WESTERN SYDNEY EMPLOYMENT AREA

Mamre Road Precinct

Development Control Plan 2021

November 2021

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Title: Mamre Road Precinct

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1. Introduction and Administration

1.1 Name of this DCP

This plan is the Mamre Road Precinct Development Control Plan (DCP) 2021. This DCP has been prepared in accordance with Part 3, Division 3.6 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2000* (Regulation).

1.2 Adoption and Commencement

1.2.1 Commencement of the DCP

This DCP was adopted by the Group Deputy Secretary, Planning Delivery and Local Government (under delegation from the Secretary) of the Department of Planning, Industry and Environment (DPIE) on 17 November 2021 and came into force on 19 November 2021.

1.2.2 Amendments to this DCP

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

Table 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
2021				

1.2.3 Savings and Transitional Provisions or Arrangements

Nil.

1.2.4 Review of the Plan

The DPIE will review this DCP as required to assess whether the DCP is fit for purpose, given any changes to the related State Environmental Planning Policy (SEPP) and changes in population, jobs, infrastructure, strategic direction and other key indicators.

1.3 Where this DCP Applies

1.3.1 Land Application

This DCP applies to land within the Mamre Road Precinct as identified by *State Environmental Planning Policy (Western Sydney Employment Area) 2009*. This area is shown on the Land Application Map (Figure 1).

1.3.2 EPIs or Deemed EPIs that Apply to the Land to Which this DCP Applies

Nil.

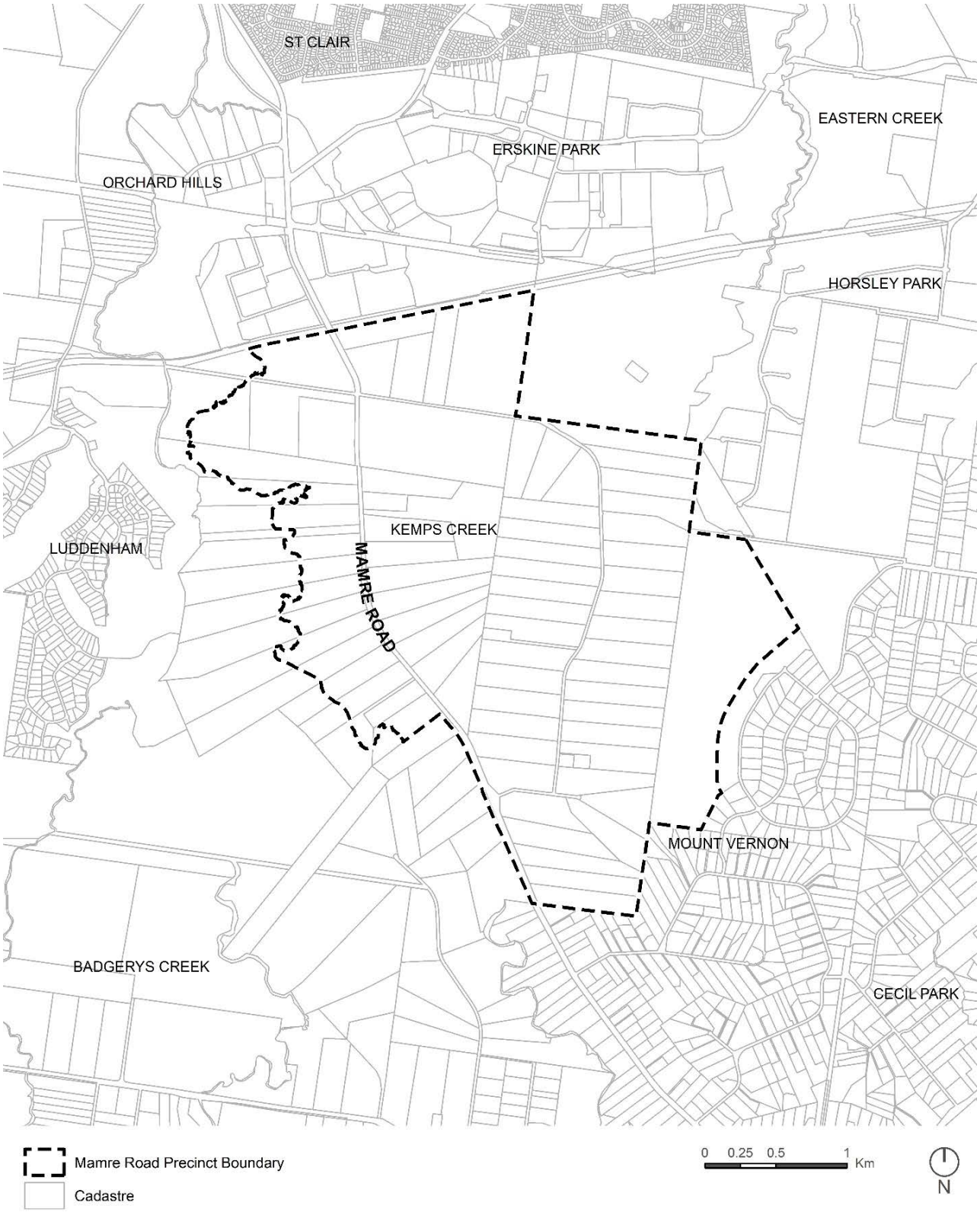

Figure 1. Land Application Map

1.4 Consent Authority

Penrith City Council is the consent authority for all development in the area to which this DCP applies, unless otherwise provided for under 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 DCP

1.5.1 Structure of the DCP

The DCP is structured into five chapters, plus appendices, as outlined in Table 2.

Table 2. Structure of this DCP

Chapter	Description
Chapter 1 Introduction and Administration	Provides 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	Provides development controls for precinct scale matters that apply to all development, including consistency with the Structure Plan, biodiversity conservation, water cycle management, heritage, bushfire and contamination, as well as aviation safeguarding and the protection of transport investigation areas.
Chapter 3 Precinct and subdivision design	Provides development controls for all development, including provisions to guide the subdivision of land, consolidation of land and boundary adjustments for industrial purposes, and the transport and traffic network for the precinct. This section applies to all development.
Chapter 4 General Requirements for industrial development	Sets out controls for all development such as requirements for site analysis in the design phase, consideration of character and design, amenity, earthworks and retaining walls, waste minimisation and management, and transport, access and parking.
Chapter 5 Other Developments	Provides additional controls for employment service hubs identified in the precinct.
Appendices	Provides two appendices: a dictionary defining key terms and lodgement requirements for development applications.

1.5.2 Variations to DCP Controls

In special circumstances, consent may be granted to a proposal that does not comply with the controls in this DCP, providing the variation can be justified and the intent of the controls is achieved. Similarly, consent may be granted to a proposal that varies from the Precinct Structure Plan, where the variation is considered to be minor and the proposal is generally consistent with the Precinct Vision and objectives and *State Environmental Planning Policy (Western Sydney Employment Area) 2009*.

Where a variation is sought, it must be justified in writing, indicating how the development is meeting the intent of the objectives of the relevant control and is generally consistent with the Precinct Structure Plan.

A proposed departure from the development controls will only be considered where the written justification demonstrates:

- Why the controls are unreasonable or unnecessary in the circumstances.
- How the development will achieve the aims and objectives of the DCP, Precinct Structure Plan, and Precinct Plan under the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* despite the proposed departure.
- What innovative and improved outcomes will be achieved to justify the departure.
- That coordinated and orderly development outcomes will be achieved, including a suitable interface with adjoining sites in terms of finished ground levels.
- The departure would not result in unacceptable impacts on other sites, nor make it difficult for other sites to comply with the Structure Plan. Where inconsistencies with the DCP may have the potential to significantly impact adjoining landowners, written evidence of consultation with those landowners and support for an agreed alternative solution is required.
- The departure would not impact on accessibility to sites in the precinct and the safety and efficiency of the proposed road system and its relationship to the broader road network.

1.6 Precinct Vision

The Mamre Road Precinct will be a world-class industrial area, primarily catering for warehousing and logistics on larger consolidated land parcels close to the Western Sydney Airport. The Precinct will accommodate an intermodal terminal serviced by the planned Western Sydney Freight Line and a dedicated freight road network, and has convenient and quick access to the M12 and Elizabeth Drive. Connectivity to the broader Western Sydney Employment Area will be improved.

Flexible zoning and land use controls will also promote other smaller industrial, manufacturing, commercial and clean industrial uses that provide for a range of employment opportunities. Low impact urban services will be encouraged in transition areas adjoining rural-residential properties in Mount Vernon, where views, the natural landscape, noise and amenity will be carefully managed.

Sympathetic site planning, earthworks and building design will be required at the interface with sensitive land uses as well as Wianamatta-South Creek, Kemps Creek and Ropes Creek, bushland and open space, to ensure public spaces and environmental lands are protected, attractive and activated.

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 and make it a great place to work. Development of the Precinct will aim to achieve zero net carbon emissions and support healthy waterways.

High quality development, infrastructure services, amenities and public domain will deliver a pleasant, safe and efficient working environment that will provide for local employment. Streets will be attractive places for pedestrians and cyclists, as well as being safe for cars and trucks.

1.7 Relationship to Other Policies and Instruments

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

This DCP has been prepared in accordance with the EP&A Act and provides additional objectives, controls and guidance to applicants proposing to undertake development in the Mamre Road Precinct, and to guide the assessment of development applications. It should be read in conjunction with *State Environmental Planning Policy (Western Sydney Employment Area) 2009*

(the WSEA SEPP), in particular the Mamre Road Precinct Structure Plan (Figure 2). The WSEA SEPP and Mamre Road Precinct Plan provide the statutory planning controls for development in the Precinct.

1.7.2 Penrith City Council Documents

Penrith Local Environmental Plan 2010 (and other Penrith local environmental planning instruments) and the Penrith Development Control Plan 2014 do not apply to land to which this DCP applies, except where specifically referred to in the WSEA SEPP and this DCP. The Mamre Road Precinct Development Contributions Plan 2020 will apply to development in the Precinct.

Some other design standards and guidelines of Council will continue to apply, such as the Council's engineering standards documents. Where existing policies, procedures and guidelines continue to apply to the Mamre Road Precinct, these are specifically referred to in the relevant clauses of this DCP and in Appendix B Lodgement Requirements.

1.7.3 Cumberland Plain Conservation Plan

The Cumberland Plain Conservation Plan (CPCP) will meet the requirements for a strategic biodiversity certification under the *NSW Biodiversity Conservation Act 2016* (BC Act) and strategic assessment under the Australian *Government's Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

DPIE undertook field surveys to determine the biodiversity values in the Precinct so as to avoid or minimise biodiversity impacts and identify areas of high value biodiversity for conservation. This ensures important areas of biodiversity, vegetation and habitat are protected, including nationally significant threatened ecological communities like Cumberland Plain Woodland.

2. Precinct Planning Outcomes

This part of the DCP outlines the matters to be considered when undertaking development within the Precinct. These controls should be considered during the initial stages of subdivision planning to determine the suitability and the development potential of the land.

2.1 Mamre Road Precinct Structure Plan

The Mamre Road Precinct Structure Plan (refer Figure 2) forms the basis for urban development in the Precinct by setting out:

- The major road network and potential access points.
- A potential intermodal terminal and associated dedicated freight network to connect with the proposed Western Sydney Freight Line.
- The environmental, open space and drainage networks.
- The locations of critical infrastructure, including the Warragamba Pipelines.
- The proposed land uses including employment lands, utilities, service hubs and recreation.
- Areas requiring protection or special consideration of environmental, heritage or amenity values.

Clause 275B of the Environmental Planning and Assessment Regulation 2000 applies the Mamre Road Structure Plan to development within the Precinct.

Objectives

a) To ensure that development in the Precinct occurs in an orderly manner.

b) To ensure coordinated and orderly planning and delivery of infrastructure, land uses, supporting facilities and protection of the environment.

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

d) To protect environmental, heritage, amenity, and existing critical infrastructure.

Controls

1) Development applications are to be generally consistent with the Precinct Structure Plan (Figure 2), the water cycle management strategy and local road network strategy.

2) The consent authority will consider the extent to which the proposed development is consistent with the Structure 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 Structure Plan must be consistent with the Precinct Vision, to the satisfaction of the consent authority.

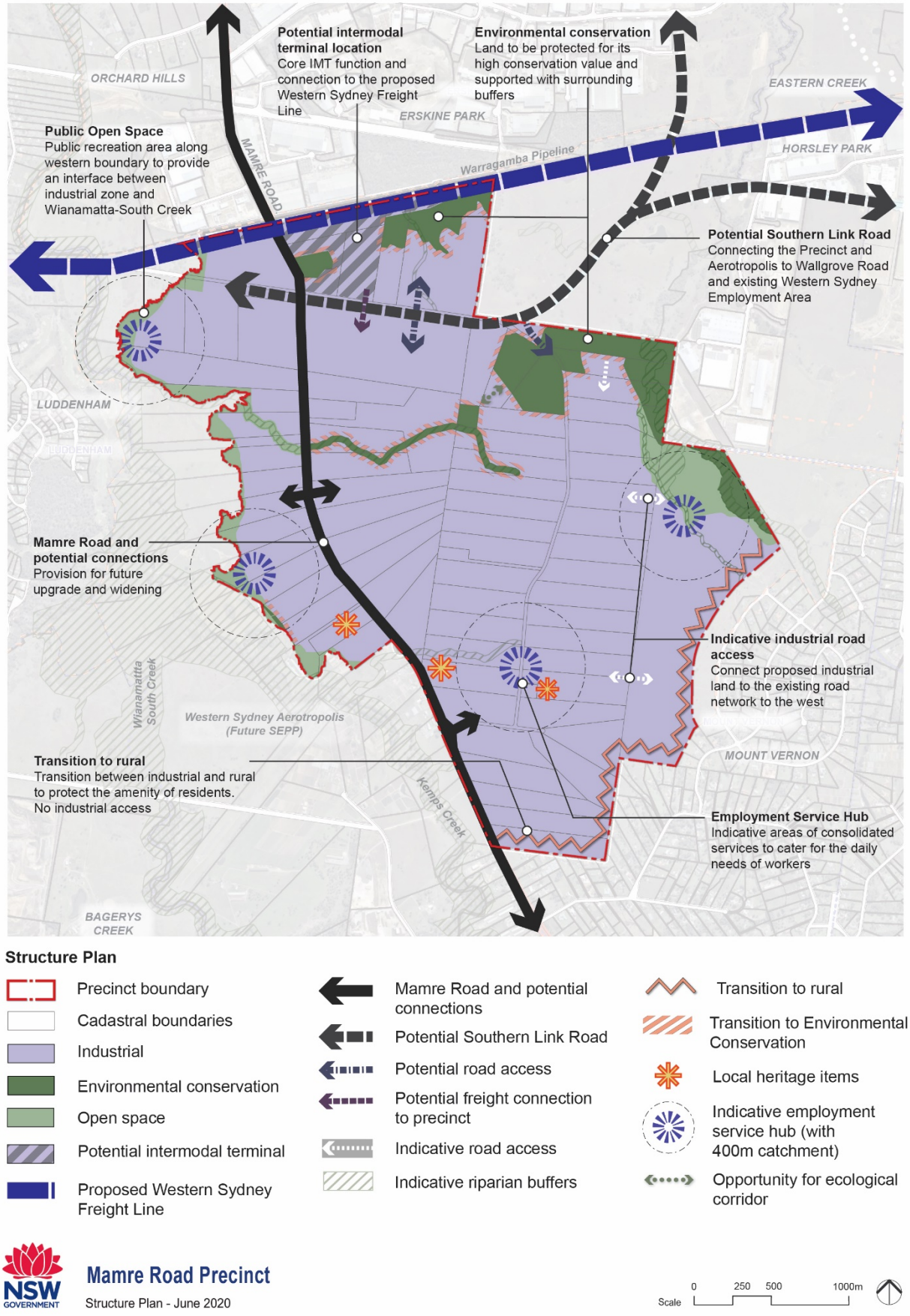

Figure 2. Mamre Road Precinct Structure Plan

2.2 Biodiversity

2.2.1 General Principles for Biodiversity Conservation

This section of the DCP considers lands that form part of the blue-green network that combines hydrological, ecological and urban resilience through a network of green infrastructure (Government Architect 2017[1]). The purpose of the blue green grid is to protect and manage biodiversity, cultural and landscape values across Greater Sydney.

The blue green grid includes riparian corridors, such as the Wianamatta – South Creek corridor, native vegetation on public and private lands, aquatic ecosystems, and areas of open space for active and passive recreation. In the Precinct, some aquatic ecosystems and areas of urban bushland are on privately owned lands and others are publicly owned. Areas of bushland in these urban areas need to be managed and enhanced to reduce edge-effect impacts, such as pollution and nutrients from stormwater runoff, weeds, litter and unmanaged or informal recreation trails. In applying the controls as set out in this section, the Precinct seeks to balance the needs of biodiversity conservation and urban development to deliver the dual outcomes of environmental protection and employment generation.

The overarching biodiversity principle is to avoid, minimise, offset and mitigate the direct and indirect impacts of development and land use change on biodiversity. Existing native trees shall be preserved within development sites, wherever possible, to deliver biodiversity outcomes and support the ecological function of the Cumberland subregion while improving liveability and supporting urban development in Western Sydney.

