard surface carpark area and contains a gravel pitched stone channel along the southern boundary. There is an existing open channel with a 825mm diameter outlet that drains to a sag immediately adjacent and to the northern side of the access road. The main outlet to this basin is an existing twin 2100mm x 600mm rectangular box culvert. This drainage outlet previously discharged to an existing dam south of the access road. This dam has now been removed and superseded by a drainage detention basin.

5.2.3 North Sub-Catchment

This sub-catchment contains the highest point within the Precinct. The western portion of this sub-catchment consists of predominantly paved and roofed areas as part of the core amusement area of the theme park. The drainage system discharges to an existing pond at RL 66m central within the sub-catchment. Beyond this pond to the east, the eastern portion of the catchment consists of predominantly natural grassed, gravel based, bare earth and moderately tree lined catchment.

The main drainage system consists of an existing man-made gully running west to east to the main water pond situated adjacent to the M4 Motorway at RL 53.1m. In addition to drainage, this gully was also constructed to artificially improve aesthetics within the former amusement park. This pond is drained via an outlet with screens beneath the existing M4 Motorway. Two existing 600mm and 900mm outlet pipelines discharge onto a rock mattress immediately adjacent to the existing embankment to the pond. The M7 Motorway has installed a new 1200mm drainage outlet, which now drains below the recently constructed ramp system adjacent to the pond embankment.

5.2.4 Eastern Sub-Catchment

This sub-catchment is predominantly grassed and tree lined which has been created artificially to improve aesthetics within the former amusement park. Runoff from the catchment discharges into the existing pond at RL 53.9m. There is no dedicated drainage outlet, and the overflow from this sub-catchment flows into the larger existing pond contained in the northern catchment.

5.2.5 South East Sub-Catchment

The upper reaches of this catchment commence at the existing entrance to the former amusement park and the existing carpark previously used by patrons and delivery coaches to the amusement park. There are 3 main streams running southwest within the sub-catchment towards an existing pond. This pond is situated at RL 53.5m and its main drainage outlet is an existing 1050mm pipeline running southeast below Wallgrove Road. The main overflow corridor from the catchment is across Wallgrove Road in a southwest direction, and the M7 Motorway contains a road underpass at the location of this overflow and existing 1050mm pipeline.

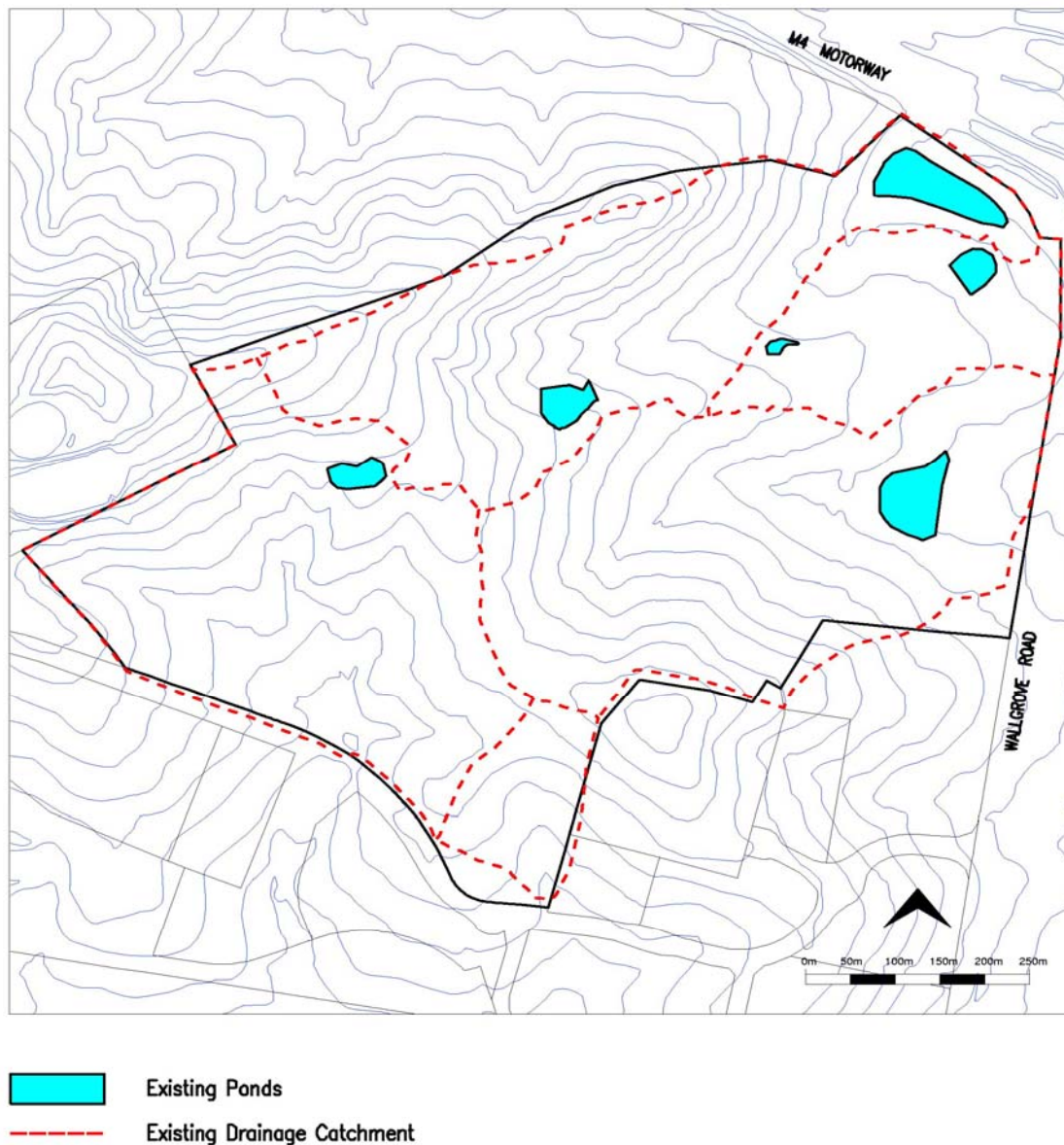


Figure 10 – Existing Drainage Catchments

5.3 Potential Impacts from Urban Development

The likely impacts from development of the Precinct include:

- (a) The introduction of roofs, roads and other impervious surfaces will reduce the infiltration of rainwater into the soil and lead to extra surface runoff, particularly in storms associated with light rainfalls, which typically produce little or no runoff in a natural or rural catchment.
- (b) Formalisation of drainage systems often reduces channel storage and reduced channel roughness. These effects tend to increase the velocities of flood flows and lead to increased peak discharges, both within the development and downstream.
- (c) Increase imperviousness and formalisation of the drainage system within the Precinct will lead to wet and dry weather flows. These in turn change the natural flow regime of the creeks, impacting on bed and bank erosion, aquatic habitats and the riparian environment.
- (d) Increase in the export of a range of pollutants including litter, sediment, nutrients and hydrocarbons (oils and grease). Sediment export is likely to be particularly high during the construction period.
- (e) The removal of vegetation, rocks and logs from waterways can reduce habitat and impact on flora and fauna.

5.4 Measures to Mitigate Impacts of Urban Development

- (a) Stormwater runoff will be carried by a combination of major and minor drainage systems including:
 - (i) an underground piped system with provision for overland flow along roads, streets, pathways and dedicated drainage corridors;
 - (ii) detention structures; and
 - (iii) the natural creek system.
- (b) The use of best practice water sensitive urban design ('WSUD') techniques is required to mitigate the impacts of urban development in this Precinct. These techniques, used in conjunction with each other, can achieve the reduction of flow rates generated from existing and introduced impervious surfaces to emulate natural conditions and to remove pollutants generated from the altered land use. The following measures to mitigate the effects of urban development are

considered appropriate for the Precinct. However, use of innovative best practice WSUD solutions not listed below is encouraged.

- (i) Use of vegetated open channels that emulate natural channel features, or retention of natural channels to transport small flows. These produce low flow velocities and help to control flood peak flows. They also provide biological filtration, which assists water quality, and provides habitat for native fauna.
- (ii) The use of vegetated swales, filter strips and bio-retention systems incorporated into the conventional drainage system to treat rainfalls events up to the 2 year ARI.
- (iii) Reinstatement of native aquatic riparian vegetation along creek corridors to reduce flow velocities enhances habitat and mitigates salinity.
- (iv) Use of infiltration trenches, bio-retention systems and pervious pavements for driveways and parking areas to encourage infiltration to compensate for reduced infiltration caused by other impervious surfaces such as roofs. Infiltration is not encouraged in areas where soil salinity is an issue and clay soils are present. Application on down slopes may contribute to the overall land management measures for salinity.
- (v) Limit the percentage of impervious surfaces.
- (vi) Reuse of stormwater to reduce potable water consumption.
- (vii) Use of constructed wetlands and reinstatement of natural wetlands to enhance water quality.
- (viii) Use of native plants and efficient watering practices for lawns and gardens to reduce trickle flows, which will also reduce demand on water supply.
- (ix) Use of on-site oil and grease traps, and sediment traps for large vehicle parking areas.
- (x) Use of litter, oil, grease and sediment traps, especially upstream of wetland, to improve water quality.
- (xi) The use of spill containment devices in the stormwater system to mitigate the impact and assist in the clean-up of accidental chemical and oil spills.
- (xii) Use of erosion and sediment control measures, especially during construction.

- (xiii) Infiltration of rainwater into the soil profile should be minimised unless there is a corresponding increase in deep-rooted vegetation to maintain the natural water balance of the groundwater system.
- (xiv) Deep-rooted vegetation planted along the lower slopes of hills, especially near major drainage lines, to lower water tables, reduce salt scalding of soils and flows of saline groundwater to the surface streams.

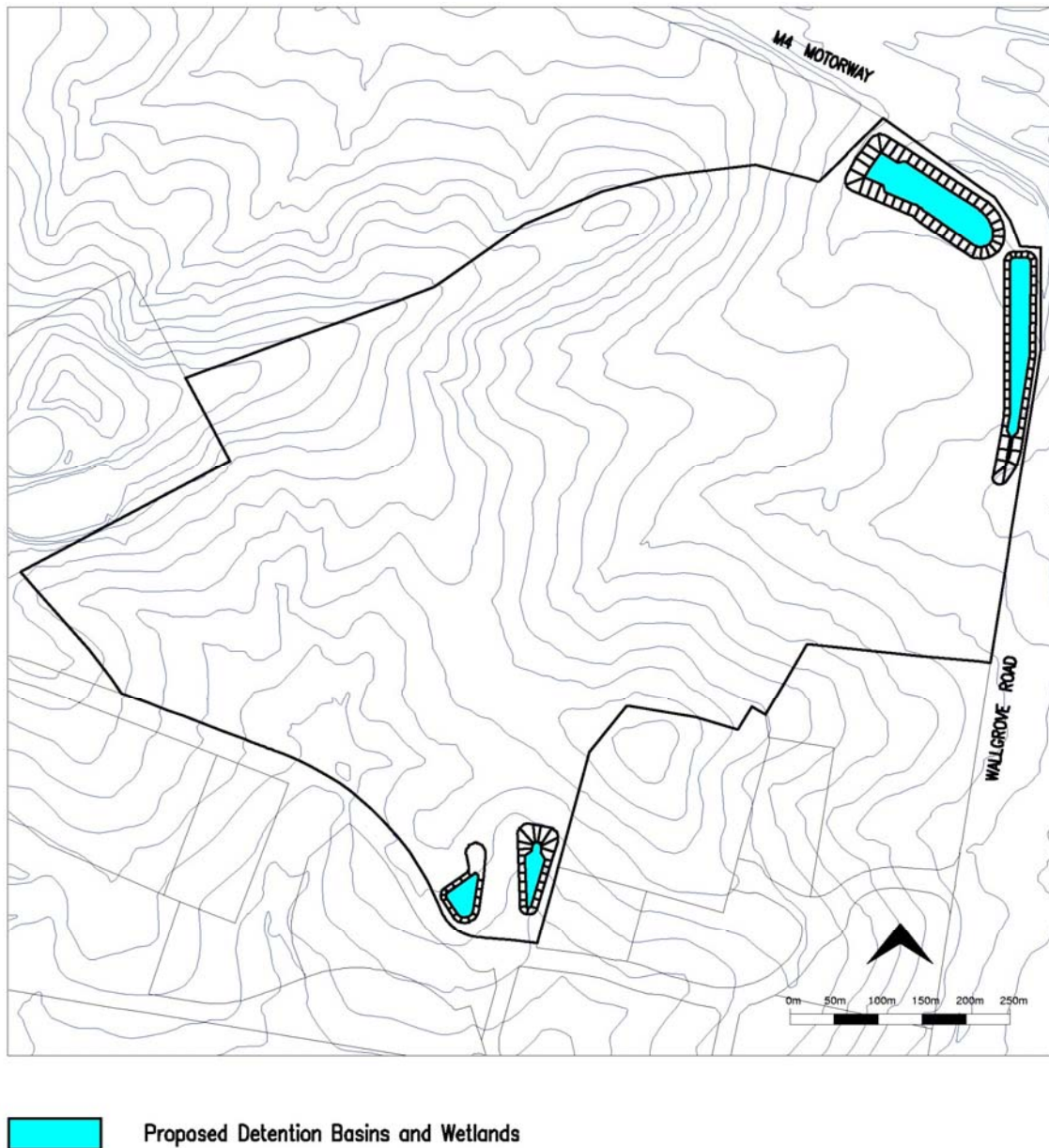


Figure 11 – Stormwater Management Plan

5.5 Objectives

(a) Environmental

- (i) Provision of appropriately designed, functional stormwater facilities that provide a safe, efficient and sustainable urban water management system;
- (ii) Maintain or improve impacts of sedimentation and pollutants;
- (iii) Limitation of downstream discharge peaks and velocities to emulate the predeveloped status of the site;
- (iv) Maintenance of existing downstream peak flow rates; and
- (v) Preserve the ecological integrity of the watercourses and riparian corridors.

(b) Urban Amenity

- (i) Provision of a stormwater management strategy that identifies and controls limits of flood affectation;
- (ii) Provision of aesthetic design forms that enhance urban amenity; and
- (iii) Integrate open space and landscape corridors with the stormwater management system to provide high amenity and maintain the natural character and ecology within the Precinct.

(c) Engineering

- (i) Effective management and control of peak discharges, discharge velocities, and site detention;
- (ii) Industry best practice technical analysis of catchment hydrology and system hydraulic performance; and
- (iii) Ensure stability to drainage lines, and natural waterways and their riparian zones.

(d) Economics

Provision of a cost effective, functional site drainage system that optimises performance, provides maximum value for expenditure and keeps on-going maintenance requirements to a minimum.

5.6 Controls

5.6.1 General

- (a) Development Applications must be accompanied by a site specific Stormwater Management Plan, designed to:
 - (i) be consistent with the Precinct stormwater management system;
 - (ii) be consistent with the latest stormwater quality control requirements of Blacktown City Council;
 - (iii) include appropriate water quantity and quality control systems, accompanied by a management plan in accordance with Council and manufacturer's specifications;
 - (iv) implement effective source controls of stormwater pollution and discharge;
 - (v) retain, improve, and restore valuable features of the water environment;
 - (vi) manage flooding and water quality problems on site to ensure that there are no adverse downstream impacts;
 - (vii) ensure all permanent structures and devices are at source and off-line of any open watercourse;
 - (viii) ensure sediment controls measures, stormwater quality improvement devices or other innovative technology to minimise water pollution;
 - (ix) incorporate bank stabilisation, revegetation, energy dissipating structures and upstream detention basins to minimise erosion of waterways; and
 - (x) revegetate waterways and drainage lines, and the provision of riparian setbacks to minimise salinity of waterways and nearby areas.
- (b) Use of natural materials and channel forms are preferred to engineered forms as they provide improved habitat for native flora and fauna, and contribute to natural processes associated with flooding and water quality.
- (c) Applicants are required to demonstrate that water sensitive urban design principles have been considered through the inclusion of water retention and reuse, minimisation of impervious areas, the use of grass swales, bio-retention systems, revegetation and regeneration of waterway areas and multiple use of drainage systems.

- (d) Stormwater pollution loads generated from the developed site are not to exceed the Pollution Rention Criteria provided in the Water Quality Section of this Precinct Plan. This is to be demonstrated through the use of an appropriate stormwater quality model, such as MUSIC.
- (e) Development adjoining riparian corridors and trunk drainage channels (including detention basins and wetlands) must include a 10m buffer zone consisting of a landscaped open space area that can tolerate occasional flooding.
- (f) Stormwater management and drainage works are to be constructed in accordance with Council's drainage standards and other relevant guidelines and standards, including:
 - (i) *Managing Urban Stormwater: Strategic Framework (Draft)* published by the Environment Protection Authority in March 1998;
 - (ii) *Managing Urban Stormwater: Treatment Techniques* published by the Environment Protection Authority in November 1997;
 - (iii) *Managing Urban Stormwater: Council Handbook (Draft)* published by the Environment Protection Authority in 1997; and
 - (iv) *Managing Urban Stormwater: Soils and Construction* published by the Department of Housing in August 1998.
 - (v) *Water Sensitive Urban Design Guidelines – Technical Guidelines for Western Sydney*, published by the Upper Parramatta River Catchment Trust and URS in May 2004.
 - (vi) Stormwater Quality Control Policy, published by Blacktown City Council in June 2005.
- (g) Adequate provision must be made for the collection and disposal of surface and roofwater runoff. All stormwater must be either reticulated to the street gutter or conveyed to a suitable location as approved by Council.
- (h) Where a site has a slope that falls away from the fronting street, the Development Application must include information establishing that the written agreement of all relevant downstream property owners to drain water over their property has been obtained. Such agreement must state that downstream property owners have no objection to the discharge of stormwater through their properties to reach Council's drainage system nor do they have objection to the creation of necessary easements over the pipelines. If an easement is necessary over downstream properties this must be created prior to the release of the Subdivision Certificate or Occupation Certificate.

5.6.2 Major Drainage System

- (a) The major drainage system shall be designed to safely convey the stormwater flows under normal operating conditions for the critical 100 year ARI flood event. In the event of blockage of pits and/or pipes, or for storm events greater than the design event, adequate overland flowpaths shall be provided on the roads or open space areas to ensure safety and control damage to property.
- (b) The effects of failure during extreme storm events shall be assessed and adequate provision shall be made for evacuation of personnel up to the critical PMF event.
- (c) The major drainage system shall incorporate appropriate WSUD techniques in order to meet stormwater quality control and stormwater attenuation requirements.
- (d) The use of WSUD techniques (such as vegetated swales, filter strips and bio-retention systems) shall be incorporated into the conventional drainage system to treat rainfall events up to the 2 year ARI. WSUD devices are to be generally situated along collector roads within the Precinct.
- (e) Where the major drainage system is not located within road reserves, drainage easements / reserves shall be created across the area occupied by infrastructure and include an easement to allow access for maintenance purposes.
- (f) Development shall not adversely impact the performance of existing drainage structures within the area.
- (g) All major drainage and stormwater detention basins shall be constructed within land dedicated for stormwater use.
- (h) All major drainage, basins and stormwater quality control (WSUD) structures shall be maintained by the Developer for a minimum of 3 years after “Practical Completion”, after which they will be handed over to Council.
- (i) During the maintenance period, performance monitoring of major drainage, basins and stormwater quality control (WSUD) structures must be undertaken in order to demonstrate satisfactory performance. The monitoring shall be in line with design parameters. Council will not accept handover of any device until it is demonstrated to be working efficiently.
- (j) All major drainage, basins and stormwater quality control (WSUD) structures adjacent to a watercourse, shall be located clear of the 100 year flood extent, and shall not adversely impact on buffers for riparian vegetation.

- (k) The drainage system shall provide for detention structures in appropriate locations to minimise any adverse affect on existing downstream drainage paths.
- (l) The frequency of bank-full flows shall not increase as a result of the development. Generally there shall be no increase in events ranging from the 2 year to 100 year ARI peak flows.
- (m) The major drainage system for the development shall generally follow the natural drainage system.
- (n) Design of drainage works shall include a minimum freeboard of 0.5m.

5.6.3 Minor Drainage System

- (a) The minor drainage system shall be designed to have the capacity to convey stormwater flows under normal operating conditions for the ARI specified in Council's *Drainage Design Standard* and shall link in with the major drainage system.
- (b) The minor drainage system shall be designed to:
 - (i) enable the safe passage of vehicles and pedestrians;
 - (ii) prevent ponding for a prolonged period; and
 - (iii) prevent damage to property such as buildings and landscaped areas.
- (c) The minor drainage system will need to be either piped or in grass swales, and will ideally be located within the road reserves. Where this is not possible, drainage easements shall be provided.
- (d) The use of WSUD techniques (such as vegetated swales, filter strips and bio-retention systems) shall be incorporated into the conventional drainage system to treat rainfall events up to the 2 year ARI. WSUD devices are to be generally situated along collector roads within the Precinct.
- (e) Road drainage shall:
 - (i) provide water quality treatment to achieve objectives outlined in Council's latest Stormwater Water Quality Control Policy and Engineering Guide for Development.
 - (ii) incorporate drainage systems and other infrastructure to allow treated runoff from development sites to be transferred to the major drainage system as necessary.

5.6.4 Detention Basins and Constructed Wetlands

- (a) Detention basins shall be located on or adjacent to the natural drainage system and meet the requirements of Council and relevant State Government agencies. The operation of the detention basins is not only for flood attenuation but also to provide environmental protection of the downstream watercourses and shall be designed with these principles in mind.
- (b) Suitable numerical modeling shall be undertaken for the detail design of detention basins to ensure an acceptable level of hazard downstream for all storm events up to and including the PMP/PMF.
- (c) Wetlands shall be located adjacent to the existing drainage channels. It is desirable that they are located off line to ensure that they are not damaged during floods and that trapped material is not resuspended.
- (d) Detention basins and wetlands:
 - (i) will need to include appropriate safety features, especially with regard to edge treatments.
 - (ii) shall be designed to prevent induced salinity.
 - (iii) shall be sized to attenuate peak flows to a maximum of rural flows over a range of storms from the critical 2 year ARI event up to and including the critical 100 year ARI event.
 - (iv) shall be sized to limit pollutant export loads to the levels specified in the water quality section of this Precinct Plan.
- (e) The detention basins shall be designed to attenuate flows to a maximum of the rural flowrates. This shall be addressed over a range of storms from the 2 year ARI to the 100 year ARI. The objective of this is to achieve a more natural flow regime in the creek systems as well as providing flood attenuation in major flood events (the attenuation of flows may be assisted with the incorporation of WSUD techniques). The effects of the PMF on the basin shall be assessed and measures prepared to avoid catastrophic failure. Where required the basins shall be referred to the Dam Safety Committee for assessment.

5.6.5 Water Quality

- (a) The stormwater quality control for the Precinct should maintain the impact of the development on the total water cycle and maximise the environmental, social and economic benefits achievable by using responsible and sustainable stormwater quality control measures.
- (b) A critical consideration is the on-going ecological sustainability of the riparian corridor within and downstream of the Precinct. To maintain stormwater quality to the required levels, a “treatment train” approach shall be taken where various types of pollutants are removed by a number of water quality devices acting in series. This system allows for flexibility with the individual on-lot development with a co-ordinate Precinct approach for the road system and regional drainage treatment.
- (c) Each development will be required to provide a water quality control mechanism to Council’s satisfaction. These could include an individual device or combination of devices to ensure that the appropriate water quality standard is achieved. Pollutants generated from development shall be treated on site.
- (d) Best practice WSUD techniques are to be used for treating stormwater quality to the required standard and for the attenuation of flows to the predevelopment level. A combination of WSUD devices shall be used throughout the catchment to achieve the necessary treatment.
- (e) The following pollution retention criteria within Council’s Stormwater Quality Control Policy and Engineering Design Guidelines are required to be met on a Precinct scale and individual development lot scale.
- (f) An appropriate stormwater quality model (such as MUSIC) shall be used to demonstrate that the proposed stormwater quality control measures will meet the pollution retention criteria provided above.

5.6.6 Maintenance and Monitoring

- (a) Where development incorporates stormwater treatment devices, WSUD measures or revegetation/enhancement of watercourses and riparian corridors occur, the developer will be responsible for the maintenance for 3 years beginning from practical completion. A maintenance plan prepared by a suitably qualified person shall be submitted to Council for approval.
- (b) Where wetlands and revegetation/enhancement of watercourses and riparian corridors has occurred, an appropriately qualified horticulturalist/ecologist with experience in bush regeneration techniques and aquatic environments is to develop a wetland/watercourse and vegetation maintenance plan, and submit same to Council for approval. This maintenance plan is to include a macrophyte harvesting schedule, with harvesting and replanting to occur prior to handover to Council.
- (c) For stormwater treatment devices, WSUD measures and watercourse/riparian corridors, a performance monitoring program is to be developed and implemented for the life of the maintenance period. This is to demonstrate that the stormwater treatment devices and WSUD measures are performing to the design criteria and that the watercourse and riparian corridor is establishing and meeting the requirement for revegetation and enhancement.
- (d) Results from the maintenance and performance monitoring schedule are to be provided to Council on a 3 month basis.
- (e) If it is demonstrated that the stormwater treatment devices and WSUD measures are not performing to design requirements and watercourses and riparian corridor enhancement is failing, appropriate alteration are to be undertaken prior to hand over to Council.

Section 6

ENVIRONMENTAL MANAGEMENT

6.0 Environmental Management

SEPP 59 establishes guiding principles designed to ensure ecologically sustainable development that takes an active approach to anticipating and preventing damage to the environment. This approach encompasses water cycle management, energy efficiency, waste minimisation, contamination, salinity, air quality, noise and vibration.

6.1 Ecologically Sustainable Development

Ecologically sustainable development ('ESD') principles seek to establish best practice in terms of maintaining and nurturing our environment for today and the future. This Precinct Plan encourages development that minimises the consumption of energy from non-renewable sources to preserve the environment, reduce greenhouse gas emissions, and improve the health and comfort of the community.

Objectives

Ensure that development incorporates best practice environmental management techniques by improving energy efficiency through:

- (a) the design and siting of buildings using passive solar strategies;
- (b) operating energy systems by choosing supplementary systems or active solar design strategies;
- (c) construction energy by choosing materials and construction techniques with low energy inputs in their production; and
- (d) the retention of remnant vegetation and the incorporation of soft soil zones for absorption of rainwater.

Controls

- (a) Development Applications are required to demonstrate that consideration has been given to:
 - (i) measures that will reduce waste and conserve water (by including water recycling);
 - (ii) measures to minimise run-off and stormwater generation;
 - (iii) implementing total water cycle management by measures that include reducing consumption of potable water for non-potable uses, treating and recycling wastewater for re-use, minimising site run-off and promoting stormwater re-use;
 - (iv) utilising recycled materials and renewable building resources;
 - (v) promoting biological diversity by measures which include increasing habitat through appropriate retention, planting and maintenance of native flora considered representative of the area;
 - (vi) implementing a waste management strategy and promoting the achievement of the 60 percent waste reduction target for New South Wales by measures including, utilising recycled materials and renewable building resources, and recycling building and demolition materials for recycling and composting; and
 - (vii) implementing energy conservation measures that include reducing energy consumption and increasing inherent energy efficiency through design and materials selection, and adopting energy management plans.
- (b) Development Applications are required to demonstrate that consideration has been given to promoting ecologically sustainable transport by measures that include:
 - (i) complementing and reinforcing the development and use of the existing and planned integrated public transport, pedestrian and cycling networks servicing the site;
 - (ii) encouraging increased reliance on public transport and reduced reliance on private vehicles for journeys to work and other trips, so as to reduce vehicle kilometers travelled; and
 - (iii) providing levels of on-site parking aimed at reducing reliance on private vehicles for journey to work trips.

6.2 Water Conservation

Development should adopt the principles of integrated water cycle management, including minimising total water usage, minimising waste water requiring treatment and disposal, minimising stormwater impacts on the environment, and maximising water retention and reuse.

Objective

Ensure that development incorporates water conservation measures into design and operation.

