Department of Planning and Environment

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NSW GOVERNMENT

Ropes Creek Precinct Development Control Plan

WESTERN SYDNEY EMPLOYMENT AREA

July 2022

Acknowledgement of Country

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and we show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Ropes Creek Precinct Development Control Plan

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1 Introduction and Administration

1.1 Name of this Development Control Plan

This plan is known as the Ropes Creek Precinct Development Control Plan (DCP) 2021. This DCP has been prepared in accordance with Section 3.43 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2021* (Regulation).

1.2 Adoption and commencement

1.2.1 Commencement of the DCP

This DCP was adopted by the Secretary of the Department of Planning and Environment (DPE) on 29 June 2022 and commenced on 25 July 2022.

1.2.2 Amendments to this DCP

A list of amendments made to this DCP is shown in **Table 1-1**.

Table 1-1 | Amendments to this DCP

Year of commencement (of the original DCP)	Adoption date (of the amendment)	Amendment/version number	Date of commencement (of the amendment)	Description of amendment
2022				

1.3 Where this DCP applies

1.3.1 Land application

This DCP applies to the northern portion of the Ropes Creek Precinct within *State Environmental Planning Policy (Industry and Employment) 2021*. Under section 4.15 of the EP&A Act, the consent authority is required to take into consideration the relevant provisions of any applicable DCP when determining an application for development.

Refer to the Land Application Map (**Figure 1**) for land to which this DCP applies. The subject lots include Lot 1 DP 1266682, Lot 2 DP 1266682, Lot 4 DP 1266682 and Lot 31 DP 1264694.

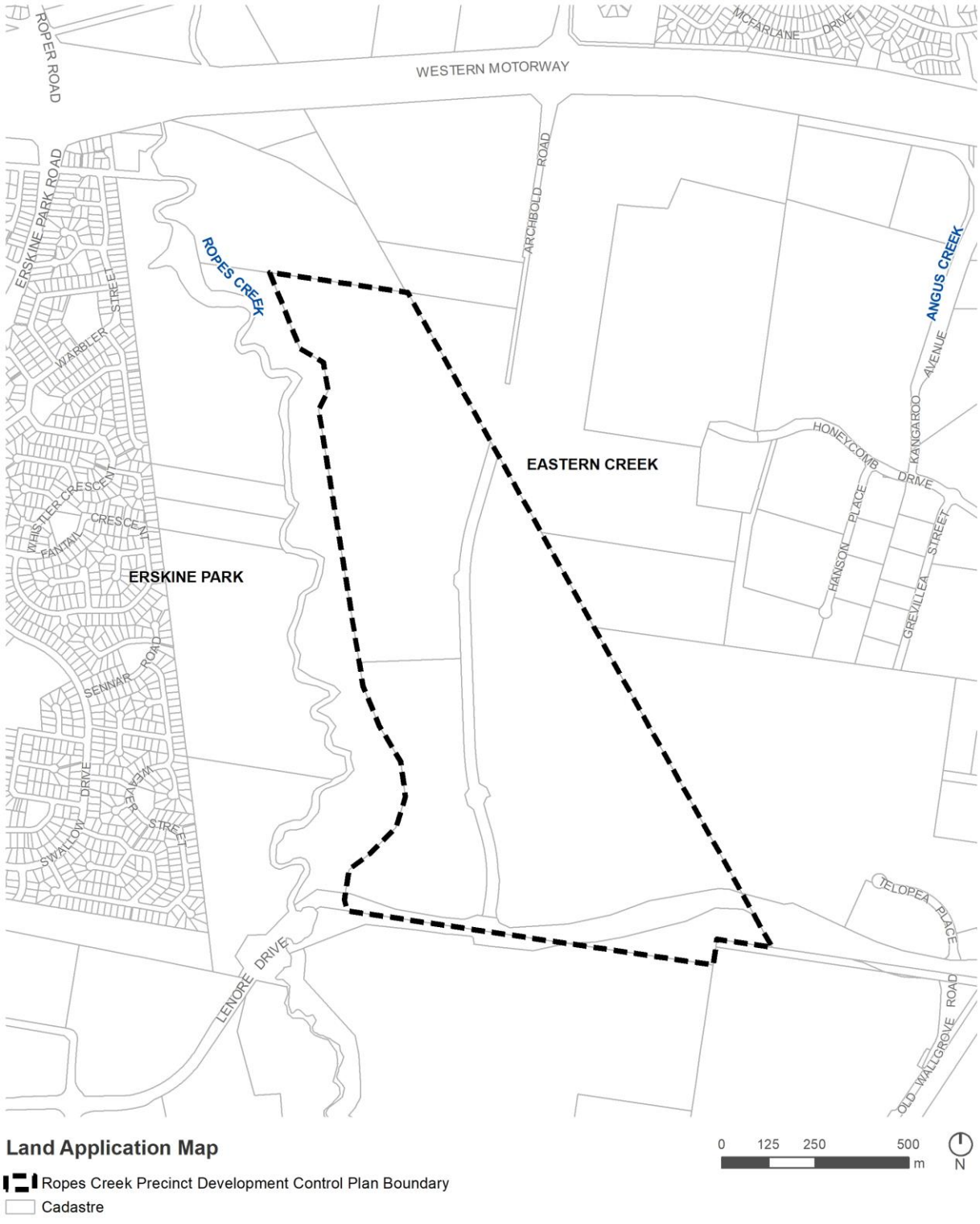

Figure 1 | Land application map

1.4 Consent Authority

Blacktown City Council is the consent authority for all development in the area to which this DCP applies, unless otherwise authorised by the EP&A Act. Council (or other consent authority) will use this DCP in its assessment of a planning application for development.

1.5 How to use the DCP

1.5.1 Structure of the DCP

This DCP is structured into four chapters, as outlined in **Table 1-1**.

Table 1-2 | Structure of this DCP

Chapter	Description
Chapter 1: Introduction and Administration	Addresses information about the administrative provisions of the DCP, such as the name of the DCP, adoption and commencement information, where the DCP applies and how to use the DCP. This chapter also includes the Precinct Vision.
Chapter 2: Precinct Planning Outcomes	Addresses topics relating to the delivery of the precinct vision, including biodiversity conservation, integrated water cycle management, riparian land, heritage, and contamination, as well as infrastructure.
Chapter 3: Precinct and Subdivision Design	Addresses development issues including the subdivision of land, consolidation of land and boundary adjustments for industrial purposes, and the transport and traffic network for the precinct.
Chapter 4: General Requirements for industrial development	Addresses issues that are likely to arise for industrial development, such as built form, character and design, amenity, earthworks and retaining walls, waste minimisation and management, and access and parking.

1.5.2 Information to be submitted with development applications

All development applications must be accompanied by a completed application form and comply with the relevant checklist requirements, which can be accessed from Blacktown Council's website: https://www.blacktown.nsw.gov.au/Home

1.5.3 Variations to development controls

Council may grant consent to a proposal that varies from the requirements of this DCP, providing the aims and objectives of the controls are achieved. In these instances, a development application will be assessed on its merits and must demonstrate that the proposed variations are:

- Consistent with the aims and provisions of *State Environmental Planning Policy (Industry and Employment) 2021*;
- Achieve the relevant objectives of this DCP; and
- Will not likely result in significant impacts to the environment or adjoining development.

1.6 Aims of this DCP

This DCP aims to reinforce the provisions of the Industry and Employment SEPP, by providing guidelines for detailed planning and development. The specific aims of the DCP are to:

a. Promote economic growth and employment opportunities consistent with the objectives of the Greater Sydney Region Plan and Industry and Employment SEPP;
b. Ensure the orderly provision of infrastructure and services in a manner that minimises impacts on the environment and cost to government;
c. Ensure ecologically sustainable development that actively anticipates and prevents damage to the environment;
d. Conserve areas of environmentally sensitive land and minimise the impact of development on these areas;
e. Encourage development and construction which is compatible with the identified flood hazard to ensure safety to life and property;
f. Ensure the traffic and public transport needs for the Precinct are achieved;
g. Ensure high quality urban design outcomes are achieved; and
h. Allow for the provision of adequate landscaped areas for the use and enjoyment of the working population.

1.7 Precinct vision

The Ropes Creek Precinct, in conjunction with the adjoining Erskine Park Employment Lands and Eastern Creek Precinct, will be a key component of the Western Sydney Employment Area (WSEA supporting the growth of the Western Parkland City). The Ropes Creek Precinct will facilitate employment uses with strong links to the M4, M7, Aerotropolis, and broader WSEA.

The Ropes Creek Precinct will likely support a range of industrial uses, including transport depots and freight transport facilities, industrial retail outlets, warehouse or distribution centres and other industries (other than offensive or hazardous industries).

Western Parkland City principles will be implemented through the blue and green grid and ambitious landscaping requirements which will contribute to the Greater Sydney Region Plan target of 40% tree canopy across Metropolitan Sydney. Green infrastructure, integrated with urban development and grey infrastructure, will increase the Precinct's resilience.

The built form, including building siting and envelopes, will respond to the constraints of the site, including the tributaries and riparian land, and the transmission line easement. The tributaries and riparian corridors of the Precinct are to be conserved, rehabilitated, and protected. A high-quality public domain and landscaping will reflect the native vegetation of the area and contribute towards a comfortable microclimate with soft and hard landscaping.

The provision of ancillary supportive uses should be encouraged to create a high amenity business environment, such as food and drink premises, local shops and services. A safe and permeable street network is to be provided with separate pathways for pedestrians/cyclists and vehicles, which promotes accessibility and connectivity.

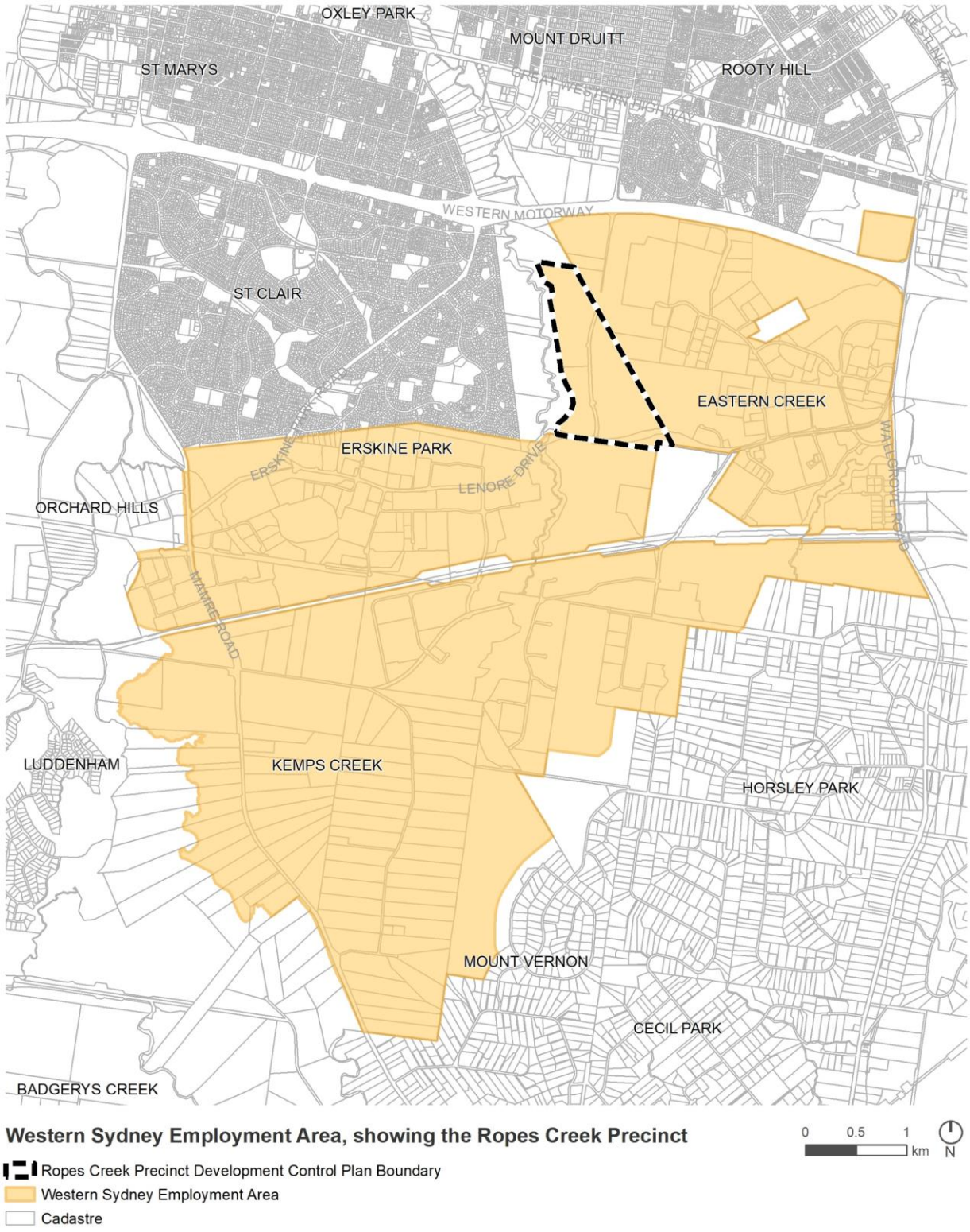

Figure 2 | Western Sydney Employment Area (Ropes Creek Precinct bound in black)

1.8 Relationship to other documents (and instruments)

1.8.1 State Environmental Planning Policy (Industry and Employment) 2021

This DCP should be read in conjunction with *State Environmental Planning Policy (Industry and Employment) 2021* (the Industry and Employment SEPP), which provides the statutory planning controls for development in the Precinct, as well as and other relevant State planning policies.