The siting and layout of a development at the initial concept stage must consider the location of existing trees with a view to their preservation and new trees with a view to their survival. Existing trees shall not be removed without the consent of the relevant consent authority.

2.2.2 Biodiversity Certification

This section applies to lands that are classified as ‘urban capable lands’ under the draft Cumberland Plain Conservation Plan (CPCP). ‘Urban capable lands’ identify where development can occur, subject to development approval, are zoned IN1 General Industrial and identified in the Precinct Structure Plan. Further information on lands that are subject to the CPCP can be sourced on the CPCP ‘Spatial Viewer[2]’.

Objectives

1) To ensure the requirements of strategic biodiversity certification under the Cumberland Conservation Plan (CPCP) are implemented, as it applies to the Precinct (if approved).
2) To protect threatened species and threatened ecological communities and ensure populations persist and the condition of suitable habitat improves at the landscape scale.

Controls

1) Development is to be sited, designed and managed to avoid or mitigate potential adverse impacts on natural areas and habitat.

[1] Tyrrell Studio (March 2017). Sydney Green Grid. Prepared for the Department of Planning and Environment in association with the Office of the NSW Government Architect.
https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/plans/sydney-green-grid-plan-1-introduction-2017.pdf

[2] Draft Cumberland Plain Conservation Plan. – Exhibition.
https://webmap.environment.nsw.gov.au/Html5Viewer291/index.html?viewer=CPCP_Exhibition_Viewer

2) Development applications for land that has the potential to impact biodiversity prior to the approval of the CPCP are to be accompanied by a Biodiversity Development Assessment Report.

3) Where development is proposed to impact on an area of native vegetation, it shall be demonstrated that no reasonable alternative is available and suitable ameliorative measures are proposed (e.g. weed management, rehabilitation, nest boxes).

4) A Weed Eradication and Management Plan outlining weed control measures during and after construction is to be submitted with the development application.

2.2.3 Biodiversity Conservation and Management

Objectives

a) To implement a blue-green network linking remnant native vegetation with the riparian system, including along Wianamatta-South Creek, Kemps Creek and Ropes Creek.

b) To increase and improve landscape connectivity through conservation and restoration of native vegetation 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 protect and enhance habitat for threatened species and endangered ecological communities.

e) To retain and protect native vegetation and wetlands in parcels of a size and configuration that will allow for the survival and improvement of native vegetation communities, wetlands, and existing plant and animal communities, in the long term.

f) To ensure appropriate management arrangements are in place for the blue-green network.

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

Controls

Environmental Conservation and Recreation Zones – Blue-Green Network

1) Minimise clearing of native vegetation within the blue-green network, which comprises land zoned E2 Environmental Conservation, RE1 Public Recreation, RE2 Private Recreation and riparian corridors. Note: Clause 33K of WSEA SEPP also applies.

2) No clearing of native vegetation shall occur within the Precinct on land zoned Environmental Conservation (E2), Public Recreation (RE1), and Private Recreation (RE2) without having regard to the *Biodiversity Conservation Act 2016*.

3) A Vegetation Management Plan (VMP) for the rehabilitation and conservation of native vegetation is to be prepared by a suitably qualified expert for land within the blue-green network.

4) A Threatened Species Assessment is to be undertaken for development applications on land within 500m of an E2 Environmental Conservation zone to determine the presence of threatened species or their habitat. Building setbacks for grey-headed flying fox and raptors are required, if present on or adjacent to the development site, are outlined in Table 3.

5) Bushfire Asset Protection Zones (APZs), stormwater detention basins, and roads are to be located wholly within land zoned IN1 General Industrial and avoid the blue-green network.

Table 3. Prescribed building setbacks for grey-headed flying fox and raptors

Species	Setback control
Grey-headed flying fox	Grey-headed flying fox camp requires 100m setback to any buildings and development. The setback area should be maintained free of flying fox roosting habitat.
Raptors	Raptor nests require a 500m circular setback from where nests are located in extensive undisturbed bushland. Where nests are located closer to existing developments, a minimum circular setback distance of 250m should be maintained along with an undisturbed corridor at least 100m wide extending from the nest to the nearest foraging grounds.

General Biodiversity Management

6) Avoid impacts on habitat features which provide essential habitat for threatened species and other fauna including large trees including dead trees at (>50cm trunk diameter at breast height) and avoid impacts to soil within the dripline of the retained trees.
7) Any mature native tree removed is to be replaced by at least 2 trees selected from the Plant List (Appendix C) which would develop to a similar size at maturity.
8) 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).
9) 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*.
10) WONS and weeds on the National Environmental Alert List under the National Weeds Strategy are to be managed and eradicated (refer to NSW Weed Wise for current weed identification and management approaches).
11) Subdivision design and bulk earthworks are to consider the need to minimise weed dispersion during and after construction and promote weed eradication. A Weed Eradication and Management Plan is to be submitted with subdivision development applications.
12) Pest control techniques implemented during and post construction are to be in accordance with regulatory requirements for chemical use and address the relevant pest control strategy and are to reduce the risk of secondary poisoning (e.g. from Pindone or second-generation rodenticides).
13) Vegetation to which Part 3 of *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017* applies is the same vegetation that must not be ringbarked, cut down, lopped, topped, removed, injured, wilfully destroyed or cleared without a development consent or permit granted by Council.

14) Where high intensity lighting is necessary for site operation, safety and security, it is to be designed to avoid light spill into adjoining natural areas. Australian Standard AS 4282 or updates to that standard are to be considered as a minimum.

15) Where a development footprint contains or is within 100m of known microbat colonies or habitat likely to support microbat colonies, street lighting must be of the type that will not attract insects.[3]

16) Where noise adjacent to natural areas is likely to impact wildlife, the proponent must manage the timing of noise producing activities, including installing appropriate noise treatment barriers along major roads and other attenuation measures.

17) Ensure appropriate mitigation strategies (including fauna-sensitive road design elements) are employed to minimise vehicle strike during and after road construction and upgrading.

18) Traffic calming measures shall be considered in all development areas adjacent to Environmental Conservation and Recreation zoned lands not subject to wildlife (including koala) exclusion fencing[4], such as speed humps, audible surfacing and faunal bridges.

19) Ensure movement of fauna is facilitated within and through wildlife corridors by:

    - Ensuring that activities do not create barriers to the movement of fauna along and within wildlife corridors;
    - Separating fauna from potential construction hazards through the pre-construction and construction process.

20) Adopt and implement open structure design for roads adjacent to known populations of Cumberland Plain Land Snail in accordance with actions under the Save our Species Program (EES, 2020).

2.3 Riparian Land

Objectives

a) 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 improve the ecological condition of aquatic and terrestrial ecosystems.

d) To restore native vegetation along riparian corridors to promote aquatic and terrestrial ecosystems functioning.

e) To promote natural stream design methodologies and ensure appropriate revegetation of riparian corridors is implemented to allow for watercourse stability.

f) To ensure planning, design and development adopt naturalised solutions for riparian lands.

Controls

1) Within a mapped riparian corridor (field-validated), as identified in Figure 2, existing native vegetation is to be retained, rehabilitated and managed in accordance with the controls below, except where clearing is required for essential infrastructure e.g. roads.

[3] Narrow spectrum lighting has been shown not to attract insects. Further information can be found here: Artificial light pollution: are shifting spectral signatures changing the balance of species interactions? Thomas W. Davies, Jonathan Bennie, Richard Inger, Natalie Hempel de Ibarra and Kevin J. Gaston. First published:09 February 2013 https://doi.org/10.1111/gcb.12166 (https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.12166

[4] NSW Government Chief Scientist and Engineer, 30 April 2020, Advice on the Protection of the Campbelltown Koala Population: Koala Independent Expert Panel

2) Modifications to a natural (or historic) waterbody and waterfront land requires the approval of Natural Resources and Assessment Regulator (NRAR), including the enhancement of the ecological outcomes of the watercourse, hydrological benefits and ensure the long-term geomorphic stability of the watercourse.
3) 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.
4) 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.
5) Waterway crossings such as bridges are to be maintained to retain ecological connectivity and water quality.
6) 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 - Fisheries requirements to maintain fish passage.
7) 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 NRAR *Guidelines for Controlled activities on waterfront land - riparian corridors* (May 2018).
8) All riparian corridors shall comprise a vegetated riparian zone along each side of the watercourse/channel.
9) The vegetated riparian zone shall be vegetated with fully structured native vegetation (trees, shrubs and groundcover species).
10) Riparian areas along Kemps Creek and Ropes Creek shall retain proteaceae shrubs providing habitat and connectivity for the Eastern Pygmy Possum *Cercartetus nanus*.
11) 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.
12) The number of vehicular and pedestrian watercourse crossings should be minimised and designed in accordance with the NRAR Guidelines.
13) Private and public fencing should avoid intersecting across riparian corridors.
14) Bushfire asset protection zones should be located outside the vegetated riparian zones.
15) Appropriate widths for vegetated riparian zones are dependent on the stream order in accordance with the Strahler methodology. Stream width shall be measured either in accordance with the 'Waterfront Land Tool' as developed by the NRAR, or from the top of the highest bank on both sides of the channel/watercourse. Enhancement of riparian corridors should:
    - Respond to the hydrological regime of the drainage area for watercourse treatments;
    - Replicate the natural watercourse through creation of a meandering channel;
    - Simulate natural stream bank and bed substrate having regard to riparian requirements and flow velocities to sustain vegetation groupings;
    - Minimise ongoing maintenance through channel and stream bed design;
    - Establish functional riparian zones and natural stream channels;
    - Maintain or create a full assemblage of local indigenous vegetation with natural in-stream obstructions;
    - Minimise damage to channel banks and vegetation from storm flow events; and

- Ensure that the channel has the capacity to support flood flows having regard to the steepness of the catchment and stream channel morphology.

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) Water holding structures (e.g. farm dams) more than 0.1ha in area or 3ML in volume within 3km of the approach boundary to Western Sydney Airport, are to be avoided unless appropriate wildlife strike assessment and design/maintenance controls are implemented, to ensure there is no attraction for water-favouring fowl.

18) Dams proposed for retention must be subject to a geotechnical investigation to determine the safety of the structure with respect to surrounding land uses.

19) 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.

2.4 Integrated Water Cycle Management

The Mamre Road 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 D), 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 D).

The *Mamre Road Precinct Flood, Riparian Corridor and Integrated Water Cycle Management Strategy* (Sydney Water) describes the principles of the integrated water management strategy for the Precinct.

Objectives

a) To protect, maintain or restore waterway health within Wianamatta-South Creek and its tributaries by managing development impacts.

b) To ensure the waterway objectives (flow and water quality) for Wianamatta-South Creek are achieved.

c) To ensure land use and 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 protect, maintain and restore the ecological condition, hydrologic and hydrogeology of aquatic ecosystems (including but not limited to wetlands and riparian lands).

e) To protect groundwater quality and availability.

f) To consider whole of life costs and ease of maintenance in water planning.

g) To transition to regional water infrastructure, where feasible, to optimise the efficiency of development and deliver better outcomes for waterways, amenity and liveability.

h) To safely and effectively convey stormwater flows from the developed area to the existing waterways or stormwater treatment infrastructure.

i) To deliver the waterway objectives (flow and water quality) held in Appendix B.

Controls

Waterway health and Water Sensitive Urban Design

1) Development applications must demonstrate compliance with the stormwater quality targets in Table 4 and the stormwater flow targets during construction and operation phases in Table 5 and Table 6 at the lot or estate scale to ensure the NSW Government's waterway objectives (flow and water quality) for the Wianamatta-South Creek catchment are achieved (see Appendix D). 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.

2) The stormwater flow targets during operation phase (Table 5) 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.

3) 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.

4) 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.

5) WSUD infrastructure may be adopted at a range of scales (i.e. allotment, street, estate, or sub-precinct scale) to treat stormwater, integrate with the landscape and maximise evaporative losses to reduce development flow runoff. Vegetated WSUD measures, naturalised trunk drainage and rainwater/stormwater reuse are preferred. Acceptable WSUD measures to retain stormwater within the development footprint and subdivision are shown in Table 7.

6) Development must not adversely impact soil salinity or sodic soils and shall balance the needs of groundwater dependent ecosystems.

7) Infiltration of collected stormwater is generally not supported due to anticipated 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).

8) 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.

9) Where a recycled water scheme (supplied by stormwater harvesting and/or recycled wastewater) is in place, development shall:

- Be designed in a manner that does not compromise waterway objectives, with stormwater harvesting prioritised over reticulated recycled water;
- Bring a purple pipe for recycled water to the boundary of the site, as required under Clause 33G of the WSEA SEPP. Not top up rainwater tanks with recycled water unless approved by Sydney Water; and
- Design recycled water reticulation to standards required by the operator of the recycled water scheme.

Table 4. 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 5. Stormwater flow targets - Construction Phase

	Construction Phase 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 6. Stormwater flow targets – Operational Phase.

	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
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 7. 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 facilities • 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 and 7 in Section 2.4 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 and 7 in Section 2.4 above) • Irrigation with collected rainwater and/or stormwater runoff • Estate/precinct scale stormwater harvesting and irrigation

Component	Potential Measure
Naturalised trunk drainage paths	• Infiltration into deep soil (where permissible – refer to Waterway health and Water Sensitive Urban Design controls 6 and 7 above)
Public roads	• Passively irrigated Wianamatta Street Trees, where accepted by the road authority • Bioretention

Trunk Drainage Infrastructure

Naturalised trunk drainage paths are included in the above list of acceptable solutions for WSUD (refer to Table 7). 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.

10) Indicative naturalised trunk drainage paths are shown in Figure 4.

11) Naturalised trunk drainage paths are to be provided when the:

    - Contributing catchment exceeds 15ha;or
    - 1% AEP overland flows cannot be safely conveyed overland as described in *Australian Rainfall and Runoff – 2019*;

    unless otherwise agreed by the consent authority.

12) The design and rehabilitation of naturalised trunk drainage paths is to be generally in accordance with NRAR requirements (refer to Section 2.3) that replicates natural Western Sydney streams. An example of a naturalised trunk drainage path is shown in Figure 3.

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 flood event.

14) Where naturalised trunk drainage paths traverse development sites, they may be realigned to suit the development footprint, provided that 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. Where unavoidable, retaining walls shall not exceed 2.0m in cumulative height.

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

22) All proposed development submissions must clearly demonstrate via 2-dimensional flood modelling that:

    1) Overland flow paths are preserved and accommodated through the site;
    2) Runoff from upstream properties (post development flows) are accommodated in the trunk drainage system design;
    3) Any proposed change in site levels or drainage works are not to adversely impact and upstream or downstream, or cause a restriction to flows from upstream properties;
    4) There is no concentration of flows onto an adjoining property; and
    5) No flows have been diverted from their natural catchment to another.