Controls

- (a) Development should incorporate water efficient fixtures such as taps, showerheads, and toilet suites (cisterns and urinals). The fixtures must be rated to at least AAA under the National Water Conservation Rating and Labelling Scheme.
- (b) Development Applications are required to submit a Site Water Management Plan that investigates, and where feasible, provides for the integrated management and use of water. The Site Water Management Plan should demonstrate that other water sources have been considered including:
 - (i) an integrated water collection and recycling system for capturing and recycling of roofwater;
 - (ii) the reuse of greywater on site;
 - (iii) the capture and reuse of stormwater from the site;
 - (iv) treating and re-using any process water generated by the development; and
 - (v) controlling the quality of waste water and stormwater to be disposed.

6.3 Energy Efficiency

The total energy use of a building can be significantly affected by the way it is designed. Passive building design can reduce the total energy consumption of a development. Passive design principles should be integrated into building elements by making the building do the work of keeping occupants comfortable rather than relying on additional systems to do the work. Good passive design can eliminate or substantially reduce the load on heating, cooling and ventilation systems, thus providing savings in operational energy and reductions in greenhouse emissions.

Some land uses will naturally use a significant amount of energy during their operation. A proactive approach should be taken towards energy use during the operation of the development, and to serve as a benchmark from which a consideration of energy reduction measures can be achieved. High energy land uses should consider an energy management system to help minimise energy consumption during the on-going operation of the development.

Objectives

- (a) Encourage site planning and building design that optimises site conditions to achieve energy efficiency; and
- (b) Encourage use of building materials that minimise impact on the environment.

Controls

- (a) Applicants are required to demonstrate appropriate use of energy efficient materials during construction.
- (b) Development should be planned to achieve maximum energy efficiency in building design through measures including building location, internal layout, design and materials use, and the selection of energy and water efficient building services, equipment and appliances, and the use of landscape elements for microclimate control. These measures should aim to achieve:
 - (i) optimal solar access and natural lighting; and
 - (ii) optimal natural heating, cooling and ventilation.
- (c) Development should incorporate energy efficient hot water systems, air-conditioning, and lighting and lighting control systems.
- (d) An Energy Performance Statement ('EPS') is to be prepared and lodged with all Development Applications, if not participating in SEDA's Greenhouse Rating

Scheme. The EPS shall provide justification for the proposed energy efficiency measures by addressing:

- (i) solar access;
 - (ii) building form and construction;
 - (iii) heating/cooling and ventilation; and
 - (iv) lighting, water usage and appliances.
- (e) Consideration should be given to the feasibility of any measures to substitute grid-source power with environmentally sustainable alternatives such as co-generation (i.e. recovery of waste energy) or photovoltaics.

6.4 Air Quality

The nature of development within the Precinct has the potential to cause adverse environmental impacts from air pollutants. Appropriate controls are required to ensure that any adverse environmental impacts from development are avoided.

Objective

Ensure that development does not cause adverse environmental impacts from air pollutants.

Controls

- (a) Development Applications should provide an assessment, and identify necessary mitigation measures, to minimise the potential environmental impacts from air pollutants generated by the proposed development.
- (b) Development Applications must comply with relevant Council, and government authority guidelines, to ensure no adverse environmental impacts occur both during and after development of the Precinct.

6.5 Waste

Development of the Precinct will generate waste from the following sources:

- (a) materials from the demolition of existing structures on the site, including fencing;
- (b) green waste from the removal of vegetation;
- (c) construction waste; and
- (d) industrial/commercial waste generated from ongoing operation of development.

Objective

Reduce the quantity of waste and maximise the reuse of building and construction materials and industrial/commercial waste.

Controls

A Waste Management Plan that complies with *Blacktown Development Control Plan 1992 - Site Waste Management and Minimisation* is required with each Development Application. As a minimum, the plan will be required to:

- (a) identify any licensing requirements under the *Waste Avoidance and Resource Recovery Act 2001*;
- (b) document the type, classification and quantity of all waste that are likely to be generated during the development and post-development phases;
- (c) identify initiatives for reusing and/or recycling of waste; and
- (d) identify waste management protocols during the development and post development phases including:
 - (i) storage and handling of waste on-site;
 - (ii) transportation of waste;
 - (iii) record keeping and target setting;
 - (iv) compliance with obligations for notifying the relevant government authority; and
 - (v) training and education of workers.

6.6 Contamination

A precautionary approach is adopted to considering development involving contaminated or potentially contaminated land. The object of this approach is to enable any land contamination issues to be identified and dealt with at an early stage.

Contamination can result from a number of past and/or present occurrences, such as:

- (a) the controlled or uncontrolled disposal of wastes, including sewage;
- (b) accidental leakage;
- (c) leakage during plant operation, storage or transportation of raw materials, finished products or wastes;
- (d) the corrosion of underground tanks;
- (e) the emission of particulate matter into the atmosphere;
- (f) the migration of contaminants into a site from neighbouring land, either as vapour, leachate or movement of liquids through the soil; and
- (g) the use of agricultural chemicals.

Objective

Ensure that all sites are free of contamination that may pose a risk to human health and the environment.

Controls

- (a) Applicants are required to submit a site specific contamination report and/or remedial action plan prepared by a suitably qualified person to confirm that the site does not pose a risk to human health or the environment.
- (b) Development should be designed and managed to minimise the potential for polluting discharges, fugitive emissions and controlled spillages by appropriate site management techniques.
- (c) All development must comply with the requirements of Council's *Site Contamination Policy*, and relevant government guidelines.

6.7 Salinity

Future development has the potential to cause soil salinity problems if appropriate soil salinity management procedures are not implemented. If soil salinity is not addressed early in the development process, it can become an expensive land management issue, leading to land degradation, damage to brickwork, concrete or pipes and a reduction in water quality.

Adverse impacts on soil salinity would be expected if the groundwater level were to be raised significantly over long or short periods. A rise in the groundwater table may be caused by either or a combination of events including prolonged flooding, removal of vegetation (especially deep rooted vegetation), over irrigation, disruption of natural drainage lines, infiltration of stormwater and leakage from sewer or drainage pipes. Some areas, owing to their geology, are more susceptible to developing soil salinity problems.

Objectives

- (a) Manage and mitigate the impacts of development on salinity; and
- (b) Manage and mitigate the impacts of salinity on development.

Controls

- (a) Applicants are required to provide a salinity model for the site, describing the distribution and concentration of salinity within the soil and groundwater profile in order to identify any potential different zones that may require different management strategies to be applied as a result of developing that site.
- (b) A Salinity Management Plan must be submitted with all Development Applications, outlining what actions are proposed to minimise the impact of:
 - (i) development on the saline environment. Such measures could include minimising / decreasing recharge to saline groundwater tables and waterlogged / evaporation areas by appropriate drainage, and strategic tree planting; and
 - (ii) the saline environment on development. Such measures could include drainage around buildings, fill rather than cut where practical, the use of building techniques and materials to resist saline attack, and moisture exclusion to prevent salt damage.
- (c) Development is to conform to the Western Sydney Regional Organisation of Councils, *Western Sydney Salinity Code of Practice* (March 2003).

(d) Earthwork Design Details

- (i) The final surface of all development areas is to be graded to prevent ponding of surface water.
- (ii) Subsoil drainage shall be provided along both sides of all subgrades and at low points in the finished earthwork profile.
- (iii) Subsoil drains shall be provided in areas where groundwater discharge from the underlying shale or soil profile may occur, such as retained cuts, cut slopes, and changes in grade.

(e) Earthwork Procedures

- (i) All subsoil shall be separately stripped and stockpiled for later use in landscaped areas. Topsoil shall be placed after completion of the buildings in areas to be landscaped.
- (ii) B horizon material, typically expected to extend to a depth of 0.5 metres, shall be stripped and separately stockpiled to be used beneath landscaped areas and where less dispersive soils are required.
- (iii) Amelioration of material underlying topsoil and B horizon material shall be undertaken in areas to be landscaped. Amelioration will generally include mixing gypsum with underlying materials to a depth of approximately 0.3 metres. Gypsum needs shall be established for landscaped areas and will typically involve application of approximately five kilograms per square metre.
- (iv) Site preparation shall be based on good engineering practices including top soil stripping and grubbing and treatment of soft spots, areas of poor drainage and waterlogging.
- (v) All batter slopes will require stabilisation. Stabilisation works shall be undertaken as soon as possible after completion of the batter.

(f) **Construction Management Plan**

- (i) Surface water runoff shall be directed around all stockpiles and work areas.
- (ii) Erosion control for stockpiles and disturbed areas shall be planned during all stages of construction using methods including grading and sealing of partially completed earthworks surfaces during construction.
- (iii) Temporary sediment control structures shall be used during all site development works.

(g) **Landscape Design**

- (i) Plant species are to be selected based on their suitability for the soil conditions.
- (ii) Establishment of deep rooted trees is to be planned and encouraged. Such trees will draw water from the groundwater system and assist retention of groundwater at existing levels.

(h) **Wetlands and Detention Basins**

- (i) Wetlands shall be constructed to prevent leakage and recharge of the groundwater system. Conditions at specific wetland and detention basin locations shall be investigated in detail and assessed in relation to linear requirements and other design parameters.
- (ii) Wetland construction should include sediment and erosion control methods.

(i) **Monitoring**

- (i) Monitoring and maintenance of the development in relation to soil and groundwater conditions is required during and on completion of construction.
- (ii) The extent of the required monitoring shall be adjusted over the life of the project, based on the monitoring results and the frequency of works required to maintain the facilities.

6.8 Noise and Vibration

Given the nature of development within the Precinct, noise generation from the site is to be restricted to a reasonable level. Noise is to be contained where possible and not unreasonably impact on the operations or amenity of adjoining or surrounding sites.

Objectives

Ensure that development does not cause adverse environmental impacts from noise and vibration.

Controls

- (a) Development Applications should provide an assessment, and identify necessary mitigation measures, to minimise the potential environmental impacts from noise and vibration generated by the proposed development.
- (b) Development Applications must comply with relevant Council, and government authority guidelines, to ensure no adverse environmental impacts occur both during and after development of the Precinct.
- (c) The optimum noise level goals for the Precinct are:

Period	Noise Emission Goal at Nearest Effected Residential Location
Day	56 dBA
Evening	46 dBA
Night	40 dBA

Table 1 – Optimum Noise Level Goals

These goals will provide adequate protection to the noise amenity of residential areas surrounding the Precinct without unduly restricting the operation of development.

- (d) Where appropriate, development may need to be treated to minimise the impact from noise generated both on and off site.
- (e) Consideration shall be given to:
 - (i) the appropriate spatial arrangement of sensitive land uses;
 - (ii) the sensitive location of buildings on lots; and
 - (iii) the design of buildings to attenuate noise inside the building.

Section 7

BIODIVERSITY

7.0 Biodiversity

The guiding principles of SEPP 59 require consideration of ecological issues and biological diversity. Consideration must be given to the existing natural environment, including any remnant vegetation, and where appropriate, guidelines must be prepared for any communities of flora and fauna so that ecosystem diversity is maintained.

7.1 Overview

The Precinct contains remnant patches of Woodland which are characteristic of Cumberland Plain Woodland. Cumberland Plain Woodland is listed as an Endangered/Threatened Ecological Community under the *Threatened Species Conservation Act 1995* and the *Environment Protection Biodiversity Conservation Act 1999*. The extent of disturbance present is a factor in assessing the relative condition of the Cumberland Plain Woodland, and likely threats and its long-term viability, which all assist in determining its overall conservation value.

7.1.1 Flora Survey Results

A total of 124 species of plants were observed within the Precinct. Of these, 54 species were native plants and 70 species were exotic. The native species observed consisted of 10 trees, 13 shrubs, 5 vines, 25 herbs and 1 fern. Several native species have been planted and may not have originally occurred on or near the Precinct. In addition to those species, a number of unidentified exotic species were observed in gardens and other landscaped areas.

Two vegetation communities were identified within the Precinct through aerial photographic interpretations and extensive ground truthing:

- (a) Residual Woodland; and
- (b) Cumberland Plain Woodland.

7.1.2 Fauna Survey Results

A total of 51 fauna species were observed within the Precinct. This number comprised 31 bird, 9 mammal, 3 reptile, 5 amphibian, 2 mollusc and 1 fish species. The following 3 threatened species were recorded within or in close proximity to the Precinct:

- (a) Eastern Freetail-bat (*Mormopterus norfolkensis*);
- (b) Large-footed Myotis (*Myotis adversus*); and
- (c) Cumberland Plain Land Snail (*Meridolum corneovirens*).

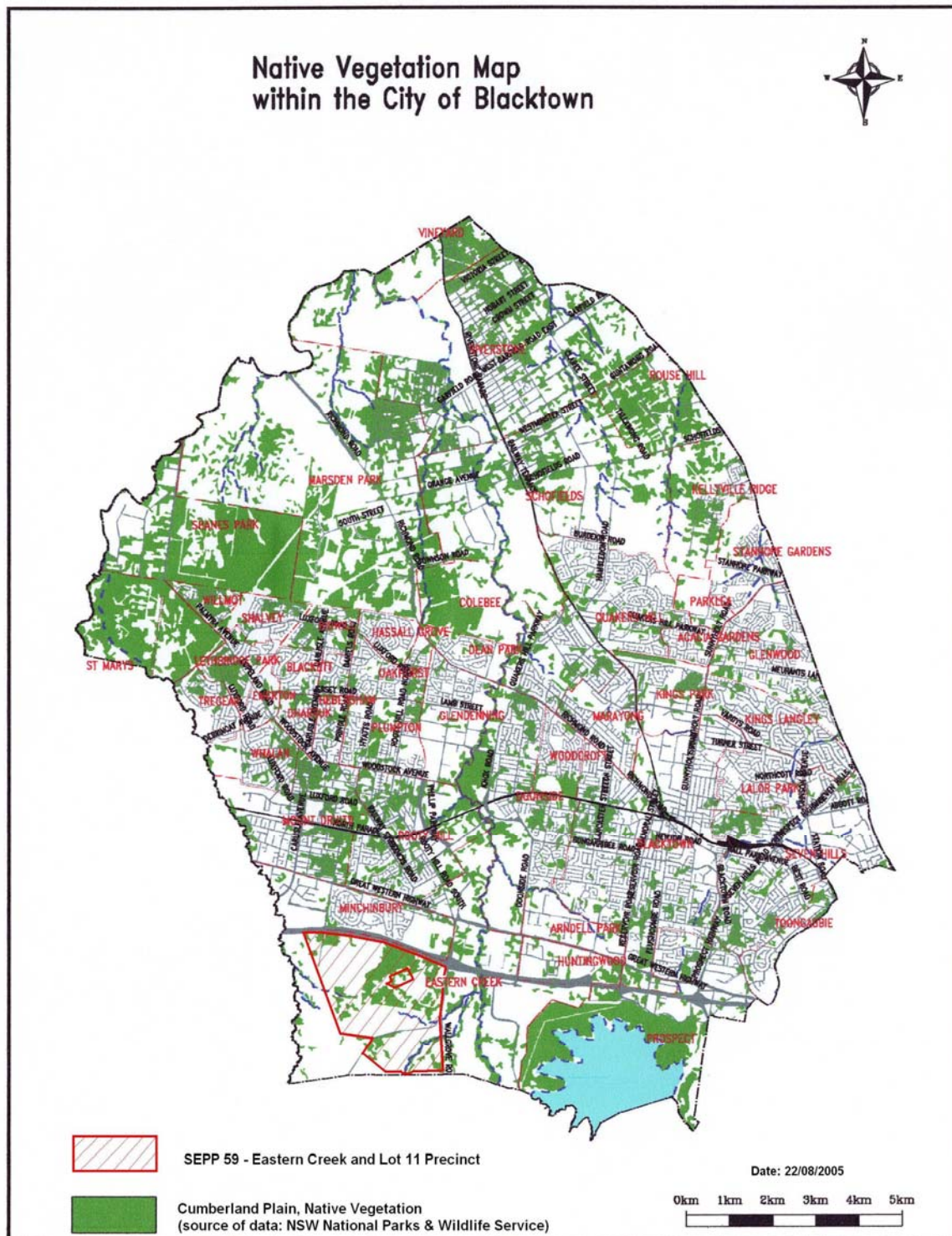


Figure 12 - Native Vegetation Map of Blacktown LGA

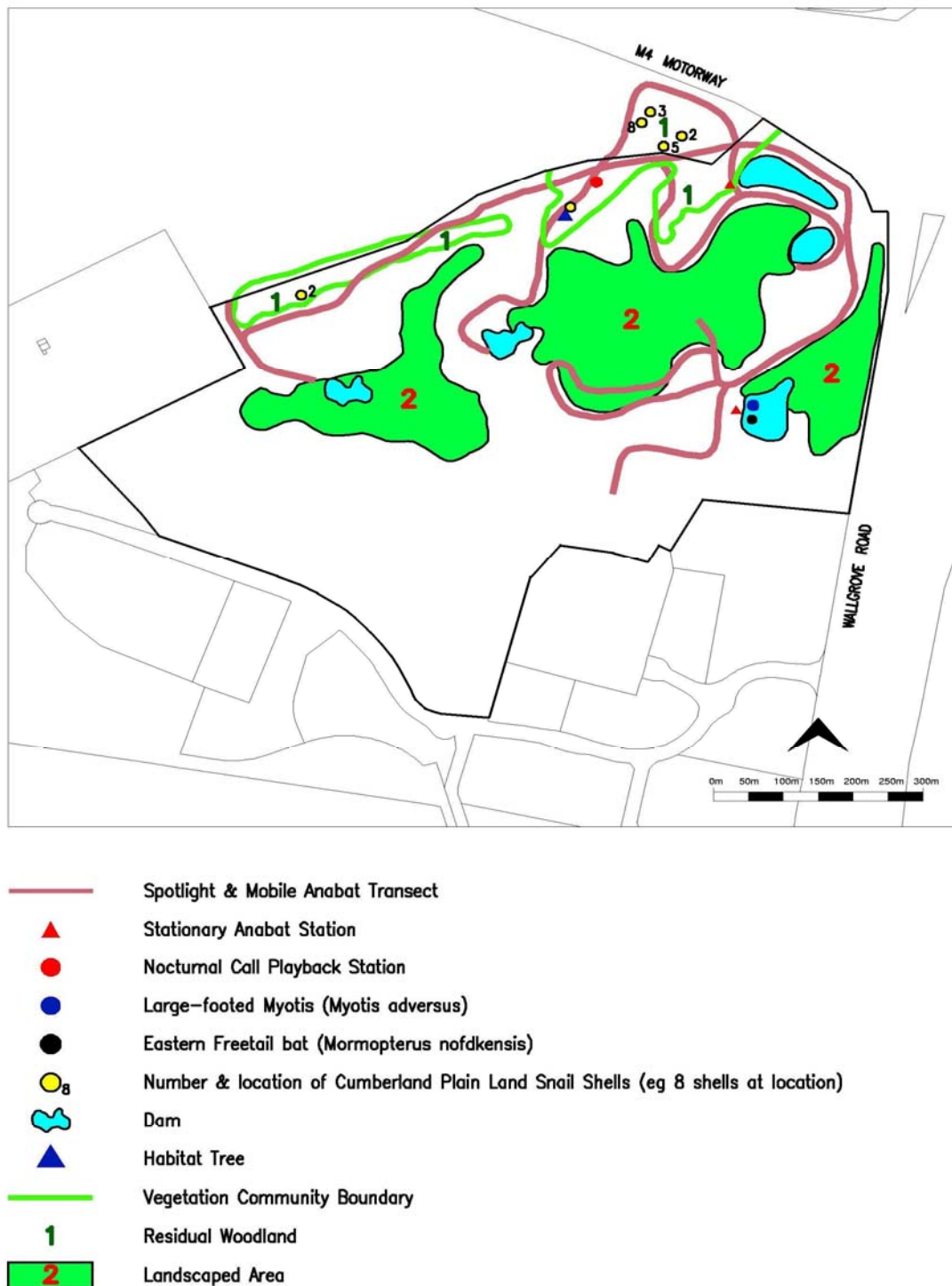


Figure 13 - Flora and Fauna Assessment

7.1.3 Landscaped Native Vegetation Areas

Areas of landscaped native vegetation should be included as open space and integrated as part of the design and planning of the Precinct. This involves the retention of existing trees and vegetation and the planting of native species of local provenance seed stock.

Habitat attributes from this vegetation will also provide habitat, and foraging resources for fauna species, and as such may assist in the long term viability of locally occurring threatened fauna species. The areas of open space area should aim to:

- (a) conserve threatened species habitat;
- (b) enhance identity and character of development;
- (c) complement adjoining buildings use and services; and
- (d) mitigate adverse site conditions through buffering of western sun exposure, provision of shade, wind protection, and visual screening of poor views.

7.2 Objectives

- (a) The redevelopment of the site is to be undertaken in a manner that avoids significant impacts on the threatened fauna species recorded within or in close proximity to the site.
- (b) Open space is to be provided to enable the long term retention and ongoing maintenance of foraging habitat for threatened bat species.
- (c) Open space and landscaped setbacks are to be provided to create linkages between the open space conservation areas on the adjoining sites to the south and west.

7.3 Controls

- (a) If, during the demolition of manmade structures, any structures are observed to be occupied by micro-chiropteran bats, demolition works should be postponed and the structures inspected by a fauna ecologist to determine a suitable course of action to provide for the welfare of affected fauna.
- (b) Habitat trees should be retained where possible. If a habitat tree is to be removed, it should be inspected by a fauna ecologist for fauna occupation prior to its removal. If the habitat tree is occupied by breeding native fauna, the removal of the tree should be postponed until the young have matured. Existing tree hollows should also be dismantled and placed in appropriate locations as specified by a fauna ecologist.
- (c) Cumberland Plain Land Snail recorded within the Precinct is dependent on surrounding areas of Cumberland Plain Woodland to the west and north-west. Areas of open space and potential habitat for the Cumberland Plain Land Snail should aim to link to the existing habitats to the north-west of the Precinct. Where possible, remnant vegetation adjoining building envelopes and lot boundaries with connectivity to areas of woodland to the north and north-west should be retained and/or revegetated with native species of the Cumberland Plain. This will enhance the value of landscaped and open space areas for the Cumberland Plain Land Snail and assist in long-term viability of the species.
- (d) Target surveys for the Green and Golden Bell Frog are to be conducted between August and March prior to the removal or significant alteration of Dams 3 and 5. The new waterbodies should be designed and constructed to provide suitable habitat for the Green and Golden Bell Frog. If the species is found during the survey work, further consultation should occur with Council and the relevant State Government authority regarding future development plans for area.
- (e) Reconstruction of the existing dam system into a series of smaller lakes is to be undertaken so that new waterbodies are completed and revegetated prior to the removal of the existing dam, in order to maintain foraging habitat for the threatened bat species.
- (f) Landscaping around the lake system is to be similar to existing terrestrial and aquatic vegetation or natural ecosystems. A riparian buffer of at least 10 metres is to be provided and maintained.
- (g) Public access to open space areas is to be restricted to marked tracks in existing habitats for the Cumberland Plain Land Snail. Tracks should be designed to minimise trampling of the Cumberland Plain Land Snail and litter allowed to accumulate to provide suitable understorey habitat. Natural habitats for the

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- Cumberland Plain Land Snail include deep leaf litter, under logs, debris, clumps of grass, around the base of trees and burrowing into loose soil.
- (h) Landscaping of open space areas is to incorporate endemic species, and retain as many trees as possible to retain habitat for Cumberland Plain Woodland and Cumberland Plain Land Snail.
 - (i) A senescent tree within an open space area which has greater than 15 years life expectancy and a SULE 4A rating should be retained, unless it poses a direct health or safety issue associated with public access. These trees may eventually provide hollow bearing limbs and roosting/nesting habitat for a variety of fauna species including Large-footed Myotis and Eastern Freetail-bat. Tree management should aim to retain dead wood, hollow limbs and potential hollows to provide for future habitat.
 - (j) Dams should be inspected prior to filling or alteration by a suitably qualified person for fauna occupation, so that any significant species can be relocated to suitable habitat in the local area.
 - (k) Species selection for the open space areas should include indigenous native species to provide future habitat within shrub and canopy plantings.
 - (l) A Management Plan is required for the open space areas to address the future management of protected and preserved vegetation. The Management Plan should be prepared in consultation with Council and relevant State Government authorities, and include clear provision for the long-term protection of both biodiversity and Aboriginal heritage values.
 - (m) Development Applications for any lots adjoining the north western boundary of the Precinct are to be accompanied by a Bushfire Hazard Assessment that addresses:
 - (i) provision of Asset Protection Zones;
 - (ii) fuel management, and the design and maintenance of landscaped areas within the Asset Protection Zones;
 - (iii) installation of radiant heat barriers at the boundary of a riparian corridor, in the event of an overlap between the riparian corridor with an Asset Protection Zone; and
 - (iv) reduced setbacks to buildings into the Asset Protection Zones, where appropriate radiant heat barriers (eg. masonry walls) are installed.

Section 8

HERITAGE

8.0 Heritage

The guiding principles of SEPP 59 require the conservation of items of heritage significance identified in SEPP 59 or any other environmental planning instruments or subject to an order under the *Heritage Act 1977*.

8.1 Non-Indigenous Heritage

8.1.1 European development of the Precinct prior to 1985

The Precinct was originally part of a 1,000 acre Minchinbury Estate granted to Captain William Minchin in 1819. The Minchin Family used the land primarily for grazing, until it was sold in 1859, at about the time that the railway line to Penrith was constructed. By this time some 200 acres of the land holding had been cleared of forest and divided into paddocks.

The land was sold to Dr Charles McKay, who added a further 1,000 acres by the early 1870s. In the mid 1860s McKay had started a vineyard on the western portion of his land. This was eventually known as the Minchinbury Vineyards. The remainder of the land, including the Precinct was leased for pastoral purposes to a number of tenants. McKay was forced to sell the land in the mid 1890s, after a failed attempt to subdivide in 1881. The new owner, James Angus continued the vineyard and the pastoral leases. In 1913 Angus sold the vineyard complex to Penfolds Wines but held onto the pastoral land. The family retained links with the remnant property until 1975.

In 1941 some 9 acres of the Angus estate, along with 120 acres of adjoining land, were resumed by the Government and developed as the Wallgrove Army Camp. Part of the camp, which was used for training purposes, was located in the Precinct. In 1942 more land was resumed to build the Ingleburn Strategic Road, now Wallgrove Road. Following the end of the war the old camp was adapted for use as migrant accommodation, with some of the huts remaining on the site until the mid 1970s. Little potential exists for archaeological remains associated with the military and migrant use of the site to have survived. On this basis, the Precinct has no local heritage significance in terms of relics.

8.1.2 Introduction of a themed entertainment park in 1985

Land within the Precinct was zoned 3(k) Entertainment and Tourism on 4 November 1983 under Blacktown Local Environmental Plan No. 65, which amended Blacktown Planning Scheme Ordinance and Interim Development Order No. 133.

An announcement in the early 1980s proclaimed the proposed development of a major amusement park on the Precinct by a consortium of government and private enterprise. On 1 March 1984 Development Consent No. 013166 was issued for a Themed Entertainment Park known as Australia's Wonderland. Construction began in June 1984, with the opening of the park in December 1985. At the time, Wonderland was said to be the largest amusement park of its kind in Australia. The park was managed by the parent company of Paramount, the movie company from the United States.

Councils Business zones were subsequently rationalised upon gazettal of *Blacktown Local Environmental Plan 1988*. Consequently, the Wonderland Sydney Theme Park was zoned 3(c) Entertainment and Tourism. This zoning remained until Amendment No. 6 to SEPP 59 was gazetted on 2 July 2004, which rezoned the site to Employment and incorporated it into the Lot 11 Precinct of SEPP 59.

An important feature of the themed amusement park was its association with well known cartoon characters and other popular contemporary entertainment. Many of the cartoon characters were described as "walk-arounds", meaning actors dressed up as the characters strolling around the park entertaining visitors. Theme parks based on this model were an early form of the modern trend of extensive related product merchandising to coincide with the release of a new movie from Hollywood. This association gave Wonderland closer links with the various theme parks established on the Queensland Gold Coast than with the traditional Australian amusement parks known in both Sydney and Melbourne as Luna Park.

Initially Wonderland opened with only 3 themed "lands", including Hanna Barbera Land, and a number of themed attractions such as Medieval Fare, Transylvania, Gold Rush and Botany Bay. An additional 4 more were added later, including The Beach, a themed water park, the Outback Woolshed and Restaurant, and the Australian Wildlife Park. These and other attractions were spread over the 60 hectare site.