1.8.2 Blacktown City Council documents

Various Council design standards and guidelines will also apply where specifically referred to in this DCP, such as Council's engineering standards documents. Part E (Development in Industrial Zones) and Part J (Water Sensitive Urban Design) of Blacktown Development Control Plan 2015 additionally applies to the site and its development.

In the event of any inconsistency between this DCP and any other DCP or policy of Council, this DCP will prevail to the extent of the inconsistency.

1.8.3 Documents that informed this DCP

The preparation of this DCP was informed by the following technical reports:

- Biodiversity and Riparian Assessment (Eco Logical Australia, October 2016);
- Asset protection zones advice (Eco Logical Australia, July 2016);
- Traffic and Transport Assessment (AECOM, May 2016);
- Aboriginal and Historical Heritage Study (Eco Logical Australia, October 2016);
- Land Capability, Salinity and Contamination Assessment (WSP, October 2016);
- Infrastructure Report, Infrastructure Servicing Strategy (Mott MacDonald, November 2016); and
- Draft Water Cycle Management Strategy (Cardno, September 2020)[1].

[1] A Draft Water Cycle Strategy has been prepared, however, is required to be updated to meet the waterway health controls established within this DCP.

2 Precinct planning outcomes

This part of the DCP outlines the matters to be considered during the initial stages of subdivision planning to determine the suitability and the development potential of the land.

2.1 Precinct characteristics and context

The site is zoned part IN1 General Industrial and part E2 Environmental Conservation (which relates to an existing tributary across the site) under the Industry and Employment SEPP. Land west of the Precinct is zoned part RE1 Public Recreation zone and part E2 Environmental Conservation under *Blacktown Local Environmental Plan 2015* (BLEP).

The site is bound by a separate parcel of land to the north that adjoins the M4 Motorway, Hanson Wallgrove Quarry and Eastern Creek industrial land to the east, Lenore Drive to the south and Ropes Creek and riparian corridor to the west (**Figure 3**).

The site is gently undulating, with the lowest lying land along Ropes Creek (approximately RL 50), and the highest land (at RL 90) in the south eastern corner of the site. A 200m wide transmission easement runs along the eastern edge of the boundary.

Ropes Creek (a Strahler Order 3 Stream) and a tributary (Order 2) traversing the site in an east-westerly direction are both affected by flood events to 1 in 100 ARI.

The site includes high value vegetation, including Cumberland Plain Woodland listed under the *Environment Protection and Biodiversity Conservation Act 1999* and *Biodiversity Conservation Act 2016* and River-flat Eucalypt Forest listed under the *Biodiversity Conservation Act 2016*.

Lenore Drive provides direct road access from the south of the site and is planned to connect with the existing Archbold Road into the future. This will not only provide a vital entry point into the site, but also an important north south connection for the wider region. A shared cycling and pedestrian path is located along Lenore Drive, connecting to Erskine Park Road in the west, and is planned to link with the proposed Old Wallgrove Road upgrade, which also includes a shared pathway linking to Wallgrove Road and the M7.

The M4 Motorway and the industrial area west of Minchinbury are situated approximately 500m north of the site. The low-density residential area of Erskine Park (located within the Penrith LGA) is located approximately 500m west of the site. The M7 Motorway is located approximately 3km to the east, with access from the site via Lenore Drive and Old Wallgrove Road.

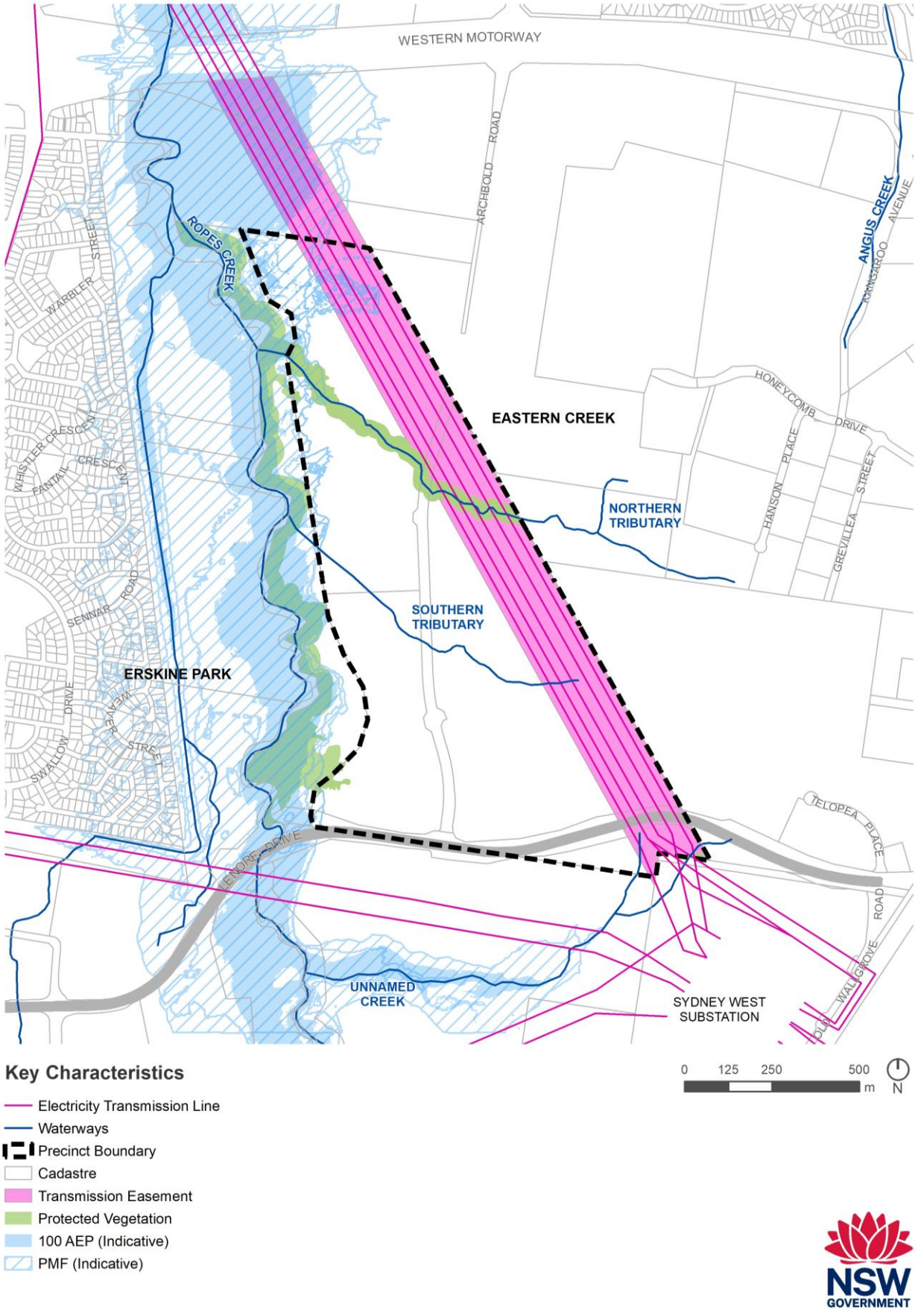

Figure 3 | Key characteristics

2.2 Indicative Concept Plan

The Indicative Concept Plan (ICP) (see **Figure 4**) illustrates the potential urban structure and key principles for the planning and future development of the site.

The Indicative Concept Plan outlines:

- The alignment of the extension of Archbold Road to Lenore Drive;
- The potential location of new local access roads and key intersections;
- How the existing transmission easement is incorporated into the urban design; and
- Key site constraints, including Ropes Creek and protected vegetation.

Objectives

a. To ensure development occurs in a coordinated and orderly manner.

b. To ensure that infrastructure, services and amenities are sufficient to support growth and development in the Precinct.

c. To protect the environment, heritage, amenity, and existing critical infrastructure.

Controls

1. Development applications are to be generally consistent with the Indicative Concept Plan (see **Figure 4**).
2. The consent authority will consider the extent to which the proposed development is consistent with the Indicative Concept Plan, including cumulative and precedent implications on existing and planned infrastructure, and services and amenities provision.
3. Proposed variations to the general arrangement of the Indicative Concept Plan must be consistent with the Precinct Vision, to the satisfaction of the consent authority.
4. Prior to the issuing of development consent for a development or subdivision application, a detailed concept plan is to be prepared for the site consistent with the indicative concept plan (**Figure 4**) and adopted by the consent authority. The detailed concept plan is to form the basis for development of the precinct by setting out the proposed site layout, including;
    i. the existing physical and environmental features of the site.
    ii. any major infrastructure, such as transmission lines, trunk sewerage, recycled water or water supply lines or infrastructure.
    iii. an indicative local road layout to align with intersections of Archbold Road.
    iv. indicative subdivision layout.
    v. indicative location of land uses and buildings including potential access points.
    vi. indicative landscaping.
    vii. management of the public domain.
    viii. contour plan and earthworks.
    ix. pedestrian, vehicular and cycle road access and circulation networks and facilities.
    x. stormwater management network and any precinct-scale basins or water quality treatment measures.
    xi. the general indication of the staging of development.

    The detailed concept plan is to comply and deliver the development standards established within this DCP.

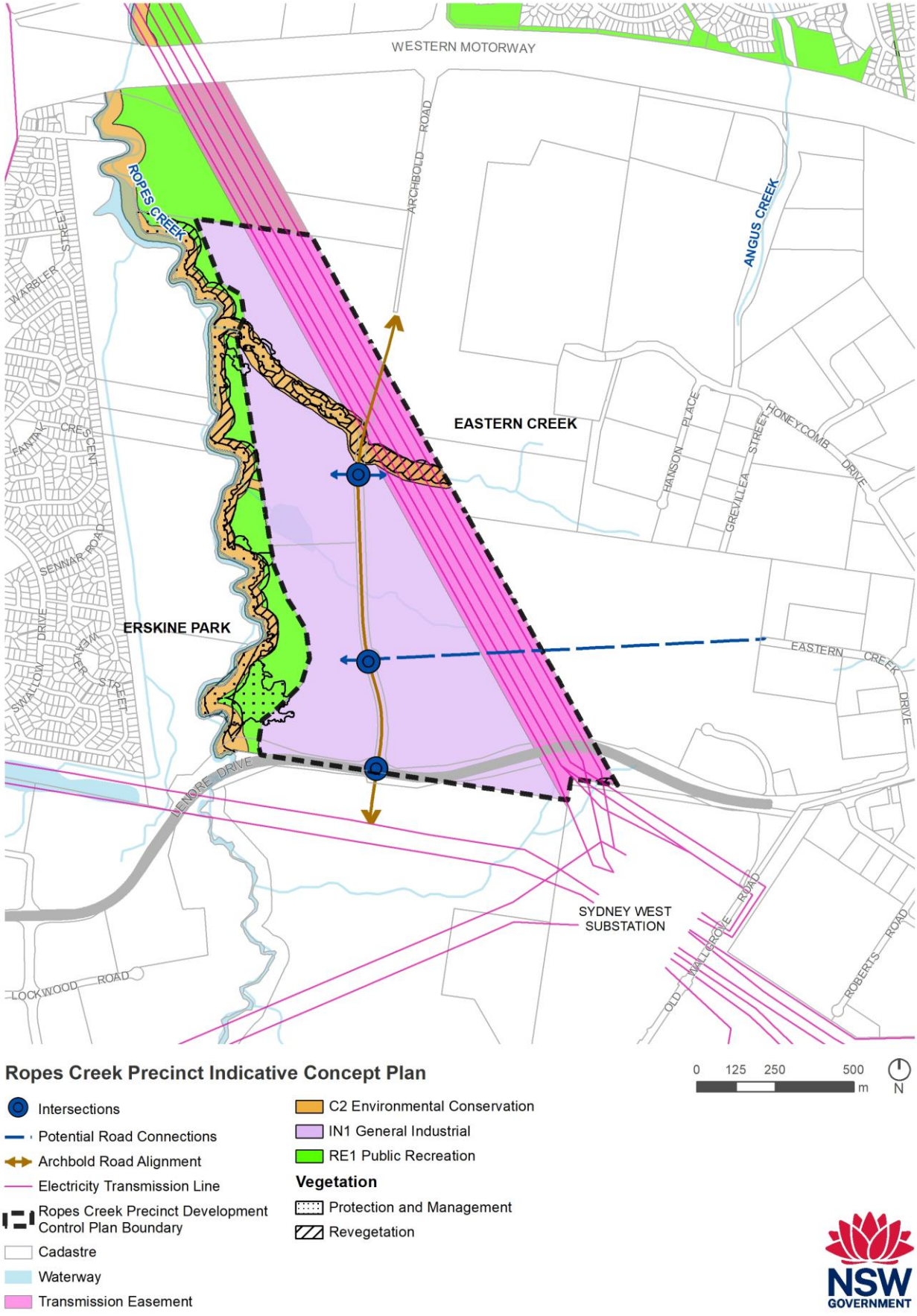

Figure 4 | Ropes Creek Precinct Indicative Concept Plan

2.3 Biodiversity

Objectives

a. To protect, restore and enhance the environmental values of significant vegetation and waterways, including Ropes Creek and its tributaries.

b. To increase and improve landscape connectivity through conservation and restoration of native vegetation, including in perpetuity management of privately-owned biodiversity land, to enable plant and animal communities to survive in the long term.

c. To mitigate the impacts of development on threatened species and endangered ecological communities to improve and enhance condition over the long term.

d. To minimise the spread of weeds, including weeds of national significance (WONS), and manage weeds towards eradication.