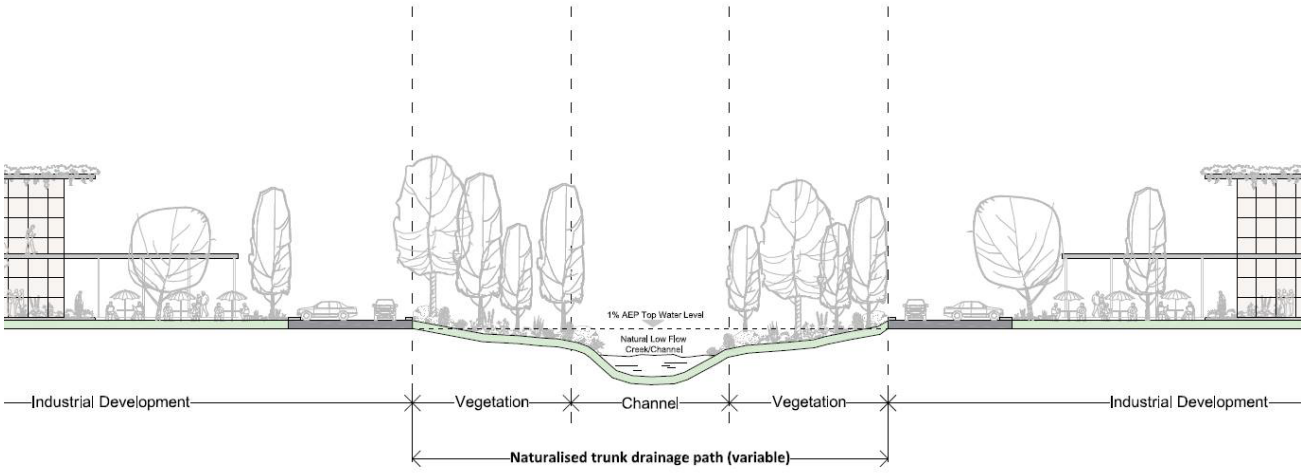

Figure 3. Indicative cross section of a naturalised trunk drainage path

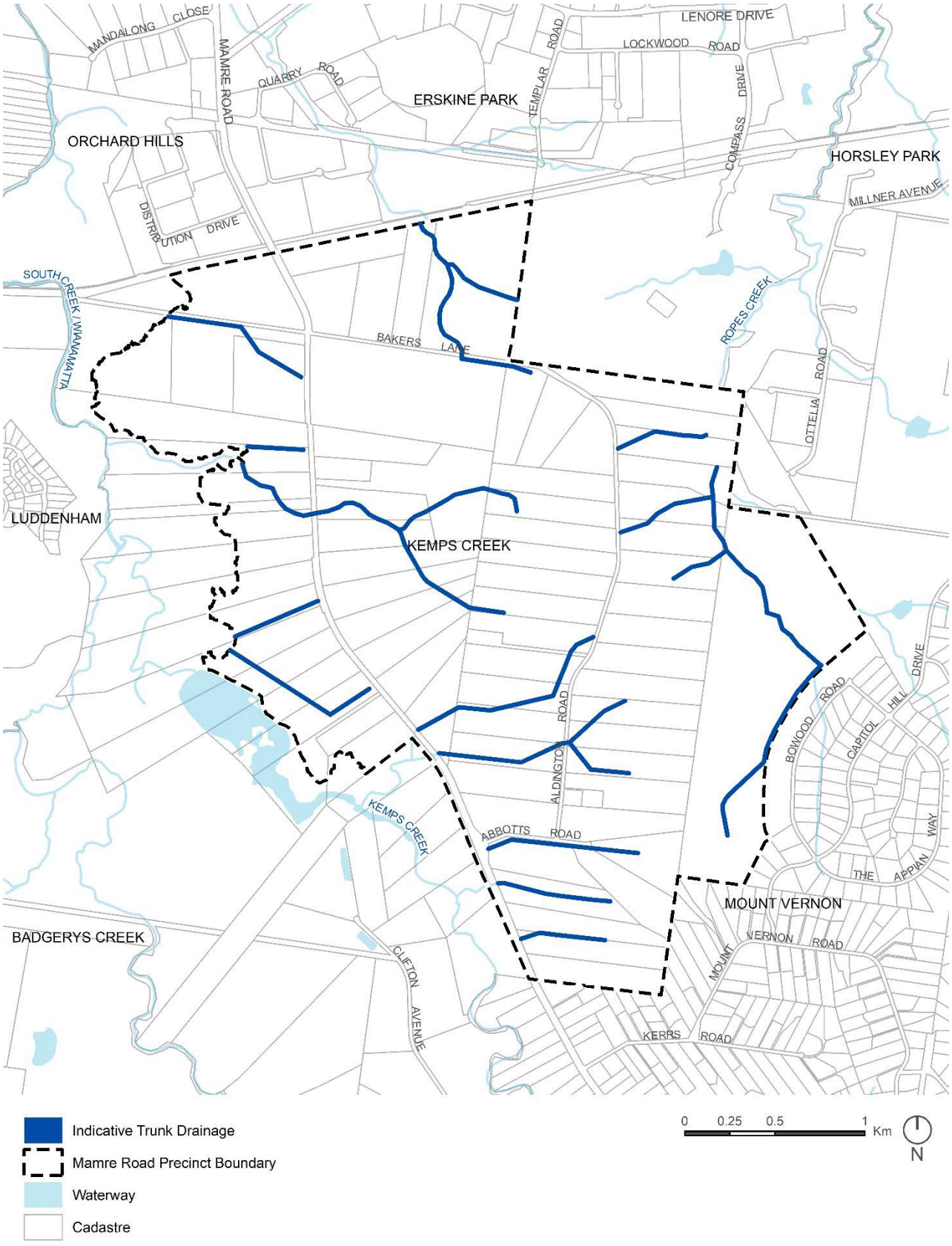

Figure 4. Indicative trunk drainage paths

2.5 Flood Prone Land

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 floodplain risk management minimises the potential impact of development upon the aesthetic, recreational and ecological values of waterways.

c) To maintain the existing flood regime, velocities, flow conveyance and stream hydrology.

d) To ensure development does not alter flood behaviour resulting in adverse impacts to surrounding properties, land uses and infrastructure.

e) To enable safe occupation and evacuation of flood prone land.

f) To ensure development is compatible with flood hazard and flood behaviour.

g) To avoid adverse or cumulative impacts on flood behaviour and environment.

Controls

1) A comprehensive Flood Impact Risk Assessment (FIRA) (prepared by a qualified hydrologist and hydraulic engineer) is to be submitted with development applications on land identified as fully or partially flood affected. The FIRA should utilise Council's existing data and data arising from the Wianamatta (South) Creek Catchment Flood Study[5] to provide an understanding of existing flooding condition and developed conditions consistent with the requirements of the *NSW Flood Prone Land Policy and Floodplain Development Manual*. The FIRA shall determine:
    - 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 Probable Maximum Flood (PMF);
    - Flood Function (floodways, flood fringe and flood storage areas);
    - Flood Hazard; and
    - Flood constraints, including evacuation constraints (if applicable).
2) The FIRA 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 structurally adequate to deal with PMF flow rates and velocities (including potential flood debris);
    - 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 sea level rise and climate change on flood behaviour has been considered;
    - Development considers Construction of Buildings in Flood Hazard Areas and accompanying handbook developed by the Australian Building Codes Board (2012); and
    - Fencing does not impede the flow of flood waters/overland flow paths.

[5] Advisian Pty Ltd (November 2020) Wianamatta (South) Creek Catchment Flood Study – Existing Conditions – Report. https://flooddata.ses.nsw.gov.au/related-dataset/wianamatta-south-creek-catchment-flood-study-existing-conditions-main-report

Flood Constraints

3) New development in floodways, flood fringe and/or flood storages or in high hazard areas in the 1% AEP flood event considering climate change is not permitted.
4) Development applications are to consider the depth and nature of flood waters, whether the area forms flood storage, the nature and risk posed to the development by flood waters, the velocity of floodwaters and the speed of inundation, and whether the development lies in an area classed as a 'floodway', 'flood fringe area' or 'flood storage area'.

Subdivision

5) Subdivision of land below the flood planning level will generally not be supported.
6) Subdivision must comply with *Designing safer subdivisions guidance on subdivision design in flood prone areas* 2007 (Hawkesbury-Nepean Floodplain Management Steering Committee).

New Development

7) Finished floor levels shall be at 0.5m above the 1% AEP flood.
8) Flood safe access and emergency egress shall be provided to all new and modified developments consistent with the local flood evacuation plan, in consultation with Council and the State Emergency Services (SES).

Storage of Potential Pollutants

9) Potential pollutants stored or detained on-site (such as on-site effluent treatment plants, pollutant stores or on-site water treatment facilities) shall be stored above the 1% AEP flood. Details must be provided as part of any development application.

Overland Flow Flooding

10) Development should not obstruct overland flow paths. Development is required to demonstrate that any overland flow is maintained for the 1% AEP overland flow with consideration for failsafe of flows up to the PMF.
11) Where existing natural streams do not exist, naturalised drainage channels are encouraged to ensure overland flows are safely conveyed via vegetated trunk drainage channels with 1% AEP capacity plus 0.5m freeboard. Any increase in peak flow must be offset using on-site stormwater detention (OSD) basins.
12) OSD is to be accommodated on-lot, within the development site, or at the subdivision or estate level, unless otherwise provided at the catchment level to the satisfaction of the relevant consent authority.
13) Stormwater basins are to be located above the 1% AEP.
14) Post-development flow rates from development sites are to be the same or less than pre-development flow rates for the 50% to 1% AEP events.
15) OSD must be sized to ensure no increase in 50% and 1% AEP peak storm flows at the Precinct boundary or at Mamre Road culverts. OSD design shall compensate for any local roads and/or areas within the development site that does not drain to OSD.

Filling of Land At or Below the Flood Planning Level

16) Earthworks up to the PMF must meet the requirements of Clauses 33H and 33J of the WSEA SEPP as well as Sections 2.5 and 4.4 of this DCP.
17) Filling of floodways and/or critical flood storage areas in the 1% AEP flood will not be permitted. Filling of other land at or below the 1% AEP is also discouraged, but will be considered in exceptional circumstances where:
    - The below criteria have been addressed in detail in the supporting FIRA;

- The purpose for which the filling is to be undertaken is adequately justified;
- Flood levels are not increased by more than 10mm on surrounding properties;
- Downstream velocities are not increased by more than 10%;
- Flows are not redistributed by more than 15%;
- The cumulative effects of filling proposals is fully assessed over the floodplain;
- There are alternative opportunities for flood storage;
- The development potential of surrounding properties is not adversely affected;
- The flood liability of buildings on surrounding properties is not increased;
- No local drainage flow/runoff problems are created; and
- The filling does not occur within the drip line of existing trees.

2.6 Aboriginal Heritage

Objectives

a) To manage Aboriginal heritage values to ensure enduring conservation, design and community outcomes.

b) To ensure areas identified as archaeologically or culturally significant are managed appropriately.

Controls

1) Sites of known Aboriginal Heritage and areas of high and moderate–high Aboriginal archaeological potential, as identified in the *Mamre Road Aboriginal Heritage Study* (EMM Consulting 2020), are shown in Figure 5.

2) Any development application within land that contains a known Aboriginal cultural heritage site and/or areas of moderate and moderate–high archaeological potential (refer Figure 5) must consider and comply with the requirements of the 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).

3) 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).

4) Ground disturbance proposed in areas where cultural material has not been identified and/or is considered of low potential to occur is to 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).

5) 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.

6) 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.

Notes: 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 stop work and consult with Heritage NSW to determine an appropriate course of action.

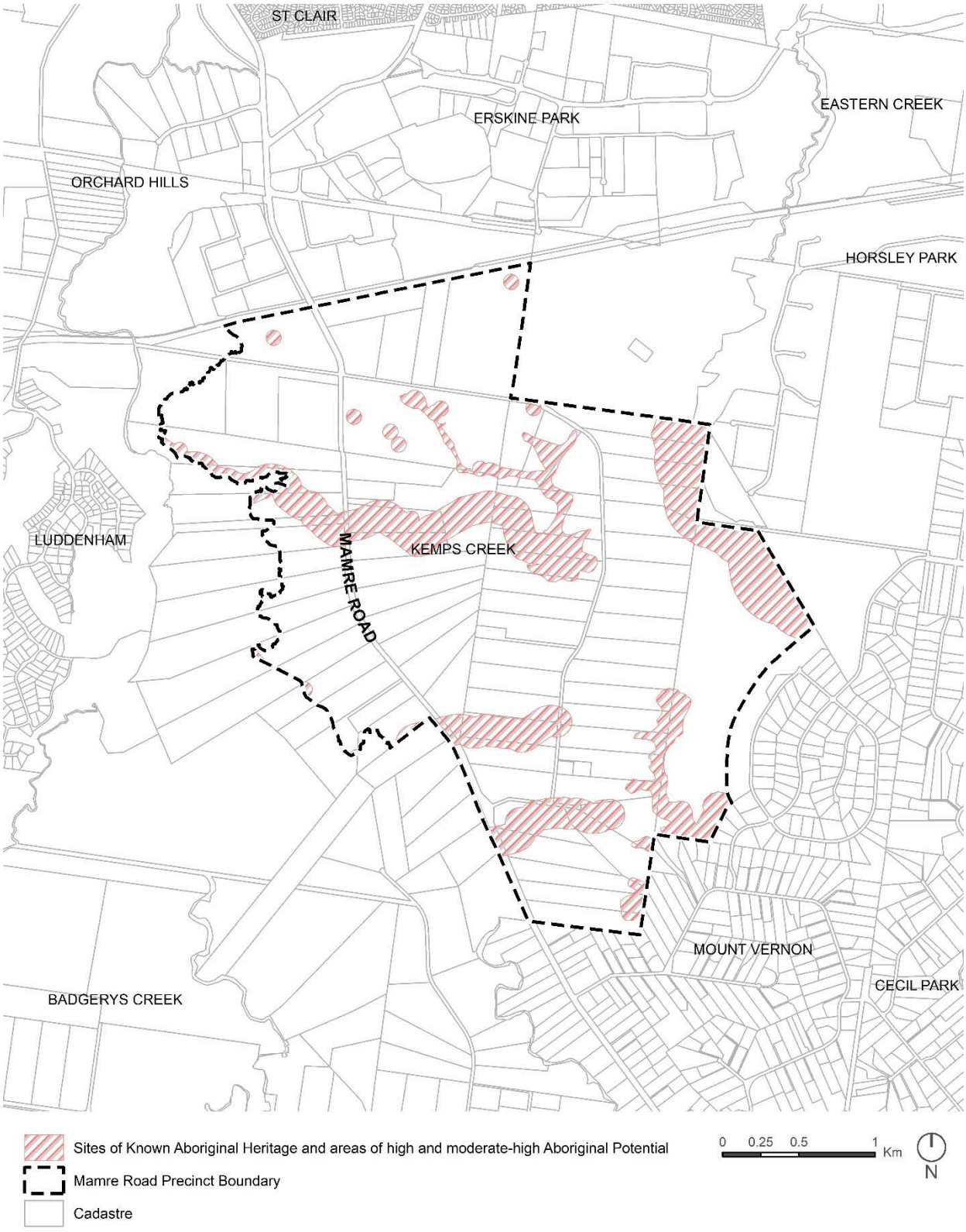

Figure 5. Areas of Aboriginal heritage

2.7 Non-Aboriginal Heritage

Objectives

a) To protect and reinforce the significance of heritage items.

b) To ensure adequate curtilage and landscape setting for heritage items.

c) To ensure the integrity of the heritage item and its setting is retained by the careful siting and design of new buildings and alterations and additions to existing buildings.

d) To ensure that the subdivision of land on which a heritage building is located does not isolate the building from its setting or context, or adversely affect its amenity or privacy.

Controls

1) A Heritage Impact Statement shall be lodged with a development application for subdivision, buildings or works in the vicinity of heritage items listed under the WSEA SEPP and identified in Figure 6, including development that:
    - May have an impact on the setting of a heritage item, for example, by affecting a significant view to or from the item or by overshadowing; or
    - May undermine or otherwise cause physical damage to a heritage item; or
    - Will otherwise have any adverse impact on the heritage significance of a heritage item within which it is situated.
2) Subdivision applications shall define an appropriate setting or curtilage for the heritage building as part of the Heritage Impact Statement or Conservation Management Plan.
3) In determining the curtilage of a heritage building, consideration is to be given to:
    - The original form and function of the heritage building: The heritage building's former use and architecture should be reflected in the design of the curtilage. For example, it may be appropriate that a larger curtilage be maintained around a former rural homestead than that of a suburban building;
    - Outbuildings: A heritage building and its associated outbuildings should be retained on the same allotment; and
    - Gardens, trees, fencing, gates and archaeological sites: Features that are considered valuable in interpreting the history and in maintaining the setting of a building should be identified and, where possible, retained within the curtilage.
4) Development shall be of a scale and form that does not detract from the historical significance, appearance and setting of the heritage item, and consider the following:
    - The height of new development near heritage items shall be less than the subject item. New development or large additions or alterations must provide a transition in height from the heritage item. Increases in height shall be proportional to increased distance from the items;
    - Views and vistas to the heritage item from roads and other prominent areas are key elements in the landscape and shall be retained;
    - If the development site can be viewed from a heritage item(s), any new development will need to be designed and sited so that it is not obtrusive when it is viewed from the heritage item(s); and
    - Curtilages shall be retained around all listed items sufficient to ensure that views to them and their relationship with adjacent settings are maintained.
5) The colours and materials used in a new development (whether an extension or addition) should complement the colours and materials of the heritage item. New development within the curtilage must not adversely impact upon the significant fabric of a heritage item.
6) Where possible, existing fences that have been identified as significant or that contribute to the overall setting or character of a heritage item are to be retained or repaired.

7) New fences should either match as closely as possible the original fencing, or if the original fence type is not known, specifically relate to the architectural character and period of the existing heritage item with respect to design, materials, colour and height.
8) New development shall not be sited in front of the front building line of the existing heritage item nor shall it extend beyond the established side building lines of the heritage item.
9) Vegetation around a heritage item shall be assessed for its value to the item and retained where required.