Located around the park, when it first opened, were a number of ride attractions, including The Beastie, a relatively small wooden rollercoaster, and The Bush Beast, described as the largest wooden rollercoaster in the southern hemisphere. In addition to the various themed "lands" and rides there were many other elements of the park that provided activity, including live entertainment, noise, music, colour and movement as well as retail and food services. The various "walk-around" characters were an important part of this activity. The various structures and rides were part of the fun and provided visitors with exciting and stimulating rides, often by giving the impression of extreme danger.

A major reworking of the features of Wonderland was completed by about 2002, including a change in name to Wonderland Sydney Theme Park. The park was closed on 26 April 2004, followed by the progressive sale of most of the decommissioned plant and equipment.

8.1.3 Bush Beast Rollercoaster

At the time of closure the Bush Beast was one of three rollercoasters at Wonderland Sydney, including the smaller Beastie, also of wooden construction, and the Demon rollercoaster of steel framed construction. Built in 1985, the track of the Bush Beast was 975.3 metres in length and reached a maximum height of 27.5 metres. The structure was almost entirely made of treated pine and consisted of an unenclosed track supported on timber framing, with support facilities; the major element of which was a pitched roof two-level building that was the passenger loading station.

The Bush Beast Rollercoaster displays local heritage significance through its association with the Philadelphia Toboggan Company and as a major attraction within the former Wonderland Sydney amusement park. The Bush Beast, as an original ride of the former Wonderland Sydney, operated on the site from 1985 and ran for a total of 19 years. The sale of Wonderland Sydney and removal of the rides and attractions that made up the former theme park affected the integrity and operability of the Bush Beast and its setting. Further, the removal of the track and trains for on-sale reduced the integrity of the ride. Structurally, the rollercoaster had further been comprised by a lack of regular upkeep and maintenance that was essential during its working life.

Much of the Bush Beast's significance lied in its associated social values in connection with the cultural history of western Sydney. The Bush Beast was a popular attraction at Wonderland Sydney and is likely to be fondly remembered by those who experienced the ride. In this sense, it may prove to have a social significance, on a local level in connection with the use of the former theme park. Its size made it a rare example of this type of rollercoaster in Sydney. Part of a places' social value is that it provides a connection to a community, ties the past and the present or shapes some aspect of community behavior or attitude. The Bush Beast, as an individual item, did not reach this level of social value.

The Bush Beast was not listed, nor any of its values warranted identification as an item of environmental heritage in Blacktown, or within the NSW State Heritage Register. Owing to its lack of integrity, it was not considered to be of sufficient heritage significance to warrant identification as a heritage item. However, its removal would result in loss of an element which is evidence of a particular historical phase of the local area which should be appropriately recorded and memorialised.



Figure 14 - Bush Beast Rollercoaster



Figure 15 - Beastie Rollercoaster

8.1.4 Objectives

- (a) Determine an appropriate Interpretation Strategy of the Bush Beast rollercoaster and the former Wonderland Sydney amusement park.
- (b) Ensure that evidence of the historical development of the site is appropriately conserved where possible and recorded in an appropriate manner for interpretation by future generations.

8.1.5 Controls

- (a) Prior to removal of the Bush Beast, the rollercoaster should be archivally recorded, including its setting to a level that will allow its long term interpretation and commemoration. This should include ground level photos of any major ride structure still intact, as well as photos of remaining graphics and signage that can evoke the nature of the place when it was operating. These photos should be stored in the Blacktown Local History Library and be publicly accessible.
- (b) The Bush Beast and the Wonderland Sydney amusement park should be recognised within the Precinct through interpretation of the site. Interpretation of the former theme park could take the form of a plaque or interpretative panels, which may include a short history of the site and some historic images.
- (c) Prior to removal, any remnant or surviving items that may have been identified in the Interpretation Strategy should be salvaged and stored in an appropriate format ready for incorporation into the framework set out in the Strategy.
- (d) Any components of the Interpretation Strategy, such as a web-based programme should be commissioned and completed. This should then be made available electronically and linked to relevant rollercoaster and amusement park web sites.
- (e) Prior to the completion of the relevant stages of redevelopment of the Precinct, any proposed interpretative signage should be commissioned and installed as outlined in the Interpretative Strategy.
- (f) An Exception to the provisions of Section 139 of the NSW *Heritage Act 1977* is to be lodged as there is some limited potential for relics to survive.

8.2 Indigenous Heritage

8.2.1 Context

Most of the archaeological sites in western Sydney are comprised of open stone artifact scatters. Different types of sites provide information on the different ways that the Cumberland Plain was used by Aboriginal people. It is the variety of site types which has the potential, through their content and arrangement across the landscape, to provide the details which will enhance our general understanding of prehistoric human occupation on the Cumberland Plain. It is likely that such a variety of sites and types of evidence will be present across the SEPP 59 lands because of the range of environmental landscapes present, and because a relatively large proportion of this is undisturbed.

There are a number of landscapes and topographic elements that are rare across the Cumberland Plain. These represent higher value landscapes, in terms of local conservation requirements. Aboriginal sites located in these landscapes would have intrinsically higher conservation potential, since the number of such sites likely to be remaining in the Cumberland Plain is low. The high value landscapes are:

- (a) Shale hillslopes (Minchinbury and to a slightly lesser degree, Ashfield);
- (b) First order tributary creeklines; and
- (c) Shale ridges and low ridgetops (particularly Minchinbury and Bringelly).

8.2.2 Archaeological Significance

The Precinct is located mainly on elevated topography, but between (and quite close to) 3 relatively permanent creeklines of Ropes Creek, Reedy Creek, and Eastern Creek. There are several locations within the Precinct where there are landscapes in good condition with high regional and local conservation needs. Conservation requirements are to be achieved by conserving a representative set of landscapes in good condition.

There are two small patches of low ridgetop in the western part of the Precinct that have been identified as having archaeological sensitivity. This landscape is under-represented in the broader SEPP 59 area. These patches of low ridgetop with archaeological sensitivity are identified as a Potential Archaeological Deposit ('PAD'). PAD1 (area of 0.18ha) and PAD2 (area of 0.51ha).

The following provides a summary of the assessed significance / potential of identified sites and areas with archaeological potential.

NPWS	Site Name	Site Type	Local Topography	Surface Artifacts	Raw Material	Disturbance	Sensitivity Zone
45-5-0438	W2	OS	SW	2	S	High	3
	PAD1	PAD	LRT	0		Low	1
	PAD2		LRT	0		Moderate	2
	PAD3		HS/CB2	0		Moderate	2
	PAD4		HS	0		Moderate	2
	PAD5		HS	0		Moderate	2
	PAD6		HS	0		Moderate	2
	PAD7		HS	0		Moderate	2

Table 2 - Identified Sites with Archaeological Potential

One of the PAD areas (PAD1) is assessed as having high archaeological potential and to be a landscape that is under-represented in the regional context. PAD2 is in a landscape that has high conservation value, though the condition of this area is only moderate (Zone 2).

PADs 3-7 are assessed as having moderate potential. They are located in landscapes that are well represented in the overall conservation outcome for the SEPP 59 lands. Being small and patchy they are not considered as ideal candidates for subsurface investigation.

By identifying the range of representative landscapes with the best conservation potential, and by adding to this identified areas of Aboriginal significance and targeting these for conservation, a meaningful management outcome can be achieved. The overriding aim of a strategic Indigenous heritage management strategy is the preservation of a representative sample of intact landscapes, to ensure that a range of human responses, as represented by the archaeology, can be protected.

8.2.3 Conservation Strategy

The general principles for the strategic management model are as follows:

- (a) identify landscapes that have been minimally disturbed by land-use practices over the last 200 years;
- (b) landscapes must provide, and be representative of, the range of landscapes present across the study area, being the SEPP 59 lands;
- (c) regionally threatened landscapes, sites of recognised regional significance (i.e. rarity) and areas of significance to the Aboriginal community should be included within the conservation area, as long as these are minimally undisturbed by previous land-use disturbance;
- (d) assess areas on the basis of a predictive model of Aboriginal site occupation on the Cumberland Plain, because some areas have a greater potential to contain archaeological sites of high significance than others; and
- (e) landscapes that have been comprehensively disturbed by sub-surface soil removal or rearrangement are of limited potential for archaeological sites. These require no further archaeological investigation and pose no constraint for development.

8.2.4 Management Principles

The following general management principles should apply for sites and landscapes with Aboriginal heritage values:

- (a) Sites and/or landscapes with high archaeological potential or Aboriginal significance (particularly in threatened landscapes) should be avoided, retained and protected in open space.
- (b) Sites and/or landscapes with moderate archaeological potential or Aboriginal significance should be avoided if possible and/or a range of management options considered. For example, subsurface investigation to properly assess their scientific significance, covenants on lots, small open reserves, or if necessary, Consents to Destroy. Management of these should be made on the basis of their assessed significance.
- (c) Sites and/or landscapes of low or no archaeological potential or Aboriginal significance do not require further archaeological investigation in relation to the proposed development. If they cannot be avoided by the proposed development, then Consent to Destroy should be sought. The Deerubbin Local Aboriginal Land Council may wish to collect any surface artifacts prior to their destruction and monitor the initial construction activity in their vicinity.

- (d) Archaeological sub-surface investigation may be required where there is a proposed development impact in the study area, which falls within the developable areas designated Zone 1 or Zone 2. Development impacts occurring within Zone 3 would not require further archaeological investigation.

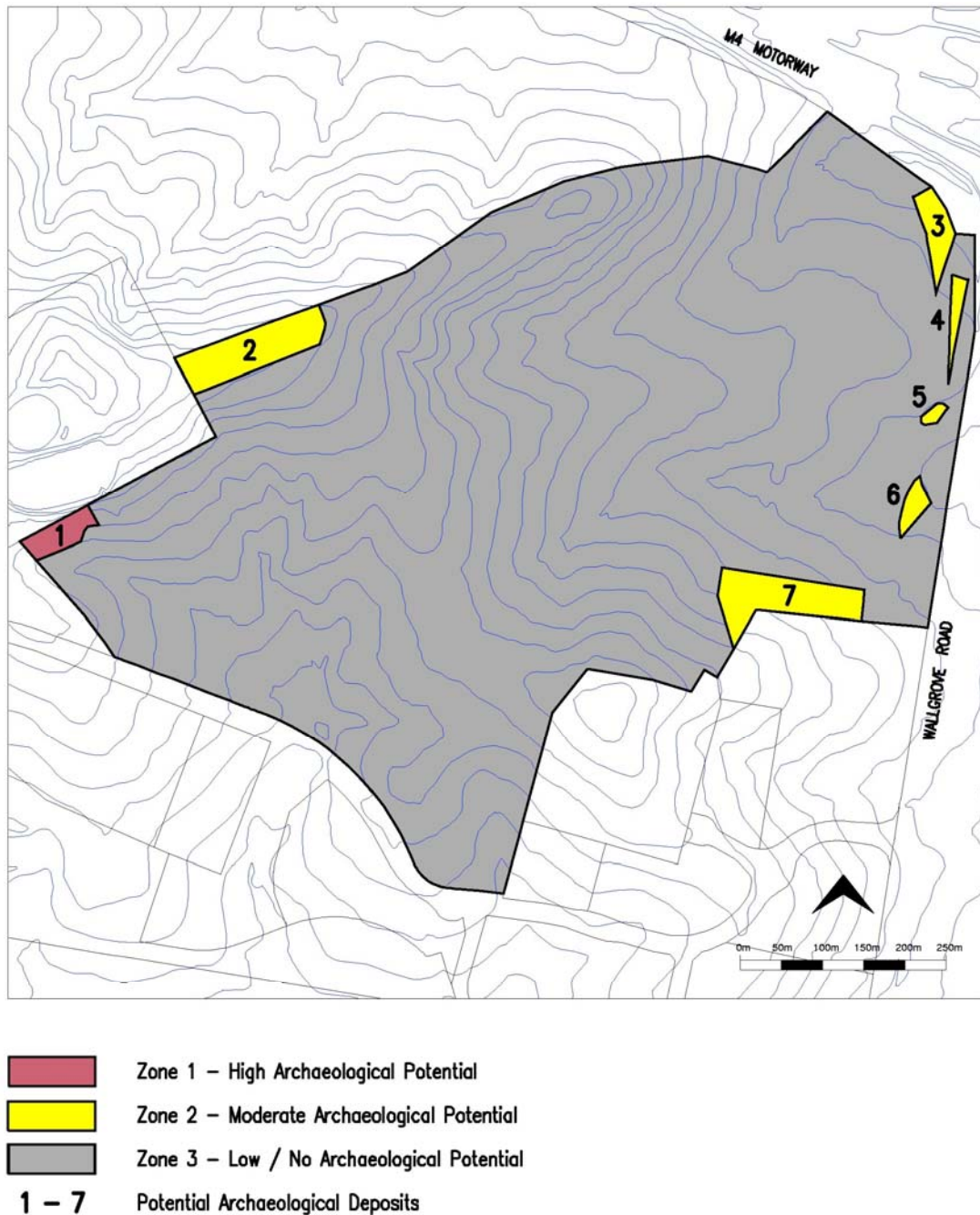


Figure 16 - Existing Archeological Sensitivity

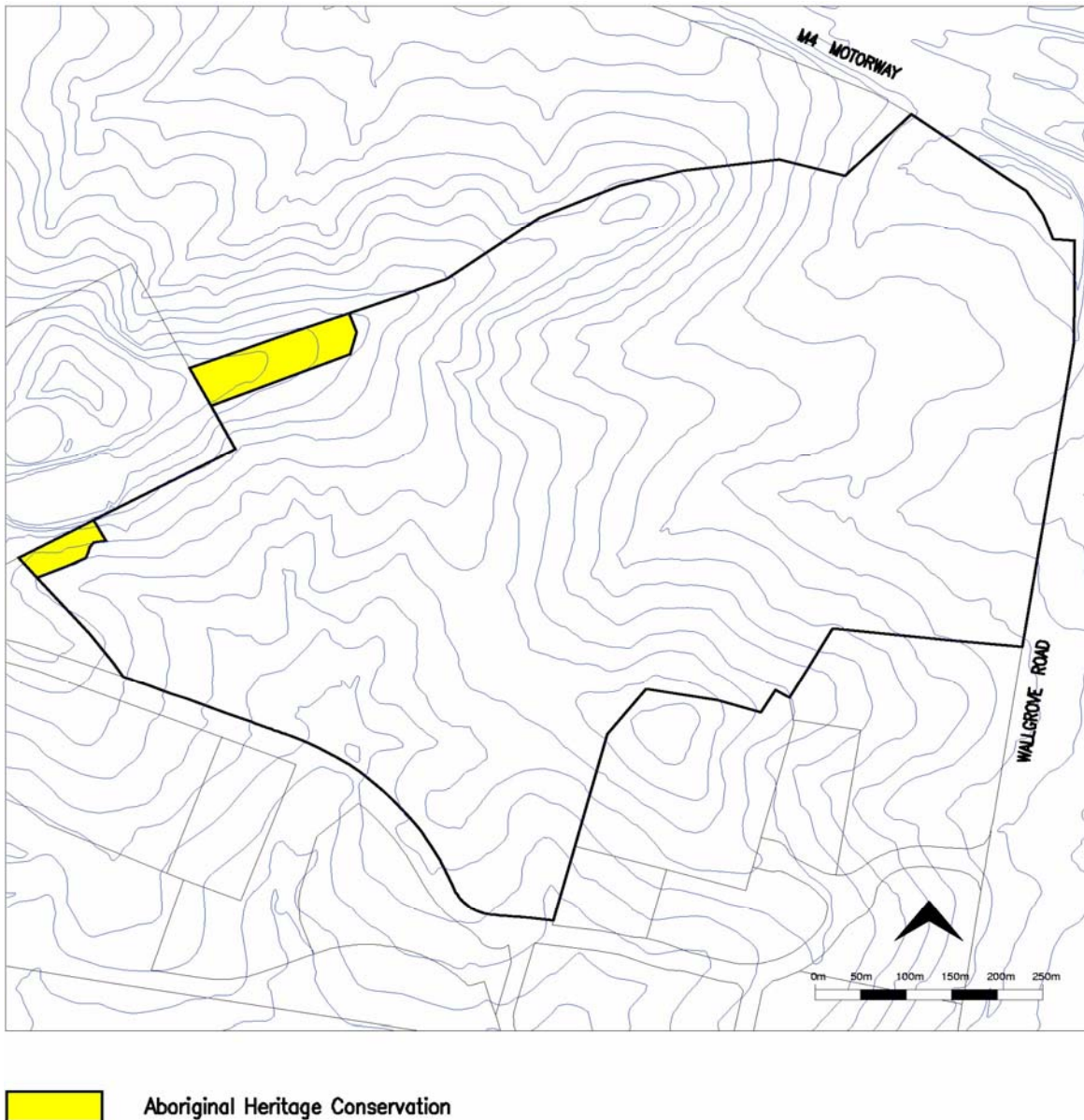


Figure 17 - Aboriginal Heritage Conservation Zones

8.2.5 Objectives

- (a) Land identified as having high archaeological significance is to be conserved and utilised as passive public open space.
- (b) The redevelopment of the developable portions of the site is to be undertaken in accordance with the requirements of the NSW *Heritage Act 1977*.

8.2.6 Controls

- (a) The council must not consent to the carrying out of development for any purpose on the land within the Precinct unless it is satisfied that appropriate arrangements have been made for the ongoing protection and management of the identified Aboriginal Heritage Site.
- (b) The council must refer any Development Application relating to an area directly adjacent to the Aboriginal Heritage Site to the NSW Department of Environment and Conservation for comment and must not consent to the carrying out of the development until:
 - (i) the council has received and considered advice with respect to the development application from the Department, or
 - (ii) the council has been notified by the Department that it does not wish to provide any advice with respect to the Development Application, or
 - (iii) 28 days have elapsed since a copy of the Development Application was referred to the Department for comment,whichever occurs first.
- (c) A conservation strategy is to be adopted to ensure a meaningful Indigenous heritage conservation outcome which incorporates landscapes with high archaeological potential and cultural values.
- (d) Further consultation with local Aboriginal community groups is required to ensure that cultural and contemporary social values for the area continue to be considered, particularly during the formulation of the conservation strategy. The groups should be asked to provide recommendations for the treatment and interpretation of the identified conservation sites.
- (e) The two small patches of low ridgetop in the western part of the Precinct identified as having archaeological sensitivity are to be excluded from construction impacts and designated as conservation zones. A covenant or some other instrument of land use agreement is to be used to ensure the ongoing protection of these areas. If these two areas cannot be conserved, then they will require salvage excavation in mitigation against their destruction.
- (f) There will be a range of impacts in the developable land on the small patches of landscapes (PADs 3-7) that have Moderate Archaeological Sensitivity (Zone 2). These do not require conservation, nor require sub-surface investigation (salvage) as mitigation against their destruction.

- (g) Areas and/or landscapes in Zone 3 have low or no archaeological potential. These should be considered as developable, and without archaeological constraint. There is no requirement for further investigation in these areas.
- (h) The remainder of the site is considered developable land and should be managed on the basis of the sensitivity mapping and the defined management principles. A ‘whole of development’ Section 90 Heritage Impact Permit should be sought from the NSW Department of Environment and Conservation for the development of the site, having regard to the areas identified as having moderate archaeological sensitivity.
- (i) The identified and recorded archaeological surface feature (site #45-5-438) should be managed on the basis of a “whole of development” Section 90 Heritage Impact Permit sought from the NSW Department of Environment and Conservation.

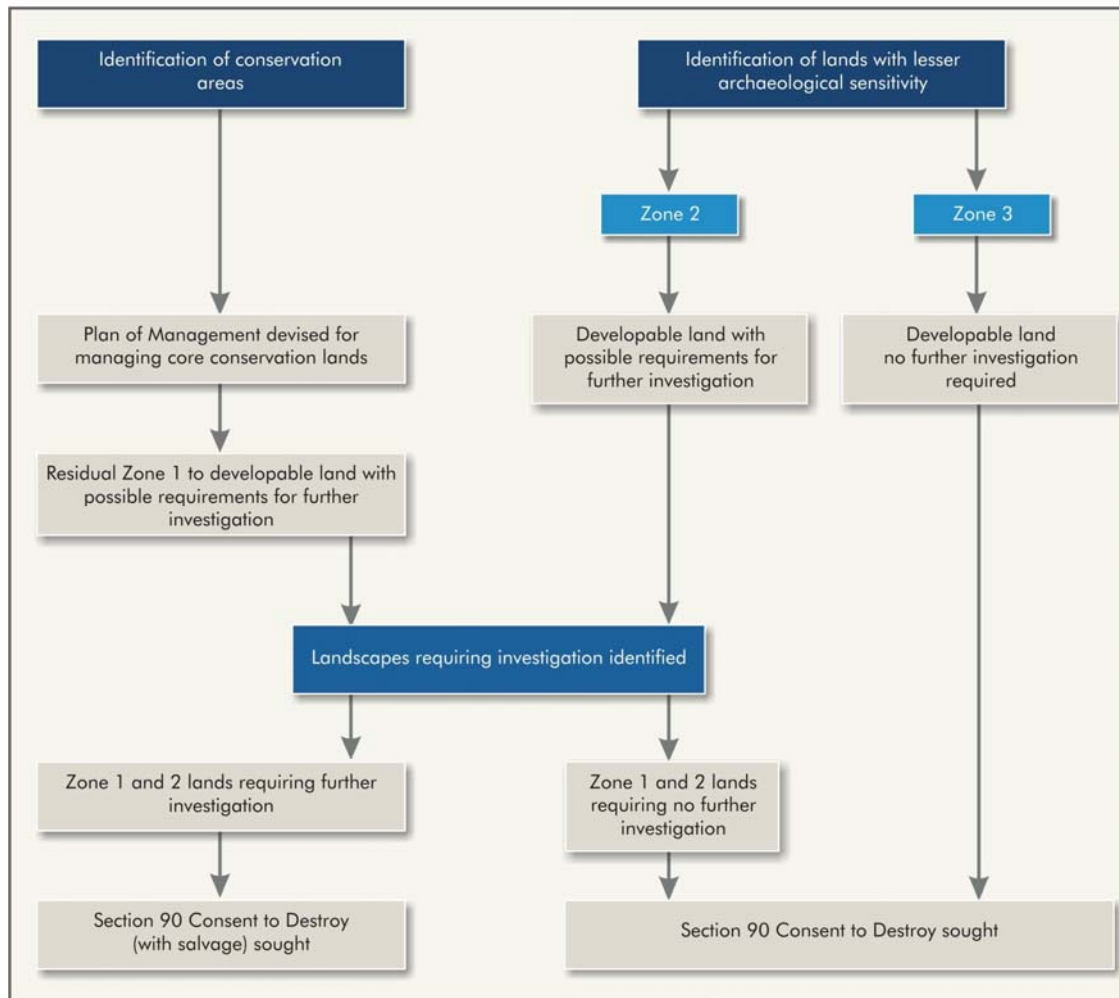


Figure 18 – Applying the Archaeological Conservation Management Plan

Section 9

TRAFFIC AND TRANSPORT

9.0 Traffic and Transport

SEPP 59 establishes guiding principles and performance targets which:

- (a) recognises the need to integrate all modes of transport including public transport, walking, cycling, vehicles and freight;
- (b) integrates the local and regional transportation network; and
- (c) is consistent with the strategic goals outlined in NSW Government policies such as *'Action of Air'* and *'Action for Transport 2010'*.

9.1 Regional Road Network

The Precinct is located in close proximity to the intersection of the M4 and M7 Motorways, which provides excellent links to the regional road network and the shared pedestrian path/cycleway that runs parallel to the M7 Motorway and connects to the Sydney cycleway network.

9.1.1 Access to External Road Network

The following regional access points service the Precinct:

- (a) left-in only access from Wallgrove Road north of Wonderland Drive;
- (b) signalised intersection at Wallgrove Road and Wonderland Drive;
- (c) signalised intersection at Wallgrove Road and Old Wallgrove Road, which also serves as access to the south bound ramps on/off the M7 Motorway;
- (d) signalised intersection at Wallgrove Road approximately 900m south of Old Wallgrove Road, which serves as access to the north bound ramps on/off the M7 Motorway;
- (e) Archbold Road over the M4 Motorway;
- (f) left-in/left out access at Old Wallgrove Road south of Wonderland Drive; and
- (g) signalised intersections along Old Wallgrove Road.

9.1.2 Objectives

- (a) Provide regional transport infrastructure which achieves the transport targets established by SEPP 59.
- (b) Develop transport infrastructure that serves the needs of the Precinct and also integrates and improves the operation of the regional transportation network.
- (c) Provide transport infrastructure which recognises the need to integrate all modes of transport including public transport, freight, walking and cycling.
- (d) Develop measures to mitigate potential transport impacts generated by the development of the Precinct on surrounding areas.

9.1.3 Controls

- (a) Council must not issue development consent on land within the Precinct unless:
 - (i) the Director-General of DOP and the RTA has certified in writing to the Council that satisfactory arrangements have been made for contributions to the provision of regional transport infrastructure and services in relation to the land comprising that development, and
 - (ii) the provision of any agreement for those or any other contributions relating to the proposed development have been complied with.
- (b) The object of contributions referred to in subclause (a) (i) is to require assistance towards the provision of regional transport infrastructure and services to satisfy the needs that will arise from intensive urban development of land within the Precinct.
- (c) The reference in subclause (a) to development consent does not include a reference to:
 - (a) land that is identified as a residue lot in a plan of subdivision, or
 - (b) land that is proposed in the Development Application to be reserved or dedicated for public road utilities, drainage or any other public purpose.
- (d) Subclause (a) does not apply to a subdivision of land for the purpose of rectifying an encroachment of any existing allotment.

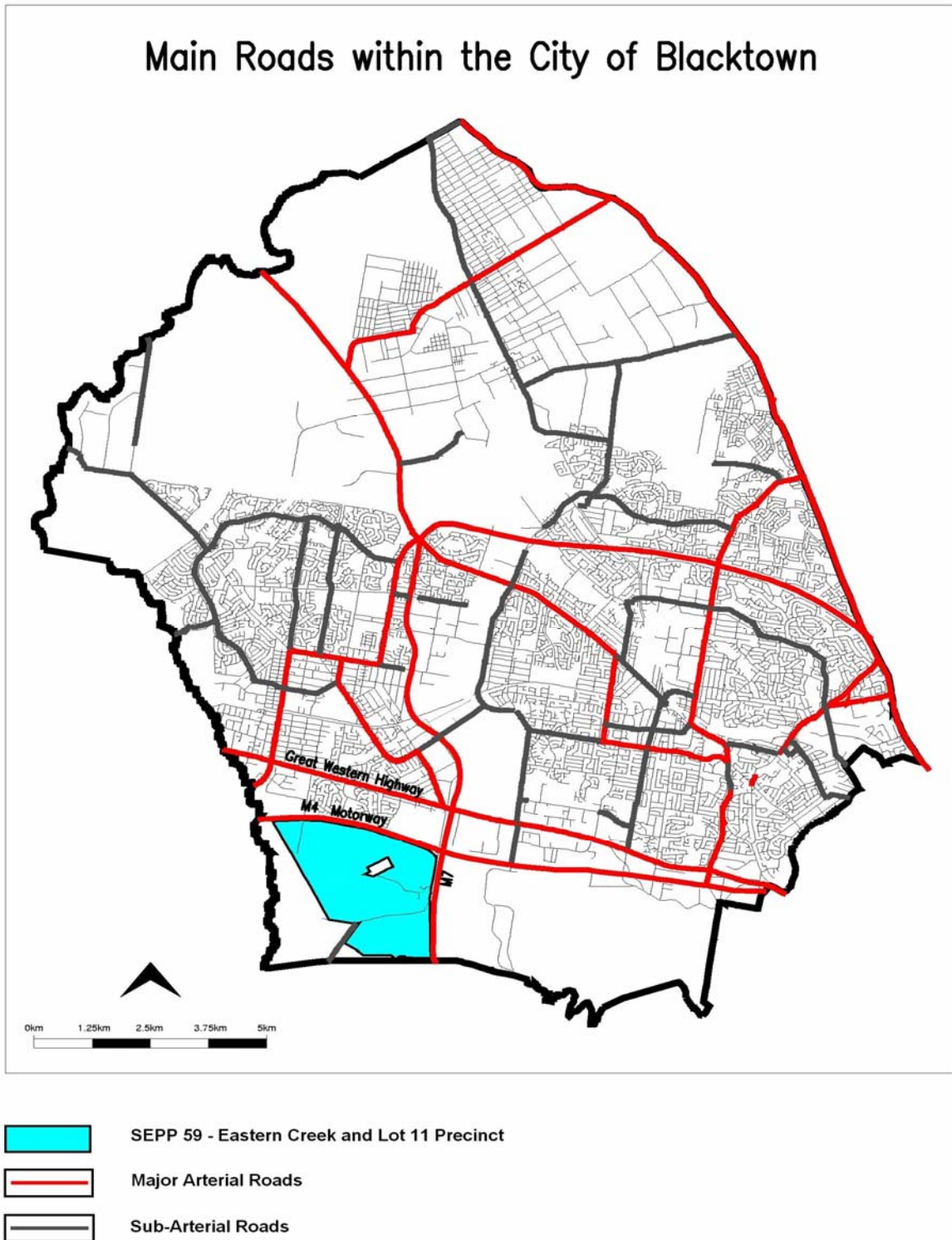


Figure 19 - Main Roads within Blacktown

9.2 Local Road Network

It is important to integrate traffic management with good urban design principles when considering the road network throughout the Precinct, as streets need to accommodate a range of users such as trucks, public transport, private vehicles, pedestrian and cyclists. The design of an internal road network should also provide linkages external to the Precinct.