Controls

1. Tree and vegetation preservation is to be in accordance with Clause 2.31 and 2.43 of the Industry and Employment SEPP and Clause 4.3 of Blacktown DCP 2015.
2. No clearing of native vegetation shall occur without having regard to the *Biodiversity Conservation Act 2016*. Subdivision involving land zoned E2 Environmental Conservation is to be in accordance with Section **Error! Reference source not found.**.
3. Any application for subdivision of land identified in **Figure 4** as 'Protected Vegetation' or E2 Environmental Conservation is to be accompanied by a Vegetation Management Plan (VMP) prepared by a suitably qualified expert in accordance with the Natural Resources and Assessment Regulator (NRAR) *Guidelines for Controlled activities on waterfront land - riparian corridors* (NRAR Guidelines, May 2018). The VMP must also consider the need for in perpetuity management of E2 Environmental Conservation Lands to ensure future maintenance for environmental and aesthetic reasons. Development adjoining 'Protected Vegetation' of E2 Environmental Conservation is to have regard to the approved VMP and is to consider the need to minimise weed dispersion. The implementation of the VMP is the responsibility of the land owner of the E2 Environmental Conservation lands.
4. Areas identified as 'Protected Vegetation' or E2 Environmental Conservation (see **Figure 4**) are to be protected, conserved, restored and revegetated as part of any future development, in accordance with the VMP. Development is to avoid this area.
5. Bushfire Asset Protection Zones (APZs) must not be located in areas of 'Protected Vegetation'. Additionally, stormwater detention basins and roads are to generally avoid areas of 'Protected Vegetation'.
6. Development is to avoid impacts to habitat features that provide essential habitat for threatened species and other fauna including large trees, hollow-bearing trees and dead trees (>50cm trunk diameter at breast height) and avoid impacts to soil in the Tree Protection Zone as determined via *AS3970-2009 the protection of trees on development sites*.
7. Any mature native tree removed is to be replaced by at least 2 endemic trees which would develop to a similar size at maturity.
8. Any hollow-bearing tree removed is to be replaced by at least 2 durable hollows or constructed (chain-sawn) hollows. Where suitable host trees are not available, nesting boxes may be installed on timber poles.
9. Mitigation for threatened ecological communities is to be undertaken in accordance with:

- *Best Practice Guidelines: Cooks River/Castlereagh Ironbark Forest* (NSW DECC, 2008) within and adjacent to the TEC; and
- *Recovering Bushland on the Cumberland Plain: Best Practice Guidelines for the Management and Restoration of Bushland* (NSW DECC, 2005).

10. Where practical, prior to development commencing, applicants are to:
    - Provide for the appropriate re-use of native plants (including but not limited to seed collection) on site and re-use of topsoil that contains known or potential native seed bank;
    - Undertake a pre-clearance assessment for native fauna immediately prior to native vegetation clearing to ensure arboreal mammals, roosting and hollow-using birds, bats and reptiles found to be present are prevented from accessing vegetation to be cleared, and appropriately removed prior to clearing; and
    - Native animals are to be relocated from development sites in accordance with the former Office of Environment and Heritage's Policy on the *Translocation of Threatened Fauna in NSW*.

2.4 Riparian Land

Objectives

a. To manage the indirect and ongoing impacts of development to ensure vegetation in the riparian area and aquatic fauna is protected and improved, and established water quality and flow-related objectives are achieved and maintained.
b. To minimise disturbance and impact on natural waterbodies.
c. To restore native vegetation along riparian corridors to promote aquatic and terrestrial ecosystems functioning.
d. To promote natural stream design methodologies and ensure appropriate revegetation of riparian corridors is implemented to allow for watercourse stability.
e. To ensure that the removal of any existing dams does not cause the spread of noxious weeds or have other biodiversity impacts.

Controls

1. The Strahler Stream Order based on the waterways identified in the 1:25,000 topographic map sheet (Map Sheet 9030-2N Prospect) is shown in **Figure 5**. Note: refer to the *Ropes Creek Precinct – Biodiversity and Riparian Assessment* (Eco Logical Australia, 6 October 2016) for the field-validated top of bank mapping for each waterway.
2. Riparian corridors, including the required buffer zone widths, shall be established in accordance with the NRAR Guidelines.
3. Within a riparian corridor (field-validated), existing native vegetation is to be retained, rehabilitated and managed, except where clearing is required for essential infrastructure such as roads.
4. Modifications to a natural (or historic) waterbody and waterfront land requires the approval of NRAR, including the enhancement of the ecological outcomes of the watercourse, hydrological benefits and ensuring the long-term geomorphic stability of the watercourse.
5. Waterways of Strahler Order 2 and higher will be maintained in a natural state, including the maintenance and restoration of riparian area and habitat, such as fallen debris.
6. Where a development is associated with or will affect a waterway of Strahler Order 2 or higher, rehabilitation shall return that waterway to a natural state.

7. Waterway crossings such as bridges are to be maintained to retain ecological connectivity and water quality.
8. Road crossings across a waterway of Strahler Order 2 or higher are to be designed to minimise impacts to vegetated riparian area and species movements in accordance with NSW Department of Primary Industries requirements to maintain fish passage.
9. Where development is unavoidable within riparian areas or waterfront lands, the development application shall demonstrate that potential impacts on water quality, aquatic habitat, and riparian vegetation will be negligible or offset in accordance with the vegetated riparian zone and offsetting requirements as specified in the NRAR Guidelines.
10. All riparian corridors shall comprise a vegetated riparian zone along each side of the watercourse/channel.
11. The vegetated riparian zone shall be vegetated with fully structured native vegetation in accordance with the VMP, comprising canopy, mid-storey and ground layer plantings at appropriate densities and a maintenance schedule achieving a self-sustaining ecosystem resilient to weed invasion.
12. Activities within the vegetated riparian zone, such as cycleways and paths, detention basins, stormwater management devices and essential services, must comply with the 'riparian corridor matrix' in the NRAR Guidelines.
13. The number of vehicular and pedestrian watercourse crossings should be minimised and designed in accordance with the NRAR Guidelines.
14. Private and public fencing should avoid intersecting across riparian corridors.
15. Bushfire asset protection zones should be located outside the vegetated riparian zones.
16. Where a development proposal would significantly affect Key Fish Habitat and/or threatened fish, applicants must include an Aquatic Ecological Environmental Assessment in accordance with the *Fisheries Management Act 1994*.
17. If the existing dam on the southern tributary (see **Figure 5**) containing *Salvinia molesta* (a Class 3 weed) is to be removed, a dam decommissioning plan and dewatering assessment is to be prepared. The implementation of this plan is to ensure Salvinia weed is not transmitted to any drainage line, including Ropes Creek.
18. Where development immediately abuts a riparian corridor, development shall be located and designed to minimise environmental impact to the riparian corridor. Consideration must be given to issues such as surveillance, built form and design, landscaping, opportunity for public interfaces, where appropriate, and protection from bushfire threat.

Note: A Controlled Activity Approval under the *Water Management Act 2000* is required for all works located within waterfront land as defined in the Act.

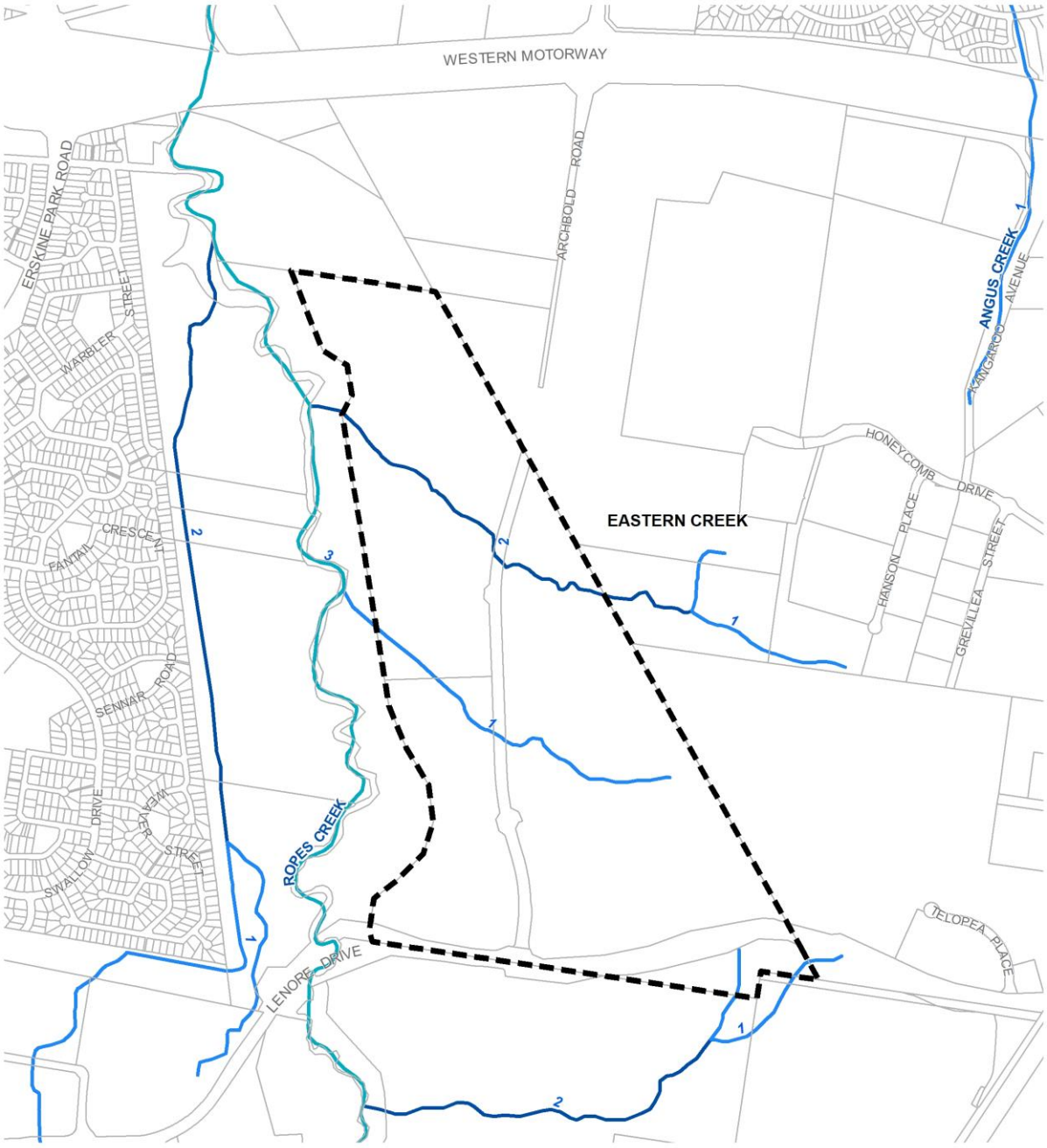

Figure 5 | Strahler stream order

2.5 Integrated water cycle management

The Ropes Creek Precinct is part of the Wianamatta-South Creek system, an intermittent waterway that is sensitive to changes in flow and water quality. Protection and restoration of creek health, ecology and biodiversity is a key policy for future development and delivery of the Blue-Green Infrastructure Network in the catchment. By improving and maintaining waterway health we can optimise environmental outcomes and promote healthy and resilient communities.

Waterway objectives (flow and water quality) were established for the protection of waterways in the Wianamatta-South Creek catchment (refer to Appendix A), in line with the *Western Parkland City District Plan* and NSW Government *Risk-based Framework for considering Waterway Health Outcomes in Strategic Land-use Planning Decisions* (2017). In addition, the NSW Government has prepared technical notes and guidance documentation on the modelling parameters and software packages that can be used to demonstrate compliance with these objectives and the controls below (refer Appendix A).

The provisions of Part J (Water Sensitive Urban Design) of Blacktown Development Control Plan 2015 also apply to development within the Precinct.