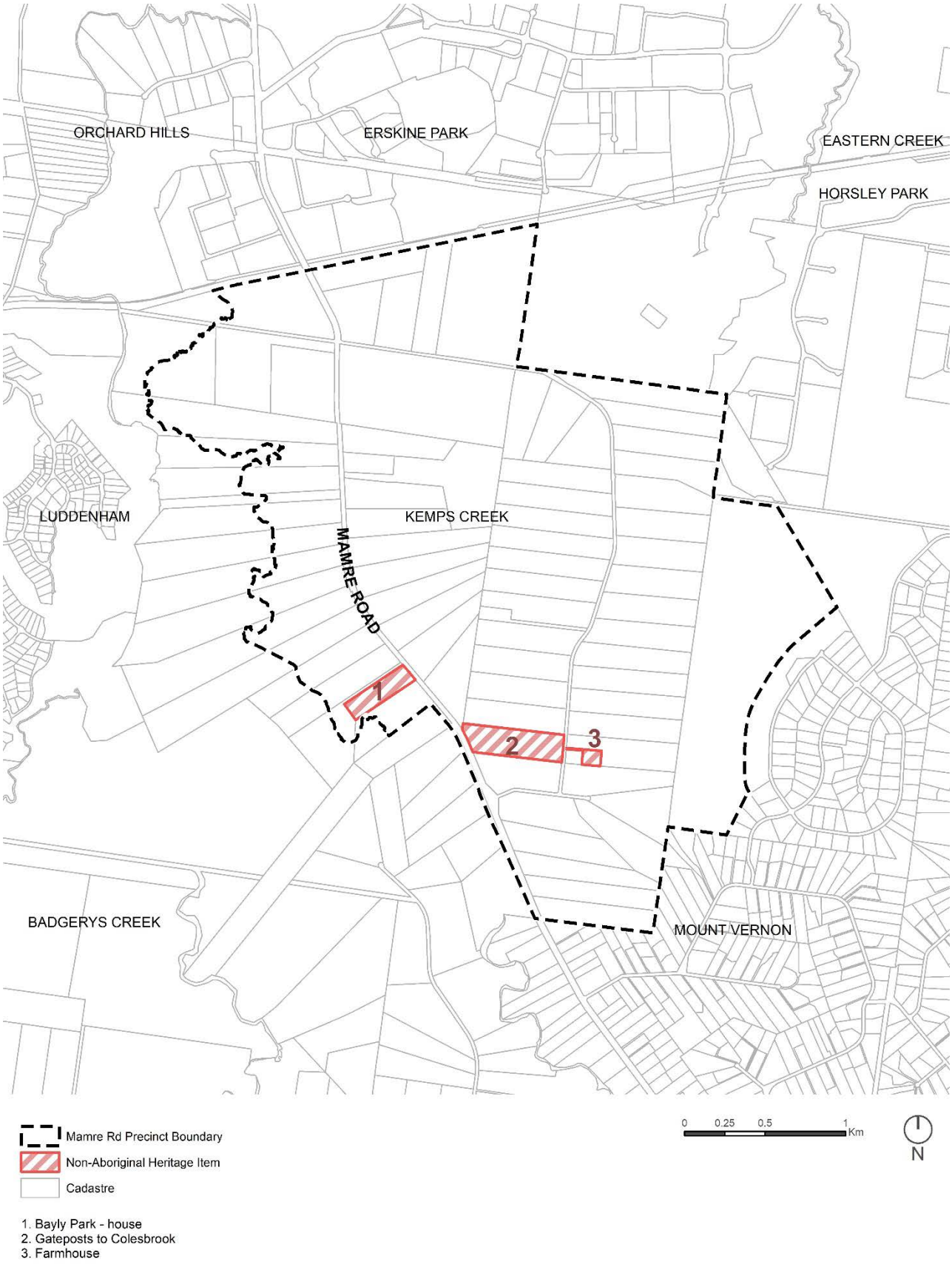

Figure 6. Non-Aboriginal heritage items

2.8 Bushfire Prone Land

Objectives

a) To minimise the risk to life, property and the environment in the event of a bushfire, including the lives of emergency personnel.
b) To ensure that all development on bush fire prone land makes adequate provision for access for emergency personnel, vehicles and equipment.
c) To balance the risk of bushfire to life and property with the other principles in this Plan, including the need to protect and enhance existing vegetation where possible.
d) To recognise that land not classified as 'bushfire prone land' may still be subject to the impact from bushfire, particularly through ember attack.

Controls

1) Land identified as 'bushfire prone land' on the Penrith City Council Bushfire Prone Land Map is to address the bush fire protection measures in the Rural Fire Service publication *Planning for Bushfire Protection 2019* (PBP) (as amended).
2) A Bushfire Assessment Report, prepared in accordance with PBP, must accompany all development applications on land identified as bush fire prone land.
3) Development on land within 250m of land zoned RU2, E2, and E4 that is not identified as bushfire prone land must consider ways to minimise the risk of ember attack, particularly with regard to roof design, building materials and landscape design.
4) Bushfire hazard reduction work must be authorised by the *Rural Fires Act 1997*.

2.9 Salinity

Objectives

a) To avoid or mitigate the impacts of development on salinity processes to prevent any degradation in soils, groundwater or vegetation.
b) To avoid or mitigate the impacts of salinity on development, including damage to buildings and infrastructure and the loss of productive agricultural land.
c) To ensure development will not significantly increase the salt load in existing watercourses.

Controls

1) Development applications shall include a detailed salinity analysis and Salinity Management Plan, noting the relatively low permeability and saline clay soils dominant in the area. The analysis is to consider the stormwater management measures proposed in accordance with Section 2.4 to limit the mobilisation of salts in the catchment.
2) Salinity investigations are to be conducted in accordance with the *Local Government Salinity Initiative* series by the former Department of Natural Resources (2002).
3) The author of the salinity analysis must sign off on the project on completion of works and submit this to Council prior to an occupation certificate being issued, if required.
4) Disturbance to the natural hydrological system shall be minimised by maintaining good surface drainage and reducing water logging on the site.
5) Groundwater recharge is to be minimised to the extent it does not adversely impact groundwater dependent ecosystems downstream.
6) Construction techniques shall be employed that prevent structural damage to the development as a result of salinity (see *Building in a Saline Environment*).

7) All works are to conform with the *Western Sydney Salinity Code of Practice June 2003*.

2.10 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 and the *Contaminated Land Management Act 1995.*

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 State Environmental Planning Policy No 55 – Remediation of Land and the *Contaminated Land Management Act 1995*. 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.

2.11 Aviation Safeguarding

The Mamre Road Precinct is located within the Western Sydney Aerotropolis, approximately 4km north-east of the proposed Nancy-Bird Walton Airport (refer Figure 7). Aviation safeguarding controls ensure development does not impact on the airport operation and should be read in conjunction with controls within the WSEA SEPP.

Objectives

a) To safeguard the future operations of the Western Sydney Airport, including 24-hour operations and provide appropriate protections for the surrounding community.

b) To ensure compatible development that exhibits design excellence occurs on surrounding land.

c) To ensure development does not introduce or intensify noise sensitive uses.

Controls

1) An Aviation Safeguarding Assessment is to be submitted with development applications detailing compliance with aviation safeguarding measures and the controls outlined below.
    - The aviation safeguarding assessment must evaluate the wildlife likely to be present on the subject land and the risk of the wildlife to the operation of the Airport provided by the applicant which includes;
        i. the species, size, quantity, flock behaviour (where applicable) and the particular times of day or year when the wildlife is likely to be present,
        ii. whether any of the wildlife is a threatened species,

iii. a description of how the assessment was carried out, and
iv. is satisfied that the development will mitigate the risk of wildlife to the operation of the Airport.

Heights

2) The height of buildings, structures, landscaping and cranes do not impact on the operations of the airport or create a hazard to the safe navigation of aircraft. Buildings and any ancillary structures must not encroach into protected airspace.

Noise

3) Development is constructed in accordance with Australian Standards AS2021 – Acoustics Noise Intrusion – Building Siting and Construction.

Lighting

4) Development does not impact on the operational aspects of the Airport with regard to light emission and reflective surfaces.

Emissions

5) Development must not generate emissions into the protected airspace.
6) Any plumes do not:
   - Have peak vertical velocities of more than 4.3m/sec.
   - Incorporate flares.

Wildlife Hazards

7) Development must not attract wildlife which would create a safety hazard in the operations of the Airport.
8) All waste bins are to be designed and installed with fixed lids.
9) Any bulk waste receptacle or communal waste storage area must be contained within enclosures that cannot be accessed by birds or flying foxes.
10) Any stormwater detention within the 8km wildlife buffer is to be designed to fully drain within 48 hours after a rainfall event.

Communications, Navigation and Surveillance Systems

11) Development must not impact upon communication, navigation and surveillance systems.
12) Development within the building restricted area does not create electromagnetic field radiations that will interfere with signals transmitted by the communication, navigation or surveillance facility.

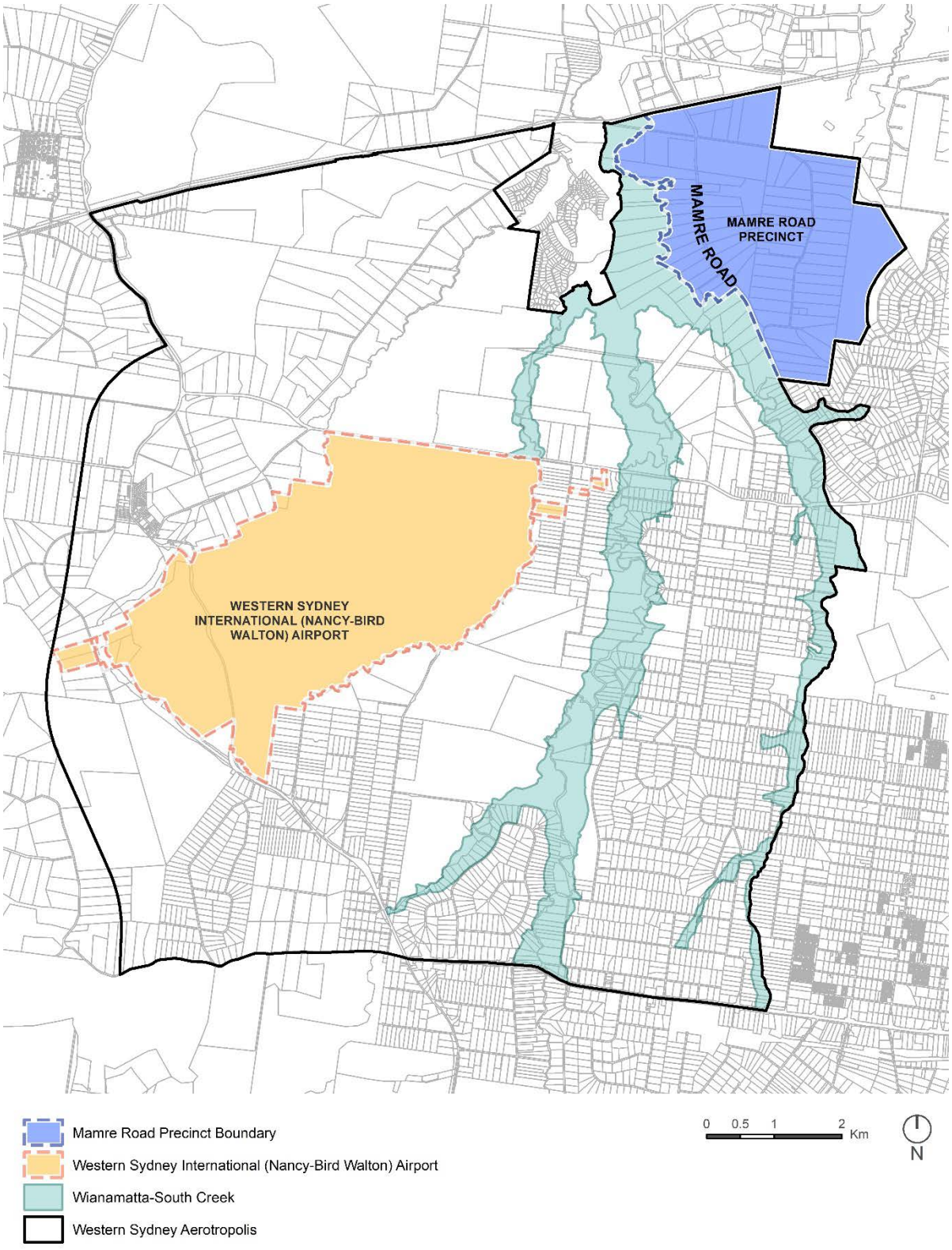

Figure 7. Location of the Nancy-Walton Airport in the Western Sydney Aerotropolis

2.12 Development Adjacent to the Warragamba Pipelines

Objectives

a) To ensure development does not adversely impact on the operation of the Warragamba Pipelines (refer Figure 8).

Controls

1) Where development (including subdivision) is proposed adjacent to the Warragamba Pipelines corridor, applicants shall consult with Water NSW. Development is to be consistent with *Guidelines for development adjacent to the Upper Canal and Warragamba Pipelines* (WaterNSW). Any written requirements of Water NSW shall be submitted with the development application, including how the requirements have been addressed.
2) Prior written approval shall be obtained from Water NSW for any access required to the Warragamba Pipelines corridor during the investigation and construction phases.
3) Access points to the Warragamba Pipelines corridor for Water NSW staff and contractors to carry out inspections and maintenance shall be retained or provided.
4) Stormwater systems serving development adjacent to the Warragamba Pipelines shall be designed to ensure that stormwater does not enter the corridor.
5) Security fencing shall be provided, or existing security fencing retained along the length of development boundaries that directly adjoin the Warragamba Pipelines corridor.
6) Road crossings should generally avoid the Warragamba Pipelines corridor. Any proposed road crossings shall be designed and located in accordance with Water NSW requirements.
7) Earthworks (excavation or filling) and landscaping works carried out adjacent to or crossing the Warragamba Pipelines shall avoid damage to the infrastructure.

2.13 Electricity Transmission Line Easements

Objectives

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

Controls

1) Development on land affected by the Electricity Transmission Line Easements (refer Figure 8) must be in accordance with the relevant electricity supply authority's requirements.

2.14 Utilities Services

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 where possible.

Controls

1) Applicants shall liaise with relevant service providers to ensure satisfactory arrangements have been made to service the development, in accordance with the relevant service providers requirements. This includes water, recycled water, sewer, drainage, electricity, gas (where required) and telecommunications. Indicative trunk infrastructure is identified in Figure 8.

2) A Utilities Plan is to be submitted with subdivision development applications demonstrating satisfactory arrangements for the delivery of utilities and services connections.
3) The Utilities Plan should allow for the installation of emerging utilities technologies, such as hydrogen district cooling/heating systems and micro-grids for energy sharing.
4) Where a recycled water network is available, development shall connect to this network (refer Section 2.4). Development must be plumbed to enable connection to and use of recycled water via the third pipe network and designed in consultation with Sydney Water.
5) Utilities are to be accommodated in the road reserve, unless otherwise required by the relevant utility authority. The design of roads will need to take this into consideration.
6) Electricity and telecommunication mains are to be placed underground.
7) Where technically feasible, compatible public utility services shall be coordinated in common trenching to maximise cost-effectiveness.
8) Premises are to be provided with high speed, high reliability telecommunications infrastructure (e.g. optic fibre or DSL technology).
9) Applicants will be required to deliver water and sewer services upgrades (in accordance with current Sydney Water procurement guidelines) to meet the anticipated demand.

2.15 Transport Investigation Areas

Objectives

a) To safeguard the future transport infrastructure essential to the delivery of the Precinct.
b) To ensure compatible development adjoining transport infrastructure.
c) To ensure safe, efficient and effective future transport infrastructure integrated with adjoining development to provide access to local, regional and interstate networks.

Controls

Proposed Western Sydney Intermodal Terminal

This section applies to land identified as Transport Investigation Area marked “A” under Clause 33B of the WSEA SEPP.

1) Proposed development on land subject to the proposed Intermodal Terminal (refer Section 3.4.2 and Figure 9) must make provision for the Intermodal Terminal and any road and rail access points.
2) Applicants must consult with TfNSW in preparing development applications for this land to ensure an appropriate area is available and access is not adversely impacted by development.

Proposed Western Sydney Freight Line

This section applies to land identified as Transport Investigation Area marked “B” under Clause 33B of the WSEA SEPP.

3) Proposed development on land subject to the proposed Western Sydney Freight Line (WSFL) corridor (refer Figure 9) must make provision for the WSFL and access to the corridor.
4) Applicants must consult with TfNSW in preparing development applications for this land to ensure an appropriate area is available and future access is not adversely impacted by development.
5) The WSFL corridor is not to be compromised by development, including any key rail and road interfaces with the Intermodal Terminal.

Classified Roads – Mamre Road and Proposed Southern Link Road

This section applies to the Mamre Road corridor and land identified as Transport Investigation Area marked “B” under Clause 33B of the WSEA SEPP.

6) Proposed development on land subject to Mamre Road and the proposed Southern Link Road (refer Figure 9) must make provision for the upgrade and construction of these roads and future access to the corridors.

7) Applicants must consult with TfNSW in preparing development applications for this land to ensure an appropriate area of land is available and future access is not adversely impacted by development.