The design of streets and pathways should consider driver and pedestrian behaviour consistent with the role of a street and pathway in the overall network. The visual appearance of roads of different classification should also convey the purpose and function of that road.

Street trees provide a critical element of the street character and public domain. Trees and other landscape elements along roadways should be designed to reinforce themes, frame views, and create attractive walking experiences and should respond to environmental conditions, views, topography, existing vegetation as well as the street function and the role of the street in the functional hierarchy.

Consideration should be given to creating streets with a cohesive character. This requires that both sides of the street, as well as corners and intersections be considered in the urban design. Adequate provision should be made for parked trucks and vehicles, bus stops, services and street landscaping.

The road hierarchy should be formed to facilitate the configuration and orientation of allotments that integrate the network with local drainage and open space areas, by taking into consideration the views and vistas as they provide memorable experience when moving through a place. Views and vistas provide outlook and significantly increase the feeling of openness within the Precinct. The overall structure of the road network should aim to create a connective and permeable network.

The local road network for the Precinct is based on the following principles:

- (a) good connectivity across and within Precincts;
- (b) good connectivity to the regional road network;
- (c) support efficient public transport networks; and
- (d) roads should be based on sound urban design principles.

Objectives

- (a) Develop a multi-modal transportation network based on function, amenity, safety, efficiency and urban design requirements. The road network should provide for the integrated provision of landscaping, public utilities and drainage.
- (b) Develop a road hierarchy that results in a coherent and logical network and is consistent with the overall identified road network.
- (c) Develop a road network which allows for efficient links for public transport.
- (d) Develop a legible, safe, and convenient pedestrian and cycle network that connects with regional cycle network.
- (e) Avoid, where possible, the creation of local streets that operate as through traffic routes for externally generated traffic.
- (f) Provide open vistas to open space to as many streets as possible.
- (g) Terminate views with appropriate built form where a street can not terminate on an open space.

Controls

- (a) Development should comply with the road design principles contained in the following documents:
 - (i) Roads and Traffic Authority, *Road Design Guidelines*; and
 - (ii) Roads and Traffic Authority, *Guide to Traffic Generating Development*, (1993).
- (b) Roads must be designed in accordance with the provision of this Precinct Plan and Council's *Engineering Guide for Development* (2005).
- (c) The street and road hierarchy should be reinforced through landscape embellishment.
- (d) Development shall not be carried out on land which adjoins a regional road unless vehicular access to the land is provided by way of another road.
- (e) Traffic control devices are required on all four way intersections to Council's satisfaction.

- (f) The location and design of road intersection junctions with regional roads should consider sight distances and expected future traffic volumes.
- (g) Generally major streets should be configured so that vistas are created. Where a street terminates at a building, that buildings façade should be designed to appropriately terminate the street.
- (h) Road widths should provide sufficient space to allow heavy vehicles to enter and exit the development and individual lots safely in a forward turning movement.
- (i) Turning heads of culs-de-sac should have a minimum radius of road reserve of 17 metres and a carriageway radius of 13.5 metres.

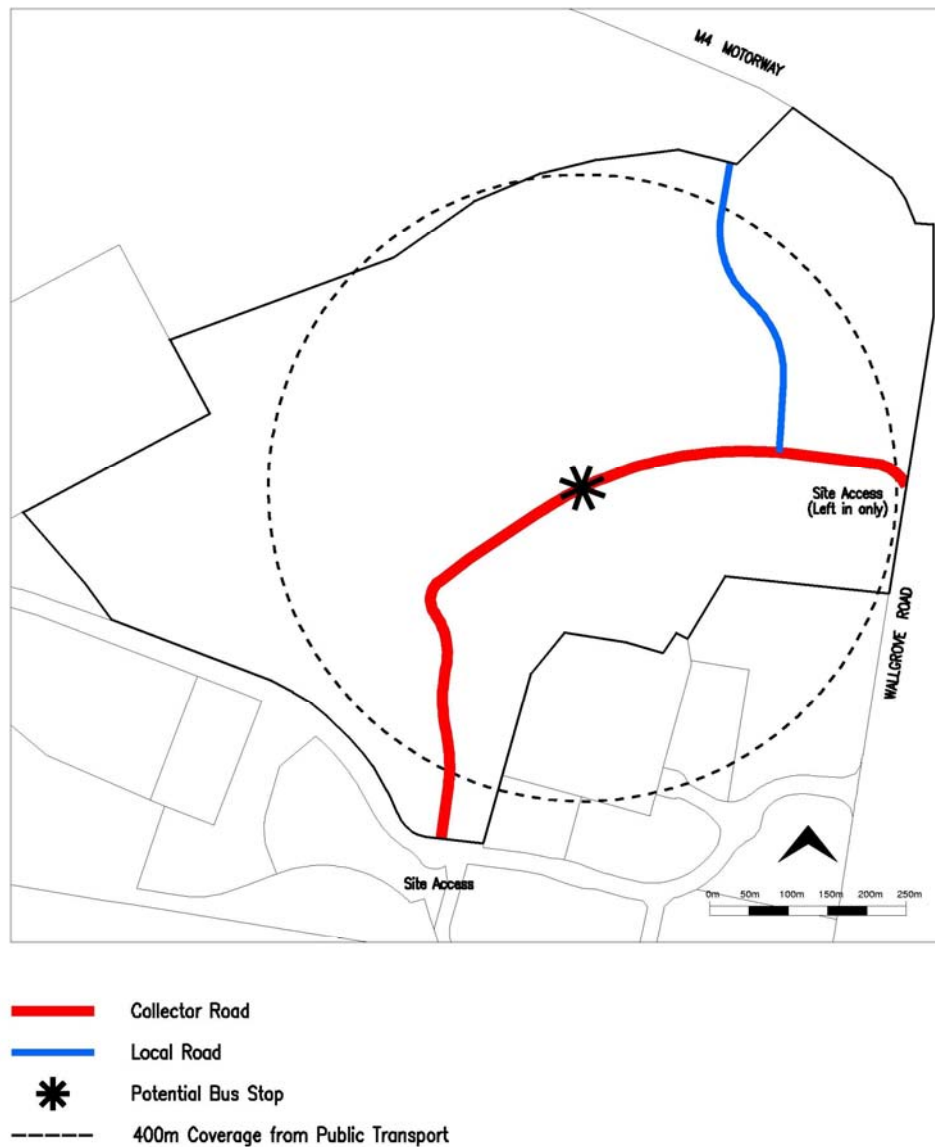
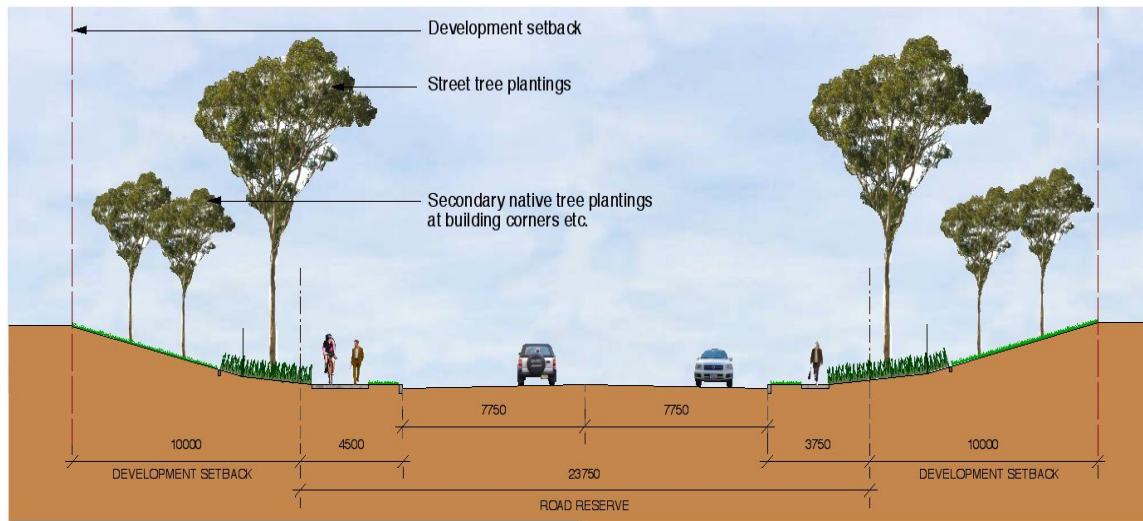
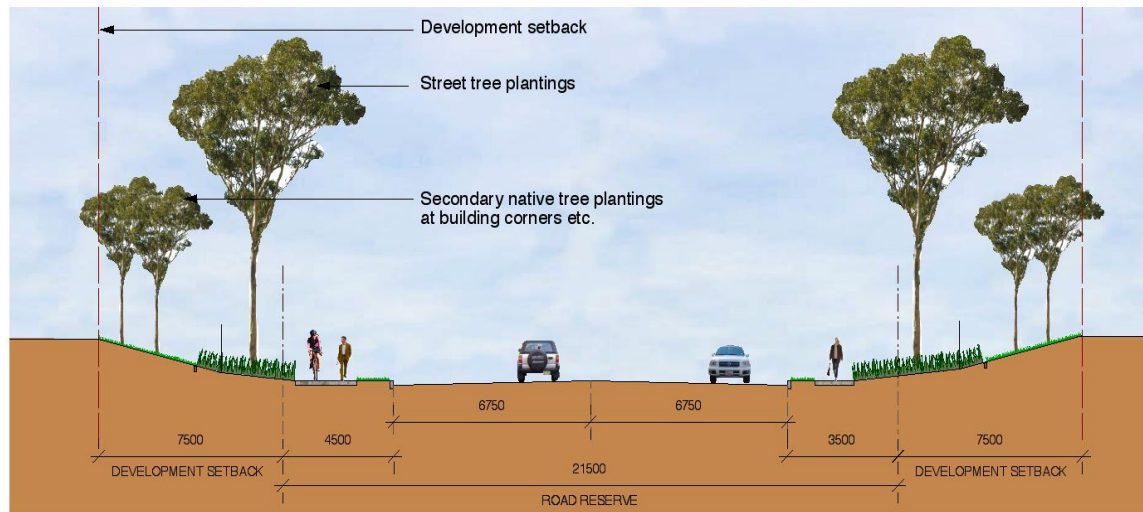


Figure 20 – Local Road Pattern and Hierarchy



COLLECTOR ROAD - TYPICAL SECTION

Figure 21 - Collector Road – Typical Section



LOCAL ROAD - TYPICAL SECTION

Figure 22 - Local Road – Typical Section

Road Type	Carriageway	Footway Each Side	Shared Pedestrian and Cyleway	Total Road Reserve	Number of Lanes
Collector	15.5m (2 x 7.75m)	3.75m	4.5m	23.75m	2 travel lanes and 2 parking lanes
Local	13.5m (1 x 6.75m)	3.5m	4.5m	21.25m	2 travel/parking lanes

Table 3 - Road Standards

9.3 Public Transport

The target mode split required by SEPP 59 will help to reduce usage of the private car as the primary means of transport to the Precinct. Action in the early stages of development can assist in facilitating a culture and pattern of public transport usage. These actions could include the provision of transport infrastructure and bus services to the Precinct. These will be supplemented by the provision of cycle routes and pedestrian linkages. The frequency of service, quality of facilities, and interchange operations are critical in building a sustainable development in terms of transport.

The bus routes for the Precinct should generally be designed to follow the collector and sub-arterial road network rather than use local roads to allow for more efficient bus operations through shorter travel times and distances, and be planned to be within 400m of the majority of employment generating land uses. Wherever possible, buses should have priority at internal intersections. Other measures that could encourage the use of buses include:

- (a) provision of shelters within the development. The location of these would need to be negotiated with the bus company and Council;
- (b) road widths to allow bus turning movements; and
- (c) as an alternative or in addition to a public bus service, a shuttle bus could be arranged by businesses to transport staff between train stations and the Precinct during morning and afternoon peak hours.

Objectives

- (a) Encourage employees within an organisation to make greater use of public transport, cycling, walking and car sharing for commuting and work related journeys.
- (b) Increase the modal split of public transport, walking and cycling above levels typical of similar development.
- (c) Reduce the total vehicle kilometres travelled in comparison to similar forms of development.
- (d) Establish a safe, convenient and reliable public transport system that integrates with regional and local transportation networks.
- (e) Ensure that the public transport system is consistent with NSW Government strategic policies such as *Action for Air* and *Action for Transport 2010*.
- (f) Ensure that the road network supports public transport and encourages pedestrian and bicycle trips along a dedicated pedestrian/cycleway shared path, especially to convenient public transport routes, recreational open space areas, and local linkages, in a safe and convenient manner.

Controls

- (a) Applicants will need to demonstrate that satisfactory arrangements have been entered into with the relevant State government authorities for the provision of public transport services to the Precinct.
- (b) Bus stops are to be provided at appropriate intervals and locations to ensure a maximum 400m walking distance from at least 90% of employment generating development.
- (c) Bus stops should be appropriately designed to provide shelter from weather and be well lit to promote safety. Up-to-date schedule and route information must be provided in all bus stops, along with footpaths to access the bus stops.
- (d) The alignment and geometry of streets that form bus routes must allow for efficient and unimpeded movement of buses and other vehicles.
- (e) The pedestrian routes and their road crossings are to be located conveniently to designated bus stops.

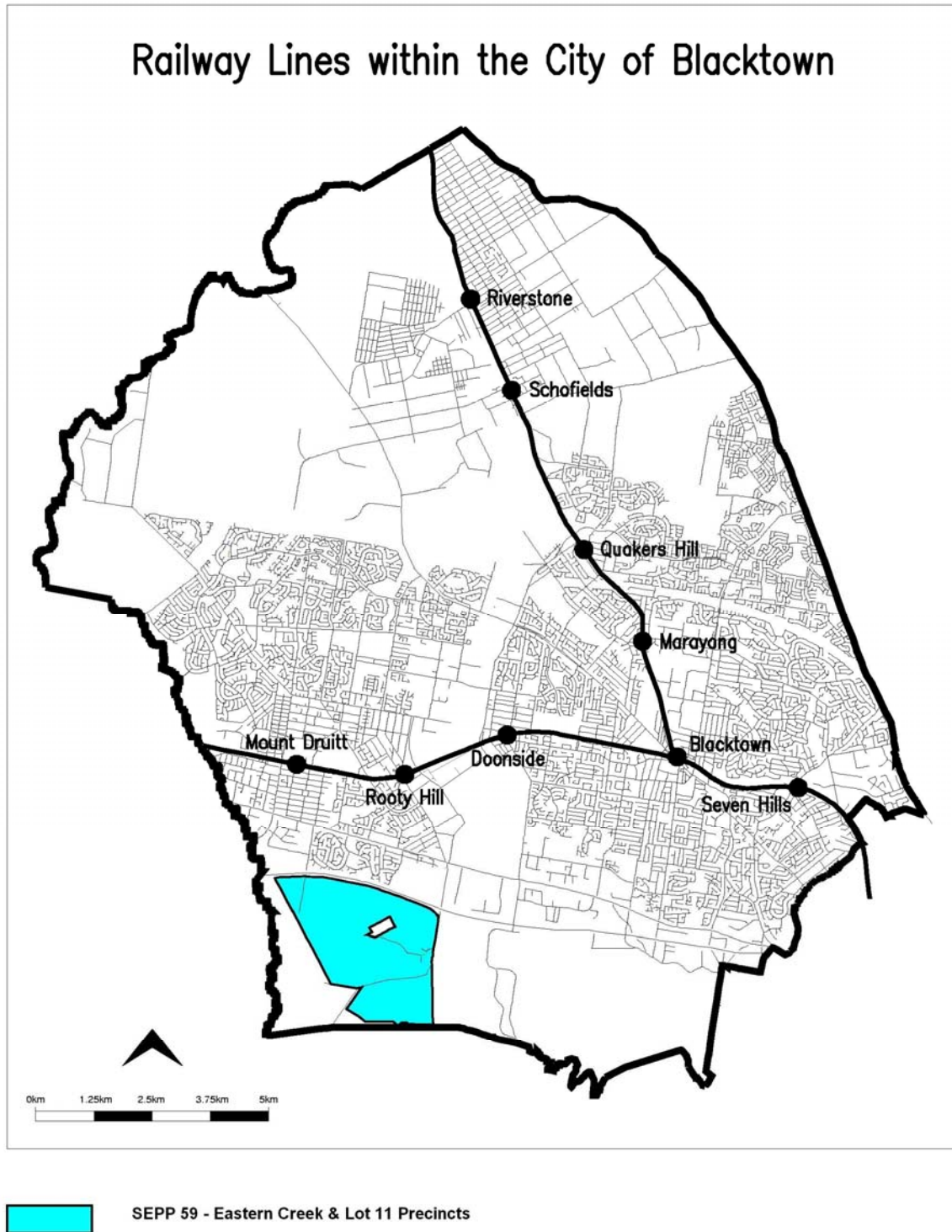


Figure 23 - Railway Lines within Blacktown

9.4 Pedestrians and Cycling

A safe, convenient and legible network of pedestrian and cycle path linkages will allow employees and visitors access to public transport nodes, neighbourhood centres and the main open space and public amenity features of the Precinct. This network should relate to the road hierarchy and landscape character of the Precinct by offering generous shade, suitable width and design.

The pedestrian and cycle network is to connect the routes within the Precinct to other external networks, including the M7 Motorway cycle paths, the adjoining regional open space systems of Ropes Creek and Eastern Creek, and the residential area of Minchinbury. Off road cycle paths within open space areas should provide links to the regional cycle network. This will form an integral part of achieving a desirable workplace environment.

9.4.1 Principles

The aim of providing bicycle infrastructure is to improve the safety and convenience for cyclists and to encourage more trips to be made by cycling rather than by a private car. Cyclist and pedestrian infrastructure supports the transport aims of SEPP 59. The *NSW Bicycle Guidelines* (RTA, 2003) gives guidance on the design of local bicycle networks. It specifies five principles for the design of a bicycle routes within a network:

- (a) safe routes that provide a safe facility for cyclists and other road users;
- (b) coherent continuous routes that have a distinct and identifiable character consistent with other routes;
- (c) directness of routes that are as direct as possible;
- (d) attractiveness of routes that compliment and enhance the environment in such a way that cycling is attractive; and
- (e) comfort of routes that enable a comfortable flow of bicycle traffic and are easy to use.

9.4.2 Regional Connections

The Eastern Creek bicycle network should link with a number of existing and proposed regional bike facilities in the area, including:

- (a) Westlink M7 cycleway consisting of a 4m wide off-road shared path along the entire length of the Westlink M7. Local access points will include Wallgrove Road at Reedy Creek, Old Wallgrove Road, Wallgrove Road at Wonderland Drive and an eastbound onramp to the M4 Motorway;
- (b) Rooty Hill Railway Station to Minchinbury, which consists of an existing off-road shared path from the M4 Motorway to Rooty Hill Railway Station. A number of existing tunnels under the M4 Motorway may provide a connection to Eastern Creek; and
- (c) Water Supply Pipeline cycleway which is a long term vision for a cycleway along the Water Supply Pipeline from Prospect Reservoir to Mulgoa.

9.4.3 Local Bicycle Network

The local bicycle network should generally follow the primary road network incorporating both on-road cycleways and off-road paths. Bicycle lock-up rails and storage space should be provided for staff within each of the developments. Associated facilities like showers and cloakrooms should also be provided for staff to change and hang their clothes. The following principles should guide the design of the local bicycle network:

- (a) cycle routes should correspond to the main transport desire lines;
- (b) off-road links may be integrated with on-road routes where they improve directness;
- (c) roads favoured for cycle routes should allow cyclists to travel without unduly obstructing traffic;
- (d) allowing shared use of short pedestrian links between streets can enhance permeability of local areas to cyclists;
- (e) the planning and design of roads and streets must recognise the needs of cyclists, particularly where there is no alternative to cyclists riding in busy traffic;
- (f) riding surfaces should be smooth and clean, with widened kerb side lanes where appropriate; and
- (g) clear channels for cars and bicycles should be provided at intersections.

9.4.4 Pedestrian Network

A good pedestrian network is required to provide a safe and attractive walking environment. The primary pedestrian network should generally follow the primary road network incorporating footpaths on both sides of the roads. The following principles should guide the design of the local pedestrian network:

- (a) it needs to be recognised that walking will be an integral component of journey to work trips undertaken by bus;
- (b) locate as many services, including public transport stops, as close as possible to employment generating land uses;
- (c) footpaths should be provided on both sides of all roads in the Precinct to provide a safe walking environment;
- (d) walking routes should be short, safe and take people directly to where they want to go; and
- (e) walking connections may often be more direct than vehicle connections.

9.4.5 Objectives

- (a) Encourage trips to be undertaken by walking and cycling instead of private vehicles; and
- (b) Develop a safe, convenient and legible pedestrian and cycle network within the Precinct that integrates with external network routes.

9.4.6 Controls

- (a) Development should be consistent with the Roads and Traffic Authority, *Action for Bikes – Bikeplan 2010*, and Blacktown Bike Plan.
- (b) Facilities for pedestrians and cyclists should be designed in accordance with *Austroads Guidelines*, Parts 13 & 14, and the RTA *NSW Bicycle Guidelines* (November 2003).
- (c) Secure bike parking, showers and lockers should be provided at destination points.
- (d) The cycleway network design should be integrated into the road hierarchy, ensuring that access along road corridors are clearly marked.

- (e) Pedestrian and cycle path networks should be designed to be safe, legible and convenient, by allowing integrated access within and external to the Precinct.
- (f) Pedestrian and cycle links are to be consistent with the traffic and transport plan for the Precinct.
- (g) Road crossings are to be located where there is adequate sight distances and suitable lighting provide at road crossings.
- (h) One bicycle locker or other suitable form of secure bicycle accommodation is to be provided per 600sqm of GFA of the office component.
- (i) Cycle and pedestrian paths should be designed and constructed in accordance with the following standards:

Path Type	Minimum Widths (m)
Pedestrian within Road Reserve	3.75 for Collector Roads
	3.5 for Local Roads
Shared Pedestrian/Cycle with Road Reserve	4.5
Off-Road	3.0

Table 4 - Pathway Design Requirements

9.5 Transport Initiatives

Applicants are required to provide an Employee Incentive Program, to the satisfaction of the relevant State government authority, which demonstrates the promotion of transport choices for visitors and employees to the Precinct. Such initiatives could include:

- (a) promoting a car pooling scheme for work related journeys;
- (b) staff sharing scheme for fleet vehicles;
- (c) use of taxis for work related journeys;
- (d) provision of a mini-bus facility and interchange area;
- (e) providing staff with a discount or subsidy on public transport costs;
- (f) employee cycling allowance;
- (g) distribution of information regarding public transport services to employees; and
- (h) provision of on-site facilities, which may include change rooms, showers, lockers and storage facilities, to encourage cycling and walking as a mode of transport.

9.6 Parking

Parking standards on site need to be sufficient to meet the demand of workers and visitors who use private cars as the mode of transport to access the Precinct. The number and location of car parking spaces provided on site should be designed to allow for the safe and efficient movement of heavy vehicles through the site.

Objectives

- (a) Ensure adequate parking for various land uses.
- (b) Ensure parking is provided in accordance with Council's standards and design principles.
- (c) Ensure the design and landscaping of car parking areas are of a high standard.
- (d) Ensure the location of driveways, parking and servicing areas are efficient, safe and suitably landscaped.

Controls

- (a) On street parking should be designed in accordance with Australian Standard Parking Facilities, Part 5 – On Street Parking.
- (b) Off street parking should be designed to be consistent with the car parking standards of this Precinct Plan.
- (c) The following additional provisions apply:
 - (i) car parking areas should be accessible to all parts of the development;
 - (ii) signage to car parking areas should be clearly visible from the road providing access to the site to encourage the use of off street parking by both visitors and employees;
 - (iii) the use of stack parking is not favoured;
 - (iv) each individual development should provide at least one clearly marked and signposted disabled parking space in close proximity to the main entrance to the building;
 - (v) developments of more than 50 car parking spaces must provide at least 2% or part thereof of those spaces for disabled drivers, clearly marked and signposted for this purpose;

- (vi) all parking areas shall be constructed of hard standing, all weather material, with parking bays and circulation aisles clearly line marked;
- (vii) car parking areas shall be landscaped to provide shade and screening; and
- (viii) designated on site truck parking areas must be provided for applications that propose overnight parking, in addition to spaces provided for loading bays.

PARKING SPACE	WIDTH (m)	LENGTH (m)	TWO WAY AISLE WIDTH (m)
Staff parking	2.5	5.2	7
Visitor	2.7	5.2	7
Disabled	3.0	5.5	7
Parallel spaces	2.8	6	

Table 5 - Dimensions for Car Parking Spaces

LAND USE	CAR PARKING REQUIREMENTS
Employment	
Industrial	Buildings 7,500sqm or less – 1 space per 100sqm GFA.
	Building greater than 7,500sqm GFA – 1 space per 200sqm GFA only for the area in excess of 7,500sqm where there is a specific end user which would not demand a higher rate and where employee parking is adequately catered for.
Commercial / Office	1 space per 40sqm GFA
Associated Showrooms	1 space per 45sqm GFA
Community Services	
Shop	Shops 200sqm or greater – 1 space per 22sqm GFA
	Shops less than 200sqm – 1 space per 30sqm GFA
Café / Restaurant	1 space per 10sqm of dining area, plus 1 space per 2 employees
Child Care Centre	1 space per employee, plus 1 space per 5 children, or part thereof, for parents and visitors.

Table 6 - Car Parking Numbers

Section 10

URBAN DESIGN

10.0 Urban Design

SEPP 59 establishes guiding principles and special provisions to ensure the best possible urban design outcomes are achieved, including landscaping and visual character. The urban design outcomes are to be drawn from an analysis of the site and its context, the objectives of SEPP 59 and the objectives of this Precinct Plan.

Buildings should be of an appropriate scale relative to the site area and adequate provision made for parking, landscaping and manoeuvring. Development should identify areas of high visibility and consider options such as vegetation screens or landmark buildings of outstanding design. Detailed consideration will need to be given to the appearance of the development from both within and outside the site from Wallgrove Road, the M4 Motorway and the Westlink M7.

10.1 Site Analysis

A site analysis documents the key opportunities and constraints of a site and its surrounding area, and shows how these elements determine the final proposal for the site.