Objectives

a. To protect, maintain or restore waterway health within Wianamatta-South Creek and its tributaries, including Ropes Creek, by managing development impacts.
b. To ensure the waterway objectives (flow and water quality) for the Wianamatta-South Creek catchment are achieved.
c. To ensure that land use planning and urban development is integrated with water cycle management including:
    - Service planning for potable water, recycled water and wastewater;
    - Effective management of stormwater flow and quality;
    - Urban design and landscape integration; and
    - Water management infrastructure solutions at a range of scales.
d. To ensure that the principles of integrated water cycle management inform the design of new development to optimise water, cooling and greening outcomes.
e. To protect, maintain and restore the ecological condition, hydrology and hydrogeology of aquatic ecosystems (including but not limited to wetlands and riparian lands).
f. To protect groundwater quality and availability.
g. To consider whole of life costs and ease of maintenance in water planning.
h. To transition to regional water infrastructure, where feasible, to optimise the efficiency of development and deliver better outcomes for waterways, amenity and liveability.
i. To safely and effectively convey stormwater flows from the developed area to the existing waterways or stormwater treatment infrastructure.
j. To deliver the waterway objectives (flow and water quality) held in Appendix A.

Controls

Waterway Health and Water Sensitive Urban Design

1. Development applications must demonstrate compliance with the stormwater quality targets in Table 2-1 and the stormwater flow targets during construction and operation phases in
2. Table 2-2 and Table 2-3 to ensure the NSW Government's waterway objectives (flow and water quality) for the Wianamatta-South Creek catchment are achieved (see Appendix A). Where the strategy for waterway management is assessed at an estate level, the approval should include for individual buildings within the estate, which may be the subject of future applications.
3. The operation phase stormwater flow targets (Table 2-3) include criteria for a mean annual runoff volume (MARV) flow-related option and a flow duration-related option. Applicants must demonstrate compliance with either option.
4. Development applications must include a Water Management Strategy (WMS) detailing the proposed Water Sensitive Urban Design (WSUD) approach, how the WMS complies with stormwater targets (i.e. MUSIC modelling), and how these measures will be implemented, including ongoing management and maintenance responsibilities. Conceptual designs of the stormwater drainage and WSUD system must be provided to illustrate the functional layout and levels of the WSUD systems to ensure the operation has been considered in site levels and layout.
5. The design and mix of WSUD infrastructure shall consider ongoing operation and maintenance. Development applications must include a detailed lifecycle cost assessment (including capital, operation/maintenance, and renewal costs over 30 years) and Maintenance Plan for WSUD measures.
6. WSUD infrastructure may be adopted at a range of scales (i.e. allotment, street, estate, precinct and regional level) to treat stormwater, integrate with the landscape and maximise evaporative losses to reduce development flow runoff. Acceptable WSUD measures to retain stormwater within the development footprint and subdivision are shown in Table 2-4 (vegetated WSUD measures and rainwater/stormwater reuse are preferred).
7. Development must not adversely impact urban salinity or sodic soils and shall balance the needs of groundwater dependent ecosystems.
8. Infiltration of collected stormwater is generally not supported due to soil conditions in the catchment. All WSUD systems must incorporate an impervious liner unless a detailed Salinity and Sodicity Assessment demonstrates infiltration of stormwater will not adversely impact the water table and soil salinity (or other soil conditions).
9. Where a regional WSUD strategy is implemented by the relevant water management authority, new subdivision and development is required to connect to this network.
10. Where development is not serviced by a recycled water scheme, at least 80% of its non-potable demand is to be supplied through allotment rainwater tanks.

Table 2-1 | Stormwater quality targets

Parameter	Target
Gross pollutants (anthropogenic litter >5mm and coarse sediment >1mm)	90% reduction (minimum) in mean annual load from unmitigated development
Total suspended solids (TSS)	90% reduction in mean annual load from unmitigated development
Total Phosphorus (TP)	80% reduction in mean annual load from unmitigated development
Total Nitrogen (TN)	65% reduction in mean annual load from unmitigated development

Table 2-2 | Stormwater flow targets — Construction Phase

Parameter	Target
TSS and pH	All exposed areas greater than 2500 square metres must be provided with sediment controls designed, implemented and maintained to a standard achieving at least 80% of the average annual runoff volume of the contributing catchment treated (i.e. 80% hydrological effectiveness) to 50mg/L TSS or less, and pH in the range 6.5–8.5.
Oil, litter and waste contaminants	No release of oil, litter or waste contaminants.
Stabilisation	Prior to completion of works for the development, and prior to removal of sediment controls, all site surfaces must be effectively stabilised including all drainage systems. An effectively stabilised surface is defined as one that does not, or is not, likely to result in visible evidence of soil loss caused by sheet, rill or gully erosion or lead to sedimentation water contamination.

Table 2-3 | Stormwater flow targets -- Operation Phase

Parameter	Target
Option 1: Mean Annual Runoff Volume (MARV) Approach	
MARV	≤ 2 ML/ha/year at the point of discharge to the local waterway
90%ile flow	1000 to 5000 L/ha/day at the point of discharge to the local waterway
50%ile flow	5 to 100 L/ha/day at the point of discharge to the local waterway
10%ile flow	0 L/ha/day at the point of discharge to the local waterway

Parameter	Target
Option 2: Flow Duration Curve Approach	
95%ile flow	3000 to 15000 L/ha/day at the point of discharge to the local waterway
90%ile flow	1000 to 5000 L/ha/day at the point of discharge to the local waterway
75%ile flow	100 to 1000 L/ha/day at the point of discharge to the local waterway
50%ile flow	5 to 100 L/ha/day at the point of discharge to the local waterway
Cease to flow	Cease to flow to be between 10% to 30% of the time

Table 2-4 | Acceptable solutions for Water Sensitive Urban Design

Component	Potential Measure
Roof	• Compact development typologies • Rainwater and stormwater harvesting connected to appropriate reuse • Green roofs/walls
Hardstand	• Diversion of runoff to deep soil/landscaped areas • Bioretention • Stormwater harvesting • Gross Pollutant Traps
Driveways, carparks and crossovers	• Diversion of runoff to deep soil/landscaped areas • Permeable pavement (carparking bays) • Bioretention
Landscaped areas	• Infiltration into deep soil (where permissible, subject to Controls 6 and 7 in Section 2.5 above) • Irrigation from on-site rainwater tanks • Planting selection to maximise evapotranspiration and nutrient removal
Public Open Space	• Infiltration into deep soil (where permissible, subject to Controls 6 and 7 in Section 2.5 above) • Irrigation with collected rainwater and/or stormwater runoff • Estate/precinct scale stormwater harvesting and irrigation
Naturalised trunk drainage paths	• Infiltration into deep soil (where permissible, subject to Controls 6 and 7 in Section 2.5 above)
Public roads	• Passively irrigated street trees, where accepted by the road authority • Bioretention

Trunk drainage infrastructure

Naturalised trunk drainage paths are considered an acceptable solution for WSUD (refer **Table 2-4**). Where applied strictly in accordance with the below controls, naturalised trunk drainage paths can count towards the required contributions to canopy cover and site perviousness. Trunk drainage paths shall remain in private ownership with maintenance covenants placed over them to the satisfaction of Council (standard wording for positive covenants is available from Council).

11. Naturalised trunk drainage paths are required when the:
    - Contributing catchment exceeds 15ha; and/or
    - 1% AEP overland flows cannot be safely conveyed overland as described in *Australian Rainfall and Runoff – 2019*.
12. The design and rehabilitation of trunk drainage paths is to be generally in accordance with NRAR requirements (refer to Section **Error! Reference source not found.**) that replicates natural Western Sydney streams. An example of a naturalised drainage path is shown in **Figure 6**.
13. Naturalised trunk drainage paths shall be designed to:
    - Contain the 50% AEP flows from the critical duration event in a low flow natural invert;
    - Convey 1% AEP flows from the critical duration event with a minimum 0.5m freeboard to applicable finished floor levels and road/driveway crossings; and
    - Provide safe conveyance of flows up to the 1% AEP event.
14. Where naturalised trunk drainage paths traverse development sites, they may be realigned to suit the development footprint, provided they:
    - Comply with the performance requirements for flow conveyance and freeboard;
    - Are designed to integrate with the formed landscape and permit safe and effective access for maintenance;
    - Do not have adverse flood impacts on neighbouring properties; and
    - Enter and leave the development site at the existing points of flow entry and exit.
15. Trunk drainage paths shall remain in private ownership with maintenance covenants placed over them to the satisfaction of Council (standard wording for positive covenants is available from Council). Easements will also be required to benefit upstream land.
16. Where pipes/ culverts are implemented in lieu of naturalised trunk drainage paths, they must remain on private land and not burden public roads, unless otherwise accepted by Council.
17. High vertical walls and steep batters shall be avoided. Batters shall be vegetated with a maximum batter slope 1V:4H.
18. Raingardens and other temporary water storage facilities may be installed online in naturalised trunk drainage paths to promote runoff volume reductions.
19. Subdivision and development is to consider the coordinated staging and delivery of naturalised trunk drainage infrastructure. Development consent will only be granted to land serviced by trunk drainage infrastructure where suitable arrangements are in place for the delivery of trunk infrastructure (to the satisfaction of the relevant Water Management Authority).
20. Stormwater drainage infrastructure, upstream of the trunk drainage, is to be constructed by the developer of the land considered for approval.
21. All land identified by the Water Management Authority as performing a significant drainage function and where not specifically identified in a Contributions Plan or Planning Agreement,

is to be covered by an appropriate “restriction to user” and created free of cost to the Water Management Authority.

22. Development applications must consider flows upstream and downstream of the site and demonstrate, via 2-dimensional flood modelling, that:
    - Overland flow paths are preserved and accommodated through the site;
    - Runoff from upstream properties (post development flows) are accommodated in the trunk drainage system;
    - Any proposed change in site levels does not adversely impact, or cause a restriction to flows from, upstream properties;
    - There is no concentration of flows onto an adjoining property; and
    - No flows have been diverted from their natural catchment to another.

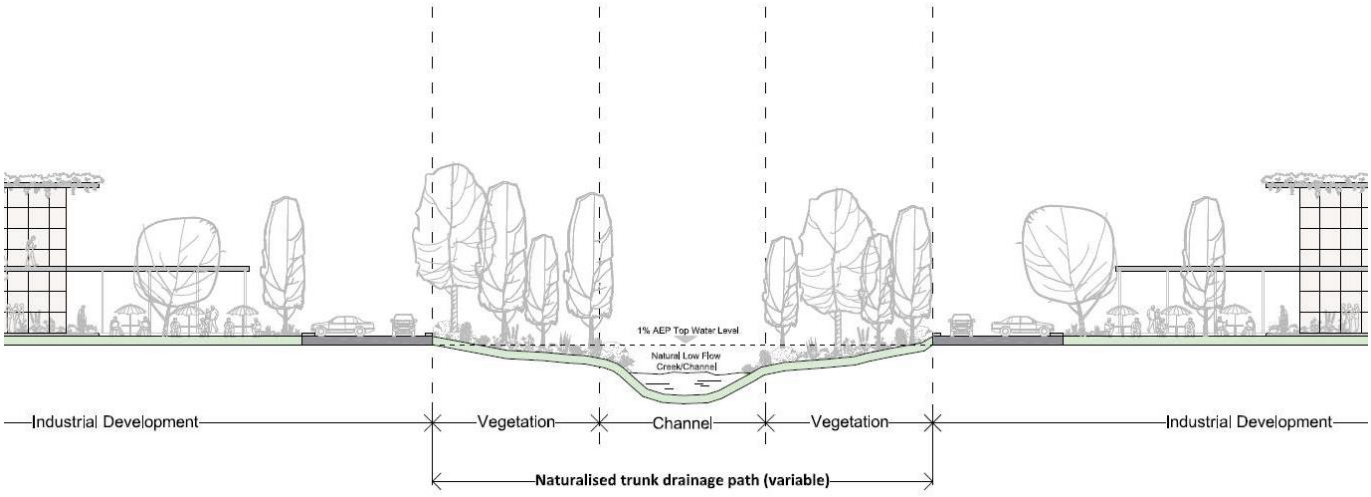

Figure 6 | Indicative cross-section of a naturalised trunk drainage path

2.6 Flooding

Objectives

a. To ensure development in the floodplain is consistent with the *NSW Flood Prone Land Policy* and principles in the NSW Government *Floodplain Development Manual*.
b. To ensure that development does not increase the flood function or flood behaviour or extents, taking into account projected changes as a result of climate change.
c. To ensure development does not alter flood behaviour resulting in adverse impacts to surrounding properties, land uses and infrastructure.
d. To ensure no cumulative impacts – to avoid adverse or cumulative impacts on flood behaviour and the receiving environment.
e. To minimise the flood risk to life and property associated with the use of land.