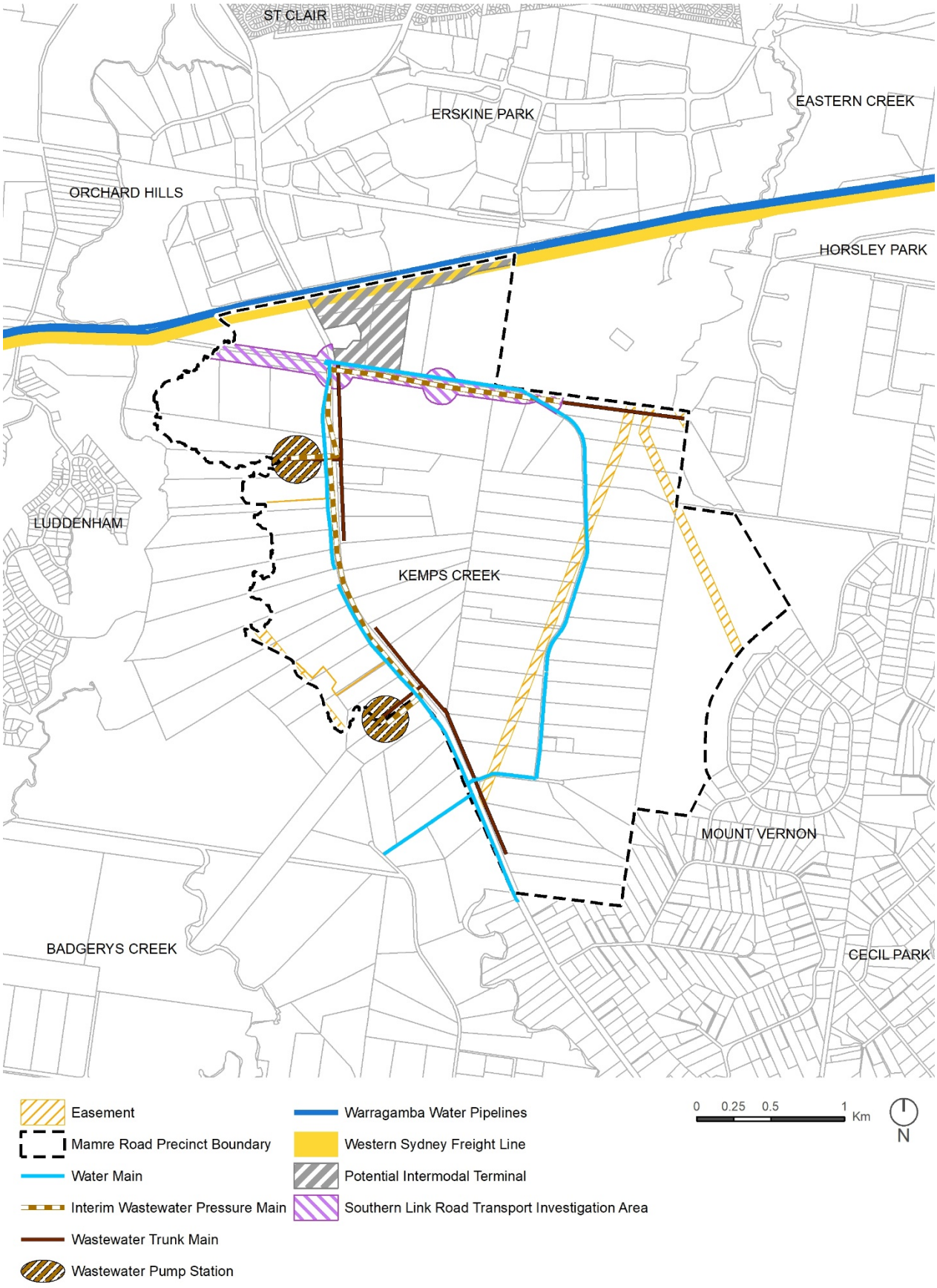

Figure 8. Precinct infrastructure

3. Precinct and Subdivision Design

3.1 Subdivision

Objectives

a) To provide opportunities for a range of industrial uses and subdivision sizes.

b) To ensure that development occurs in a logical, coordinated, and staged manner.

c) To protect biodiversity values and minimise impacts on remnant native vegetation.

d) To protect, restore and enhance riparian corridors.

e) To respond to the natural topography and physical characteristics of the land and minimise the need to cut and fill.

f) To enable the desired road network and hierarchy.

Controls

1) Subdivision is to be in accordance with the controls in Table 7.

2) Subdivision design is to enable the conservation of natural and landscape features, including important fauna habitats, rare or threatened plant habitats, and designated biodiversity areas.

3) Subdivision design shall balance cut and fill as far as practicable. Development applications must include an Earthworks Plan, detailing the proposed cut and fill strategy, how the design minimises cut and/or fill, and justification for the proposed changes to the landform.

4) Lots adjoining or containing watercourses are to maintain or establish native vegetation riparian corridors in accordance with Section 2.3.

5) Land zoned E2 Environmental Conservation must not be subdivided unless the consent authority is satisfied appropriate arrangements have been made for revegetation and rehabilitation in accordance with a Vegetation Management Plan, including ongoing monitoring and management.

6) Subdivision design is to facilitate the precinct road network and hierarchy.

7) Access to lots should be from local or collector industrial roads.

8) Lots adjoining the potential intermodal terminal and dedicated freight corridor shown in Figure 17 should be larger lots (i.e. 10,000m^2 or greater) to support freight and logistics development.

Table 8. Subdivision controls

Subdivision element	Area	Control
Minimum Allotment Size	IN1 General Industrial	1,000m^2
	E2 Environmental Conservation	Single contiguous lot
Minimum Frontage	IN1 General Industrial	40m (excluding cul-de-sacs) and 35m minimum lot width at building line

3.2 Views and Visual Impacts

Objectives

a) To protect the amenity of adjoining rural-residential areas and other sensitive land uses, whilst facilitating employment-generating uses.

b) To protect significant landscape features and view corridors including to Wianamatta-South Creek.

c) To consider topography and the natural landscape in the design of subdivisions.

Controls

1) The design of subdivisions and building orientation should respond to the significant landscape elements and view corridors identified in Figure 11, including Mount Vernon, Wianamatta-South Creek and Ropes Creek. Development applications should demonstrate how the natural features of the site have influenced the design.

2) Site design shall retain visual connection with the blue-green network, ridge lines and vistas.

3) The design of lots adjoining Mamre Road, Southern Link Road, and Aldington/Abbotts Road shall promote a high-quality landscape character.

4) Subdivision development applications for land on ridgelines and highpoints shall give careful consideration to the potential siting and scale of buildings.

5) All retaining walls must include mature tree planting along the top of the retaining wall to mitigate the visual impact of buildings when viewed from sensitive locations (refer Figure 9). Sufficient deep soil shall be available to accommodate a mature screening tree.

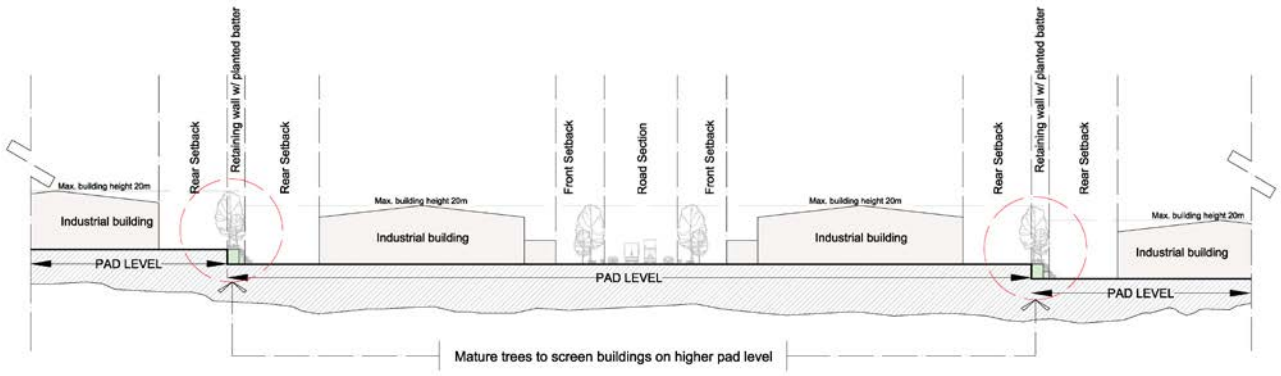

Figure 9. Landscape planting along retaining walls

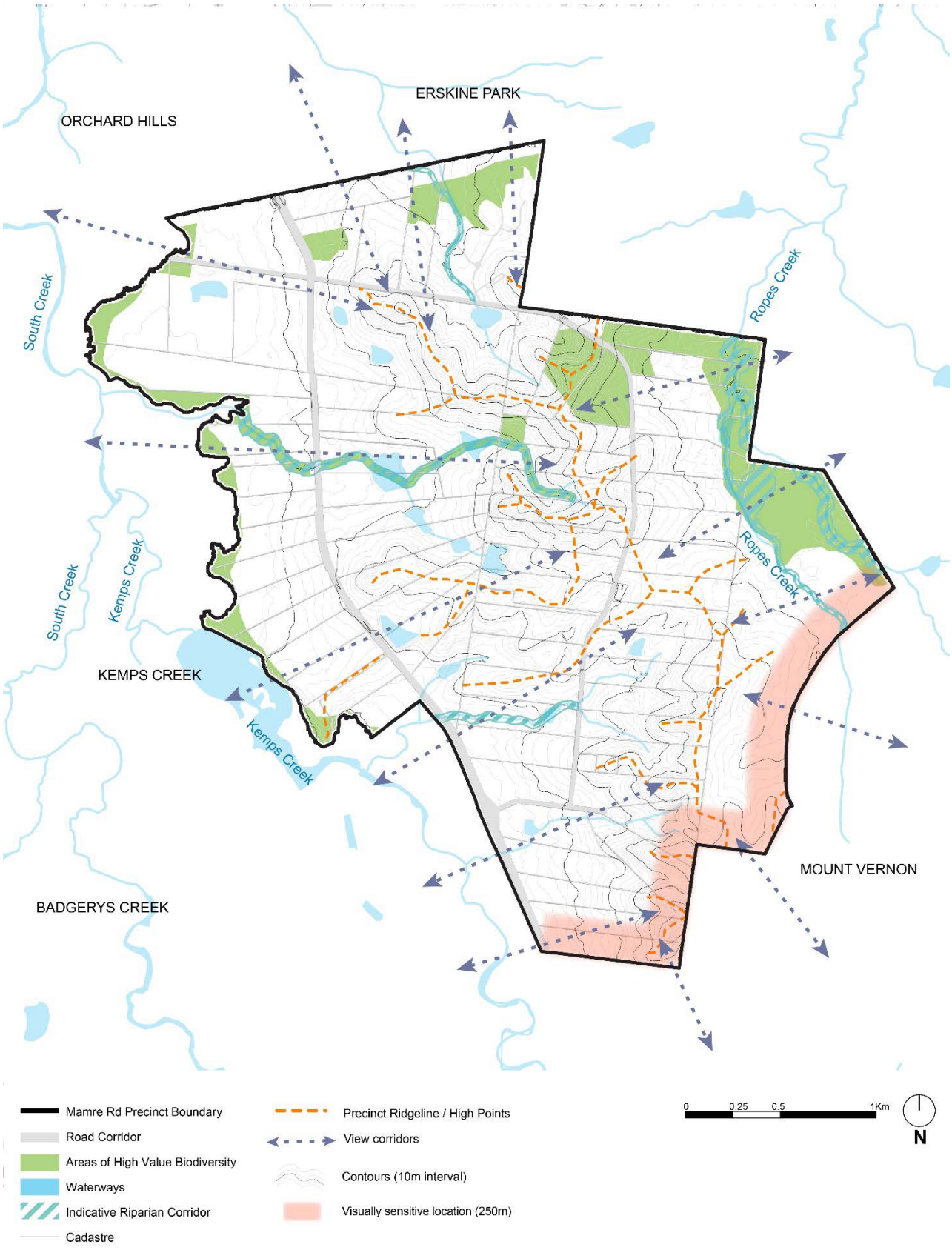

Figure 10. Landscape features and visually sensitive locations

3.3 Interface with Mount Vernon rural-residential area

Objectives

a) To provide a sensitive interface between industrial development and existing rural-residential properties within Mount Vernon.

b) To ensure the design of subdivision and development at the interface with Mount Vernon responds to the topography of the land and other landscape features.

c) To obscure development when viewed from Mount Vernon and respect the rural-residential context and setting.

d) To minimise amenity impacts from industrial uses, including visual, noise, odour, vibration, overshadowing, privacy and light impacts.

Controls

1) Development applications for land within 250m of the southern and south-eastern Precinct boundary (refer Figure 10) are to include a Landscape Plan and Visual Impact Assessment by suitably qualified designers which demonstrate a sympathetic transition to Mount Vernon, including appropriate cross-sections illustrating visual mitigation strategies.

2) Landscape setbacks and treatments are to be in accordance with Section 4.2.3.

3) A minimum 30m building setback is to be provided to buildings that directly adjoin a rural-residential zone. An indicative landscape treatment within the interface area is shown in Figure 11.

4) Subdivision within the visually sensitive interface (refer Figure 10) should relate to the scale of adjoining rural-residential buildings and consider the use of height transitions and more generous building separation.

5) The design of sites adjoining rural-residential areas should respond to natural level changes and use a combination of mounding and vegetation screening to soften the visual impact.

6) Tree planting shall be located to provide a visual barrier to industrial development. Mature tree planting is to be located on the top of landscape mounds, as well as on the rise or fall, to ensure the lower tree canopy meets the canopy of the tree on the top of the mound. The placing of trees shall also be staggered to ensure a continuous visual screen.

7) At planting, trees within the sensitive interface area should be a minimum 2m in height.

8) Boundary fences within the sensitive interface area should be a minimum 1.8m in height.

9) Site design shall minimise light spill to adjoining residential areas (refer Section 4.2.10).

10) Uses and building elements that are likely to adversely impact the amenity of adjoining rural-residential areas (e.g. loading areas, driveways, storage areas and roof top equipment) shall be sited away from the sensitive interface and use landscaped screening.

Note. Development applications must also address Section 4.3 Amenity of this DCP and Clause 23 of the WSEA SEPP.

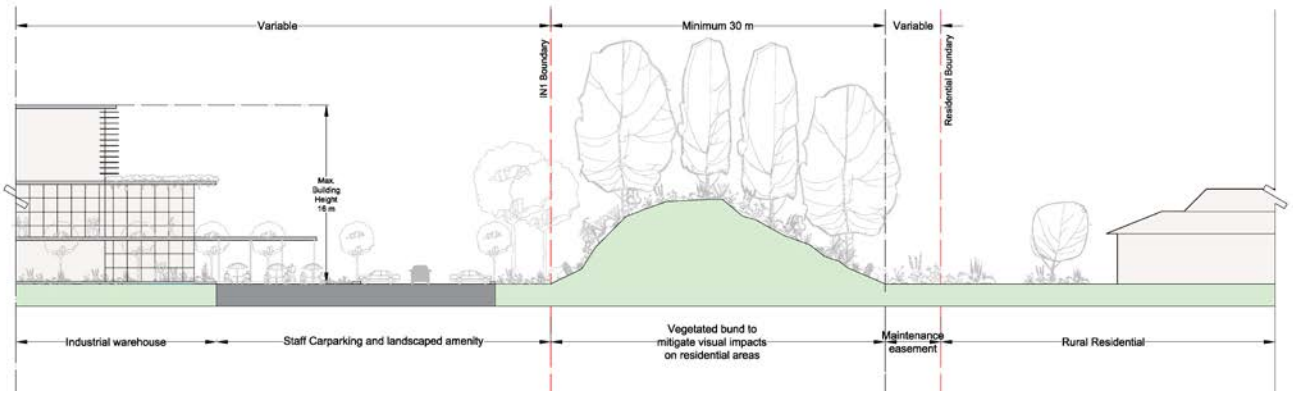

Figure 11. Indicative landscape treatment in the rural-residential interface area

3.4 Transport Network

3.4.1 Road Network, Hierarchy and Design

Objectives

a) To enable a road network that is safe and efficient for all users and minimises through traffic on minor roads.

b) To encourage the use of public transport, bicycles and walking.

c) To provide safe and efficient access to Mamre Road for all road users (light vehicles, heavy vehicles, pedestrians and cyclists), while minimising the number of road entry points.

d) To maintain the capacity of Mamre Road and proposed Southern Link Road.

e) To provide better connectivity between the Precinct and other parts of WSEA.

f) To encourage the orderly and economic provision of road and intersection works.

Controls

Traffic and Transport Assessments

1) Development applications shall be accompanied by a Traffic and Transport Report. The Traffic and Transport Report shall include a Green Travel Plan and Travel Access Guide, and assess the impact of projected pedestrian and vehicular traffic associated with the proposal, and outline the extent and nature of traffic facilities necessary to preserve or improve the safety and efficiency of the road system.

Note: Development identified in Schedule 3 of SEPP (Infrastructure) 2007 is referred to TfNSW (Column 2) or Council's Local Traffic Development Committee (Column 3), as required.

2) Subdivision and development are to consider the coordinated staging and delivery of final road infrastructure throughout the precinct. Development consent will only be granted to land serviced by a suitable road network with traffic capacity to service the development (to the satisfaction of the relevant roads authority).

Road Network

3) The Precinct shall be developed generally in accordance with the desired road network structure and hierarchy (Figure 12). The road network will comprise the arterial roads of Mamre Road and the future Southern Link Road (Movement Corridors), Aldington Road/ Abbotts Road (distributor road) and an indicative internal industrial local and collector road network.

4) Until the delivery of the connection of Aldington Road to the future Southern Link Road, all development accessed from Aldington Road and Abbotts Road is to be accessed via the

southern end of Aldington Road/ Abbotts Road and Mamre Road. Access to the north via Bakers Lane is not permitted.

5) The centre line for all Local Industrial Roads and Collector Industrial Roads shall be on the common cadastre boundary between adjoining lot plans unless otherwise agreed by adjoining owners.

6) Internal local roads are to be designed to:

   - Create a permeable network based on a modified grid system;
   - Provide access to and facilitate the development of adjoining properties;
   - Provide a pedestrian and cycle network that minimises travel distances and conflicts with industrial traffic;
   - Maximise connectivity to and from open space and employment service hubs;
   - Take account of topography, view corridors, site drainage, and vegetation;
   - Provide frontage to and maximise surveillance of open space and riparian corridors;
   - Provide views to landscape features and visual connections to activity nodes; and
   - Maximise the effectiveness of water sensitive urban design measures.