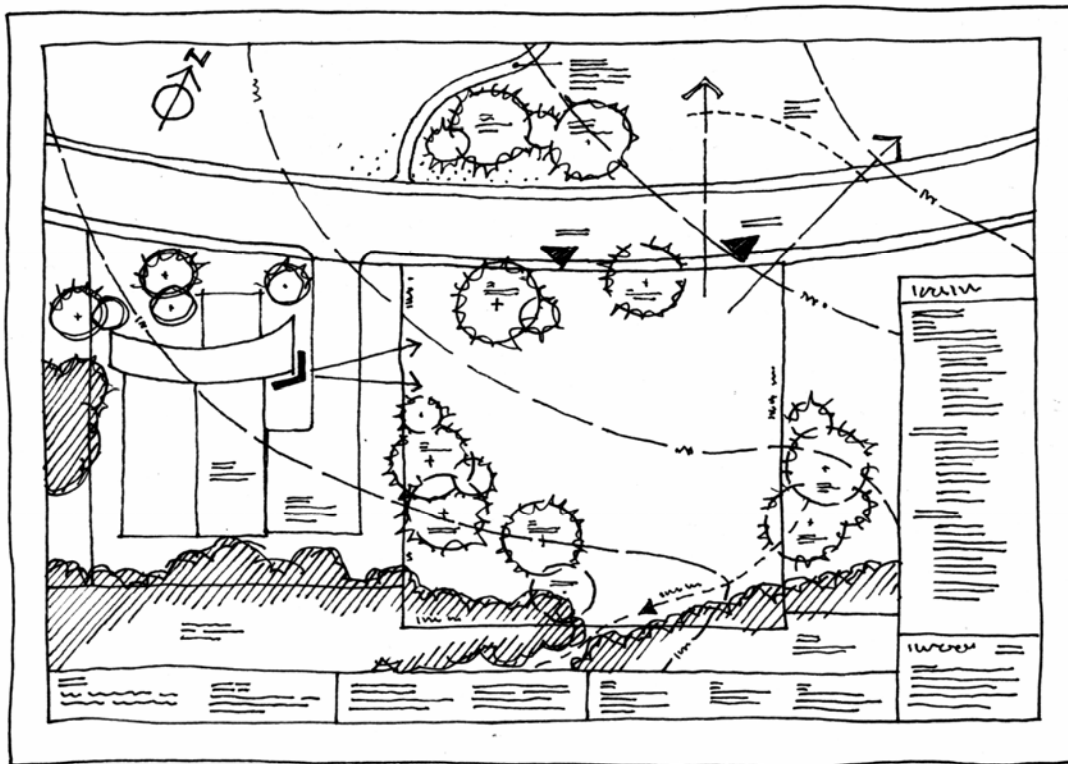


Figure 24 - Typical Site Analysis

Objective

To ensure that the opportunities and constraints of the site, and its surrounding area, are fully considered and incorporated into the final design.

Controls

A site analysis based on a survey drawing produced by a suitably qualified person must be submitted with all Development Applications. The site analysis should include:

- (a) In relation to the site:
 - (i) orientation and solar access;
 - (ii) existing contours and levels to AHD;
 - (iii) trees and other significant vegetation;
 - (iv) existing buildings;
 - (v) access points;
 - (vi) any known Aboriginal heritage sites;
 - (vii) existing views to and from the site;
 - (viii) prevailing winds and noise sources;
 - (ix) flood affected areas;
 - (x) filled areas;
 - (xi) contaminated soils;
 - (xii) salinity levels;
 - (xiii) unstable lands;
 - (xiv) overland flow patterns, drainage and services;
 - (xv) fences, boundaries and easements;
 - (xvi) noise sources; and
 - (xvii) any other noticeable features or characteristics of the site.
- (b) In relation to the surrounding area:
 - (i) the location and use of surrounding buildings;
 - (ii) the difference in level between the site and surrounding properties;
 - (iii) private open space and windows on nearby properties that have an outlook to the site;
 - (iv) solar access to surrounding development;
 - (v) major and significant trees on surrounding properties;
 - (vi) location and height of walls built near to the boundary of the site;
 - (vii) the built form, scale and character of surrounding and nearby development, including characteristic fencing and landscape styles;
 - (viii) street frontage features such as poles, street and kerb crossovers;
 - (ix) existing public transport, cycle and pedestrian routes;
 - (x) materials used in the area;
 - (xi) any known Aboriginal heritage sites and
 - (xii) any vantage points surrounding the site from which the site can be viewed.

- (c) The site analysis is to identify where additional architectural treatments and design standards are required to respond to site conditions.
- (d) Buildings with a high design standard are preferred. These should respond to the site's location and visual catchment(s). Special attention to building appearance is to be given to the design of all buildings on sites within the areas of high visibility.
- (e) In areas of high visibility, an analysis identifying sensitive viewing locations should be undertaken and the design of buildings should consider their appearance from these external locations. Architectural treatments should be used to ensure that the appearance of the building does not detract from the amenity of the area.
- (f) Where architectural design alone is unable to respond to site challenges, screening vegetation may be utilised to ameliorate visual impact. Species selection must be nominated on landscape plans lodged with the Development Application and should compliment the architecture of the building.

10.2 Subdivision

Subdivision will generally be the first stage of development within the Precinct. Subdivision design outcomes are critical to the realisation of the image and appearance of the Precinct.

The design of a subdivision can influence the image and appearance of the development within the Precinct. Road pattern configuration, and lot orientation, shape, size and dimension will vary with the needs of particular land uses.

Development Applications must demonstrate sufficient areas are provided on site for:

- (a) access and circulation;
- (b) car parking;
- (c) landscaping
- (d) drainage; and
- (e) separation between buildings.

Objectives

- (a) Enable substantial perimeter planting, landscaping and attractive buildings to be located around the entrances and highly visible areas of the Precinct;
- (b) Subdivisions should seek to maximise solar access to all parts of the development and protect site attributes such as views, existing vegetation and other environmental features;
- (c) Provide a range of allotment sizes that caters for a diversity of land uses and employment opportunities within the Precinct;
- (d) Orientate allotments to ensure buildings appropriately address the street, particularly those allotments with frontage to arterial, sub-arterial, and collector roads; and
- (e) Protect and enhance significant existing vegetation, and open space areas.

Controls

(a) Allotment Size

- (i) The minimum lot size for all allotments in a Torrens Title subdivision, shall be no less than 5,000 square metres.
- (ii) The allotment size for a neighbourhood centre shall range from 10,000 square metres to 20,000 square metres.
- (iii) Smaller lot sizes may be considered for ancillary development, such as shops and commercial premises only within the neighbourhood centre, and for open space, conservation, drainage, and public utility undertakings and the like.

(b) Allotment Dimension

The minimum width for all allotments in a Torrens Title subdivision, when measured at the building line, shall be no less than 35m, except as otherwise provided for in (a)(iii).

(c) Allotment Shape

The design of a subdivision should create lots that are relatively regular in shape, although lot sizes should also be diverse to meet a range of different land uses. These may range from those requiring wide street frontages and a minimum depth to those that require less frontage but a greater depth.

(d) **Allotment Orientation**

- (i) Lots should be orientated such that they enable buildings to be designed to orientate towards the street, particularly those lots with frontage to arterial, sub-arterial and collector roads, in order to increase visual surveillance of the street and avoid streetscapes with loading docks and long blank walls dominating the facades.
- (ii) Irregular shaped allotments with narrow street frontages should be avoided, particularly where several of these lots are proposed in an adjoining manner.
- (iii) Lots should be created to enable buildings to be sited and aligned for solar efficiency.
- (iv) Lots should be orientated to encourage building design that has frontage to conservation areas, and public open space areas.

(e) **Road Pattern**

Subdivisional roads should:

- (i) incorporate a road hierarchy that will accommodate the anticipated traffic volumes and vehicle types, and should be designed to clearly lead from the entrance of the Precinct to the internal collector roads; and
- (ii) be practical and legible for users.

(f) **Allotment Titles**

- (i) Where a Strata or Community Title subdivision is proposed, any space for parking or other purposes forming part of a sole occupancy unit required by Council must be included in the same strata lot as the unit. All landscaping, access areas, and directory board signs not forming part of an individual unit will be required by Council to be included in any Strata plan of subdivision as common property.
- (ii) Council discourages inappropriate multi-tenanted industrial development that are not of high visual appearance compatible with existing development within the Precinct. However, this does not preclude two or more differing industrial processes associated with the same development occurring on a single allotment. The minimum gross floor area for any industrial unit that forms part of a multi-tenanted industrial development shall be no less than 1,000 square metres.

(g) **Battle-Axe Shaped Allotments**

- (i) Subdivisions should avoid the creation of battle-axe allotments. However, where they are provided, the minimum lot size and lot dimension are to address the provisions outlined above, exclusive of the area taken up by the battle-axe handle.
- (ii) Battle-axe shaped allotments shall meet the minimum width of 35m when measured at the building line.
- (iii) The battle-axe handle shall have a minimum width of 8m for single access.
- (iv) Where 2 or more battle-axe handles adjoin and provide a shared driveway with reciprocal rights-of-way over the other, the minimum width of the shared driveway must be 10 metres. Additional turning facilities may be necessitated at the end of a shared battle-axe driveway.

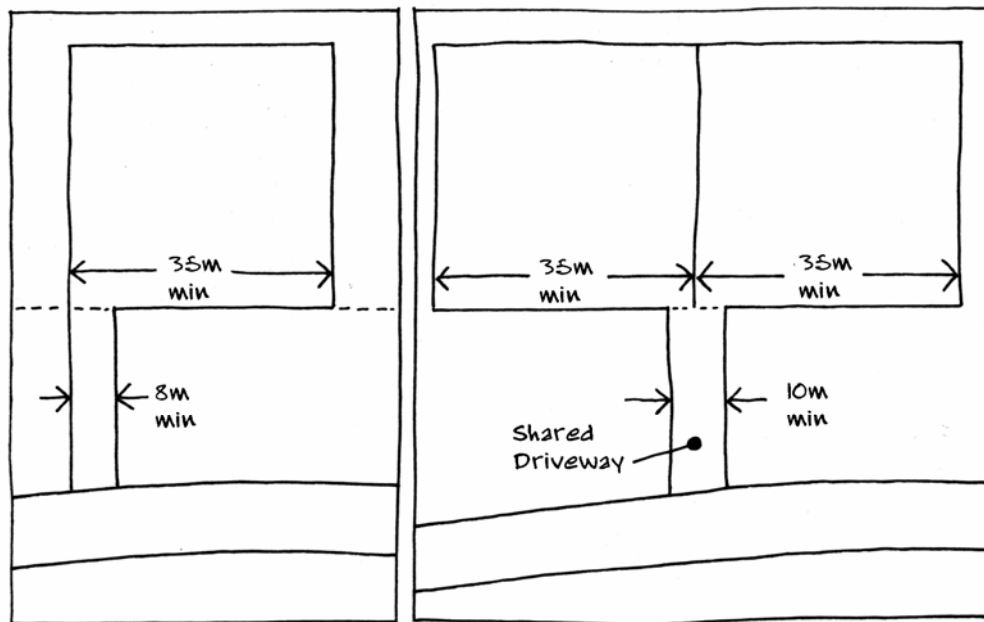


Figure 25 - Battle-Axe Lot Subdivision

10.3 Entrance Treatment

Objective

- (a) Create distinctive high quality gateways to the Precinct; and
- (b) Create identifiable, attractive and safe entrances to buildings.

Controls

- (a) The entrance to the Precinct should be clearly visible, well sign posted, well lit and landscaped.
- (b) Entry to buildings should be clearly visible to pedestrians and be integrated into the form of the building.
- (c) Architectural features are to be provided at ground level giving an entrance element to the building and addressing the primary street frontage.
- (d) All entrance treatments, such as Precinct directory boards, must be located on private property, with appropriate positive covenants and restrictions on title to ensure that the ongoing management of such treatments.
- (e) No form of advertising will be permitted on any entrance treatment facility.

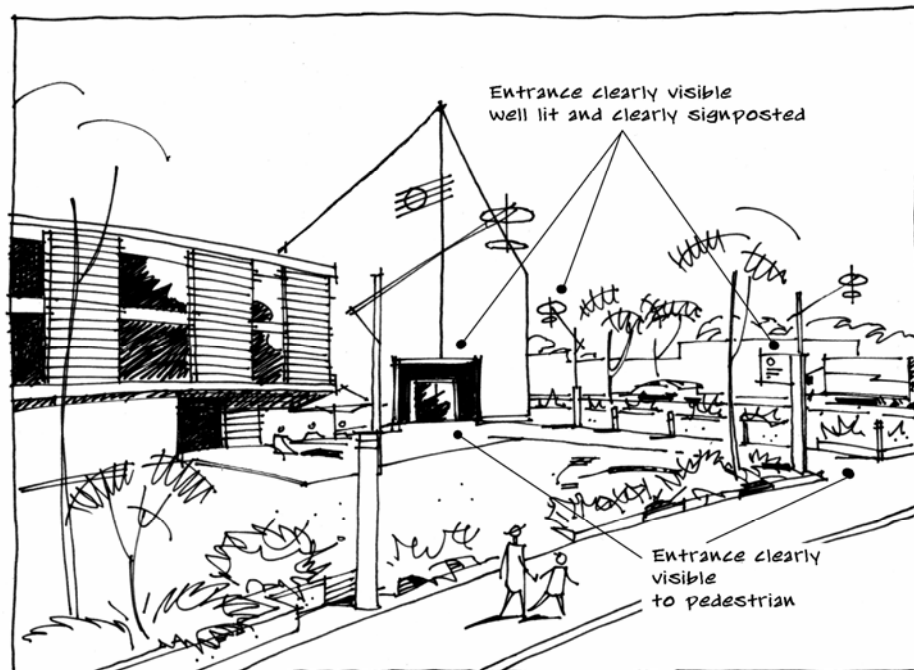


Figure 26 - Indicative Entrance Treatment

10.4 Siting and Setbacks

A key element in maintaining visual character is the visibility and appearance of development when viewed from the public domain. The streetscape is one of the interfaces of development, landscape and open space with the street.

Objectives

- (a) Define the building envelope within each allotment by specifying minimum setbacks;
- (b) Achieve attractive streetscapes and quality landscaped settings for buildings;
- (c) Use setback areas exclusively for landscaping and other beautification works; and
- (d) Ensure buildings present an acceptable scale and bulk when viewed from the public domain.

Controls

- (a) No building or hardstand area (concrete or bitumen pavement) shall be erected on any land within:
 - (i) 20m of the front property boundary with Wallgrove Road and the M4 Motorway;
 - (ii) 10m of the front property boundary with an industrial collector road;
 - (iii) 7.5m of the primary front property boundary of any other road;
 - (iv) 5m of the secondary street property boundary for corner allotments, provided that the building presents a satisfactory facade to the street with good design and landscaping elements;
 - (v) 3m of side and rear boundaries for any building and 2m for any hardstand area;
 - (vi) 10m of the boundary (excluding public roads) of a:
 - conservation area;
 - open space area; or
 - drainage detention basin or wetland area.
 - (vii) 2m of the top edge of a retaining wall or the top of the bank of a battered slope.

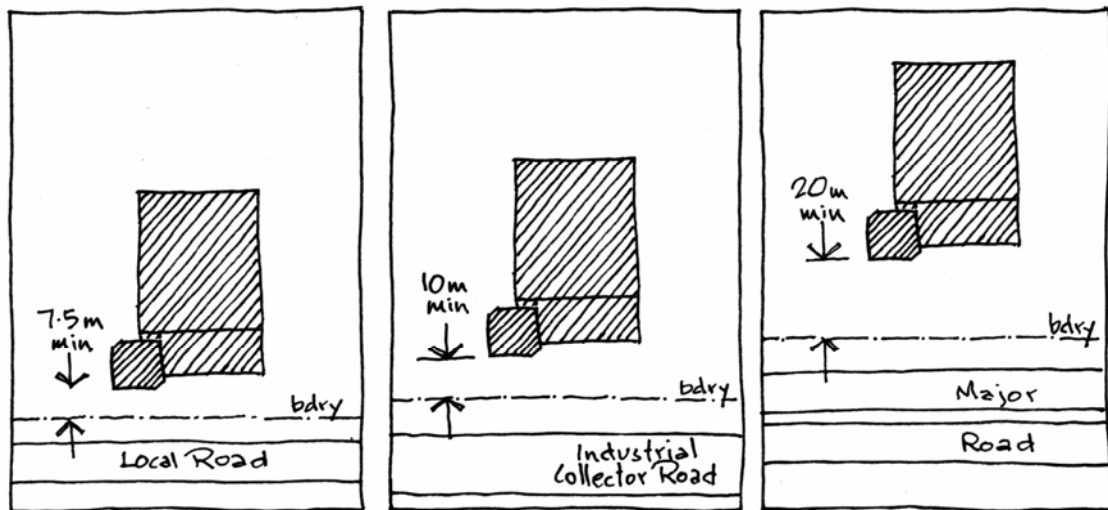


Figure 27 - Front Boundary Setbacks

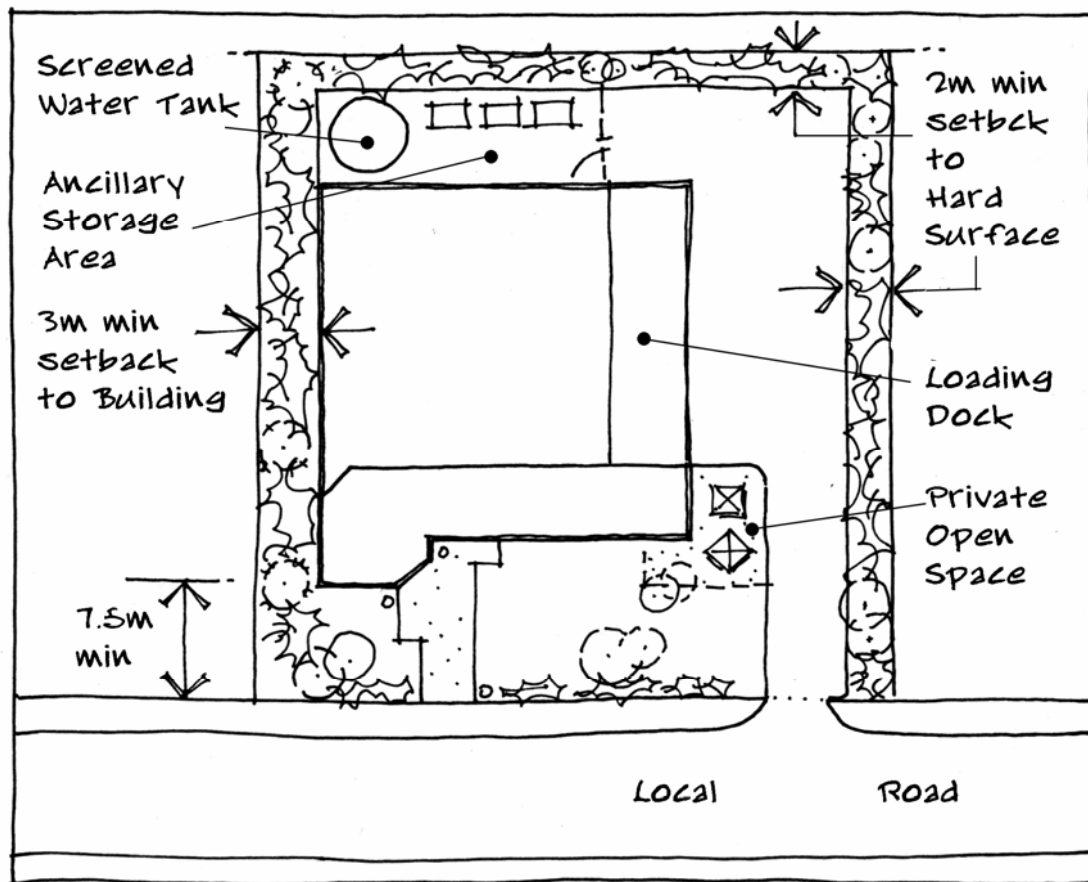


Figure 28 - Development Setbacks

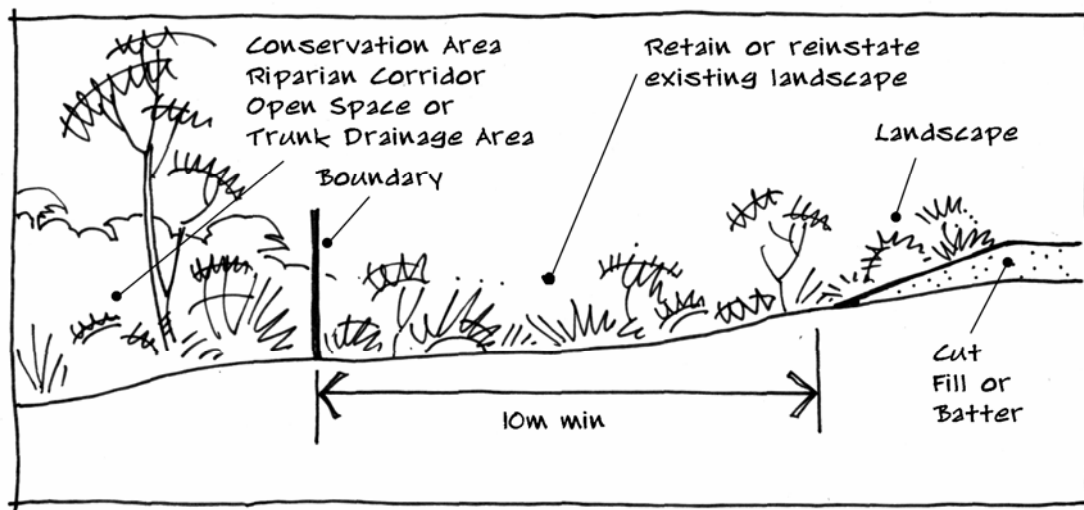


Figure 29 - Setbacks to Significant Natural Areas

- (b) The site coverage of the footprint of all buildings and canopy areas (excluding hardstand areas) to the area of the allotment on which it is to be situated shall not exceed 65% of the site area.

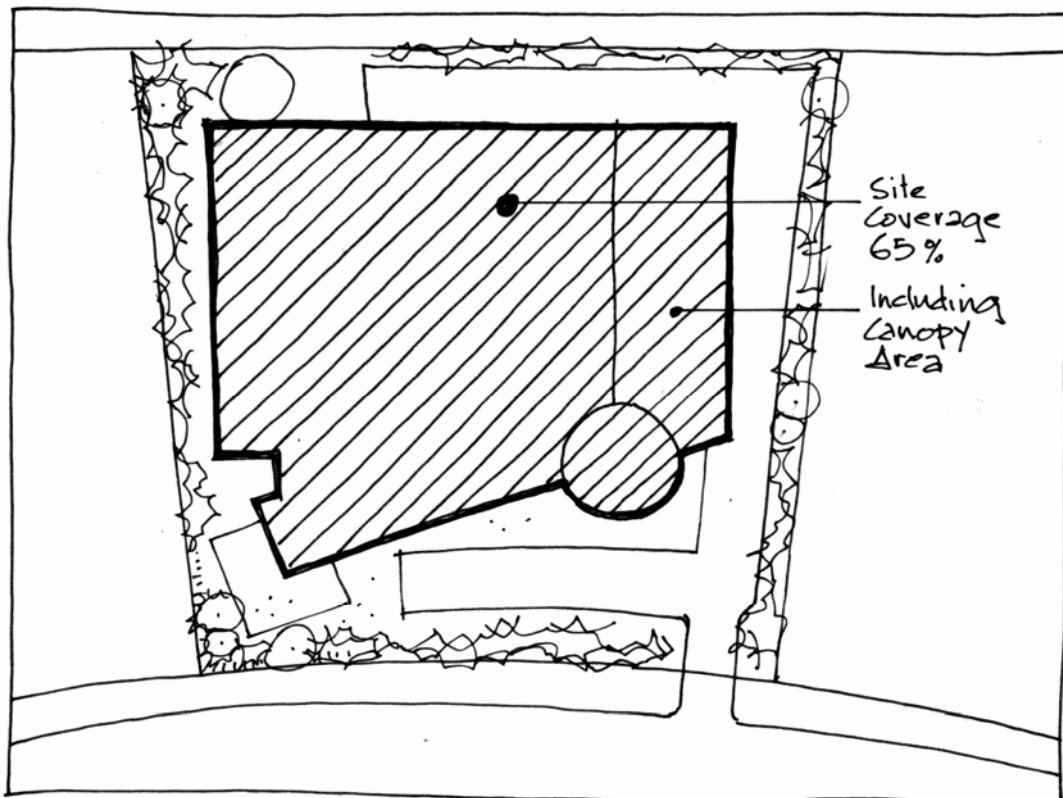


Figure 30 - Site Coverage

- (c) All setback areas should be landscaped in accordance with the Landscape Controls outlined in this Plan, and maintained as open space.
- (d) Pedestrian access should be provided to all landscaped setback areas for maintenance and security purposes, but is not to be included within the designated open space buffer.
- (e) No storage of any kind is permitted within the landscaped setback areas.
- (f) The landscaped setback areas should be designed to contribute to the creation of attractive views from the public domain and reduce the perceived cumulative bulk and scale of development.
- (g) Council may increase the minimum setback where, in the Council's opinion, the proposed development is of a bulk and scale out of character with existing development within the Precinct, or where landscaping techniques are not sufficient to ameliorate the visual impact of the proposed development.

10.5 Building Heights and Design

The built form should promote visually pleasing and diverse private and public domain environments. Built form should be varied and interesting to provide attractive streetscapes.

Objective

- (a) Encourage creative and innovative building design of a high architectural standard that reflects the natural, functional and aesthetic opportunities presented by the site;
- (b) Encourage quality and consistency in the treatment of facades, external finishes and the like;
- (c) Ensure that the future development in the Precinct is compatible with the height, scale, siting and character of existing development in the Precinct;
- (d) Ensure sufficient visual relief is achieved on facades significantly exposed to the view from adjoining sites, and the public domain, including major thoroughfares, and subdivisional roads; and
- (e) Ensure development addresses the road frontage that provides vehicular access, especially where dual road frontage exists.

Controls

- (a) Council encourages high aesthetic standards for building design. Applicants are encouraged to consider variations in fascia treatments, facade treatments, rooflines and section of building materials to achieve an attractive design.
- (b) Applicants must give consideration to the following:
- (i) integration of building design with landscape elements;
 - (ii) the impact of building heights on district views;
 - (iii) building orientation and siting to optimise the use of natural elements, including topography, wind and sunlight, and maximise aspect and views;
 - (iv) the articulation of building facades to provide visual relief from the public domain by using architectural elements such as:
 - external structures, finishes, etchings and recessed patterns;
 - decorative features, textures and colours; or
 - locating offices and highlighting entries within front facades to reduce the apparent bulk and scale of the structure; and
 - prevention of blank building facades.
 - (v) building design to incorporate a hierarchy of spaces so as to assist in the legibility of the building and give significance to areas of importance;
 - (vi) buildings on lots that have dual road frontage should be designed to ensure:
 - the building addresses the road frontage from which vehicular access is gained;
 - distinctive identifying architectural elements are incorporated to provide sufficiently and varied facades; and
 - blank walls are avoided on the secondary road frontage.
 - (vii) amenity of any adjoining conservation areas, and open space areas;
 - (viii) the location of roller shutters, loading docks and other building openings so they do not detract from the overall appearance of the building. Where possible, roller shutters and the like should not be located on the principal street frontage; and

- (ix) roof design to ensure visual interest and compatibility with the overall building design especially in areas of high visibility. Where visible from a public area, all rooftop or exposed structures including lift motor rooms, plant rooms etc, together with air conditioning, satellite dishes, ventilation and exhaust systems, are to be suitably screened and integrated with the building in order to ensure a properly integrated overall appearance. Natural lighting should also be incorporated into the roof design for large span buildings.
- (x) the location of above ground water tanks to ensure that they are not located forward of the front facade of the primary industrial building, and are not visible from the public domain. Water tanks must be screened with an extended fin wall or sited in a solid enclosure, surrounded by mature vegetation. Details (including elevations) of all water tanks must be submitted with the Development Application.