Controls

1. A Flood Risk and Impact assessment (FRIA) is to be undertaken for lots that are flood affected,(including within an overland flow path). **Figure 7** identifies indicative flood affectation on the site, however flood extent must be confirmed with Council. Flood behaviour, constraints and risk, understand off-site flood impacts on property and the community resulting from the development, and flood risk to the development and its users

is to be assessed. The assessment shall also demonstrate the development will not increase flood impacts, hazard or damage to other properties. The assessment shall address the requirements of Clause 2.41 of the Industry and Employment SEPP, including at a minimum (subject to advice from the consent authority):

- The impact of flooding on proposed development, including an estimation of the extent of flood prone land, high hazard areas and flood ways, the implications of the full range of floods and the safety of people using or within the site;
- Flood behaviour for existing and developed scenarios for the full range of flooding including the 5% Annual Exceedance Probability (AEP), 1% AEP, 0.5% AEP, 0.2% AEP and Probably Maximum Flood (PMF);
- The flood hazard in the area (including hydraulic hazard, flood warning time, rate of rise of floodwater and duration of floods) and access and evacuation issues; and
- Viable strategies to manage any adverse impact of proposed development on flood behaviour.

2. The FRIA shall adequately demonstrate to the satisfaction of the consent authority that:
    - Development will not increase flood hazard, flood levels or risk to other properties
    - Development has incorporated measures to manage risk to life from flooding;
    - For development located within the PMF, an Emergency Response Plan is in place;
    - Structures, building materials and stormwater controls are adequate to deal with 1% AEP plus 0.5m freeboard;
    - Development siting and layout maintains personal safety during the full range of floods and is compatible with the flood constraints and potential risk;
    - The impacts of climate change on flood behaviour have been considered;
    - Development considers Constructions of Buildings in Flood Hazard Areas and accompanying handbook developed by the Australian Building Codes Board (2012);
    - Fencing does not impede the flow of flood waters/overland flow paths;
    - Earthworks will not affect storage capacity or flood behaviour for the full range of flood events.
3. Development, including the filling of land, within the 1% AEP floodway will not be permitted due to its function as the main flow path for flood waters once the main channel has overflowed and the possibility of a significant threat to life and property occurring in a major flood.
4. The finished floor level of new development is to incorporate a minimum 0.5m freeboard above the designated flood level. The designated flood level is the 1% AEP.
5. Where the applicant proposes to construct flood-free access on the site by filling in excess of 0.2m compacted depth above the natural surface level, the survey plan must indicate the following details:
    - The location of the proposed access in relation to the boundaries of the land;
    - Contours of the existing natural surface to Australian Height Datum;
    - If a culvert is proposed to prevent a damming effect, the culvert size must be calculated and the calculations submitted for approval; and
    - The Registered Surveyor's name, qualifications and signature.
6. Flood prone land is to be determined by the relevant consent authority and the current flood study adopted by Council for the Ropes Creek Precinct.

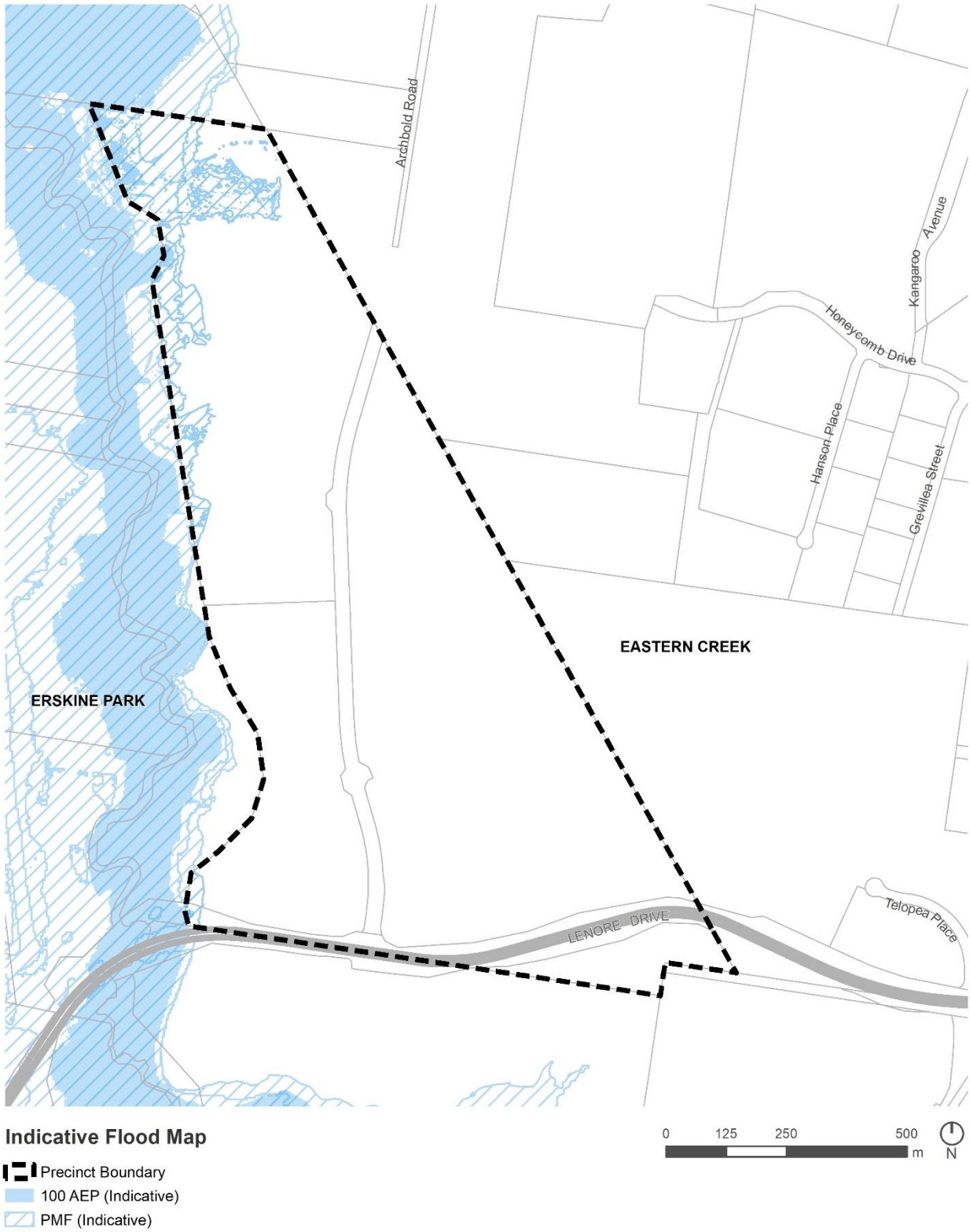

Figure 7 | Indicative flood mapping (Flood data source: INSW, 2021 and Draft Water Cycle Management Study, 2020) [2]

[2] Refer to control 2.6(6) regarding flood extent.

2.7 Aboriginal heritage

Twenty items of Aboriginal heritage significance are known to be located within the Precinct. The topography, general lack of disturbance, proximity to water and the presence of multiple sites in proximity, suggests additional Aboriginal objects or sites, both surface and subsurface, are likely to be present. Future development resulting in ground modification may have the potential to disturb Aboriginal cultural objects in the form of stone artefacts.

Objectives

a. To manage Aboriginal heritage values to ensure enduring conservation outcomes.
b. To ensure archaeologically or culturally significant areas are managed appropriately.

Controls

1. Any development application within land that contains a known Aboriginal cultural heritage site must consider and comply with the requirements of the National Parks and Wildlife Act 1974 (NPW Act) and related guidelines. An Aboriginal Cultural Heritage Assessment in accordance with Heritage NSW guidelines (e.g. *Code of Practice for Archaeological Investigation of Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*) shall be completed to inform future assessment and approval requirements for the activity (if any).
2. In order to ensure that a person undertaking any development or activities on land does not harm Aboriginal objects, development applications must identify any areas of Aboriginal heritage value that are within or adjoining the area of the proposed development, including any areas within the development site that are to be retained and protected (and identify the management protocols for these).
3. Ground disturbance proposed in areas where cultural material has not been identified and/or is considered of low potential to occur should be subject to a due diligence investigation consistent with best practice guidelines (e.g. *Due Diligence Code of Practise for the Protection of Aboriginal Objects in NSW*). The findings of the due diligence should guide future assessment and approval requirements for the activity (if any).
4. Developments or other activities that will impact on Aboriginal heritage may require consent under the NPW Act, such as an Aboriginal Heritage Impact Permit, from Heritage NSW and consultation with the relevant Aboriginal communities.
5. Where the necessary consents have already been obtained from Heritage NSW, the development application must demonstrate that the development will be undertaken in accordance with any requirements of that consent.

Note: Applicants should consult with Heritage NSW to determine requirements for assessment and approval where developments or other works are to be carried out on or near Aboriginal heritage sites. Council or Heritage NSW may require additional investigations to be undertaken as part of a development application to confirm the presence of Aboriginal cultural heritage on the land. Where works uncover items that may be of Aboriginal cultural heritage, the developer is to consult with Heritage NSW to determine an appropriate course of action.

2.8 Non-Aboriginal heritage

The Precinct has high potential for the survival of an archaeological resource relating to the occupation and development of the Chatsworth Estate homestead site (see **Figure 8**), which may have local significance for association with the Chatsworth nursery and the Shepherd family.

Objectives

a. To ensure any archaeological sites are protected in accordance with the NPW Act.
b. To conserve and record the significance of the former European Farm uses within the site.
c. To encourage the interpretation of the former Chatsworth Farm as part of development.

Controls

1. Areas of historic archaeological potential are shown in **Figure 8**. The Chatsworth Farm homestead is considered an area of archaeological sensitivity.
2. A heritage study shall be lodged with development applications for subdivision, buildings or works in the vicinity of the 'area of historical archaeological sensitivity' relating to Chatsworth Farm, as shown in **Figure 9**. The heritage study is to:
    - Research and map any archaeological remnants of Chatsworth Farm;
    - Identify opportunities for the retention of remains and future interpretation as part of new development;
    - Establish a heritage curtilage around the sensitive area (similar to that shown in **Figure 9**) that protects the archaeological resource from any impact or disturbance and conserves it in situ;
    - Include an Archaeological Management Plan to manage this resource.

Figure 8 | Sites of historic archaeological potential (Source: Eco Logical Australia, 2016)

3. No ground disturbance works may proceed in areas identified as having historical archaeological potential (see **Figure 8**) without first obtaining an Excavation Permit from Heritage NSW pursuant to Section 139 of the *Heritage Act 1977*. The application to Heritage NSW is to include a research design and excavation methodology.
4. Following the archaeological investigation, an excavation report would be prepared detailing the findings of the investigation, along with a catalogue and analysis of recovered artefacts. These items could then be removed according to regulations. No state heritage items would be removed from the site.
5. Applications for subdivision shall be accompanied by a heritage interpretation plan for the Precinct outlining historical and heritage values and interpretation strategies such as street and place naming.

Figure 9 | Chatsworth Farm area of historical archaeological sensitivity (dashed red line and potential curtilage) and location of homestead (blue) (Source: Eco Logical Australia, 2016)

2.9 Contaminated land

Objectives

a. To minimise the risks to human health and the environment from the development of actual or potentially contaminated land.
b. To ensure actual or potential site contamination and appropriate remediation measures are adequately addressed at the subdivision stages.

Controls

1. Prior to granting development consent, the consent authority must be satisfied that the site is suitable, or can be made suitable, for the proposed use having regard to land contamination.
2. All development applications shall be accompanied by a Stage 1 Preliminary Site Investigation prepared in accordance with *State Environmental Planning Policy No 55 – Remediation of Land* (SEPP 55) and the *Contaminated Land Management Act 1995* (CLM Act).

3. Where a site has known contamination, or a Stage 1 Preliminary Site Investigation identifies potential or actual site contamination, a Stage 2 Detailed Site Investigation must be prepared in accordance with SEPP 55 and the CLM Act. A Remediation Action Plan (RAP) will be required for contaminated land identified in the Stage 2 Detailed Site Investigation. Remediation works identified in the RAP will require development consent.
4. A Section A1 Site Audit Statement (SAS) or Section A2 SAS accompanied by an Environmental Management Plan (EMP) (issued by a NSW EPA Accredited Site Auditor) will be required where remediation works have been undertaken to confirm a site is suitable for the proposed use.

2.10 Electricity Transmission Line Easement

Objectives

a. To ensure development and land use does not adversely impact or prevent access to existing Electricity Transmission Lines.

Controls

1. Buildings and structures are not generally permitted within the transmission easement.
2. Approval for any works within the transmission easement is subject to approval by the relevant authority to this easement. Applicants should refer to *TransGrid's Easement Guidelines for Third Party Development (Guidelines)* when preparing development applications affecting land within the vicinity of transmission lines.

2.11 Utilities services

2.11.1 General

Objectives

a. To ensure adequate utilities services are available and/or planned to facilitate development.
b. To provide for the timely provision of new, extended and/or upgraded services.
c. To ensure the co-location of services.

Controls

1. All services placed within the verge must allow for co-location underneath the footpath. Trees will be planted within the verge (1m back of kerb and 1m from boundary) and all underground utilities are to be placed under footpaths or road carriageways.

2.11.2 Water

Objectives

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

Controls

1. Developers will be required to fund and construct trunk water mains, extend and/or amplify existing mains, and undertake all required reticulation works. Water mains will need to be

designed to service full development of the Precinct. Water reticulation mains, to be supplied by the developer, must be laid within the road reserve and the design of the public roads will need to take this into consideration.