7) Variations to the desired road network and hierarchy (refer Figure 12) must demonstrate to the consent authority's satisfaction that the proposal:

   - Will not detrimentally impact on access to adjoining properties;
   - Provides for the management of stormwater to drain to the trunk drainage network without negative impacts on other properties;
   - Will not impede the orderly development of adjoining properties in accordance with the Structure Plan (Figure 2) and this DCP;
   - Does not restrict the ability to provide water, sewer, electricity and other essential services to adjoining properties; and
   - Includes written evidence of consultation with affected adjoining owners and agreement with these affected owners.

8) A public road is to adjoin land zoned RE1 Public Recreation along Wianamatta-South Creek precinct in accordance with Figure 12.

9) Access points shall be located to optimise safety, traffic flow and landscape opportunity, as well as end user operations. All parking shall be provided either on site or in centralised off-road locations.

10) Direct vehicle access to Mamre Road, Southern Link Road and distributor roads (Aldington Road/ Abbotts Road) is not permitted.

11) All intersections within the internal road network shall incorporate traffic facilities, which promote safe and efficient pedestrian, cyclist and traffic movement.

12) The internal road pattern is to facilitate 'through-roads' with cul-de-sacs to be avoided unless dictated by topography or other constraints.

13) Heavy vehicles are to avoid Bakers Lane, especially in the vicinity of existing schools.

14) Internal road network intersections are to be provided at the following minimum intervals:

   - Local to local industrial road – 40m-60m;
   - Local to collector/distributor road – 100-200m; and
   - Collector/distributor to sub-arterial – 400m-500m.

15) Development shall, where appropriate, be designed to:

   - Allow all vehicles to either leave or enter the site in a forward direction;

- Accommodate heavy vehicle parking and manoeuvring areas;
- Avoid conflict with staff, customer and visitor vehicular movements; and
- Ensure satisfactory and safe operation with the adjacent road system.

16) Development applications shall detail the volume, frequency and type of vehicle movements.

17) The design of manoeuvring areas for large vehicles shall consider the Australian Standard 2890 series and Performance Based Standards *An Introduction for Road Managers* (National Heavy Vehicle Regulator – May 2019).

Road Design

18) Road design is to address the *Guide for Traffic Generating Development* (former RTA 2002).

19) Road design must comply with the road configurations in Table 8 and corresponding typical road cross-sections (Figure 12, Figure 13, Figure 14, Figure 15, and Figure 16).

20) The road network is to be designed for 30m Performance Based Standards (PBS) Level 2 Type B vehicles and tested for a 36.5m PBS Level 3 Type A vehicles.

21) To accommodate the design vehicle (i.e. B-double and B-triple) the standard kerb return radius will need to increase from 12.5m to 15.0m.

22) Road design shall consider arrangements for broken down vehicles and incident response.

23) For roads adjoining open space, finished road design levels shall match with existing levels of open space and negate the need for retaining walls or battering. Design is to address:

- Public access to open space;
- Function of the road;
- Impact on existing vegetation;
- Public amenity;
- Public safety; and
- Impact on ability to provide street tree planting.

24) Alternate road configurations may be considered in special circumstances where it can be demonstrated the following key principles can be achieved:

- Road and lane widths must allow for two-way movement and turning movements of design vehicles, including consideration for buses, heavy vehicles, garbage trucks and emergency vehicles;
- Verge widths must consider requirements for utilities, street tree planting, footpaths, shared paths and urban design outcomes;
- Adequate on-street parking must be provided;
- Adequate swept turning paths must be provided for all design vehicles at intersections and for property access to meet the required design vehicle;
- Road widths must be set to minimise kerbside restrictions and regulatory signage;
- Sufficient width must be provided for specialist drainage functions; and
- Life cycle costs for construction and maintenance must be minimised.

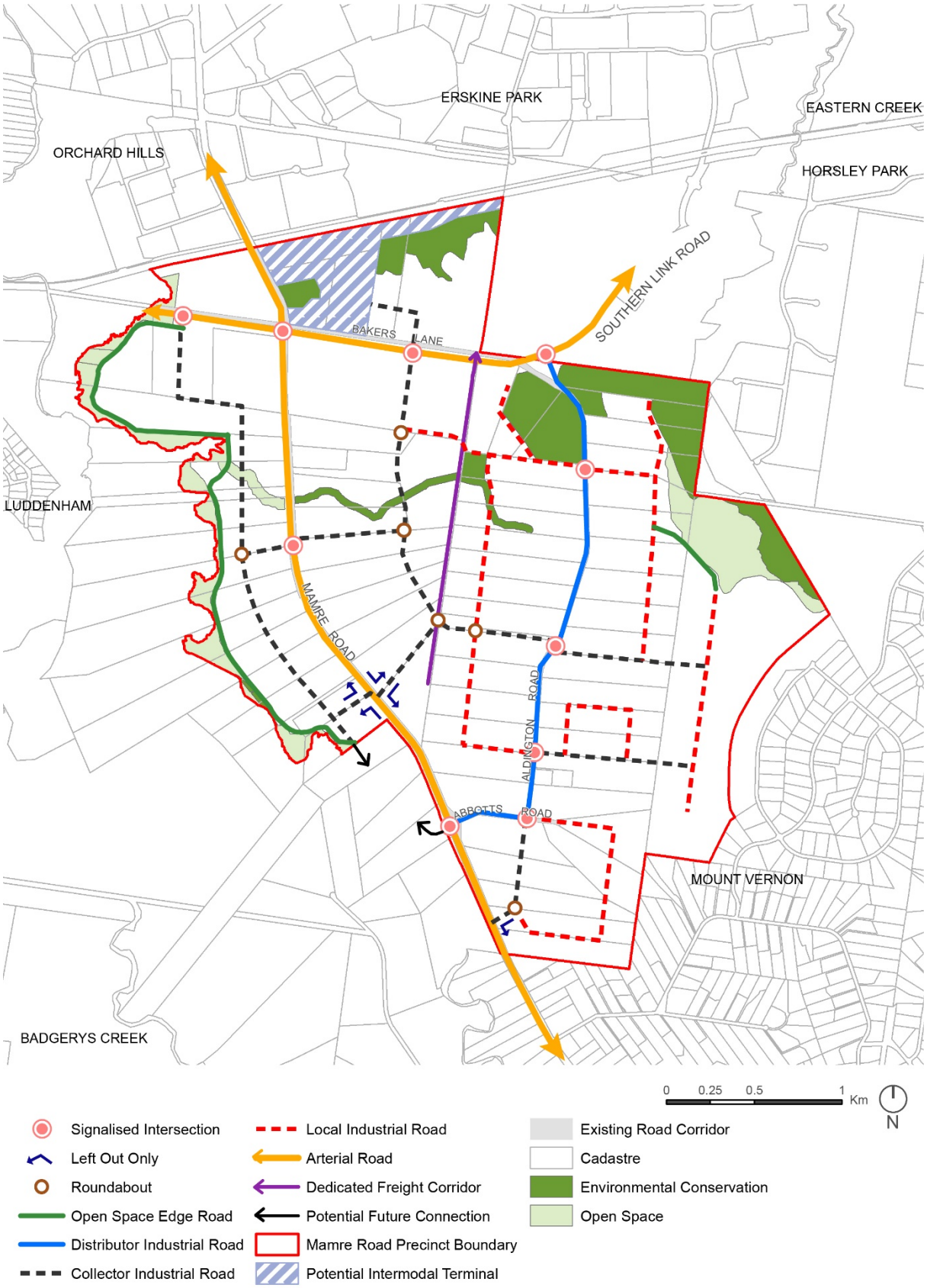

Figure 12. Road network hierarchy in the Mamre Road Precinct.

Table 9. Summary of preferred road typologies

Component	Local Industrial Road (Type 1)	Typical Collector Road (Type 2)	Typical Distributor Road (Type 3)	Typical Open Space Edge Road (Type 4)
Signposted speed	50km/hr	50km/hr	60km/hr	50km/hr
Pedestrian and cycle path (within verge width)	Verge 1 – 1.5m path Verge 2 – 2.5m shared path	Verge 1 – 1.5m path Verge 2 – 2.5m shared path	Verge 1 – 2.5m shared path Verge 2 – 2.5m shared path	Verge 1 (RE1 boundary) – 2.5m shared path Verge 2 (IN1 boundary) – 1.5m path
Through traffic lane	2 x 3.5m = 7.0m	2 x 3.5m = 7.0m	2 x 3.5m = 7.0m	1 x 3.5m = 3.5m (adjacent to RE1) 1 x 4.0m = 4.0m (adjacent to IN1)
Kerbside / travel lane	2 x 4.0m = 8.0m (No Parking)	2 x 4.2m = 8.4m (No Parking)	2 x 4.5m = 9.0m (No Parking)	1 x 3.0m = 3.0m (Parking fronting RE1 only)
Central median widths*	N/A	0.8m* (mid-block) required only at key signalised intersections and locations to separate opposing movements which may cause conflicts	1.6m (mid-block) and 5.0m required at the intersection of a collector road, distributor road, arterial road, or at any signalised intersection	Not applicable
Road carriageway width	15.0m (mid-block)	15.4m (mid-block no median)	18.6m (mid-block with 1.6m median)	10.5m (mid-block)
		16.2m (mid-block with median)	Variable – Subject to detailed intersection design and approval of road authority	
Verge width (both sides of road)	Verge 1 – 4.0m Verge 2 – 5.0m	Verge 1 – 4.6m Verge 2 – 5.6m	Verge 1 – 6.5m Verge 2 – 6.5m	Verge 1 (RE1 boundary) – 4.0m Verge 2 (IN1 boundary) – 5.0m
Street tree planting	1.9m (both sides of road)	2.5m (both sides of road)	3.5m (inclusive of 2m clearance zone requirement on both sides of road)	1.5m (fronting RE1 boundary) 2.5m (fronting IN1 boundary)
Road reserve width (total)	24.0m (mid-block)	25.6m (mid-block no median)	30.6m	19.5m (mid-block)
		26.4m (mid-block with 0.8m wide median)	Variable – Subject to detailed intersection design and approval of road authority	

*Subject to road modelling and intersection design confirmation

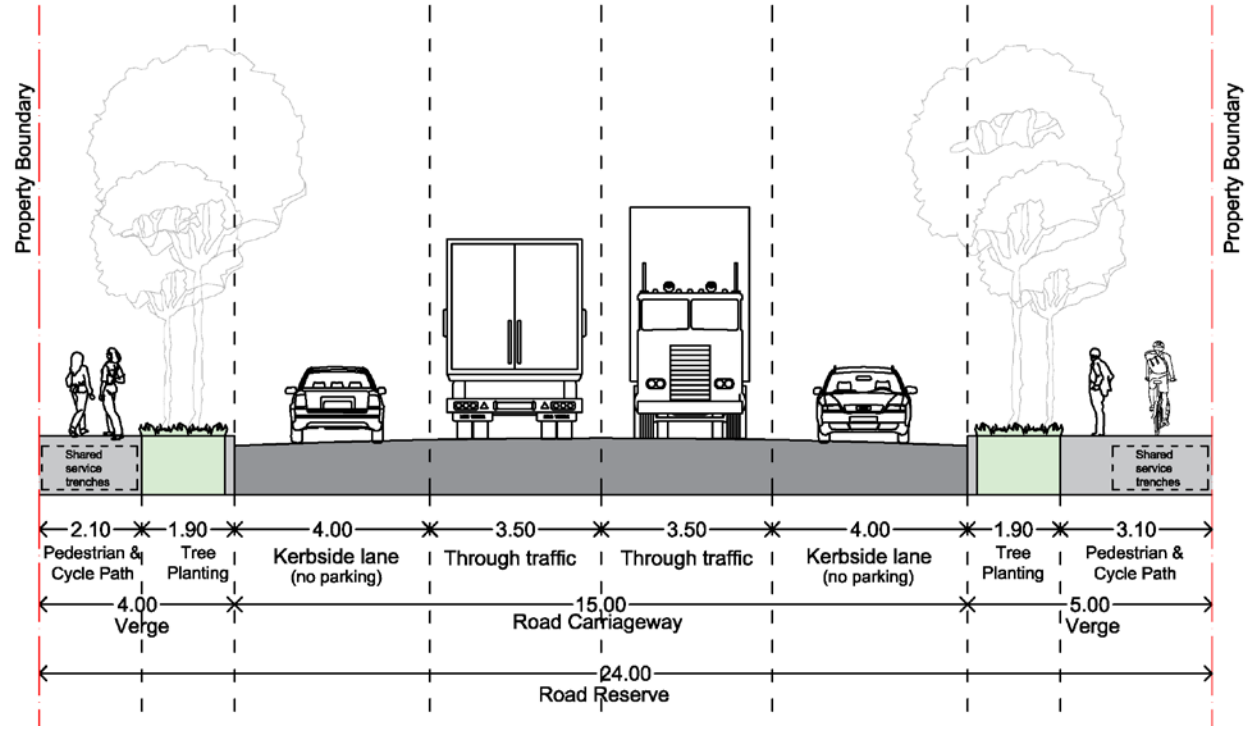

Figure 13. Typical Local Industrial Road (Type 1)

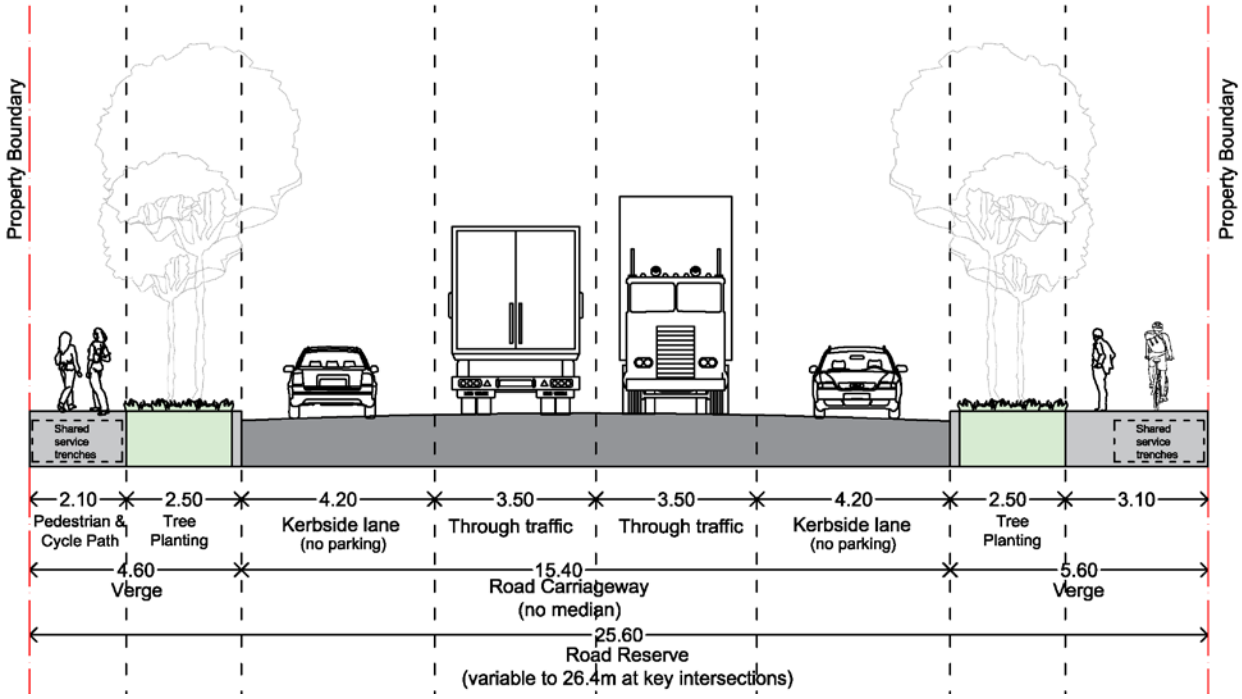

Figure 14. Typical Collector Road (Type 2)