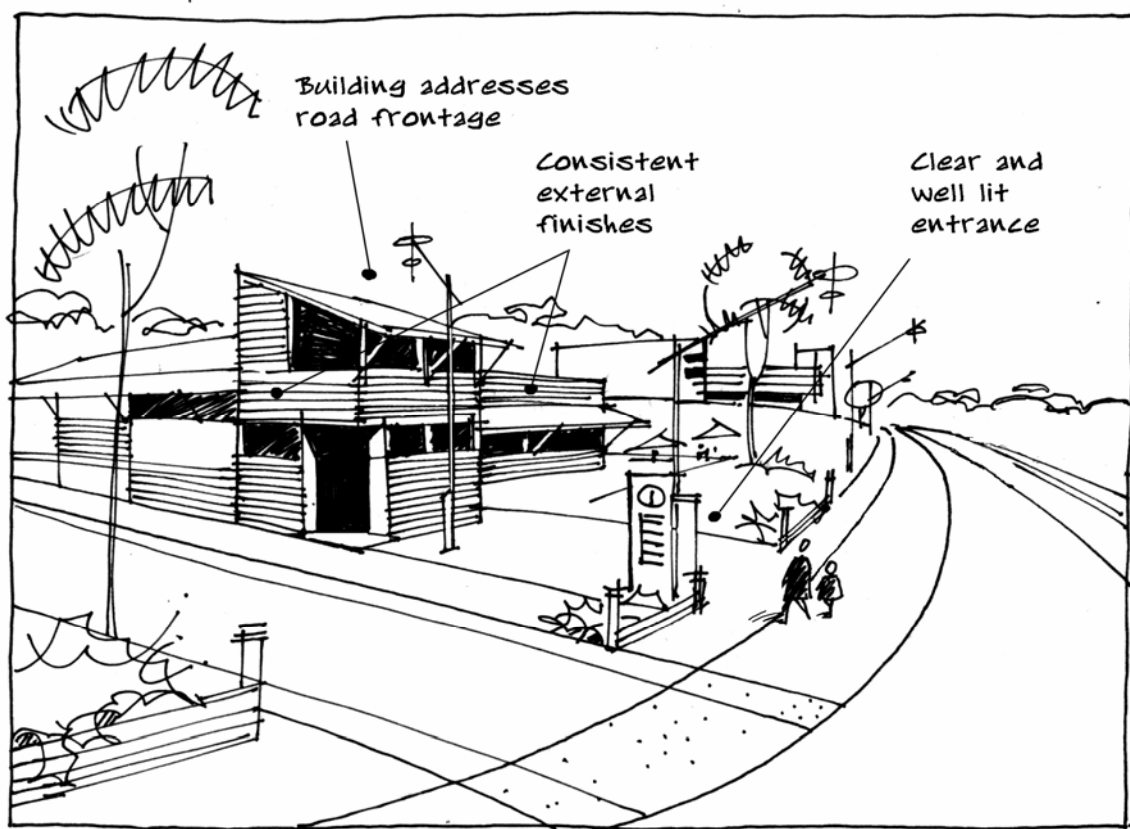


Figure 31 - Building Orientation

10.6 External Building Materials and Colour

Objectives

- (a) Enhance the visual quality of the Precinct through the selection of appropriate materials and colours;
- (b) Encourage the use of materials that minimise impact on the environment; and
- (c) Ensure that any reflective materials are used with sensitivity to neighbouring development, vehicular traffic and public domain areas.

Controls

- (a) Applicants are required to submit a panel of external finishes and detail of coloured elevations when lodging a Development Application. A condition of development consent will refer to the approved schedule of finishes.
- (b) External finishes should be constructed of durable, high-quality and low maintenance materials.
- (c) All external walls of buildings used for office/showroom purposes should be constructed of brick, glass, steel, concrete, textured block work, pre-cast exposed aggregate panels or other materials approved by Council.
- (d) External materials including masonry block work, galvanized iron, zincalume, timber or fibre cement should be painted or rendered.
- (e) External finishes should contain a combination of materials.
- (f) Where a side or rear elevation is visible from the public domain, the use of metal cladding must only comprise 50% of that wall's building material. The use of metal cladding is discouraged on the front elevation of a building, unless it can be satisfactorily demonstrated that it forms part of an architectural design solution, in association with masonry, glass, and other high quality materials, and is on the office component only.
- (g) Any wall visible from the public domain must be finished with a suitable material that creates an attractive appearance to that facade of the building.
- (h) Roofs should be either pre-coloured coated masonry tiles or pre-coloured metal.
- (i) Building materials should be selected such that reflection is minimised and will not adversely affect adjacent development, vehicular traffic and public domain areas.

- (j) The following are examples of characteristics of building materials that should be considered in all developments:
- (i) energy efficiency;
 - (ii) use of renewable resources;
 - (iii) low maintenance;
 - (iv) recycled or recyclable;
 - (v) non-polluting; and
 - (vi) minimal PVC content.

10.7 Ancillary Buildings, Storage and Service Areas

Objectives

Ensure that any ancillary buildings, storage and service areas are considered as part of the overall design, and does not detract from the amenity and appearance of development from the public domain.

Controls

- (a) Council encourages the provision of storage areas within the confines of the primary industrial building.
- (b) Council will not accept open storage areas that are visible from the public domain.
- (c) Where any materials are to be stored outside the primary industrial building, the storage areas are to be fully enclosed with solid fencing, surrounded by mature vegetation, and sited as part of the primary industrial building.
- (d) Open storage areas should not compromise truck or vehicle manoeuvring, and should not compromise the car parking provisions of this Precinct Plan.
- (e) Ancillary buildings and storage sheds are to be located behind the setback lines and be consistent with the design of the main building to provide cohesion to the development appearance.
- (f) Details of any proposed ancillary buildings, open storage and services areas must be submitted with all Development Applications.

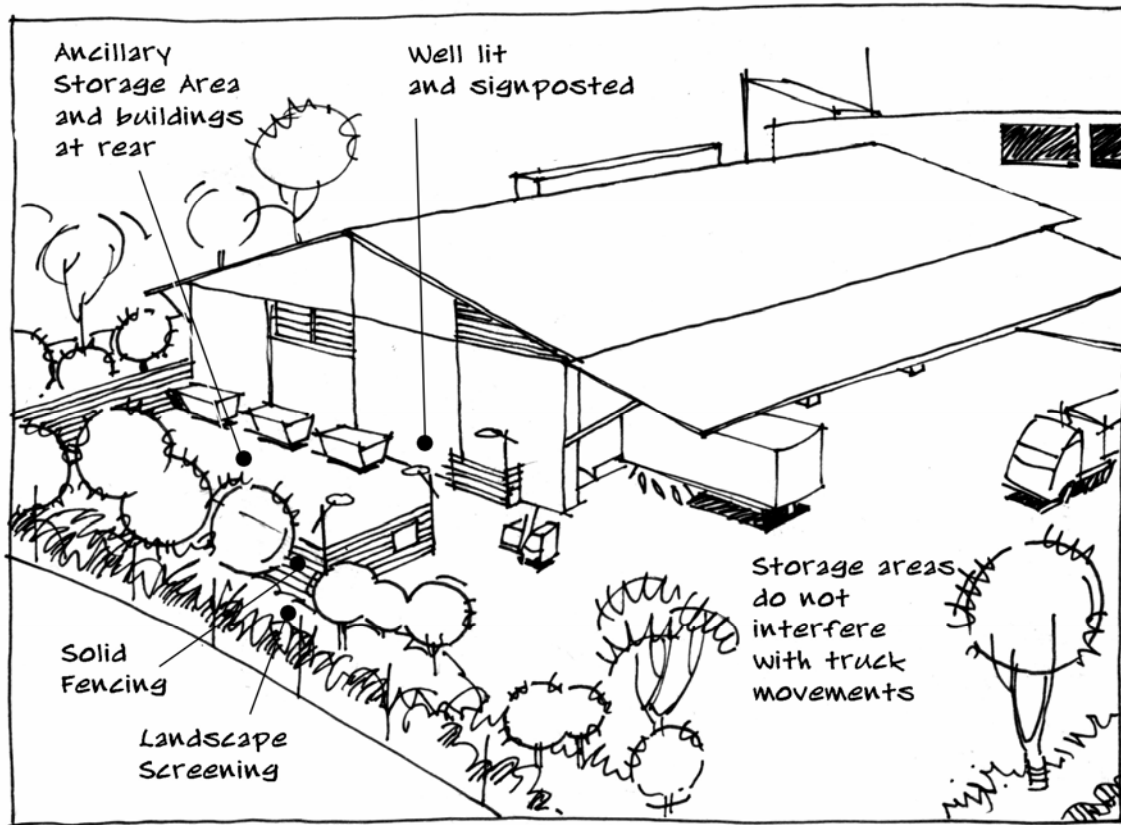


Figure 32 - Ancillary Storage Areas

10.8 Cut and Fill

The image of the Precinct will be determined by the extent of cut and fill on large scale developments that take full advantage of the undulating topography and vegetation.

Objectives

- (a) Ensure that the extent of cut and fill required for large scale developments does not detract from the appearance, and high quality design of the Precinct;
- (b) Enable development that does not adversely impact on adjoining developments or the amenity of the locality by reason of its cut and fill;
- (c) Ensure that development is capable of visual integration with the surrounding environment;
- (d) Ensure that any imported fill material on site is clean and complies with the contamination and salinity provisions of this Plan;

- (e) Ensure that any cut into the site is managed and mitigated from the impacts of salinity; and
- (f) Ensure that the extent of cut and fill does not encroach within, or adversely affect the efficiency, integrity and stability of any public domain area.

Controls

- (a) Buildings should be designed to minimise the amount of cut and fill.
- (b) No cut, fill, or batters are permitted within the 10m setback of the boundary of a:
 - conservation area;
 - open space area; or
 - drainage detention basin or wetland area.
- (c) Any embankment batters from the property boundary must be no greater than a grade of 3m in length to 1m in height, and landscaped to reduce erosion and provide suitable screening.
- (d) Retaining wall elements must be no greater than 3m in height. All retaining walls must be screened by vegetation. Where filling requires a retaining wall element to be greater than 3m in height, the retaining wall shall be terraced to allow for a ratio of 3m in height to 1.5m in length. The 1.5m terraced area must be provided with suitable landscaping to screen the height of the retaining wall.
- (e) Notwithstanding (d), Council may consider a retaining wall element higher than 3m where it can be demonstrated that the retaining wall is structurally sound, is not visible from the public domain, and where it will not detract from the overall appearance of the development.
- (f) Appropriate soil erosion and siltation measures are to be implemented on site. Details of the proposed measures are to be provided with the Development Application.
- (g) A Development Application that includes cut and fill on a site adjoining a conservation area, open space area, or trunk drainage area is to address the potential environmental impacts of the proposed works on those areas.

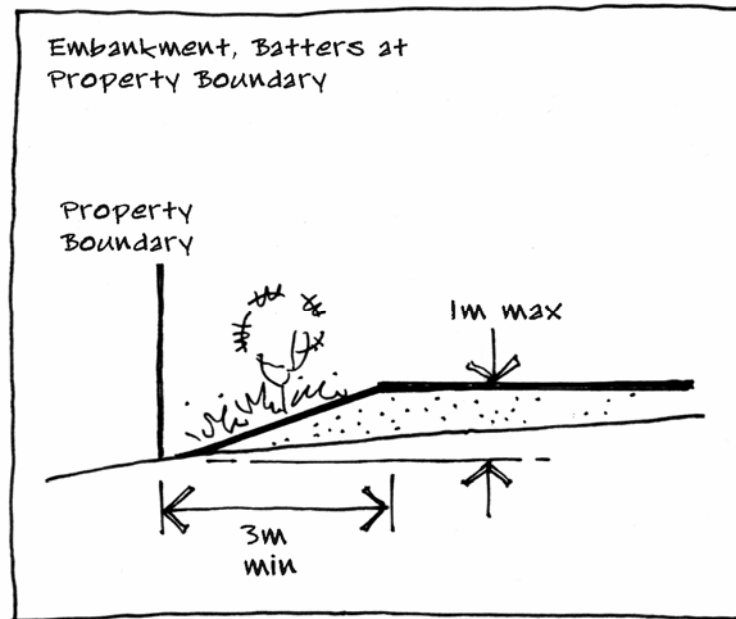


Figure 33 - Embankment Batter

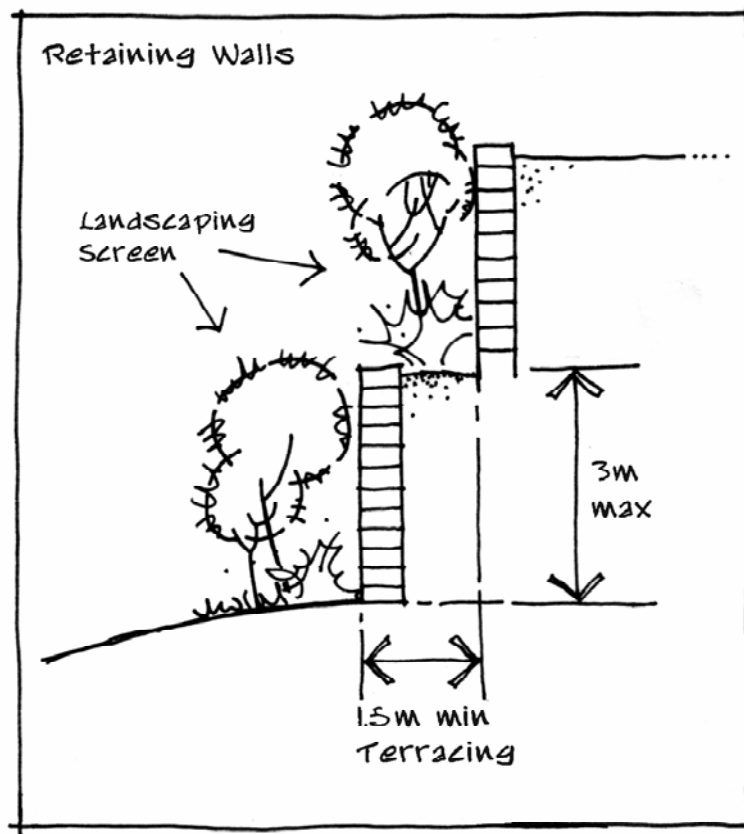


Figure 34 - Retaining Wall

10.9 Fencing

The public domain is one of the key features influencing and determining the amenity and visual quality of the Precinct. Fencing plays a major role in shaping the quality of the public domain and therefore should be appropriately designed and located to promote public safety and amenity by maximising sight lines and casual surveillance. Sight lines can be maintained through secure open style fencing.

Objectives

Define boundaries and provide security, as well as contribute to the streetscape and amenity of the Precinct.

Controls

- (a) In general, no fencing other than a low feature wall may be erected at the entry driveway on any site within the Precinct. These walls should be used for retaining purposes, as garden beds or as landscaped features and should be integrated into the overall design of the development.
- (b) Where front fencing is required for safety and security it should be setback a minimum of 1 metre from the front boundary with landscaping placed between the fence and the street boundary. The fencing should consist of a decorative 2.1m high open wrought iron 'diplomat' style fence, finished, or similar, in either bottle green or black, and designed to integrate into the overall design of the development.
- (c) All fencing materials used shall be to Council's satisfaction. Pre-painted solid metal fencing and solid fencing are not acceptable to Council.
- (d) Fencing along side boundaries may comprise chain wire mesh or similar, no greater than 2.1m in height, which is to be plastic coated dark green or black in order to allow visual surveillance of the setback areas.

10.10 Signage and Lighting

Objectives

Ensure that signage and lighting supports the visual appearance of the building, and the visual appeal of the Precinct.

Controls

- (a) Signage within the Precinct should be kept to a minimum, relate only to the use occurring on the respective property, and should identify the relevant business name.
- (b) Business identification signage should generally be attached to the wall of the main building and be designed to complement the architectural style of the building. Free standing signs will only be permitted where signs are integrated with the landscaping and where it is satisfactorily demonstrated that the proposed signage will not result in a detrimental impact on the visual character of the site and surrounding area.
- (c) Directional signs for car parking areas, loading docks, delivery areas and the like should be designed in an attractive manner and should be located at a convenient point close to the main access to a development site. The design, colouring, type and scale of signage erected within individual properties should also be considered to ensure consistency within the development.
- (d) Signage is only to display the corporate logos and company names, and is not to occupy more than 10% of any facade or wall of a building, unless it can be satisfactorily demonstrated that the unique characteristics of the site or the building require a larger area of signage and that the signage will not result in a detrimental impact on the visual character of the site and surrounding area.
- (e) Details of all signage must accompany Development Applications for a proposed building, including both free standing, fascia, and wall signs.
- (f) The design and lux of any internal or spot lighting shall be designed to avoid off-site or traffic safety impacts such as reflection and glare.
- (g) No form of moving or flashing signage or lighting is permitted within the Precinct.
- (h) Signage facing the M4 Motorway and M7 Motorway are to be designed to complement the architectural character of the building upon which they will be located. Such signage will need to demonstrate that it would not have a detrimental impact on the visual character of the site and surrounding area.

- (i) Any freestanding signs located within the setback to Wallgrove Road and the M4 must not be located within 10m from the property boundary so as not to affect the views and vistas along those roads.

10.11 Private Open Space

The changing nature of workplace environments requires consideration of the amenity and needs of employees and visitors to the Precinct. The provision of accessible, well located communal private open areas within each development for the use and enjoyment of all employees and visitors to a development acknowledges and promotes progressive workplace environments.

Objectives

- (a) Ensure that adequate private open space areas are provided within each development for the use and enjoyment of employees and visitors; and
- (b) Ensure that the size, location, configuration and embellishment of the private open space area encourages its use by employees and visitors.

Controls

- (a) Each development shall be provided with at least 1 private open space area for the use and enjoyment of all employees of that development. The private open space area shall be suitably landscaped and directly accessible from the main office component of the development.
- (b) The private open space area shall be provided at a rate of 5% of the total gross floor area of the office component of the development or a minimum of 50 square metres, whichever is the greater, to a maximum area of 100 square metres.
- (c) In the case of a Strata or Community titled development, a common private open space area shall be provided at a rate of 5% of the cumulative total gross floor area of the office components within the development or a minimum of 50 square metres, whichever is the greater, to a maximum area of 100 square metres.
- (d) Within the main private open space area a minimum square of 7m x 7m must be provided. The remaining area must have a minimum dimension in any direction of 2.5m. The area shall not be disproportionately elongated in shape.
- (e) Small pockets of open space designed to enhance the appearance of the development will not be counted in the private open space allocation, neither will car parking areas, manoeuvring areas, nor landscaped setback areas.

- (f) The private open space area shall be embellished with appropriate landscaping, paving, tables, chairs, and the like for the use and enjoyment of employees.
- (g) In locating the private open space area consideration should be given to the outlook, natural features of the site, neighbouring buildings and open space in order to maximise the use and enjoyment of the area.
- (h) The private open space area shall be relatively flat and not contain impediments which unnecessarily divide the area or cause physical barriers to the full use of the area as a whole.
- (i) The area should be screened in such a manner that it is not directly visible from the public domain and to ensure that adequate sunlight access is provided to the area.



Figure 35 – Concept of Private Open Space

10.12 Safety and Security

One of the most important concerns in new industrial sites such as the Eastern Creek Precinct is the need to make the employment area a safe and secure place, both for the workforce and for the surrounding community. With many large corporations now operating on a 24 hour basis, there is a need for appropriate lighting, security, and opportunities to promote activity in order to facilitate casual surveillance over key public areas. In addition, there is a need to ensure that employment areas are not used for anti-social activities at nights and weekends.

Safe working environments can be created by avoiding adverse environmental conditions that include:

- (a) inadequate illumination;
- (b) vast areas of storage with little or no surveillance;
- (c) blind alleways; and
- (d) expansive parking areas.

10.12.1 Principles of Minimising Crime Risk

(a) Enhancement of Natural Surveillance

Natural surveillance is a design principle directed primarily at keeping intruders under observation. It utilises design features to increase the visibility of a property or building. (i.e. through the proper placement of windows, lighting, and landscaping). The creation of a design that increases good natural visual connections between commercial units and across the public environment, such as streets, common areas, parks, sidewalks, parking areas and alleyways has the potential to deter crime by making an offender's behaviour more easily noticeable. Particular ways in which the design of the Precinct can enhance natural surveillance include:

- (i) Illuminating and defining all entrances so that they are visible from the public domain.
- (ii) Making parking areas visible to patrol cars, pedestrians, parking attendants, and/or building personnel.
- (iii) Designing office areas to have a view of parking areas, especially visitor parking.
- (iv) Providing adequate illumination of public spaces, pedestrian footways and cycle ways.
- (v) Locating 24 hr business operations so that they are close to and have visibility of public spaces.
- (vi) Providing electronic surveillance to supplement natural surveillance to parts of industrial units that may be left unattended for extended periods.

(b) Access Control

Physical and symbolic barriers can be used to attract, channel and restrict the movement of people. Natural access control employs elements like doors, shrubs, fences and gates to deny or direct access. Particular ways in which the design of the Precinct can be made potentially safer through access control include:

- (i) Using easily securable site entrances. Install entrance controls to employee parking areas (fence, gate, attendant).
- (ii) Accounting for late night workers with closed-in spaces.
- (iii) Restricting access to roofs by way of dumpsters, loading docks, stacked items, ladders, etc.
- (iv) Keeping the number of building entrances to a minimum, and monitoring them.
- (v) Using a separate, well marked, monitored entrance for deliveries.
- (vi) Having the employee entrance close to the employee parking and work stations.
- (vii) Keeping night-time parking separate from service areas.
- (viii) Providing access to both the front and the back of sites so that the grounds can be patrolled.

(c) Space Management (Maintenance)

Ensuring that space is appropriately utilised and well cared for. Ways in which space management can be utilised within the Precinct design to enhance safety and potentially reduce such crimes as vandalism and graffiti include:

- (i) keeping all exterior areas neat and clean.
- (ii) keeping all plantings looking well managed.
- (ii) rapidly repair vandalism and graffiti.
- (iii) maintaining all public areas and right of ways to a high standard.

(d) Worker Participation

As the Precinct is developed into working communities, it is important to encourage worker participation in any ongoing situational intervention processes that are aimed at controlling crime within the Precinct. Such participation has two effective outcomes:

- (i) It allows the development of crime prevention strategies that adapt to the unique needs of the worker community, and the problems and situations faced by that community.
- (ii) It enhances ownership of the Precinct by workers themselves and encourages their involvement in its development as a safe workplace.

(e) Territorial Reinforcement

Territorial reinforcement employs such design elements as sidewalks, landscape, low walls and lawns to help distinguish between public and private areas and helps commercial owners clearly identify the extent of their property, making intrusion into that property by an offender highly evident. Territorial reinforcement also fosters a sense of ownership. Ways in which territorial reinforcement can be utilised within the design of the Precinct to enhance safety and potentially reduce crimes such as vandalism and graffiti include:

- (i) creating well-defined entrance or gateways with items such as plantings, fences, and gates;
- (ii) separating visitor parking from employee parking and shipping and receiving areas; and
- (iii) defining vehicle entrances with different paving materials and signage.

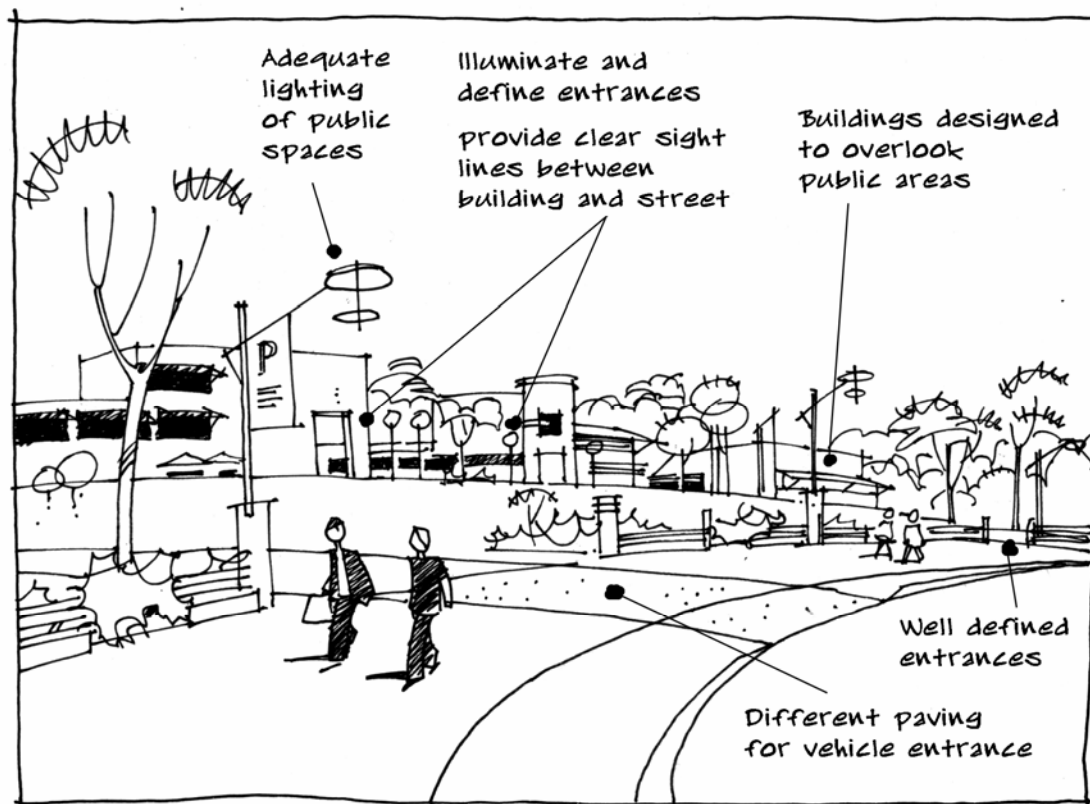


Figure 36 - Concept on Minimising Crime Risk

10.12.2 Objectives

- (a) Ensure personal safety for workers and visitors to the Precinct; and
- (b) Ensure design minimises the opportunity for crime and maximises opportunities for passive surveillance.

10.12.3 Controls

- (a) Development should comply with the NSW Government, *Crime Prevention and the Assessment of Development Applications* (April 2001).
- (b) Buildings should be designed to overlook public domain areas and provide casual surveillance.
- (c) Building entrances should be orientated towards the street to ensure visibility between entrances, foyers, car parking areas and the street.
- (d) Appropriate lighting should be provided to all cycle and pedestrian paths, bus waiting areas, parking areas and building entries in order to provide a sense of safety and security for workers and visitors.
- (e) The development should provide clear sight lines and well-lit routes between buildings and the street, and along pedestrian and cycle networks within the public domain.
- (f) Consideration should be given to use of landscape elements so as not to compromise the perceived level of safety.
- (g) Development, which in the opinion of Council has the potential to present a crime risk, will require a Crime Risk Assessment Report (Safer by Design Evaluation) to be prepared and submitted with the Development Application. The report should detail how the development responds to each of the abovementioned principles of minimising crime risk.
- (h) A Site Management Plan may also be required to detail strategies to ensure site cleanliness, rapid repair of vandalism and graffiti, and removal or refurbishment of decayed physical building elements.

Section 11

COMMUNITY SERVICES

11.0 Community Services

SEPP 59 contains guiding principles that require development of land within the Precinct to consider the integration of community services with land use planning that will result in an attractive and safe built environment which satisfies a diverse range of community needs.

Development is required to consider the timely provision of a full range of human services and community facilities infrastructure appropriate to the changing needs of the community, and to integrate new communities with existing adjoining communities.

The amenity of the region will be promoted through the provision of on-site services and facilities, and through complementing or augmenting existing service networks. Community participation in the identification of community services and facility needs will help promote the equitable access to these services and facilities for all groups and individuals in the community.

11.1 The Changing Needs and Expectations of the Workforce

The needs and expectations of workforce populations are changing with regard to the community services they require in the work environment. Where once it was enough to have a place to get a snack or plain meal and to enjoy a break from the workplace, people now require access to a far greater range of facilities and services in close proximity to their work. There are a number of factors that influence these changing trends.

(a) Changing patterns of work

The contemporary nature of work for increasing numbers of people is associated with a shift towards longer working hours, more part-time, casual and temporary work, shift work or more flexibility in the times work is undertaken. At the same time, new technologies and work processes and new management styles are also changing the nature of work and workplaces. Associated with these changes is a breaking down of the rigid separation between work and the rest of one's life, and a need for greater flexibility in the way work is integrated with living and leisure. In many business areas, work patterns are becoming more collaborative and highly interactive, with implications for the kind of settings in which work takes place.