2. The developer must complete a hydraulic assessment of the development, including firefighting capability. On-site water storage, and/or booster pumps may be required to supplement the reticulated water supply for firefighting purposes.
3. Development consents granted by Council for most forms of development will include a condition requiring the applicant to provide evidence that arrangements satisfactory to Sydney Water have been made by the applicant for water supply to the development.
4. This evidence consists of a Certificate under Section 73 of the *Sydney Water Act 1994*, stating that the applicant has paid a contribution towards water services or has made other suitable arrangements.

2.11.3 Sewerage

Objectives

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

Controls

1. At construction certificate stage, the applicant is to provide evidence that arrangements satisfactory to Sydney Water have been made for sewer connection to the development. This evidence consists of a Certificate under Section 73 of the *Sydney Water Act 1994*, stating that the applicant has paid a contribution towards the required services or has made other suitable arrangements.
2. Development is required to address the potential impact on downstream recipients of effluent, not only with respect to volume but effluent quality.
3. Commercial premises will be required to comply with Council's environmental health requirements and the 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.

2.11.4 Electrical

Objectives

a. Provision of safe and reliable electricity that meets the installation and operational requirements of the service provider as well as user demand.
b. To allow for the development of the Precinct, while protecting existing electrical infrastructure and facilitating future foreseeable upgrades.

Controls

1. Applicants for development are required to make satisfactory arrangements with an electricity provider for:
    - The provision of low voltage electricity to the site; and
    - The installation of streetlamp brackets and fittings.
2. Applicants will be required to obtain a certificate from the service provider outlining their notification of arrangements for servicing the site including the provision of street lighting.
3. Electricity infrastructure is to be placed underground in shared trenches.

2.11.5 Telecommunications

Objectives

a. Ensure the supply of a telecommunications network that meets supplier and user demand and is capable of accommodating foreseeable advances in information technology.

Controls

1. Development is required to meet the installation and operational requirements of the network providers. Telecommunication connections are to be carried out as per Blacktown Council telecommunication guidelines.
2. 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.

2.11.6 Gas

Objectives

a. To develop a gas system that conforms to the requirements of the service provider and Blacktown City Council.

Controls

1. All gas supply infrastructure is to be installed underground in shared trenches.

2.12 Proposed transport infrastructure

Objectives

a. To safeguard the proposed Archbold Road corridor.
b. To ensure compatible development adjoining the future Archbold Road.
c. To ensure safe, efficient and effective future transport infrastructure integrated with adjoining development to provide access to local, regional and interstate networks.

Controls

Note: This section applies to the proposed Archbold Road corridor identified on the Transport and Arterial Road Infrastructure Plan Map under Clause 2.25 of the Industry and Employment SEPP.

1. Proposed development on land on or in the vicinity of the proposed Archbold Road, as identified in the Transport and Arterial Road Infrastructure Plan Map in the Industry and Employment SEPP, must make provision for the upgrade and construction of this road.
2. Applicants should consult with TfNSW in preparing development applications for land on or in the vicinity of the Archbold Road corridor.

3 Precinct and subdivision design

3.1 Subdivision

Objectives

a. To ensure that allotments are of a shape and size that supports a range of land uses and employment opportunities.
b. To ensure that access to individual allotments is provided from secondary roads.
c. To provide an internal road network that supports the role of Archbold Road as a north-south link road between Ropes Creek Precinct and the Great Western Highway.
d. To provide suitable separation between environmentally sensitive areas and development.
e. To consider topography and the natural landscape in the design of subdivision and development, including views to and from Ropes Creek.

Controls

1. The minimum allotment size for the creation of Torrens Title lots is 1,500m^2. The minimum allotment width is 30m.
2. Subdivision design should avoid irregular shaped lots.
3. Subdivision design is to facilitate the precinct road network (see **Figure 4**), designed around Archbold Road and proposed intersection locations.
4. Battle-axe handles should have a minimum width of 8m. Where 2 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 10m.
5. The minimum site area of battle-axe allotments excludes the area of the access handle.
6. Where a residue lot is created through subdivision, the applicant must demonstrate that future development of that residue lot can meet the controls in this DCP.
7. Land zoned E2 Environmental Conservation must not be subdivided unless the consent authority is satisfied appropriate arrangements have been made for revegetation and rehabilitation of the land in accordance with a Vegetation Management Plan (VMP) (refer Section 2.3), including arrangements for ongoing monitoring and management. The E2 zoned land must remain attached to a lot with development potential and be rehabilitated and maintained in accordance with the VMP.
8. The design of subdivisions and building orientation should respond to landscape and topography, including Ropes Creek and higher land in the south-east portion of the Precinct. Development applications should have regard to the impact of bulk and scale and overshadowing on natural areas, neighbouring sites and views from public roads.

3.2 Transport network

3.2.1 Roads and traffic

Objectives

a. To ensure the street system establishes a logical hierarchy for the Precinct and its connections to the broader WSEA.
b. To ensure that the system of public streets and connections to adjoining sites is designed to balance the needs of pedestrians, cyclists, motorists and buses.
c. To ensure that road and pedestrian linkages with the surrounding areas provide access to employment opportunities for neighbouring residential areas.

Controls

1. The Precinct shall be developed generally in accordance with the Indicative Concept Plan (see **Figure 4**). Where substantial variation is sought, compliance will need to be demonstrated with the above objectives.
2. Road infrastructure and supporting works is to be constructed by the developer of the land considered for approval unless otherwise agreed by the road management authority.
3. Development must not have direct access and/or frontage to Archbold Road and Lenore Drive. All frontages and access to any development must be made via a secondary road.
4. The layout of local roads should provide direct access to land zoned RE1 Public Recreation (adjoining the Precinct) and E2 Environmental Conservation and consider the following:
    - Maximising connectivity to and from open space and riparian corridors;
    - Providing frontage to and surveillance of open space and riparian corridors;
    - Providing an edge road/s along the western boundary adjoining the Ropes Creek corridor.
5. The design of roads and pathways within the site should be consistent with Blacktown Council's *Engineering Guide for Development 2005*, unless variation in the road reserve responds to specific traffic modelling and requirements. The general requirements of Council's Guide are outlined in **Table 3-1**.
6. The design of roads should also consider the *Western Sydney Street Design Guidelines 2020* (Western Sydney Planning Partnership).
7. Vehicular ingress and egress to the site must be in a forward direction at all times.
8. Turning heads of cul-de-sacs in industrial areas should have a minimum radius of road reserve of 17m and a carriageway radius of 13.5m.
9. Intersections must be provided with splay corners at the road reserve boundary in accordance with Council standard policy (8m x 8m for industrial development) and kerb lines of 8.5m radius or as required by Council in certain circumstances to allow for the provision of roundabouts.
10. Council may require a Traffic Assessment to determine the trip generation and impacts from the proposed development during construction and/or operation.
11. Where appropriate, freight handling facilities are encouraged to be co-located to maximise synergies between industries with regard to materials handling.

Table 3-1 | Minimum road widths

Road Type	Carriageway (metres)	Verge (metres)	Total Road Reserve (metres)	Number of lanes
Collector	15.5	3.75	23	2 travel lanes and 2 parking lanes
Local industrial	13.5	3.5	20.5	2 travel lanes and 2 parking lanes

3.2.2 Pedestrians and cycling

Objectives

a. To encourage active transport within the Precinct.
b. To maximise connections between allotments, to and from open spaces, and regional cycle and pedestrian routes.
c. To ensure safety between pedestrians, cyclists and vehicles.

Controls

1. The design of buildings shall incorporate safe storage/parking areas for bicycles, with adequate shower and change facilities provided for staff (where appropriate).
2. Streets are to incorporate a footpath of a minimum 1.5m on one side of the street and a shared pedestrian and cycle path of a minimum 2.5m on the opposing side of the street.
3. A pedestrian cycle route is proposed within the Ropes Creek corridor, west of the Precinct. The design of the pedestrian and cycle network within the Precinct, including any boundary edge road, is to be integrated with this and other regional active transport connections, and links to key catchments and employment hubs across WSEA.
4. An off-road shared pedestrian and cycle route is planned along Archbold Road of a minimum 3.0m width. The internal shared path network is to be integrated with this route.

3.2.3 Public transport

Objectives

a. To encourage the use of public transport by providing clear and safe pedestrian links to public transport stops.
b. To provide comfortable and safe waiting areas at public transport stops.

Controls

1. Bus stops shall be provided. The location of bus stops will be determined by bus operators and TfNSW in consultation with Council. Bus stop locations should be close to key intersections along Archbold Road.
2. Bus stops should be designed to provide suitable shelter and seating, with bins placed in less visible locations.

4 General requirements for industrial development

4.1 Built form design

4.1.1 Building height

Objectives

a. To encourage building forms that respond to the topography of the Precinct and the relative position of allotments to other allotments and the street.
b. To retain views to and from key public spaces, low-lying rural landscapes, native vegetation and riparian lands.
c. To minimise the impact of buildings upon the surrounding public realm, including areas of environmental significance, landscape value and residential uses.

Controls

1. Building height should respond to the natural landscape and scale of adjoining development, with lower elements towards the street, pedestrian paths, environmental and open space areas, riparian corridors and high points.
2. Taller building elements over 15m should be recessed from the street frontage.
3. Where building heights exceed the 20m from existing ground level (e.g. high bay warehouses), the proponent must demonstrate that the taller element will not create unacceptable solar, wind and visual impacts to surrounding sensitive uses or impact on the environmental and open space lands or the public domain.
4. The height and siting of buildings is to consider views to and from the Precinct to highly visible locations, including Ropes Creek, Lenore Drive and the M4 Motorway.
5. Building height must ensure direct solar access to the public domain, including street trees and footpaths, open space and environmental areas, between the hours of 11:00am and 2:00pm at the winter solstice, 21 June. Shadow diagrams must demonstrate this outcome.

4.1.2 Building siting and setbacks

Objectives

a. To achieve the appropriate minimum building line setbacks and a consistent streetscape.
b. To encourage a high-quality landscape treatment within setbacks to public roads.
c. To ensure suitable building separation between allotments.
d. To protect the electricity transmission easement from inappropriate development.

Controls

1. Buildings and structures are to have the following minimum setbacks:
    - 20m to Lenore Drive;

- 10m to Archbold Road;
- 7.5m fronting any other local road;
- 5m setback from the edge of the E2 Environmental Conservation and RE1 Public Recreation land, unless separated by a road; and
- 3m for all other boundary setbacks, including secondary setback from a local road.

2. Front setbacks may incorporate an off-street parking area if it can be demonstrated that the car parking is located behind at least a 4m wide landscaped area.
3. Buildings should be designed so that they provide a well-defined street address and entrance to the primary frontage. Lots which address more than one road should ensure that high quality landscaped treatment is also accommodated within the setback to secondary frontages.
4. No storage of any kind (including water tanks and temporary structures) is to occur within the front setback area. Any proposed storage areas are to be effectively screened and sealed. Full details of storage areas and ancillary buildings are to be included in the DA, including the size and location of the storage area, to be shown on plans and elevations drawings.
5. Buildings and structures are not permitted within the 200m wide transmission easement located along the eastern edge of the site. Any permissible development within the easement must seek permission from the relevant authority prior to the commencement of works.

4.1.3 Landscaping

Objectives

a. To contribute to the *Greater Sydney Regional Plan – A Metropolis of Three Cities* tree canopy cover target of 40%.
b. To contribute to a high-quality landscape character and built form for the site.
c. To reduce the impacts of the urban heat island effect and contribute to comfortable microclimate conditions using both hard and soft landscaping treatments.
d. To encourage retention of existing landscape elements and native vegetation, and the use of native species of flora and low maintenance landscaping.
e. To contribute towards urban habitat for native fauna species.

Controls

1. A Landscape Plan is to be submitted with development applications, outlining the following:
    - North point;
    - Scale;
    - Main structures on the site (buildings, carparks, driveways, walls, fences, paving, storage areas, etc.);
    - Existing trees to be removed or retained;
    - Proposed planting areas;
    - Proposed turfed areas;
    - Drainage areas and irrigation;
    - Contours and/or spot levels (existing and proposed);
    - Details of paving, fencing, wall and edge treatments;
    - Details of seating and other outdoor furniture including bins, bollards and signs.
    - Lighting;

- Planting schedule including botanical and common names;
- Water sensitive urban design features; and
- Sections and/or elevations where necessary to show special features or alterations in levels.