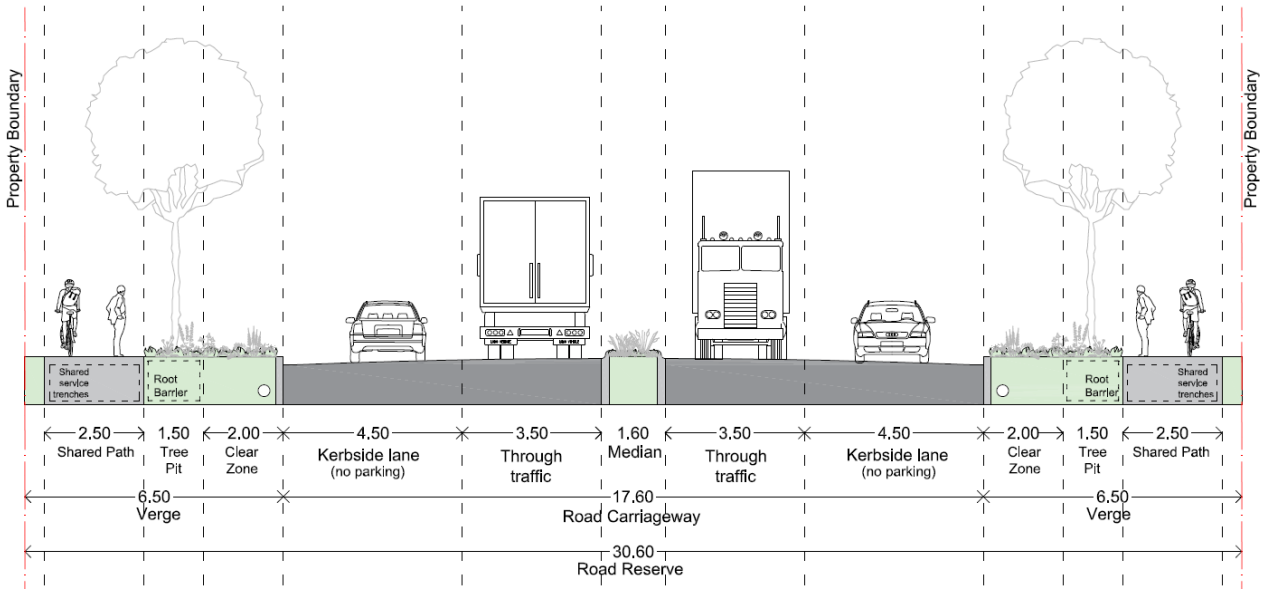

Figure 15. Typical Distributor Road mid block (Type 3)

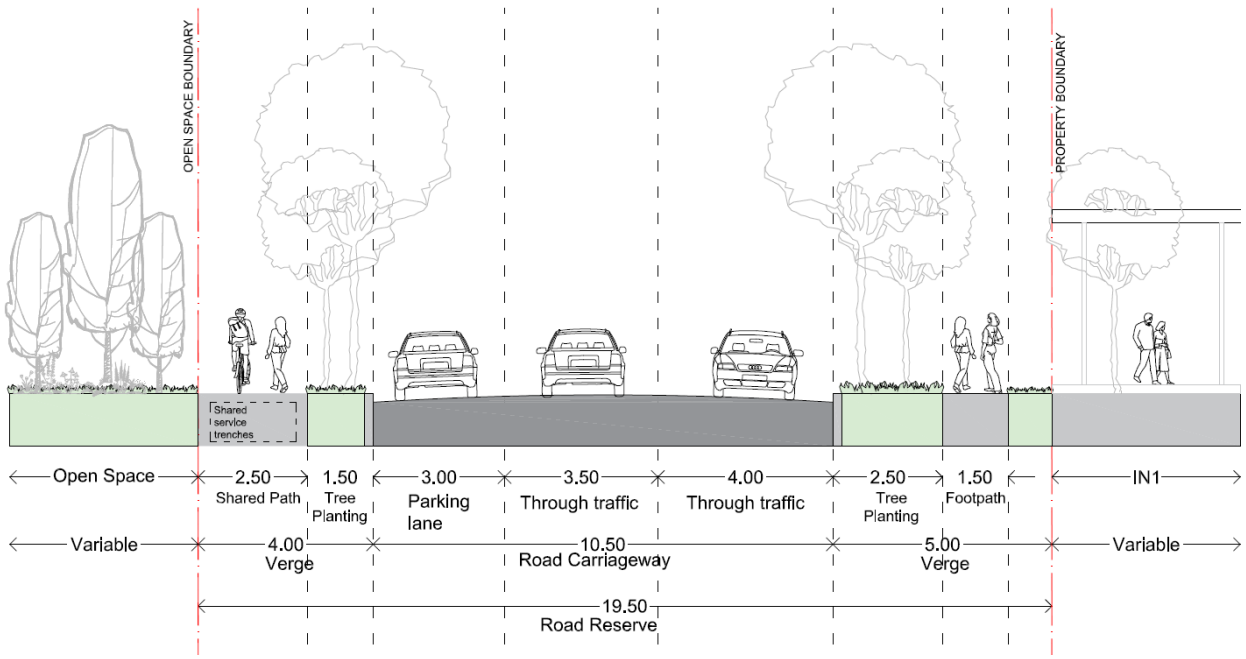

Figure 16. Typical Open Space Edge Road (Type 4).

3.4.2 Western Sydney Intermodal Terminal and Freight Network

Objectives

a) To facilitate the delivery of the Western Sydney Intermodal Terminal and dedicated freight network.

b) To facilitate dedicated freight access from the intermodal terminal to surrounding industrial precincts and individual warehouses/distribution centres.

c) To plan for a network of dedicated freight corridors to accommodate an automated guided vehicle (AGV) freight network.

d) To minimise freight vehicle impacts and interfaces with traffic on the public road network.

Controls

1) Development is to enable the delivery of the Intermodal Terminal and dedicated freight network, as identified in Figure 17.
2) Land identified for the intermodal facility is to be integrated with a dedicated freight network to the south, via a road crossing of future Southern Link Road.
3) Development applications for lots including or adjacent to the dedicated freight corridor shall make provision for the dedicated freight corridor.
4) The dedicated freight corridor shall be a minimum of 10.0m wide and meet the design requirements specified by Transport for NSW.
5) Development applications for lots with an identified access point (refer Figure 17) shall demonstrate how access to and from the dedicated freight corridor will be achieved.
6) All fire compliant internal access roads are to be a minimum of 8.0m wide to safeguard for a precinct-wide AGV freight network unless development applications can demonstrate how an AGV freight network can be safeguarded within their development.

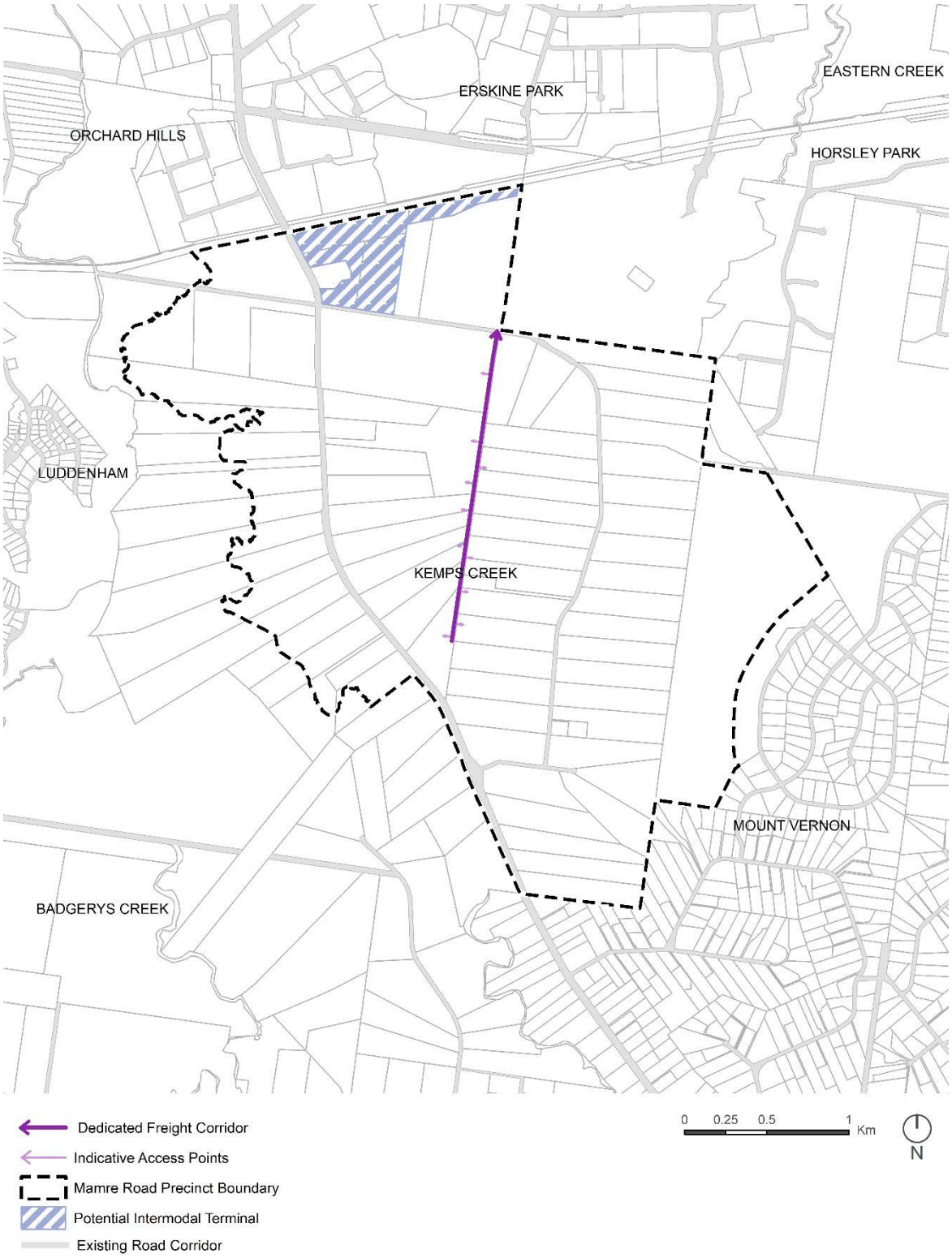

Figure 17. Dedicated freight network.

3.4.3 Public Transport, Pedestrian and Cycle Network

Objective

a) To encourage the use of public and active transport through the provision of integrated bus routes, and pedestrian and cycle routes.

b) To design major routes as 'integrator arterials' with extensive and frequent opportunity for pedestrians to move safely along and across them.

c) To design new developments to promote and support trips via active and public transport. .

d) To provide pedestrian pathways through parks for recreation purposes.

e) To encourage bicycle use by providing sufficient number of secure and accessible bicycle parking spaces with new developments.

Controls

Desired Public Transport, Pedestrian and Cycle Network

1) Bus stops should be provided, if identified by bus operators and TfNSW in consultation with Council as part of the development application process.
2) Development is to respond to the provision of a future bus link to the M4 Motorway.
3) Pathways for cyclists and pedestrians are to be provided that integrate with regional active transport connections, and links to key catchments and employment hubs across WSEA.

Public Transport

4) The road network is to be designed in accordance with this DCP, to ensure public transport (i.e. buses) can be accommodated along key roads to support early adoption of good travel practices by future workers.
5) Indented bus bays should be provided along Aldington Road and Abbotts Road, as required by TfNSW as part of the public exhibition process for a development application.

Pedestrian Connections

6) All footpaths are to be consistent with the relevant requirements of *Walking Space Guide - Towards Pedestrian Comfort and Safety* (NSW Government).
7) Footpaths should have ramps at all kerb corners for wheelchairs and pram access and cater for all people with diverse abilities in line with current Australian Standards.
8) Street lighting in accordance with the provisions of AS1158 should be provided in all streets.
9) Pedestrian crossing distances in local streets should be shortened through kerb extensions and tight turning radii, which can cause vehicular traffic to slow to negotiate the tighter corners.
10) To enable comfortable passage for all people with diverse abilities, footpaths must be:
    - Provided on both sides of the road;
    - A minimum of 1.5m wide on one side;
    - A minimum of 2.5m shared path on the opposing side (with the exception of distributer roads, refer to Table 9);
    - A minimum of 3.0m on approach routes to predictable destinations such as employment hubs and parks; and
    - A minimum width of 3.5m for shared paths for recreational use within open space and environmental corridors.

11) A durable, non-slip surface and even paving is to be designed and constructed for minimum maintenance. Continuous pathways, uninterrupted by variations in surface material must be provided.

12) Gradients from pathways to streets are to be minimal, safe and comfortable for people with limited mobility and those using wheelchairs, prams and trolleys in line with current Australian Standards.

13) Gradients and ramps must be aligned with desired paths of travel for pedestrians and cyclists.

14) A smooth transition from ramps to roads is to be provided for people using wheelchairs or prams. Ramps should be designed in accordance with appropriate design guidelines and be as wide as the pathway or marked crossing point to eliminate squeeze points at transition areas.

15) Reconstructed driveways/pathways are to achieve a useable cross slope for a width of 915mm. Cars must slow to negotiate the two steeper ramps on either side of the pathway crossing, but will not 'bottom out' at these angles (Preiser. W and Ostroff E (2001) *Universal Design Handbook* McGraw-Hill).

Cycleways

16) All cycle routes and facilities are to be consistent with the relevant requirements of *Austroads Cycling Aspects of Austroads Guides* and former RMS *Bicycle Guidelines* including line-marking, signage and logos and Council policies regarding bicycle access.

17) Pedestrian and cycle routes and facilities in public spaces are to encourage way finding and be convenient, safe, well lit, clearly defined, functional and accessible to all.

18) Shared paths and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, in accordance with Australian Standard 1428:1-4.

3.5 Council Engineering Works and Construction Standards

Objectives

a) To ensure a consistent approach to the design and construction of engineering works.

b) To set performance standards for the design and construction of engineering works.

Controls

1) Engineering works shall be consistent with Council's standards, as amended:
    - Stormwater Drainage Specifications for Building Developments;
    - Council's Water Sensitive Urban Design (WSUD) Technical Guidelines;
    - Engineering Design Specifications for Civil Works; and
    - Engineering Construction Specifications for Civil Works.

4. General Requirements for Industrial Development

4.1 Site Analysis

Objectives

a) To ensure development considers the physical and natural features of the site and surrounding area.

Controls

1) All development applications are to be accompanied by a Site Analysis Plan.

4.2 Built form design controls

4.2.1 Building Height

Objectives

a) To encourage building form that responds to the topography of the site and the relative position of the allotment to other allotments and the street.

b) To ensure a scale of buildings which minimises the impact of development on adjoining residential areas, including views.

c) To retain views to and from key public spaces, low-lying rural landscapes, native vegetation and riparian lands.

d) 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, adjoining rural-residential areas, environmental and open space areas, riparian corridors and ridgelines.

2) Buildings should not exceed a maximum height of 16m from the existing ground level within 250m of a rural-residential zone. For all other sites, a maximum building height of 20m from existing ground level is permitted.

3) Should the nature of the business require that part of the building exceeds the 20m building height control (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) Taller building elements over 15m should be set back from the street frontage.

5) Building height must ensure direct solar access to 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.

6) Building services located on the roof (such as HVAC, lift motor room, exhaust fans, etc) must be accommodated within the maximum permissible height of the building and away from the street frontage or sensitive interfaces where possible.

7) A Visual Impact Assessment is to be submitted with development applications demonstrating that development will not have a significant adverse impact on the scenic quality of:

    - The Precinct, particularly when viewed from elevated locations and view lines identified in Figure 10;

- Wianamatta-South Creek; and
- Adjoining rural-residential areas.

8) Buildings should be sited on mid-slope to minimise visual impact on ridges and to be in harmony with the existing landscape. Where possible, buildings should be designed to "step" physically up or down the site in keeping with the existing topography.

4.2.2 Building Setbacks

Objectives

a) To provide a consistent streetscape design and landscaped transition to the public realm.

b) To provide an open streetscape with substantial areas for landscaping and opportunities to green and cool the precinct.

c) To enhance the visual quality of development and the urban landscape.

d) To screen undesirable views and minimise the visual impact of hard surface areas.

e) To retain existing trees or significant stands of vegetation in the overall site layout.

f) To minimise the impact of overshadowing to adjoining buildings and open space.

Controls

1) Building setbacks are to be in accordance with the standards outlined in Table 10.

Table 10. Building setback requirements

Location	Distance (m)
Lots fronting designated roads (Mamre Road and Potential Southern Link Road)	20
Lots fronting key access roads (distributor and collector roads)	12
Lots fronting all other roads (local estate roads)	7.5
Secondary road frontages (corner lots)	5
Rear and side boundaries	5
Lots adjoining existing rural-residential development in Mount Vernon	Refer to Section 3.3
Lots adjoining Warragamba Water Supply Pipeline (unless specified elsewhere in this DCP)	5
Lots adjoining the proposed Intermodal Terminal (setback from any boundary that adjoins the Intermodal Terminal site)	20
Lots adjoining the proposed WSFL corridor	5
Lots adjoining land zoned E2 Environmental Conservation, RE1 Public Recreation, and RE2 Private Recreation (unless otherwise specified elsewhere in this DCP)	10m from the edge of E2, RE1 and RE2 land, unless separated by a road, and then no setback is required.

2) Notwithstanding control (1) above, the following development is permitted within the defined setback for any road (excluding Mamre Road and proposed Southern Link Road):

- Landscaping;
- Maintenance/rehabilitation of biodiversity corridors or areas;
- Utility services installation;
- Cross-overs;
- Fire access roads;
- Approved signage;
- Street furniture; or
- Drainage works.

3) Side and rear boundary setbacks may incorporate accessways and driveways (not permitted in setbacks to designated roads), where an alternative arrangement cannot be achieved. Setbacks to public roads may incorporate loading dock manoeuvring areas and associated hard stand if set behind a landscape setback of at least 6.0m to the property boundary.

4) Setbacks may incorporate an off-street parking area if it can be demonstrated that the location of the car parking area:

   - Is within a setback at least 13.0m in depth, as measured from the property boundary to the building line, and set behind a landscape setback at least 6.0m in depth;
   - Promotes the function and operation of the development;
   - Enhances the overall design of the development by implementing design elements, including landscaping, that will screen the parking area and is complementary to the development; and
   - Does not detract from the streetscape values of the locality.