Significant shifts in working patterns in some industries have resulted in different requirements for business environments, and an increasing focus on spaces for interaction and meeting. The need for facilities that foster the building of networks and relationships among businesses is also important in some industries. In some business sectors, work increasingly flows over to the social spaces of everyday life, into places for gathering and interaction outside of the formal workplace where meeting, eating together and exchanging ideas are part of the way work is done. These trends point to a need to accommodate new and flexible work environments which provide a range of amenities to support new patterns of working.

(b) Social interaction in the workplace

With more people living alone, or spending less time with their families or in their community as a result of the demands of working life, there is greater reliance on fellow workers to provide social contact and sense of community support. The value of the workplace in providing social meaning and support is increasingly recognised. This points to a need for spaces and facilities within the work environment that facilitate and encourage social contact. These include break-out spaces within organisations, as well as places for meeting and gathering in the broader neighbourhood.

(c) Need to balance work and family commitments

Increasing proportions of women in the workforce and longer working hours are changing patterns of domestic responsibilities. With both partners working, the need to integrate personal and household maintenance chores such as paying bills, buying food for dinner, picking up the dry cleaning and having a haircut into the working day is becoming increasingly important. Managing household maintenance tasks within the work environment can be particularly critical where the home is some distance from the workplace and commuting times are considerable, extending the working day beyond normal business hours. Trends for women to return to work more quickly after childbirth are increasing the demand for childcare services, with childcare close to the workplace facilitating parental contact where necessary during the working day.

The need to better balance work and family commitments is increasingly blurring the boundaries between work, home and leisure and changing the ways in which people are managing their working lives. There is increasing recognition of the importance of the quality of the working neighbourhood to support busy lives and provide quick and convenient access to a range of household and personal services. More broadly, there is a move towards a more holistic approach to the workplace as an environment that might support a wide range of lifestyle options and choices, and permit integration of a variety of out of hours activities into the working day.

(d) Focus on sustainability

This has implications for the design of employment neighbourhoods and location of facilities and services in ways that enhance walkability and reduce vehicle kilometres travelled. The focus on sustainable use of resources is also influencing the design of the workplace, with trends towards more flexible and adaptable buildings and spaces, and more efficient use of resources, particularly through sharing facilities among businesses rather than each business providing for itself.

(e) Focus on need for lifelong learning

This points to a need for ready access by the workforce not only to formal education and training institutions, but also to spaces at the local level to attend classes and courses.

(f) Multi-culturalism

Multi-culturalism and the need for spaces to accommodate the religious or cultural practices of a culturally and linguistically diverse workforce, such as prayer rooms, or to provide ready access to such facilities in the surrounding community. Associated with the increased focus on lifelong learning, there may also be a need for spaces for English language classes within or close to the workplace.

(g) Rising expectations that workplace should support well-being of workforce

This relates not only to the amenity of the building in which one works, but also to the amenity of the working neighbourhood. In this context there is increasing focus in employment areas on urban design and public domain improvements that will create an attractive setting for work, with safe and lively streets, spaces for social and cultural activities, well designed and interesting buildings and easy access to a range of amenities.

11.2 Community Services to Meet Workforce Requirements

It can be difficult to identify the nature and quantum of facilities and services that are necessary to meet the everyday baseline needs of a workforce, and to distinguish from those that are provided by businesses to address specific marketing, recruitment or staff support objectives. The range of services and facilities required will clearly reflect the nature of the workforce, its age, gender and socio-economic balance, as well as the specific objectives of each development. There is a trend towards a far greater range of lifestyle and support services being provided within the workplace and increasing expectation that employment areas will provide cultural and leisure functions as an integrated part of the work environment. Employment areas are also increasingly expected to contribute positively to the identity, image, vibrancy and cultural life of the broader area in which they are located.

The social and cultural needs of a workforce will be met not only through providing access to appropriate services and facilities, but also by creating an attractive and safe environment that supports the health and well-being of workers. Given the considerable amount of employment that will be generated within the Precinct, and the very limited access available to community services in the surrounding area, it is apparent that a range of additional services will be required to cater for employees.

The nature and quantum of community services required within the Precinct will be a function of:

- (a) the size and nature of the anticipated workforce;
- (b) the extent to which it can utilise services and facilities in adjoining areas; and
- (c) the extent to which services and facilities within the site may also address the needs of surrounding development and complement or augment existing service provision.

11.3 Locational Criteria

- (a) The location of facilities and services within the Precinct will need to balance:
 - (i) the need to cluster facilities and centralise them to create a lively focal point or hub which will enhance the vibrancy and identity of the Precinct; and
 - (ii) the need to distribute facilities and services equitably and in ways that promote access and walkability to reduce car usage, especially in view of the size of the Precinct and considerable distances across it.
- (b) As a general principle, services and facilities should be clustered into identified neighbourhood centres. The centres have the advantage of:
 - (i) making use of synergies among related uses;
 - (ii) promoting convenient access for users of multiple services;
 - (iii) creating active places that promote safety and a sense of security, vitality and energy;
 - (iv) focus activity in ways that enhance the image and identity of the place; and
 - (v) support utilisation of public transport.
- (c) In addition, the development of neighbourhood centres provides opportunities for the creation of a public domain that includes spaces for informal gathering and social interaction, special events and occasions, and public art.
- (d) Neighbourhood centres must be centrally located in areas that are highly accessible by walking and cycling, within close proximity to public transport nodes, and in close proximity to open space and significant natural environmental features within the Precinct.

11.4 Objectives

- (a) Enable development for community services only where it is associated with, and ancillary to, permissible employment-generating land uses carried out within the Precinct or where it serves the daily convenience needs of the local workforce.
- (b) Provide designated neighbourhood centres to accommodate the full range of human services and community facilities infrastructure appropriate to the changing needs of the community.
- (c) Locate neighbourhood centres that promote utilisation of public transport, by providing safe and accessible public transport stops in places where activity is concentrated.
- (d) Promote walking and cycling, through ensuring walking/cycling distances to facilities and services, the structure and layout of business uses, and provision of attractive streetscapes which are pleasant and appealing for pedestrians, with appropriate lighting, shade, signage and bus shelters.
- (e) To create a high quality public domain within neighbourhood centres which provide a pleasant and attractive setting for work, with a distinct identity. Place-making and cultural development strategies most usually rely on the creation of zones of high activity to create a sense of vitality and liveliness, public art strategies and incorporation of heritage features.

11.5 Controls

- (a) In order for Council to consider community services within the Precinct, applicants will need to justify that the size, function and proposed use serves the daily convenience needs of the workforce in the Precinct, or is for the benefit of the local workforce.
- (b) Any application for community services will not be considered outside an identified and designated neighbourhood centres.
- (c) Applicants will need to satisfy Council that the community service would not detrimentally affect the viability of any other neighbourhood centre, including both established, approved and an identified centre, and business zone within the surrounding area.
- (d) The type of community services that Council would consider appropriate to serve the daily convenience needs of the workforce within the Precinct, or would be for the benefit of the local workforce include:
 - (i) child care centre;
 - (ii) commercial premises;
 - (iii) community facilities;
 - (iv) educational establishment;
 - (v) mixed business;
 - (vi) recreation area;
 - (vii) refreshment room; and
 - (viii) shops.

11.5.1 Neighbourhood centre

- (a) Applications for development of a neighbourhood centre will need to provide a development concept plan for the whole site. The concept plan should demonstrate that consideration has been given to the following principles:
- (i) the design of the centre should reflect the local identity, and contribute to its legibility;
 - (ii) create cohesive, vibrant, comfortable and safe centres that provide a high level of amenity for all categories of users;
 - (iii) ensure that the visual appearance and accessibility of the centre is reflected through the public domain;
 - (iv) define and enhance landmark or gateway features to the centre;
 - (v) identify the functional characteristics of the public domain (eg footpaths, bus shelters, bins, seats, lighting etc);
 - (vi) enhance the perceptions of safety in and around the centres;
 - (vii) identify the heritage characteristics of the site;
 - (viii) paving, awnings, and street furniture such as seats, shade measures, bicycle racks, bins, bus stops, bollards and the like;
 - (ix) signage (private and public);
 - (x) landscape features that consider plant species and location, and opportunities for siting of public art;
 - (xi) environmental considerations such as noise, solar access, wind and rain, reflectivity, energy efficiency, and water conservation; and
 - (xii) open space areas to socialise, for entertainment purposes, and for outdoor recreation.
- (b) Council will not consent to the erection of a building on land within a neighbourhood centre unless the total of the gross floor areas of all buildings on that land will not exceed 5,000 square metres of gross floor area.
- (c) Each centre shall be designed so that the location of buildings, car parking, landscaping, public transport and vehicular and pedestrian movements will enable the centre to function efficiently.
- (d) All car parking shall be provided on site for all centres.
- (e) Neighbourhood centres shall provide at least 1 open space area for the use and enjoyment of employees and visitors to the Precinct. The open space area shall be provided at a rate of 5% of the site area of the neighbourhood centre, excluding landscaped setbacks and car parking areas.
- (f) The open space area must have a minimum dimension in any direction of 5m, and be embellished with appropriate landscaping, paving, seats and the like for the use and enjoyment of the area.

11.5.2 Child care centre

The need for work-based childcare will vary with the type of employment available, and the gender and age profile of the workforce. Demand for child care will be influenced by the gender make-up of the workforce and by unmet demand in the surrounding area.

- (a) A minimum site area of 600 square metres is required in order to overcome the potential problem of noise and nuisance from adjoining development.
- (b) Due to the nature of their usage, such developments should be sited on allotments which provide buffering from adjoining developments so as to minimise possible conflicts such as noise and invasion of privacy.
- (c) In order to ensure or protect the privacy of staff and children adequate noise abatement, site landscaping and fencing may be required. Such landscaping is to be in keeping with adjoining developments.

11.5.3 Commercial premises

- (a) In order for Council to approve commercial development within the Precinct, applicants will need to satisfy Council that the proposed commercial component falls into either of the following categories:
 - (i) commercial uses associated with and ancillary to permissible employment-generating development within the Precinct. Such commercial uses may include activities such as offices attached to a building in which the administration of the development is conducted; or
 - (ii) small commercial premises serving the daily convenience needs or for the benefit of the local workforce in the Precinct such as banks, professional services, and post offices.
- (b) A critical factor in determining the suitability of commercial uses in the Precinct will be whether the use offers a service that requires direct exposure to the general public (other than the workforce in the area) for its successful operation. If such exposure to the general public is required the proposed use will not be permitted in the Precinct.

11.5.4 Educational establishment

Applicants will need to provide details of the training provider with any Development Application for training facilities within the Precinct.

11.5.5 Mixed business

- (a) Applicants will need to satisfy Council that the use will not detrimentally affect the viability of any other neighbourhood centre, including both established, approved and an identified centre, and business zone, within the surrounding area. This means that Council will require evidence that the scale (floorspace and turnover), location (in relation to other centres and business zones) and type of development (goods to be sold) in relation to the proposal will not adversely affect nearby centres and business zones; and
- (b) The gross floor area should not exceed 400 square metres.

11.5.6 Shops

- (a) In order for Council to consider shops within the Precinct, applicants will need to satisfy Council that the proposed retailing use falls into either of the following categories:
 - (i) retailing associated with and ancillary to manufacturing development on the same land. Such retailing may include activities such as small shops attached to a factory and selling items such as “seconds” of goods produced in that factory or products which are “made to order” in the factory, but would not include shops attached to warehouses; or
 - (ii) individual small shops serving the daily convenience needs of the workforce in the Precinct (such as sandwich shops, chemists, newsagents, and the like) but not including uses of the scale of supermarkets or similar developments.
- (b) Council has adopted the following specific requirements in relation to retailing proposals:
 - (i) it must be demonstrated that the use is clearly ancillary and subservient to the dominant use or specifically intended to satisfy the daily convenience needs of the local workforce;
 - (ii) applicants will need to satisfy Council that the retailing activity would not detrimentally affect the viability of any other centre, including both established, approved and identified centres, or business zones. This means that Council will require evidence that the scale (floorspace and turnover), location (in relation to other centres) and type of development (goods to be sold) in relation to the proposal will not adversely affect nearby centres and business zones; and
 - (iii) in relation to individual small shops, the gross floor area should not exceed 400 square metres.



Figure 37 - Indicative Site Plan of Neighbourhood Centre



Figure 38 - Indicative Site Perspective of Neighbourhood Centre

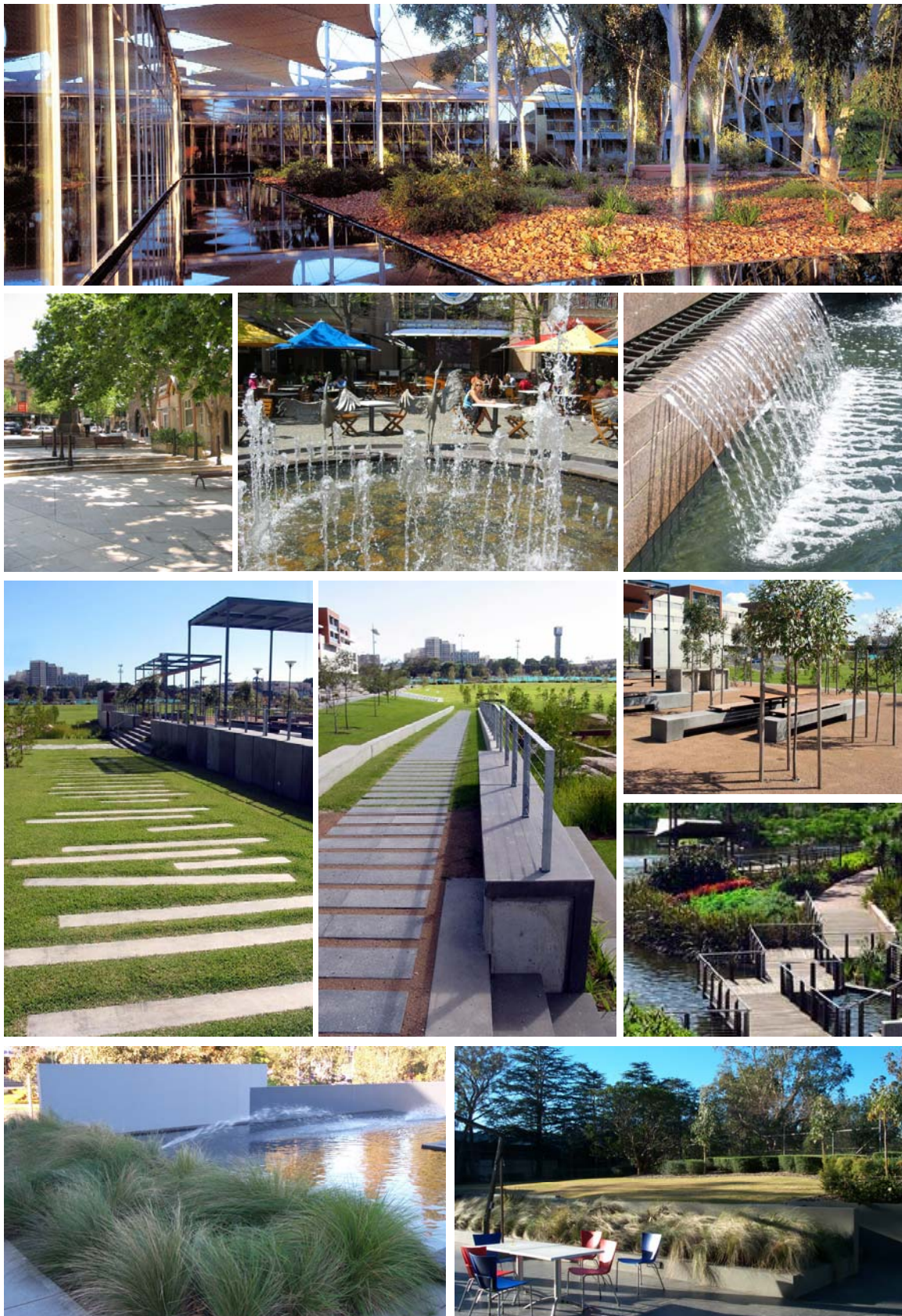


Figure 39 - Indicative Landscape Treatment of Neighbourhood Centre

Section 12

OPEN SPACE

12.0 Open Space

SEPP 59 allows for accessible and well located open space for the use and enjoyment of both residents and the workforce, that may include elements of the natural environment, and that provides for active and passive recreation. It is therefore important to ensure that development within the Precinct provides adequate treatment of open space areas that integrates natural environmental features with other activities and services within the Precinct.

12.1 Open Space Needs of Working Populations

While the greater proportion of the working population undertake most of their recreation before or after the working day or at weekends, short breaks during the day and a significant lunch break during which employees can get some fresh air or undertake exercise leads to increased productivity in the workplace and a healthier workforce. Furthermore, with increasing overtime amongst many in the workforce, the available time for out-of-hours recreation is reduced.

Consequently, people with busy working lives are increasingly looking to the work environment to provide opportunities to build exercise and fitness activity into their daily work routine. This points to a need not only for access to open space and outdoor recreational facilities, but also to indoor facilities to permit fitness activity in all weathers and at night after work.

In this context, large businesses may provide gyms, aerobic classes and swimming pools, but also spaces for yoga, relaxation and meditation. Some corporations are willing to embed lifestyle and leisure programs into their working environment to achieve a better work / life balance for their workforce, on the basis that consuming leisure as part of the working day will enhance well-being, and ultimately productivity and staff retention. Team sport may also provide a function in team building and networking with related businesses. Workplaces that provide such opportunities tend to create greater levels of business interaction.

The workplace has therefore evolved into providing not only a pleasant internal and external work environment, but also providing a range of recreation opportunities from courtyards for short breaks or lunch breaks, to walking tracks, trim trails, barbeque facilities, sports fields and/or ball courts.

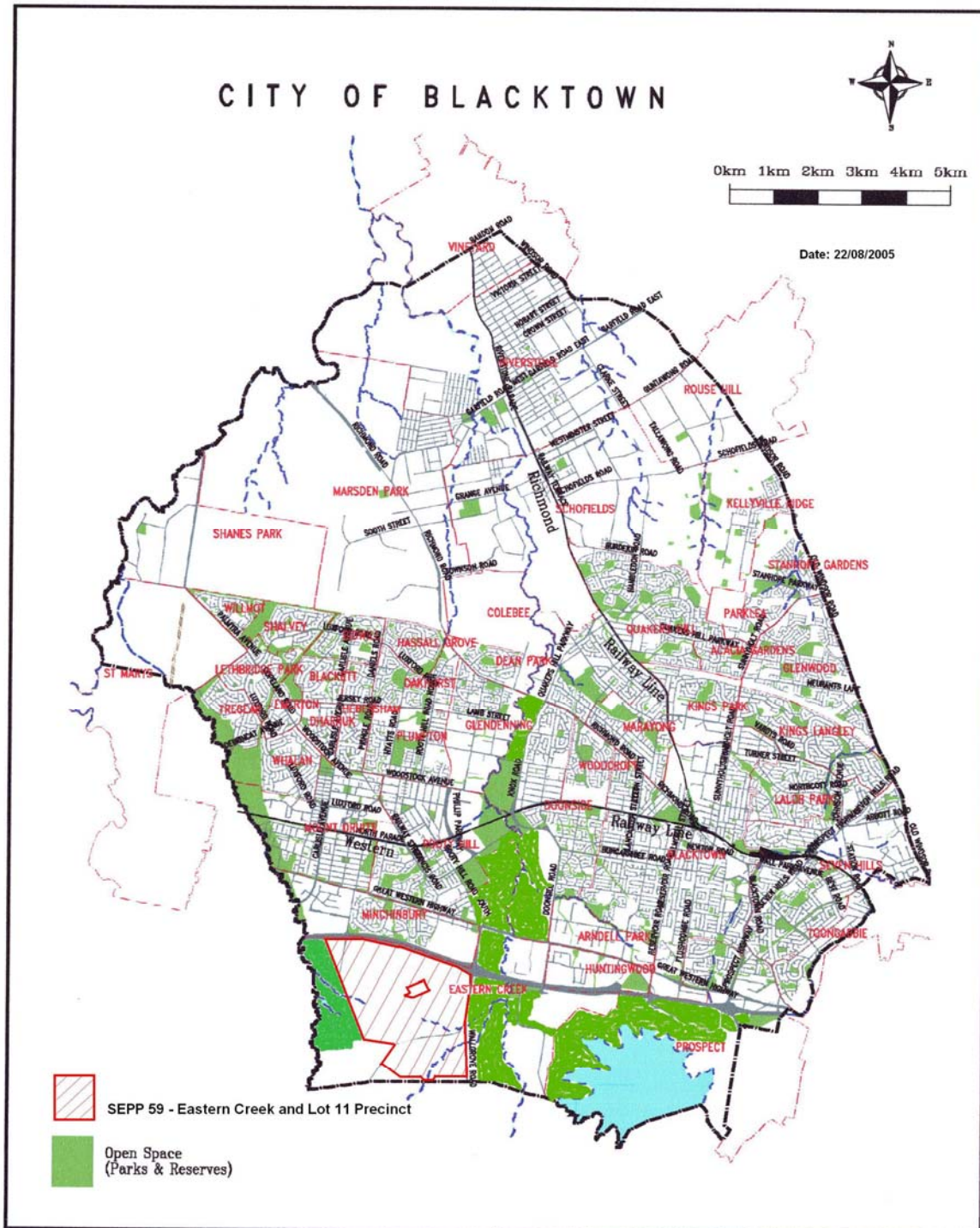


Figure 40 - Open Space (Parks and Reserves) in Blacktown

12.2 Components of an Open Space Network

The provision of open space and recreation areas within the Precinct should reflect a needs based approach, which establishes a flexibly planned and designed open space network that can evolve as community needs evolve. The needs based approach involves adopting a comprehensive and integrated planning approach that identifies notable biological, historical, educational, scenic or aesthetic resources, which require protection.

Key components of the open space network should include:

- (a) presence of significant natural features;
- (b) visually significant areas;
- (c) linkage corridors both within the study area and to adjoining areas;
- (d) accessibility;
- (e) geotechnical considerations;
- (f) significant heritage items;
- (g) land not suitable for development; and
- (h) appropriate location.

A major emphasis should be placed upon identifying open spaces in settings that reflect a high degree of naturalness, as these features are difficult to recreate. Such places provide opportunities for open space design that clearly reflects their environmental and heritage context. The Precinct retains very high natural values, and as such both the quantum and location of any open space should necessarily be based upon the approach described above.

12.3 Location and Type of Open Space

There are a number of open spaces that can be provided within the Precinct. The location and type of open space will greatly depend on the scale of development, staging, and the characteristics of the workforce population. The hierarchy of open space for the use and enjoyment of the workforce should set out to achieve the following:

- (a) respond to natural systems, by protecting and enhancing areas of natural and scenic importance;
- (b) provide for a diversity of interest by catering for a wide range of users;
- (c) create an environmentally sustainable Precinct; and
- (d) ensure an equitable distribution of open space throughout the development.

12.3.1 Significant natural areas

Includes open space opportunities within conservation areas, riparian corridors, and trunk drainage areas that enable:

- (a) walking and cycling tracks linked to surrounding communities, and incorporating exercise equipment along designated routes;
- (b) bike tracks; and
- (c) picnic and BBQ areas located on the fringe of these areas.



Figure 41 - Active Open Space Link



Figure 42 - Passive Open Space Around Significant Natural Areas

12.3.2 Neighbourhood centres

Includes open space located within and/or in close proximity to neighbourhood centres that could accommodate a range of open space and recreation opportunities such as:

- (a) village green and civic plaza with a more urban focus of a minimum area of 5% of the total site area of the centre;
- (b) open space to cater for active recreation;
- (c) leisure centre of approximately 1,500 square metres of floor space to provide a range of leisure and recreational opportunities;
- (d) mixed use courts which could be outdoor and/or indoor as a part of the leisure centre;
- (e) Small kick about area of a minimum area of 1,500 square metres; and
- (f) Children's playground of a minimum area of 150 square metres.

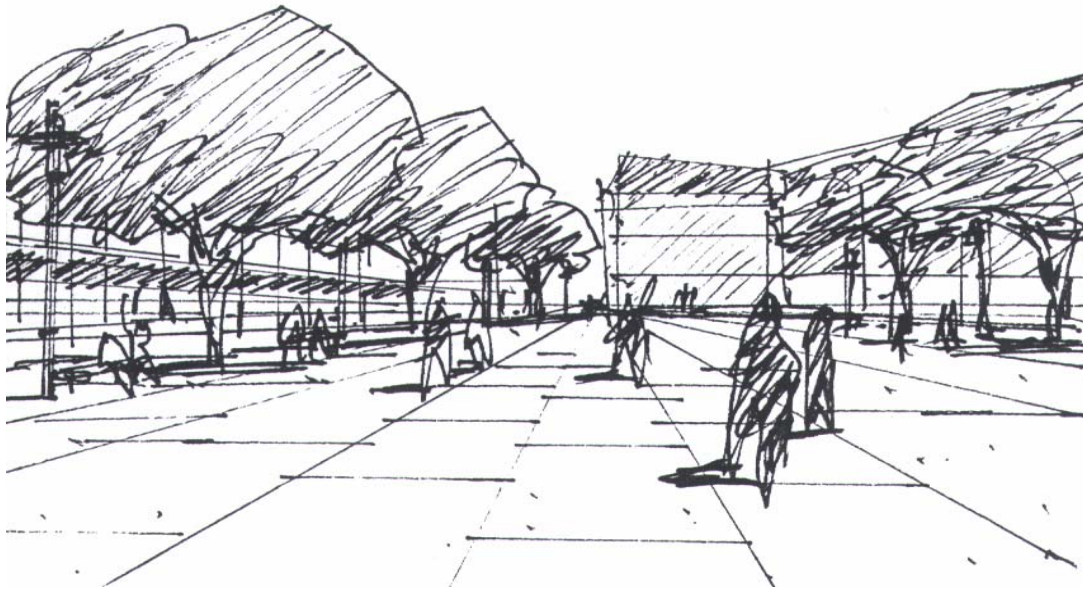


Figure 43 - Civic Open Space Associated with Neighbourhood Centre

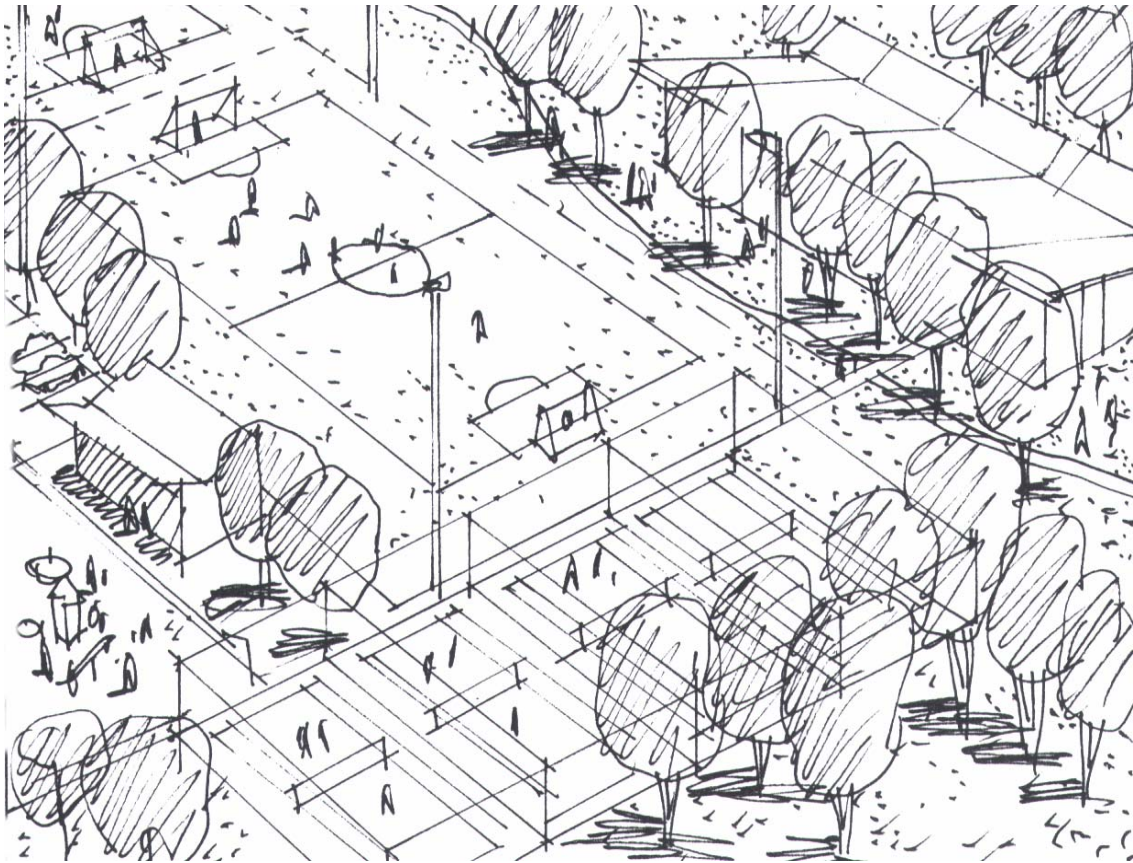


Figure 44 - Recreation Facility Associated with Neighbourhood Centre



Figure 45 - Kick About Area Associated with Neighbourhood Centre

12.4 Objectives

- (a) Provide open space and recreation areas for the use and enjoyment of the local workforce and visitors to the Precinct.
- (b) Ensure that open spaces are of a high quality and embellished to promote local character and identity.
- (c) Ensure that open spaces are flexible to changes in demand and opportunity.
- (d) Ensure that the location, design and management of open space is based on the principles of sustainability, and equality of access and opportunity.
- (e) Ensure that the open space network is integrated with areas of environmental significance in an ecologically responsible and sustainable manner.