2. Development proposals must demonstrate a 10% tree canopy on development lot (excluding public roads and any non-industrial land). This includes preserving existing trees (particularly native trees), where possible, and adding to the existing canopy to provide green infrastructure and amenity.
3. Tree canopy cover shall be provided in areas of higher pedestrian activity and outdoor breakout spaces for employees.
4. Preservation of trees and vegetation is to satisfy Clause 2.31 of the Industry and Employment SEPP.
5. Landscape design is to consider Blacktown City Council's *'Eyes on Blacktown' SP2 Landscape Design Principles 2019* and the WSUD controls in Section **Error! Reference source not found.**.
6. The selection of proposed trees and other landscaping plants is to consider the use of local native vegetation species that are low maintenance and drought tolerant.
7. Setbacks shall include suitable tree planting along the northern and western elevations of buildings to provide shadow and cool the building.
8. Landscaping in the vicinity of a driveway entrance should not obstruct visibility, to ensure safe ingress and egress of vehicles and pedestrians.
9. All landscape areas are to be suitable maintained in accordance with Council requirements bonds and maintenance.
10. Car parking areas are to be landscaped to provide shading for parked cars and reduce the heat island effect of hard surfaces. Trees are to be planted at a minimum rate of one tree every 8m and be a minimum height of 2m at the time of planting. Trees should be planted to achieve 70% shading of the carpark at ten-year maturity.
11. All landscaped areas are to be separated from vehicular areas by means of a kerb, dwarf wall or other effective physical barrier, however full fencing of landscaped areas is not encouraged.
12. Undeveloped areas are to be stabilised to prevent soil erosion. Landscaping may be required around the perimeter of undeveloped areas.
13. The setback of sites with a boundary to Archbold Road and Lenore Drive are to provide high quality trees, plantings and hedging. Trees are to have a minimum height of 2m at the time of planting.
14. Street tree planting is to:
    - Target a minimum container pot of 75L;
    - Provide continuous canopy along road corridors, including appropriate spacing;
    - Be setback a minimum 600mm from the back of kerb to tree centreline;
    - Take account of sight line requirements near intersections;
    - Be maintained for a period of no less than 2 years.
15. Trees are to be provided within a minimum 3m planting of deep soil area to enable trees to growth to maturity and not damage infrastructure.
16. Earth mounding (where on-site detention of drainage is not required) may be used within the setback area. Embankments should not be steeper than 1:4 gradient to enable vegetation to be grown and maintained.
17. All irrigation systems shall be automatic and designed to meet specific site requirements. Minimisation of water consumption should also be a consideration in the design of irrigation systems.

18. Planting in the riparian zone is to be consistent with the VMP (refer Section 2.4).
19. All landscaping is to be completed to the satisfaction of the Consent Authority prior to occupation of the development. Details of the works, including proposed plant species, are to be provided in the landscaping plans submitted with the DA.

4.1.4 Building design

Objectives

a. To ensure that development presents an acceptable bulk and scale as viewed from adjacent sites and the public domain.
b. To encourage innovation and a high standard of architectural design, utilising quality materials and finishes.
c. To minimise the impact of buildings upon the surrounding public realm, including areas of environmental significance and landscape value.
d. To ensure ecologically sustainable development principles are incorporated into the design.

Controls

1. Development adjoining Archbold Road is to include articulated building facades facing Archbold Road and suitable dense landscaping to screen development.
2. Consideration should be given to optimising building orientation and siting to natural elements such as topography, wind and sunlight, to maximise energy efficiency.
3. Applications should demonstrate that the development will not adversely affect the visual quality and amenity of the area, including the adjoining Ropes Creek.
4. Articulation of building facades is encouraged using elements such as:
    - Recessed patterns and varying wall alignments;
    - Decorative features, textures and colours; and
    - Locating offices and highlighting entries within front facades to reduce the apparent bulk and scale of the structure.

External building materials and colours

5. Development applications are to be accompanied by a materials sample board detailing external colours and finishes.
6. The extensive use of one material or colour scheme across the façade of a building adjacent to a public road will not be permitted unless suitable articulation (such as the inclusion of major doorways and windows) is used to break up the building bulk and improve the visual appearance of the building.
7. External finishes should be constructed of durable, high-quality and low maintenance materials.
8. Building materials should be selected such that reflection is minimised and will not adversely affect adjacent development, vehicular traffic and public domain areas.
9. The following should be considered in the choice of building materials in all developments:
    - energy efficiency;
    - use of renewable resources;
    - low maintenance;
    - recycled or recyclable;
    - non-polluting; and
    - minimal PVC content

10. Developments with a construction cost of $1 million or more are to demonstrate a commitment to achieving no less than 4 stars under Green Star or 4.5 stars under the Australian Building Greenhouse Rating system (now part of the National Australian Built Environment Rating System (NABERS)).

Ecologically sustainable design

11. All development must have regard to minimising greenhouse gas emissions and the consumption of potable water.
12. Development should incorporate WSUD principles in accordance with Section **Error! Reference source not found.**.
13. Development shall incorporate water efficient fixtures such as taps, showerheads, and toilets. The fixtures must be rated to at least AAA under the National Water Conservation Rating and Labelling Scheme. Where the building or development is water intensive (i.e. high water user), specific water conservation objectives must be resolved with Council.
14. Development should incorporate energy efficient hot water systems, air-conditioning, lighting and lighting control systems.

4.1.5 Storage, transportation, handling, and processing of chemical substances

Objectives

a. To ensure the use, storage, handling or transportation of chemical substance/s does not have a detrimental impact on the environmental quality of the surrounding area.

Controls

1. Development involving the storage, transportation and processing of chemical substances shall have regard to the requirements of *State Environmental Planning Policy No. 33 - Hazardous and Offensive Development*.
2. A Chemical Use and Storage Report is to accompany development applications involving the storage, transportation and/or processing of chemical substances, except where:
    - The chemicals are of household or hospital grade and used for routine cleaning;
    - The total quantity of chemicals used or stored does not exceed 100 litres;
    - The chemicals are not of sufficient acidity, alkalinity or strength to cause significant harm on skin contact, or to the environment.
3. Development applications shall outline methods for the storage and handling of chemical substances and measures to manage potential spills, such as bunding developed in accordance with the EPA's Bunding and Spill Management Guidelines.

4.1.6 Signage

Objectives

a. To encourage the use of signage to contribute to way finding, safety, the identity of businesses, and to reinforce the character of the precinct.
b. To ensure signage provides an appropriate amenity and function in both the day and night.
c. To ensure that signage does not detract from the visual quality of buildings.

Controls

1. Advertising signage should be kept to a minimum, should relate only to the use occurring on the respective property and should identify the relevant business name.
2. A signage plan is to be submitted with the development application detailing the dimensions and area, location, construction materials, colour, wording, logos, symbols, illumination, light spill diagram and hours of illumination.
3. Street signage should be limited as far as practicable (e.g. replace cycling signs with a painted sign on paths and replace no stopping sign with a yellow line on the road).

4.1.7 Entrance treatment

Objectives

a. To provide an active frontage and surveillance to the street.
b. To ensure that an identifiable entrance point is provided to each site.
c. To ensure that safe pedestrian access is provided from the street and/or parking areas to the main entry building.

Controls

1. Buildings entrances should be clearly visible to pedestrians and motorists and be integrated into the overall design of the development. This should be achieved through appropriate signage, orientation of the entry, lighting, and hard and soft landscape treatments.
2. Pedestrian access is to be provided from the street and/or parking areas to the main entry, which complies with the requirements of the Building Code of Australia and the *Disability Discrimination Act 1992*.

4.1.8 Safety and security

Objectives

a. To ensure personal safety for workers and visitors.
b. To ensure the siting and design of buildings and spaces minimises opportunities for crime and maximises opportunities for passive surveillance.

Controls

1. Development that presents a potential crime risk will require a Crime Risk Assessment Report (Safer by Design Evaluation) to be submitted with the development application. The report should address the 4 Crime Prevention Through Environmental Design Principles of surveillance, access control, territorial reinforcement and space management. The guideline for *Safer by Design - A Practical Guide to Crime Prevention Through Environmental Design* prepared by NSW Police should be referenced in undertaking the assessment.
2. All development should provide casual surveillance to the street and public domain areas as a means of passive security.
3. Provide separate pathways for pedestrians, vehicles, and cyclists where relevant to maximise safe access within the Precinct.
4. Appropriate lighting should be provided to all cycle and pedestrian paths, bus stops, carparks and buildings.
5. Use of CCTV should be used where appropriate to maximise security of individual sites.

6. Landscape treatment should not create opportunities for concealment or unreasonably reduced site lines.

4.1.9 Fencing

Objectives

a. To provide security where appropriate, clearly delineating the public and private domain.

Controls

1. Development fronting Lenore Drive and Archbold Road is to provide open style fencing, which does not obstruct the view of landscaping from the street or reduce visibility for access and egress. Fencing shall be a minimum height of 1.2m and a maximum of 2.1m and constructed so as to prevent vehicular and pedestrian access to or from those roads.

4.2 Amenity

4.2.1 Noise and vibration

Objectives

a. To minimise the impact of noise and vibration and minimise adverse impacts on surrounding land uses.
b. To ensure that development is designed to protect occupants from noise and vibration from the proposed development and surrounding uses.
c. To ensure that development is designed in a manner that minimises the impact of noise and vibration.

Controls

1. Any machinery or activity considered to produce noise emissions from a premise shall be adequately sound proofed so that noise emissions are in accordance with the provisions of the *Protection of the Environment Operations Act 1997*.
2. Noise should be assessed in accordance with *Noise Policy for Industry* (EPA, 2017) and *NSW Road Noise Policy* (Department of Environment, Climate Change and Water, 2011).
3. A noise assessment or acoustic report is to be submitted where:
    - new development is proposed that will create noise and or vibration impacts either during construction or operation that impacts on adjoining developments;
    - a new noise-sensitive development is proposed in an area where existing noise sources are present or identified within the Indicative Concept Plan including development adjacent to arterial roads, sub-arterial roads and collector roads; and
    - a new development that will generate traffic that may create noise and or vibration impacts on adjoining developments.
4. The amenity goals for individual industrial developments should be set to 10dB(A) below the Acceptable Noise Amenity levels so as to ensure cumulative impacts meet the 'acceptable' noise levels in Table 2.1 of the *Noise Policy for Industry*. Consideration however may be given to alternative amenity noise goals with provision of a detailed acoustic report (e.g. the number of industrial developments with the potential to impact upon nearby receiver locations may be considered for specific cases).

5. In general, noise generated by a development should not exceed the existing background sound pressure level by more than 5dB(A). A statement of compliance with this standard from an experienced acoustical consultant may be required to be submitted with the development application.
6. Development shall comply with the relevant Australian Standards for noise and vibration.

4.2.2 Air quality

Objectives

a. To ensure that the construction and operation of the development does not cause adverse environmental impacts from air pollutants and odour.

Controls

1. Pollution and odour management practices are to be in accordance with the requirements of the *Protection of the Environment Operations Act 1997*.
2. For development that will generate air pollution and odour an air quality assessment is to be undertaken, including recommendations for buffers and mitigation measures. This information is to be provided in development applications.

4.3 Earthworks

4.3.1 Topography and geotechnical conditions

Objectives

a. To encourage design that responds to the natural topography of the site to minimise ground disturbance, movement or land slip.
b. To ensure that any substantial modification to sloping areas is managed appropriately to reduce the impact of erosion and soil stability.
c. To ensure that landfilling associated with the existing dam does not adversely affect the soil stability for future development in that location.

Controls

1. For ground modification works, a geotechnical assessment is to be prepared by a suitably qualified consultant to identify that an acceptable level of risk is achieved with respect to the likelihood of movement, landslip or other geotechnical hazard adversely affecting or being caused by the proposed subdivision or development.
2. Council will impose conditions of development consent regarding type of fill and compaction of soil for alterations to dams. Development applications on land where an existing dam is present will require the submission of a geotechnical assessment to establish the suitability of land for the proposed development, as well as back filling of the dams and remediation where required.

4.3.2 Cut and fill

Objectives

a. To ensure that any cut or fill does not adversely affect local stormwater drainage or change floodplain characteristics.

b. To ensure that cut or fill does not contaminate land by utilising clean material where landfilling is required.
c. To ensure that soils are suitably treated to minimise soil erosion and weed infestation.
d. To ensure that the development provides for the installation of sedimentation controls to minimise the potential for water pollution.
e. To ensure that the alteration of ground levels does not cause a negative visual impact from more sensitive vistas.

Controls

1. Subdivision and building design should minimise the amount of cut and fill.
2. No cut, fill or batters are permitted within 10m of the edge of land zoned:
    - E2 Environmental Conservation; or
    - RE1 Public Recreation.
3. Retaining walls are to be avoided and replaced with batters at a max 1:3 grade, where possible. 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 (refer **Error! Reference source not found.**).
4. Notwithstanding control (3), 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.
5. 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 (refer Figure 11).
6. Notwithstanding control (5), Council may consider embankment batters steeper than 1 meter in height where geotechnical investigations demonstrate soil and rock geology are suitable.
7. A development application that includes cut and fill on a site adjoining an environmental conservation area, open space area, or trunk drainage area is to address the potential environmental impacts of the proposed works on those areas.
8. A Traffic Report, detailing the transportation of landfill, may be required, dependent on the volume of landfill required to be transported to a site.
9. A contamination assessment may be required to identify the source of the landfill, prepared in accordance with Section 2.9 by a NSW EPA Accredited Site Auditor.
10. In general, landfilling on a floodplain is not supported (refer Section **Error! Reference source not found.**). However, Floodplain Landfill Applications will be treated on their merits based on the following:
    - No net loss of flood storage and/or conveyance within the floodway extents;
    - No net loss of flood storage within the 1% annual exceedance probability (AEP) critical duration flood. This requirement must address the cumulative impacts on flood levels from similar development on other areas of the floodplain;
    - The alteration of local drainage or overland flow contours and/or natural watercourses must not adversely affect adjacent property.
11. Council may require the undertaking of detailed hydrologic / hydraulic modelling and survey contour plans by a chartered professional Civil Engineer or equivalent which addresses cumulative impacts.

12. If the existing dam is proposed to be decommissioned and filled, the consent authority will impose conditions of development consent regarding type of fill and compaction of soil.

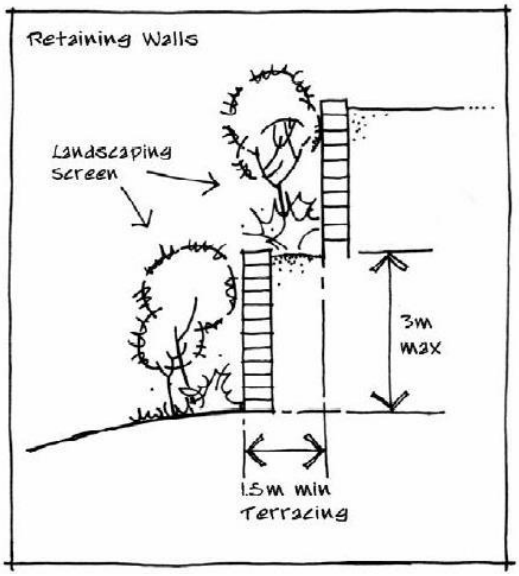

Figure 10 | Retaining wall

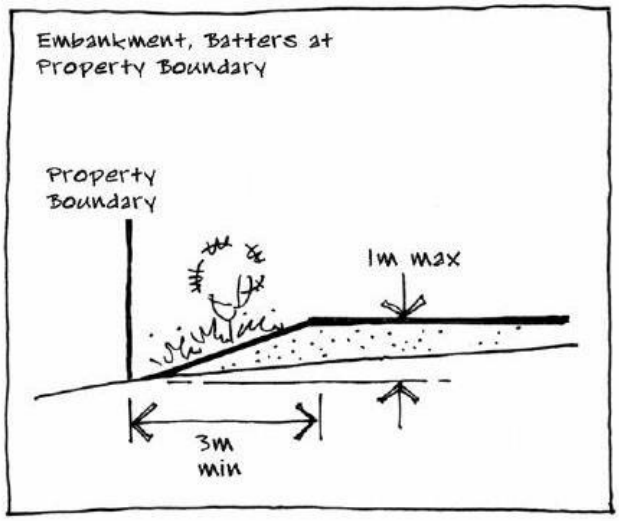

Figure 11 | Embankment batter

4.3.3 Erosion and sediment control

Objectives

a. To minimise site disturbance during the construction and operation of developments and land uses.
b. To reduce the amount of erosion and/or sedimentation of land within the Blacktown LGA and Western Sydney Employment Area.
c. To maximise the amount of vegetation retained on development sites and ensure its protection during construction and operation of the development.
d. To protect the health of Wianamatta-South Creek and its tributaries such as Ropes Creek from construction and building runoff and meet the water quality objectives.

Controls

1. All development applications must be accompanied by an Erosion and Sediment Control Plan (ESCP).
2. Development is to comply with the construction phase stormwater flow targets outlined in Section 2.5.
3. Soil erosion and sediment control measures are to be provided on-site before the commencement of any earthworks or development activity, in accordance with the approved ESCP. These must be maintained throughout the course of construction until disturbed areas have been revegetated and the soil stabilised. The applicant will be required to provide certification to this effect, which is to be lodged with Council prior to construction.
4. All erosion and sediment control measures are to be installed to the satisfaction of Council or the proposed Certifier, in accordance with best management practices recommended by recognised authorities (including *Managing Urban Stormwater – Soils and Construction and Best Practice Erosion and Sediment Control, IECA*).
5. The work supervisor is responsible for ensuring that all erosion and sediment control measures are implemented in accordance with conditions of approval and are maintained until a final inspection has indicated that the site is sufficiently rehabilitated and stabilised.

6. The decision to install a particular mechanism to prevent erosion and/or sedimentation depends on the location and type of activity proposed and may vary from site to site.
7. Council may require erosion and sediment control works to be carried out in addition to, or in variation from, the approved ESCP, should circumstances necessitate it. Any variations are to be approved by Council and implemented in accordance with this section and current best practice guidelines, where relevant.
8. All erosion and sediment control measures should be maintained for the duration of the specified maintenance period. An established, stabilised ground cover must be in place and approval should be obtained from the Certifying Authority before removing erosion and sediment control measures.

4.4 Waste minimisation and management

Objectives

a. To ensure waste is appropriately stored and disposed of.
b. To facilitate sustainable waste management in accordance with the principles of Ecologically Sustainable Development.
c. To assist in achieving Federal and State Government waste minimisation targets as set out in the *Waste Avoidance and Resource Recovery Act 2001* and *NSW Waste Avoidance and Resource Recovery Strategy 2007*.

Controls

1. Incinerators are not permitted for waste disposal.
2. Development Applications are to include a Waste Management Plan by an appropriate specialist. The Waste Management Plan is to outline the waste likely to be generated by the development and methods of managing the generation, storage and disposal of wastes in an integrated way during construction and operation, and address the following matters:
    - The types and volumes of waste and recyclables generated;
    - Details of on-site storage and/or treatment of waste;
    - Disposal of waste generated which cannot be re-used or recycled;
    - Ongoing management of waste during the operational phase of the development.
3. Adequate storage for waste materials must be provided on-site and any such waste must be removed at regular intervals and not less frequently than once per week. Proposed arrangements for the removal of waste must be detailed in the Waste Management Plan.
4. Sydney Water may require applicants to enter into a Trade Waste Agreement for the collection and removal of trade waste in relation to a proposed development.

4.5 Access and parking

4.5.1 Parking

Objectives

a. To provide parking areas that are convenient and sufficient for the use of employees and visitors generated by new developments.
b. To ensure that vehicular access and circulation is safe and efficient and minimises potential vehicular and pedestrian conflict.

Controls

1. Parking is to be provided for specific types of development in accordance with the standards shown in **Table 4-1** Parking is to be provided off-street and is to be readily identifiable and accessible from public roads.
2. For activities not specifically identified in **Table 4-1**, car parking requirements will be determined on the merits of the application.
3. Car parking areas should be in accordance with setback controls outlined in Sections 4.1.2 and 4.1.3.
4. All parking areas must provide for disabled parking in accordance with the provisions of the Building Code of Australia and relevant Australian Standards.
5. The use of stack parking is not permitted.

Table 4-1 | Minimum parking rates

Activity	Parking Requirement
Freight Transport Facilities	1 per transport vehicle present at peak vehicle accumulation plus 1 per 2 employees, or to be determined by a car parking survey of a comparable facility
Industries	1 space per 200m^2 of gross floor area or 1 space per 2 employees, whichever is the greater
Vehicle Body Repair Workshops/ Vehicle Repair Stations	3 spaces per 100m^2 of gross floor area or 6 per work bay, whichever is the greater
Warehouses or distribution centres	1 space per 300m^2 of gross floor area or 1 space per 4 employees, whichever is the greater.
Ancillary office space	1 space per 40m^2 of gross floor area
Neighbourhood shops	1 space per 40m^2 of gross leasable area
Other Uses	In accordance with RMS/TfNSW Guidelines or if there are no parking guidelines for a specific use, then a site-specific car parking analysis will be required. This may require the applicant to submit a car parking report from a suitably qualified traffic consultant.
Accessible Parking	Accessible car spaces should be in accordance with the *Access to Premises Standards*, *Building Code of Australia* and AS2890.
Bicycle Parking	1 space per 600m^2 of gross floor area of office and retail space (over 1200m^2 gross floor area) 1 space per 1000m^2 of gross floor area of industrial activities (over 2000m^2 gross floor area)

4.5.2 Parking area design and access

4.5.2.1 Objectives

a. To ensure that vehicles can enter and exit premises in a safe and efficient manner.
b. To minimise the impact of vehicle access points on the quality of the public domain and pedestrian safety.
c. To provide off-street manoeuvring, loading and docking facilities that are adequate for the operational needs of the activity and use.

4.5.2.2 Controls

1. Development applications are to include plans and details of proposed vehicular access and circulation for Council's approval. Details must specifically relate to vehicular movement, layout and turning circles.
2. The development is to comply with the requirements of Austroad's *Guide to Traffic Management*.
3. No direct vehicular access is to be provided from Lenore Drive or Archbold Road.
4. Parking areas should be designed to minimise the potential for vehicular / pedestrian conflict. Pedestrian pathway connections between car parking areas and buildings are desirable.
5. Ingress and egress to or from the site should be located where they will cause the least interference with vehicular and pedestrian movement on public roads. Road access to parking areas will not be permitted in close proximity to traffic signals, intersections or where sight distance is considered inadequate by Council. The number of access points to be provided from any site to any one street frontage should be limited to one ingress and one egress. A separate entrance and exit should be provided where more than 50 spaces are proposed or where the development generates a high turnover of traffic.
6. The potential for on-street queuing should be eliminated by the provision of sufficient standing area for vehicles entering the carpark and loading areas.
7. All developments must be designed and operated so that a standard single unit truck (as defined by Austroads Design Vehicles and Turning Path Templates (Austroads 2013)) may complete a 3-point or semi-circular turn on the site without interfering with parked vehicles, buildings, landscaping or outdoor storage and work areas. Large-scale developments shall be designed to accommodate semi-trailers. In general, turning circles will be required to be provided to accommodate the largest type of truck which could reasonably be expected to service the site.
8. All internal two-way roadways are to have a minimum width of 7m. Lesser widths may be considered for one-way aisles. All internal roadways, circulation and parking areas are to be sealed with a hard-standing, all-weather material. Direction arrows are to be shown on all internal roadways in order to facilitate the satisfactory movement of vehicles.
9. Service vehicle areas should be provided off-street with convenient access. In larger developments, service areas should operate independently of other parking areas. This includes access for loading, unloading, inspections and cleaning of vehicles.
10. Bay and aisle dimensions should be consistent the relevant requirements of Australian Standards, AS/NZ 2890.1:2004 and AS/NZ 2890.6:2009.
11. Driveway crossover accesses by heavy vehicles should be a minimum of 9m wide, when measured at the kerb alignment.
12. All parking areas and access roadways must be provided with a drainage system which includes surface inlet pits. Details of pipe sizes (with capacity calculations) and drainage layouts (including discharge points) must be submitted with the development application.

Appendix A
Waterway Health Objectives

Waterway Health Objectives

The waterway health objectives are derived from applying the *Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions.* This framework provides a structured approach that decision-makers, such as councils and environmental regulators, can use to help manage the impact of land-use activities on the health of waterways in New South Wales.

The waterway health objectives consist of ambient water quality and stream flows requirements of health waterways, riparian corridors and other water – dependent ecosystems in the Wianamatta – South Creek catchment. The water quality objectives are the same as those adopted by Local Government in the catchment. The waterway objectives have been prepared by the NSW Government to ensure that urban developments are achieving the NSW Government policy on water quality and waterway health.

This DCP includes specific stormwater management targets that achieve the waterway health objectives, and provides for appropriate management responses that can be implemented through the integrated water cycle management strategy at the regional, estate and on lot spatial scales.

The NSW Government has prepared technical guidance on calibrated MUSIC modelling parameters that should be used to demonstrate compliance with the targets.

Table A-0-1 Flow-related objectives for waterways and water dependent ecosystems

	1st or 2nd order streams	3rd order streams or greater
Daily Flows (L/Ha)		
Median Daily Flow Volume (L/ha)	71.8 ± 22.0	1095.0 ± 157.3
Mean Daily Flow Volume (L/ha)	2351.1 ± 604.6	5542.2 ± 320.9
High Spells (L/Ha)		
≥ 90th Percentile Daily Flow Volume	2048.4 ± 739.2	10091.7 ± 769.7
Freshwater Flows (L/Ha)		
≥ 75th and ≤ 90th Percentile Daily Flow Volume	327.1 to 2048.4	2642.9 to 10091.7
Cease to Flow		
Proportion of Time per Year	0.34 ± 0.05	0.03 ± 0.01
Duration (days per year)	39.2 ± 8	3.9 ± 1.2

Table A-2 Ambient water quality objectives for waterways and waterbodies

Pollutant	Value
*Total Nitrogen (TN)	1.72 mg/L
Dissolved Inorganic Nitrogen (DIN)	0.74 mg/L
Ammonium (NH_3-N)	0.08 mg/L
Oxidised Nitrogen (NOx)	0.66 mg/L
Total Phosphorus (TP)	0.14 mg/L
Dissolved Inorganic Phosphorus (DIP)	0.04 mg/L
Turbidity	50 NTU
Total Suspended Solids (TSS)	37 mg/L
Conductivity	1,103 µS/cm
pH	6.20 - 7.60
Dissolved Oxygen (DO)	43 - 75 %SAT
Dissolved Oxygen (DO)	8 mg/L