12.5 Controls

- (a) Development Applications that propose open spaces are to clearly identify the intended use and management of the open space, having regard to the potential multi-purpose use of these areas.
- (b) Areas proposed for open space and recreation should:
 - (i) provide for a range of uses and activities;
 - (ii) provide links to other activities and services within the Precinct;
 - (iii) provide connectivity with the surrounding landscape;
 - (iv) demonstrate a high level of physical and visual integration;
 - (v) be designed to assist in casual surveillance and promote user safety; and
 - (vi) incorporate a strong landscape framework for sustainability, by retaining and enhancing natural values of the Precinct.
- (c) Open space and recreation areas are to be provided within a neighbourhood centre and such areas should:
 - (i) be accessible and comfortable;
 - (ii) provide relief from sun, rain, shade and wind;
 - (iv) be separate from vehicular traffic;
 - (v) include suitable lighting and furniture; and
 - (vi) provide a sense of security and appealing ambience and character. This might come from a sense of relaxation associated with natural settings, or a sense of passive engagement associated with human activity.
- (d) The design of the open space and recreation areas should integrate with identified landscaped native vegetation areas and drainage areas, whilst not compromising the integrity of these areas.
- (e) A management plan for any proposed open space and recreation area must be submitted with the Development Application, identifying their care, control and management.
- (f) Landscaping of the open space areas must be in accordance with the landscaping provisions of this plan.

Section 13

LANDSCAPING

13.0 Landscaping

13.1 Overview

Landscaping is to provide both an attractive and sustainable setting for the development that reflects the physical and cultural context of the site. Landscape is to be integrated into the early planning of streetscape, allotment and open space design as a formative design influence that maximises aesthetic and environmental benefits and provides design and material solutions that are sustainable in the long term.

Allotment planning and design should consider the practical requirements for optimum landscape establishment including deep soils, shade / solar access and drainage in the arrangement of all site elements to provide an 'integrated' design solution. As such, built form design and landscape design must be closely related, whilst recognising that built form massing and articulation should provide a positive contribution to streetscape and public domain character that does not focus on landscape as a screening or buffer element for poor or extreme facades.

Where possible the character of adjoining bushland areas beyond the boundary of the site are to be extended into the development allotments through the continuation of native tree canopy into allotment landscapes.

Finally landscape should reflect environmentally sustainable design strategies that minimise use of non-renewable resources (in particular water), maximise recycling and integrate architecture and landscape to ameliorate the impact of climate conditions on building and open space amenity and comfort.

13.2 Objectives

- (a) Encourage a high standard of landscaping to enhance the streetscape, amenity and planting of the Precinct.
- (b) Ensure that plant species and planting patterns complement and enhance the extensive areas of Cumberland Plain Woodland.
- (c) Ensure that the public domain, open space, and outdoor staff areas are landscaped and maintained.
- (d) Enhance the appearance, amenity, energy, and water efficiency of development through integrated landscape design.

13.3 Controls

13.3.1 Design and Planning

- (a) Landscape issues, objectives, and requirements are to be incorporated into early site infrastructure and individual allotment design to maximise the quality and effectiveness of landscape outcomes.
- (b) A landscape plan is to be prepared and submitted with development applications for each allotment. Information to be included on the landscape plan include:
 - (i) north point;
 - (ii) scale;
 - (iii) contours and spot levels;
 - (iv) main structures on the site (buildings, car parking, driveways and service areas, walls, fences, paved areas, storage areas etc);
 - (v) drainage structures and above ground water storage tanks;
 - (vi) existing trees to be removed or retained;
 - (vii) proposed planting areas;
 - (viii) proposed turfed areas;
 - (ix) plant species schedule including botanical and common names;
 - (x) outdoor recreation or seating areas;
 - (xi) details of seating and other outdoor furniture including bins, bollards and signs;
 - (xii) details of paving, fencing, wall and edge treatments;
 - (xiii) lighting;
 - (xiv) irrigation systems and water requirements;
 - (xv) sections and / or elevations where necessary to describe special features or alterations in levels; and
 - (xvi) name and contact details of the designer responsible for the plans.
- (c) Site planning is to consider the minimisation of extensive runs of façade providing appropriate functional landscaped breaks and tree planting to provide visual relief.
- (d) Plant species should respond primarily to the locally endemic plant community of Cumberland Plain Woodland vegetation for tree and understorey species. Where these species are not applicable for a specific landscape design intent the rationale for species selection should be outlined on the Landscape Plan. In these cases Australian native species are preferable where design intent can be realised.

13.3.2 Streetscapes and Allotment Frontages

- (a) The streetscape is to be designed and implemented as part of a coordinated programme to include all elements such as:
 - (i) street trees;
 - (ii) frontage planting zone;
 - (iii) light poles;
 - (iv) shared path and pedestrian paths with consistent alignments and setbacks to provide visual continuity to the street;
 - (v) services; and
 - (vi) driveways.
- (b) The design is to emphasise the effective integration of vertical elements (trees, light poles and allotment signage) as a coordinated composition providing a rhythm of regular layout and consistency of materials.
- (c) Services lids and above ground structures are to be minimised in the street frontages. Where possible service lids are to be located adjoining pavement or kerbs to avoid small areas of turf or planting beds.
- (d) Street tree planting should be implemented in one programme to ensure tree planting is visually consistent in height, spread and form.
- (e) Street tree planting and frontage planting zone is to be provided with an automatic trickle irrigation system installed below mulch level. The streetscape irrigation system is to be supplied by the water storage ponds to the north east of the site.
- (f) A shared pedestrian/cycle path of 2.5 metres is to be provided along the northern side of the internal road system. The path surfacing shall stop at junctions with allotment driveways/access roads. Appropriate warning signs and line markings are to be provided at these junctions.
- (g) A mass planted and mulched zone is to adjoin the footways, which is to extend from the road carriageway through into the building setbacks. The zone is to be planted with a consistent theme of low groundcover and mature vegetation. The mass planted zone is to be evenly graded towards the adjoining path at a grade of 10 metres in length to 1 metre in height.
- (h) Level changes between the allotment and frontage are to be taken up in the zone from the fence line. Gradient of this zone shall not exceed 3 metres in length to 1 metre in height.



Figure 46 - Indicative Streetscape and Allotment Frontage Landscape Treatment

13.3.3 Allotment Landscape

- (a) Allotment landscape should be undertaken as part of an integrated design with site planning and building design to:
 - (i) reduce the scale of built form from the street and to other visible facades (including front and side facades);
 - (ii) provide tree species with a canopy equivalent or larger than the height of the building at building corners and along façades to reduce visual impact and extent of continuous building façades;
 - (iii) highlight architectural features and complement façade articulation;
 - (iv) identify site and building entries, car park entries and parking areas, in coordination with signage;
 - (v) mitigate adverse site conditions through buffering of western sun exposure, provision of shade, wind protection, and visual screening of poor views; and
 - (vi) integrate usable and attractive external seating and amenity areas for staff incorporating paved area, soft landscape, and shade planting (and canopies where necessary).
- (b) Allotment landscape will incorporate hard and soft landscape elements in a coordinated design scheme including pavements, retaining walls, low walling and terracing, ponds, artworks, trees, garden bed planting, turfed areas, and irrigation.
- (c) Local native species shall generally be preferred for all landscape plantings due to their suitability to the local conditions. Non native species may be considered in limited use to external courtyard areas to achieve seasonal climate management. Specimen tree plantings should have a minimum supply height of 1 metre, at planting. Mass plantings may use a variety of sizes including viro tubes.
- (d) Plant material for mass plantings to side and rear setback areas should preferably be sourced from plant material propagated from local provenance seed stock (eg Greening Australia).
- (e) Allotment landscape is to be provided with an automatic trickle irrigation system installed below mulch level. The allotment irrigation system is to be supplied by the water storage tanks on individual sites storing roof runoff and hardstand runoff (where feasible). Planting schemes should recognise the conditions of the site and focus on species of generally low water demand.
- (f) Irrigation systems are to incorporate soil moisture monitoring where possible to ensure that moisture levels are maintained at an appropriate level, reducing ongoing water demand, achieving optimum plant health, and minimising potential for increasing soil salinity problems.

- (g) Landscaped areas are to be separated from vehicular access areas by an appropriate edge preferably a raised kerb. Fencing is not preferred due to its impact on visual character.
- (h) Landscaped areas are to be separated from storage areas by an appropriate edge preferably low walling. Signage and management strategies are to be put in place to ensure that storage activities do not impact on, and extend into, landscaped areas. No storage is to be allowed in landscaped setback areas.
- (i) Where possible existing native vegetation in good condition with SULE of medium to long duration (life expectancy over 15 years), is to be protected and integrated into allotment planning and landscaped areas.
- (j) Areas subject to staged development within allotments shall be appropriately stabilised and subject to erosion control measures.



Figure 47 - Indicative Allotment Landscape Treatment

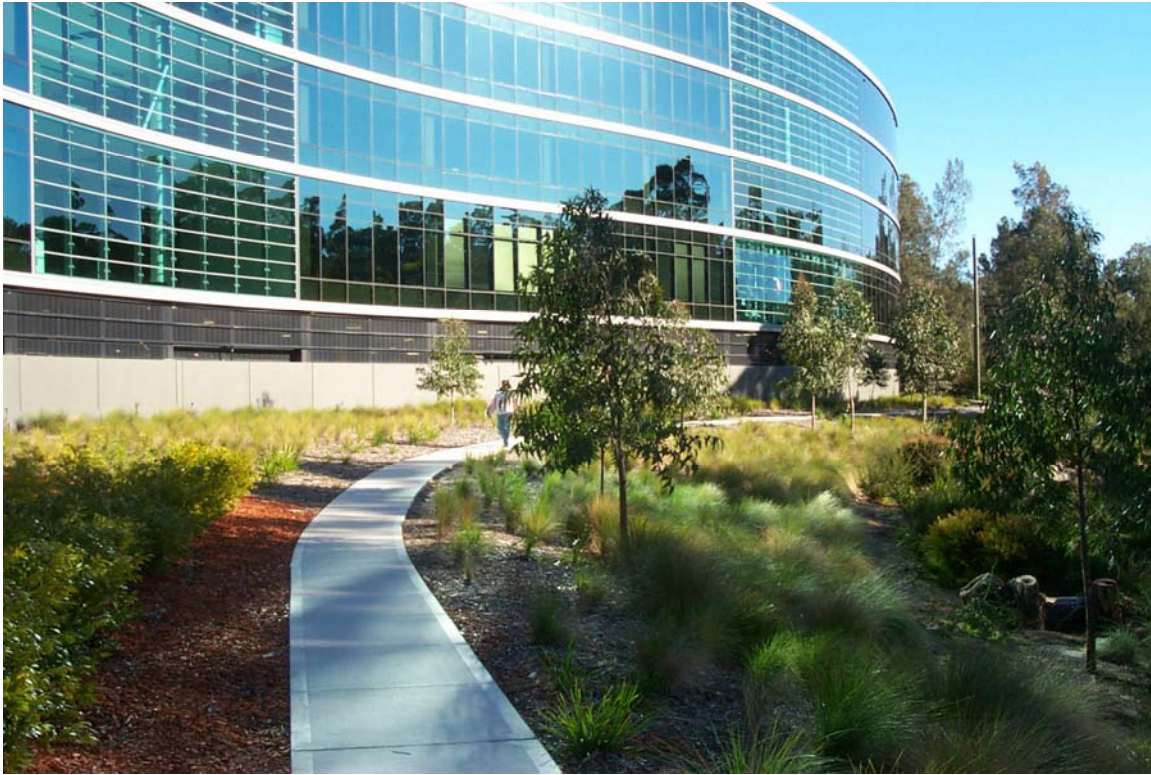


Figure 48 - Indicative Allotment Landscape Treatment

13.3.4 Car Parking

- (a) Allotment car parking areas are to be effectively landscaped to:
 - (i) reduce visual impact from public domain;
 - (ii) reduce heat generation and glare from hard paved surfaces;
 - (iii) provide shade for parked vehicles; and
 - (iv) maximise potential for soft drainage (non piped) to soft landscaped areas or collection zones.
- (b) Car park layout is to maximise efficiency of access roads (ie parking both sides of access road) where possible to reduce the need for excess hard paved areas.
- (c) Car park layout is to incorporate provision for large canopy tree planting at a maximum interval of 25 metres (9 parking bays) generally offset to maximise visual effect.
- (d) Tree plantings are to be provided with a minimum 2 metres (clear internal width) bay of deep soil conditions (minimum 600mm). Bays are to be provided with a raised kerb barrier (rounded adjoining accessways) and native groundcover planting.

- (e) Car park lighting design is to be coordinated with preferred tree layout to avoid conflicts.
- (f) Dividing zones between parking bays should be landscaped as applicable to specific site conditions:
 - (i) where pedestrian access will generate desire lines across the dividing zone, pedestrian trafficable wearing surface is required (eg stabilised gravel);
 - (ii) where pedestrian access is not required and some infiltration drainage role may be provided, mass planted landscape areas (requiring flush kerb edge and wheel stops to car parking bays) must be provided; and
 - (iii) where a major drainage role is envisaged and pedestrian access is not required, a gravel surfaced trench with collection pipework draining to on site storage or stormwater must be provided.
- (g) Clearly defined and appropriately surfaced pedestrian access links from parking areas to building entry points must be provided, incorporating kerb crossing ramps as required.
- (h) Car park landscape is to be provided with an automatic trickle irrigation system installed below mulch level. Irrigation services provision must be implemented before car park surfacing. The car park irrigation system is to be supplied by the water storage tanks on individual sites storing roof runoff and hardstand runoff (where feasible). Planting schemes should recognise the conditions of the site and focus on species of generally low water demand.
- (i) Irrigation systems are to incorporate soil moisture monitoring where possible to ensure that moisture levels are maintained at an appropriate level. This will reduce ongoing water demand, achieve optimum plant health, and minimise the potential for increasing soil salinity problems.



Figure 49 - Indicative Car Park Landscape Treatment

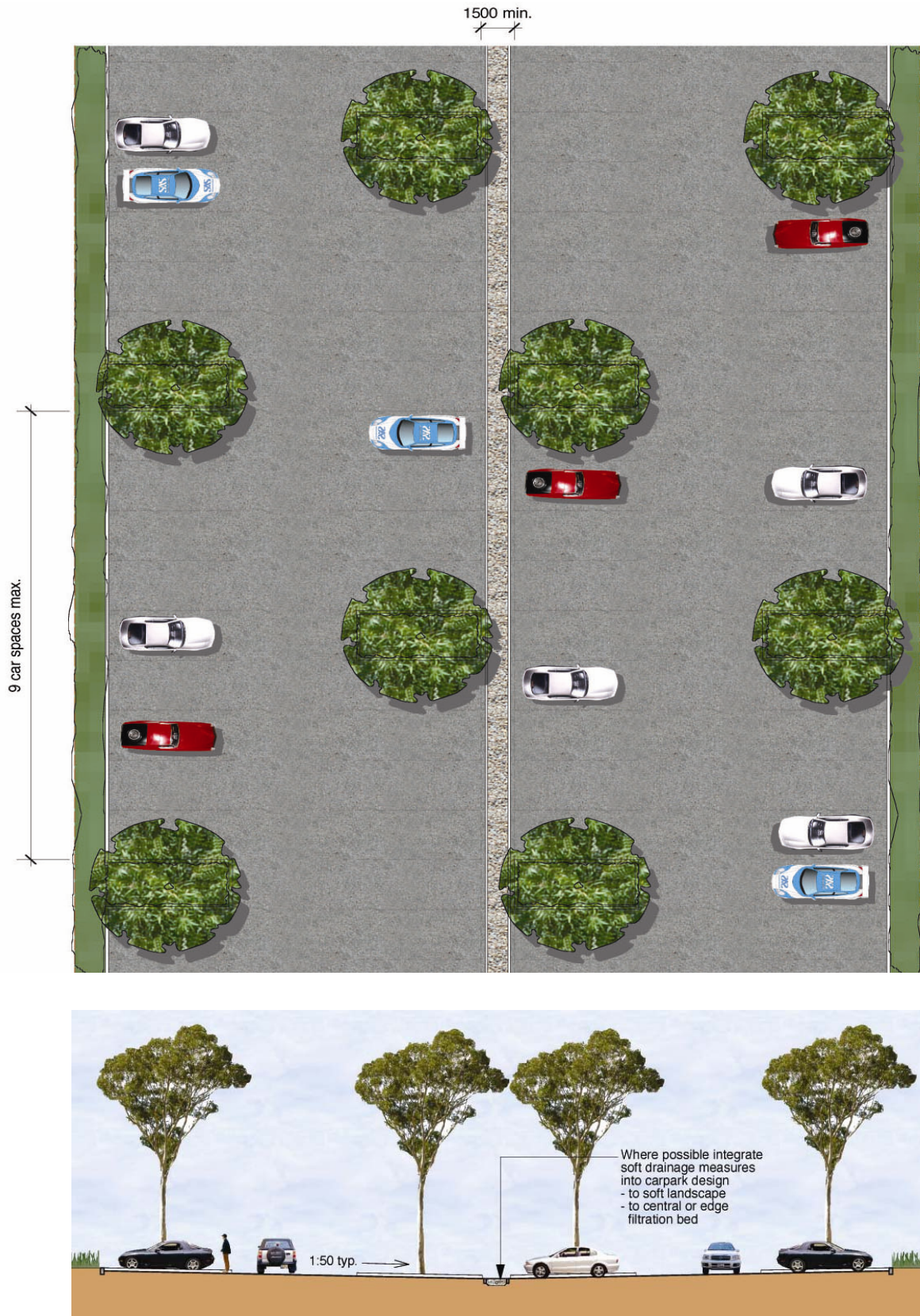


Figure 50 - Indicative Car Park Landscape Treatment



Figure 51 - Indicative Car Park Landscape Treatment

13.3.5 Open Space

- (a) Open space areas are to be appropriately landscaped to:
 - (i) facilitate, enhance, and encourage public use and enjoyment of the area;
 - (ii) enhance identity and character of development;
 - (iii) complement adjoining building uses and services; and
 - (iv) mitigate adverse site conditions through buffering of western sun exposure, provision of shade, wind protection, and visual screening of poor views.
- (b) Local native species shall generally be preferred for all landscape plantings due to their suitability to the local conditions. Non native species may be considered in limited use to courtyard areas to achieve seasonal climate management. Specimen tree plantings should have a minimum supply height of 1 metre at planting. Mass plantings may use a variety of sizes including viro tubes.
- (c) Plant material for mass plantings should preferably be sourced from plant material propagated from local provenance seed stock (eg Greening Australia).
- (d) Open space design is to have regard for user safety and security.
- (e) Open space is to provide a linkage through site pedestrian and cycle access networks, and related regional connections.
- (f) Open space landscaped areas are to be provided with an automatic trickle irrigation system installed below mulch level. The streetscape irrigation system is to be supplied by the wetlands, when practical.



Figure 52 - Indicative Wetland Landscape Treatment



Figure 53 - Indicative Wetland Landscape Treatment



Figure 54 - Indicative Open Space Landscape Treatment

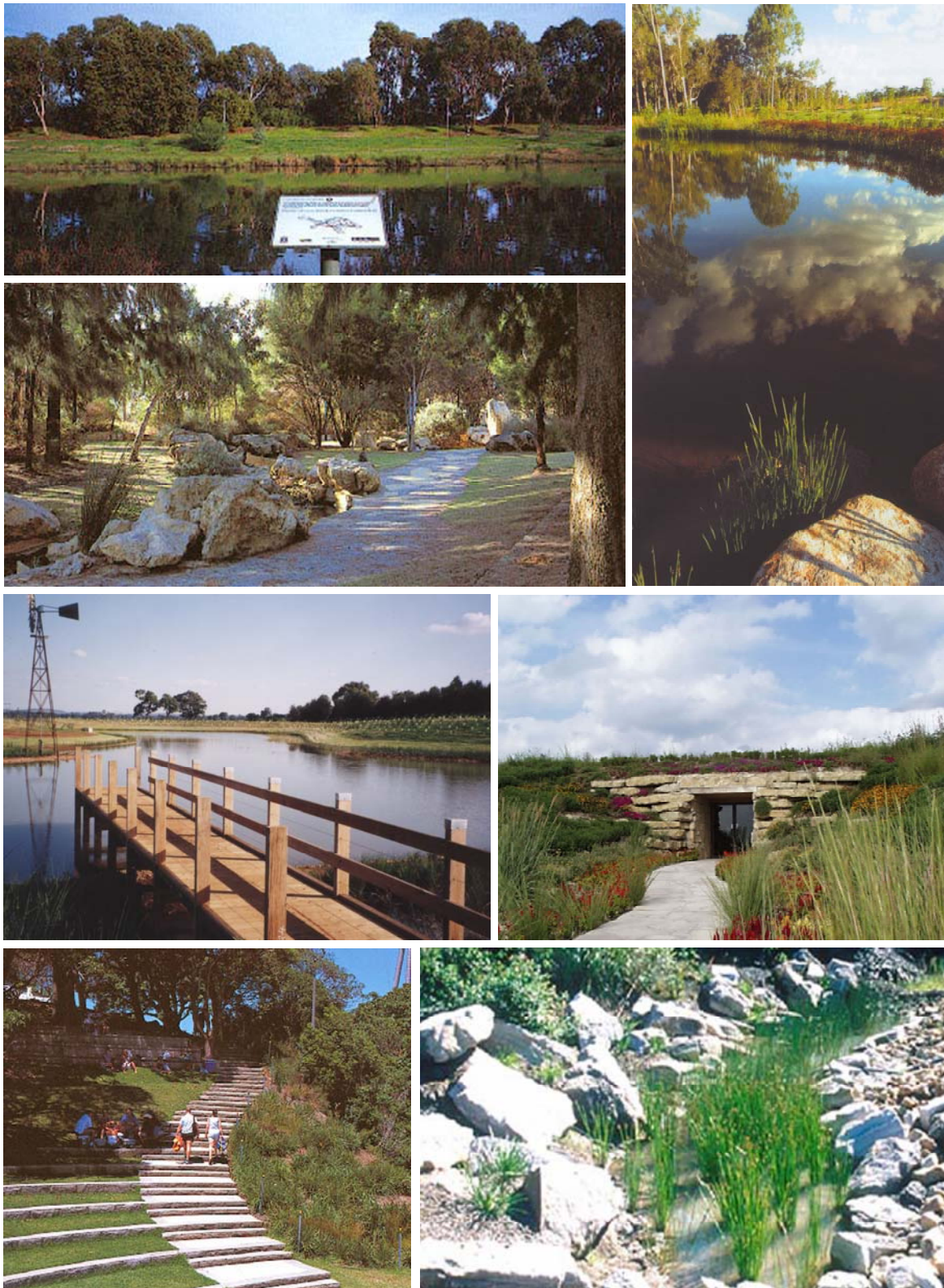


Figure 55 - Indicative Open Space Landscape Treatment

Section 14

APPENDICES

Appendix A Definitions and Abbreviations

The definitions outlined in *Blacktown Local Environmental Plan 1988* are adopted for the purposes of this plan, except for the definitions outlined below:

AHD means Australian Height Datum.

Community facility means a building or place used to provide facilities comprising or relating to any one or more of the following purposes:

- (a) public health and welfare services;
- (b) rest rooms;
- (c) meeting rooms;
- (d) indoor recreation;
- (e) child minding;
- (f) baby health centre;
- (g) public halls;
- (h) exhibition spaces;
- (i) public buildings;
- (j) club rooms;
- (k) refreshment rooms; or
- (l) any like purpose

and includes shops and commercial premises ancillary to and used in conjunction with those facilities.

Community services means a use which serves the daily convenience needs of the workforce within the Precinct, which relates to any of the following purposes:

- (i) child care centre;
- (ii) commercial premises;
- (iii) community facilities;
- (iv) educational establishment;
- (v) mixed business;
- (vi) recreation area;
- (vii) refreshment room; and
- (viii) shops.

Council means Blacktown City Council.

DOP means Department of Planning.

Finished ground level means the ground level following any bulk earthworks required during development to create a land surface generally suitable for building.

GFA means Gross Floor Area.

Neighbourhood Centre means a centre that consists of a range of community services.

PAD means Potential Archaeological Deposit.

Precinct means Lot 11 Precinct of State Environmental Planning Policy No. 59 – Central Western Sydney Economic and Employment Area.

RL means Relative Level.

SEPP 59 means State Environmental Planning Policy No 59 – Central Western Sydney Economic and Employment Area.

Site coverage means footprint of all buildings and canopy areas (excluding hardstand areas) to the area of the allotment on which it is to be situated.

SULE means Safe Useful Life Expectancy.

the Act means the *Environmental Planning and Assessment Act 1979*.

WSUD means Water Sensitive Urban Design.

Appendix B References

The following documents were used in the preparation of this Precinct Plan:

Section 3 Economic Development and Employment

- Urbis JHD, *Assessment of Employment Benefits*, (December 2004).
- SGS Economics and Planning, *Land Use and Employment Study*, (March 2005)

Section 4 General Services

- Lovegrove Oxley Consultants Pty Ltd, *General Services Plan*, (December 2004).

Section 5 Stormwater Management

- Warren Smith & Partners Pty Ltd, *Stormwater Management Report*, (May 2005)
Revision D1.

Section 6 Environmental Management

- Environmental Investigation Services, *Salinity Management Strategy*, (December 2004).
- BACTEC SE Asia Pty Ltd, *UXO Assessment*, (November 2004).
- Peter J Ramsay & Associates, *Detailed Site Investigation*, (July 2004).
- Richard Heggie Associates, *Noise and Vibration Assessment*, (September 2003).

Section 7 Biodiversity

- Conacher Travers, *Flora and Fauna Assessment of Lot 11 Wallgrove Road, Eastern Creek*, (December 2004).

Section 8 Heritage

- Casey & Lowe Pty Ltd, *Non-Indigenous Archaeological Assessment*, (July 2004).
- Graham Brooks and Associates Pty Ltd, *Former Bush Beast Rollercoaster Wonderland Sydney*, (April 2005).

- Godden Mackay Logan, *Bush Beast Rollercoaster Heritage Assessment*, (November 2004).
- Taylor Lauder Bersten Pty Ltd, *Condition Report on the Structural Adequacy of the Timber Framed Structure supporting the Roller Coaster “Bush Beast”*, (September 2004).
- Jo McDonald Cultural Heritage Management Pty Ltd, *Archaeological Assessment of Aboriginal Sites: Lot 11 Wallgrove Road NSW*, (December 2004).

Section 9 Traffic and Transport

- Sinclair Knight Merz Pty Ltd, *Transport Management and Accessibility Plan*, (December 2004)
- ARUP Transportation, *Local Traffic Study*, (July 2005)

Section 11 Community Services

- Elton Consulting, *Human and Cultural Facilities and Services Study*, (March 2005).

Section 12 Open Space

- Clouston Associates, *Open Space and Recreation Plan*, (April 2005).