5) The design of setbacks and hardstand areas should seek to minimise the visual impacts of the development (see also 4.2.3 Landscaping).

6) Additional setbacks may be applicable to avoid construction over easements.

7) For corner sites, setbacks must ensure clear vehicular sight lines for perpendicular traffic (Figure 18).

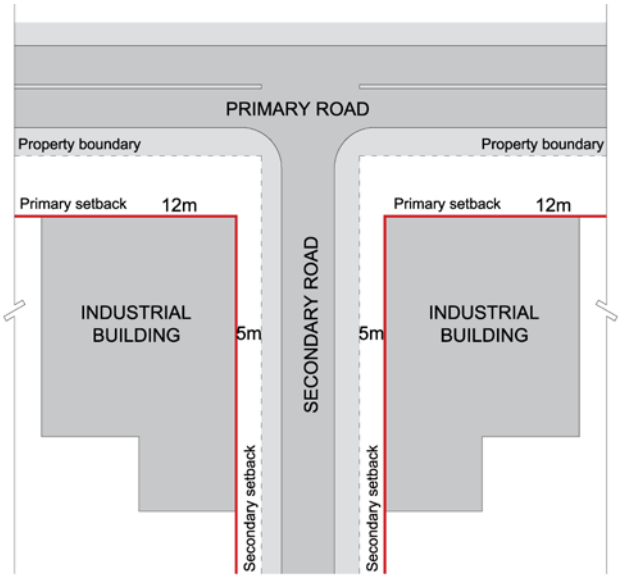

Figure 18. Corner site setbacks

4.2.3 Landscaping

Objectives

a) To contribute to the *Greater Sydney Regional Plan – A Metropolis of Three Cities* tree canopy cover target for metropolitan Sydney of 40%.

b) To provide functional areas of planting that enhance the presentation of a building, provide amenity, cooling and shade, and contribute to overall streetscape character.

c) To encourage landscape design and tree species that are suited to the locality and contribute to water cycle management.

d) To provide vegetated buffers to areas of environmental and recreational value.

e) To screen undesirable views.

Controls

1) Development proposals must demonstrate a 10% tree canopy on development lot (excluding public roads and any non-industrial land). This includes preserving existing trees, where possible, and adding to the existing canopy to provide green infrastructure and amenity. This control can be measured at estate or lot scale, depending on the subject land of the development application. Where the tree canopy strategy is established at an estate level, the approval should establish the framework for individual lots, where future development applications will be required. If the control is satisfied at an estate scale, the 10% tree canopy control does not need to apply again to individual lots, if they are consistent with the concept plan or estate approval.
2) A Landscape Plan prepared by a Landscape Architect is to be submitted with all development applications.
3) Landscaped area is to be provided in accordance with Table 11.

Table 11. Minimum landscape requirements

Location	Requirement
Lots fronting designated roads (Mamre Road and proposed Southern Link Road)	10m landscape setback to the road frontage
Lots fronting key access roads (distributor and collector roads)	6m or average 50% of the front setback from the site boundary along the road frontage
Lots fronting all other roads (local estate roads)	Average of 50% of the front setback along the road frontage
Rear boundary	2.5m from the rear boundary
Side boundary	No minimum requirement
Lots adjoining existing rural-residential development in Mount Vernon	Refer to Section 3.3.
Lots adjoining land zoned E2 Environmental Conservation, RE1 Public Recreation, and RE2 Private Recreation (unless otherwise specified elsewhere in this DCP)	5m landscape setback from the edge of the E2, RE1 and RE2 zoned land, unless separated by a road

4) A minimum 15% of the site area is to be pervious surfaces, achieved through landscaping and/or the use of permeable paving materials. Perviousness is to be calculated in accordance with the following index:
   - Deep soil (one metre or more in depth, connected subsoil) – 100%
   - Shallow soil (less than one metre in depth, not connected to subsoil) – 75%
   - Permeable pavement – 50%
   - Hardstand – 0%
5) Existing remnant vegetation and paddock trees shall be retained within setback areas and enhanced as an integral part of the landscaping proposals for each development.
6) Landscaped front setbacks should include canopy trees whose mature height is in scale with the proposed development.
7) Setbacks shall include suitable tree planting along the northern and western elevations of buildings to provide shadow and cool the building.
8) Developments adjoining existing sensitive receivers (e.g. educational establishments) shall be designed to mitigate impacts on sensitive receivers such as through generous buffer zones and landscaping, and locating noise generating activities away from the sensitive interface, as well as traffic management measures to improve safety and minimise conflicts.
9) Tree planting in the form of island planter beds shall be provided at a rate of one planter bed per 10 car spaces within car parks to reduce the heat island effect of hard surfaces that are a minimum 1.5m dimension.
10) Evergreen shrubs and trees shall screen car parks, vehicular manoeuvring areas, garbage areas, storage areas from the street frontage.
11) Paving, structures and wall materials should complement the architectural style of buildings.
12) The selection and location of proposed trees and other landscaping plants is to:
   - Be consistent with the preferred trees identified in Appendix C;
   - Consider the use of local native vegetation communities;
   - Re-use of native plants or topsoil removed during earthworks;
   - Contribute to the management of soil salinity, water levels and soil erosion;
   - Ensure tree species being low maintenance and drought tolerant;
   - Consider the capacity of the species to contribute to tree canopy cover;
   - Ensure invasive turf (including Kikuyu) is not used in areas adjoining remnant vegetation within environmental conservation and recreation areas and riparian corridors, or within landscape buffers;
   - Incorporate a diverse range of flora species for to increase species resilience; and
   - Consider service authority requirements in easement locations.
13) 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; and
   - Take account of sight line requirements near intersections.
14) Sufficient area/space is to be made available to allow trees to grow to maturity and not damage local infrastructure.

15) No plant species that are considered a Weed of National Significance and/or a Noxious Weed in New South Wales shall be used.

16) Local Indigenous groundcovers should be considered as a turf alternative in areas not specifically designed for pedestrian use.

4.2.4 Communal Areas

Objectives

a) To enable landscaping to contribute to amenity for employees.

Controls

1) Each building shall be provided with at least 1 communal area for the use and enjoyment of employees and visitors to that development. The space shall be commensurate with the scale of the development and be accessible from the main office.

2) In locating communal areas, consideration should be given to the outlook, natural features of the site, and neighbouring buildings.

3) Communal areas shall be embellished with appropriate soft landscaping, shade, paving, tables, chairs, bins, and access to drinking water etc. commensurate with the scale of the development, activities, and anticipated number of workers. Consider opportunities for small scale active recreation uses, such as a basketball half court or table tennis.

4) Communal areas shall be relatively flat and not contain impediments which divide the area or create physical barriers which may impede use.

5) Communal areas must receive a minimum of 2 hours direct sunlight between 11am and 3pm on the 21st of June.

4.2.5 Building Design

Objectives

a) To encourage innovation and a high standard of architectural design, utilising quality materials and finishes.

b) To ensure buildings achieve a high level of sustainability and environmental performance.

c) To encourage articulated and varied frontages and rooflines to minimise perceived bulk and scale, particularly where facing or visible from public roads, or surrounding suburbs.

d) To ensure new development contributes to a visually cohesive urban environment and responds to the adjacent scale and rural character of the area.

e) To support passive surveillance of the adjoining public realm.

f) To embed circular economy design principles to maximise recycling and reuse of materials.

Controls

1) 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)).

2) An access report is required where universal access is a requirement of the *Disabilities Discrimination Act 1992*.

Siting/Building Orientation:

1) Buildings shall be oriented so building frontage is parallel with the primary street frontage.

2) Buildings should take advantage of a north or north-easterly aspect to maximise passive solar illumination, heating and natural cross-ventilation for cooling.

3) Siting and building orientation shall consider landscaping requirements (refer Section 4.2.3), including the best location for tree planting to shade and screen development.

4) Building design should minimise overshadowing within the site and on adjoining buildings.

5) Buildings should be oriented so that loading, servicing and large areas of car parking (i.e. greater than 20 spaces) are accommodated to the rear or the side of the site and not directly visible from the public domain.

Architectural Design

6) The design of facades along the primary street frontage(s) should strengthen passive surveillance and streetscape character, such as through the use of glazing for the office or administration components of the building.

7) External finishes should contain a mix of materials and colours and low reflectivity to minimise glare and reflection.

8) Elevations visible from the public domain must be finished with materials and colours and articulation that enhance the appearance of that façade and provide an attractive and varied streetscape.

9) In visually sensitive locations, such as adjoining the Mount Vernon rural-residential area, the colour and material palette should utilise muted tones of the natural landscape and avoid bright bold colours and textures.

10) Large expanses of wall or building mass should be relieved by the use of articulation, variation in construction materials, fenestration or alternative architectural enhancements (refer Figure 19 and Figure 20).

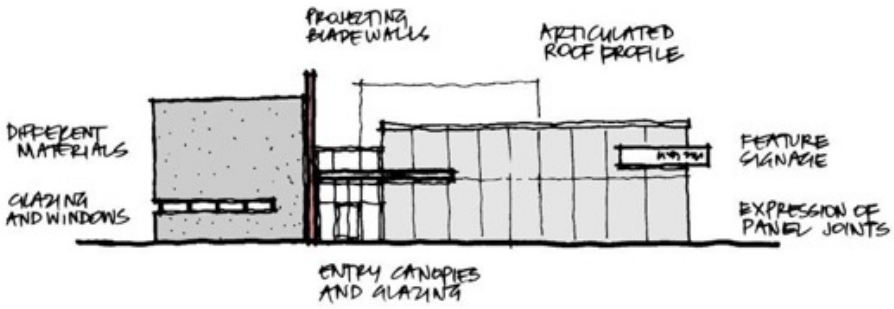

Figure 19. Acceptable solution for articulation of large buildings

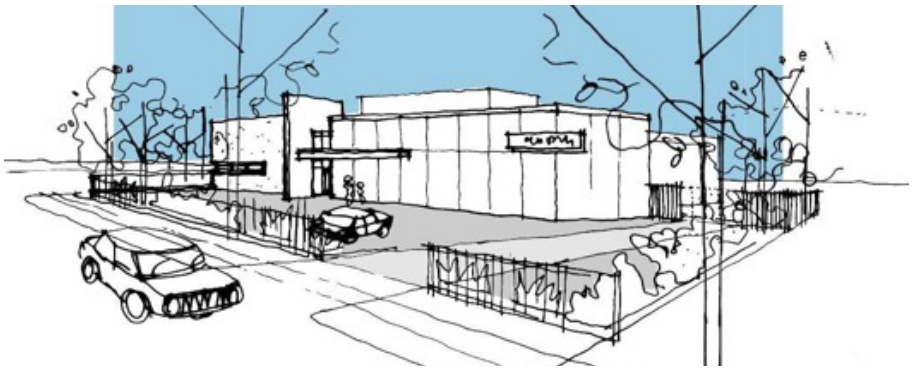

Figure 20. Sketch perspective of acceptable design solutions for articulation of large buildings

11) Energy efficient design principles shall be employed in all building designs (Figure 21).

12) Entrances to buildings must be highlighted by architectural features consistent with the overall design of the building.

13) Courtyard and screen walls shall be in the same material as the building facades.

14) The design and location of roof elements and plant and mechanical equipment, including exhausts, is to minimise visual impact from the street or from elevated locations, such as screening with an integrated built element such as parapets.

15) The design of the main office and administration components shall:

- Be located at the main frontage of the building and be designed as an integral part of the overall building, rather than a 'tack on' addition;
- Have a designated entry point that is highly visible and directly accessible from visitor parking and the main street frontage; and
- Incorporate the principles of Universal Design.

16) Roof forms should help to visually articulate the use within the building. This may include transitions between foyer, office and larger warehouse uses.

17) Roof design must provide natural illumination to the interior of the building.

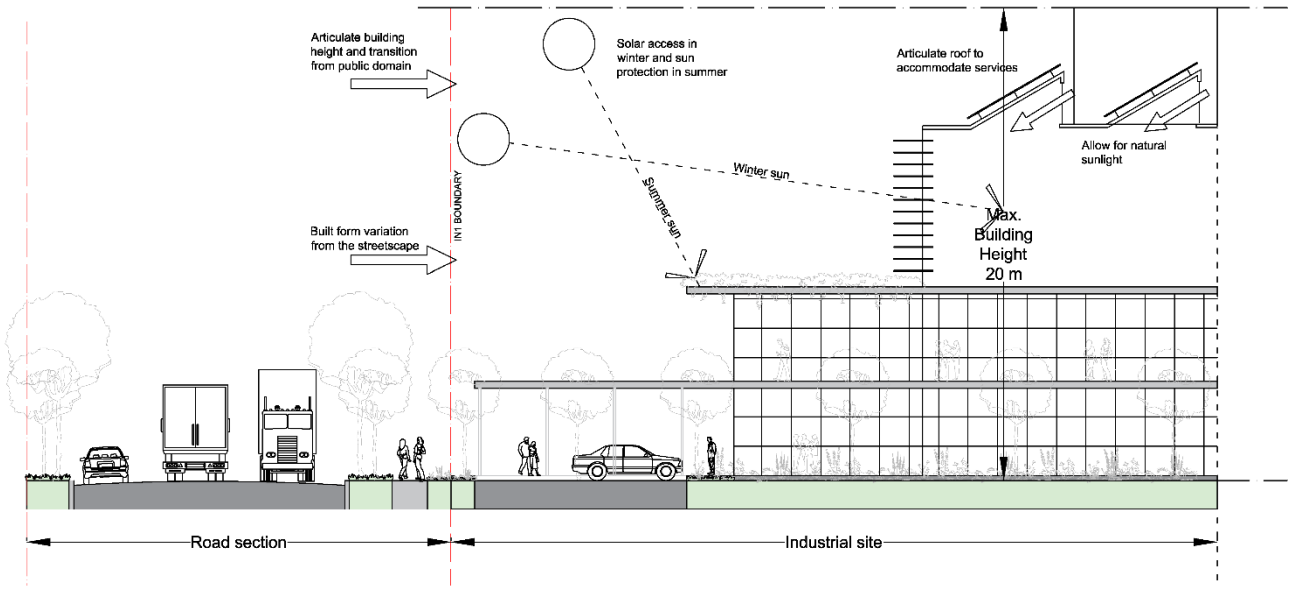

Figure 21. Energy efficient design

Environmentally Sustainable Design

18) Development applications shall demonstrate Ecological Sustainable Design (ESD) measures have been incorporated into the design, including a consideration of:

- Building and window orientation;
- Window size and glass type;
- Material, colour and surface treatments (note control 19 in relation to roof colour);
- Insulation;
- Landscaping and trees to provide shade and moderate the building microclimate;
- Natural ventilation and light with generous, all weather openings;
- Utilise extensive roof areas for energy and water collection;
- Air flow, ventilation and building morphology to support cooling; and
- Circular economy in the design, construction and operation of buildings, public domain, infrastructure, and energy, water and waste systems.

19) Light coloured materials should be used in roof construction to reduce the urban heat effect.

20) Building services, excluding manufacturing plant and operations, should promote:

- Separate metering of water and electricity for multiple uses or tenants;
- Shut-off valves at stormwater outlets to trap toxic spills;
- Waterless urinals;
- Energy efficient lighting;
- Gas boosted solar hot water for staff amenities (kitchen, toilets, showers);
- Rainwater and recycled water for toilet flushing, irrigation or other non-potable uses;
- Waste heat recovery systems;
- Integrated systems for energy generation – waste and water;
- Air-cooled systems, ground source heat rejection or pond heat rejection; and
- Energy storage systems combined with the use of photo voltaic cells for roof areas.

21) Measures to improve air quality and visual and thermal comfort to be considered include:

- Low VOC paints and low-formaldehyde floor covering, adhesives and furniture;
- Glazed facades to be shaded and/or use performance glass to control radiant heat;
- Occupant control of comfort parameters (e.g. operable windows, control of air flow);
- Protection from noise (e.g. open windows or between production and office areas);
- Provision of quality landscaped outdoor amenity areas for staff;
- Hydronic heating and ceiling fans; and
- Materials with low reflectance values.

4.2.6 Design of Storage Areas

Objectives

a) To ensure that external storage of goods does not detract from the visual amenity of industrial areas, streetscapes or adjoining rural-residential areas.

Controls

1) Storage areas are to be located within the building, where practical.

2) External storage areas must be located behind the front building setback, not be visible from a public place, and be consistent with the design of the primary development. The following matters must be addressed in designing external storage areas:

- The proposed height and on-site arrangement of stored goods;
- The visual and amenity impact of the storage area and how this is proposed to be minimised (orientation, screening with landscaping and/or solid fencing, etc.), particularly where the development interfaces with Mount Vernon;
- Access arrangements; and
- Noise, odour and safety issues.

3) For sites with multiple frontages, either to roads or other public spaces, the location and orientation of external storage areas shall minimise visual impact from all potential viewpoints.

4.2.7 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; or
    - 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*.

4.2.8 Signage and Estate Entrance Walls

Objectives

a) To promote an integrated and coordinated design approach to signage in character with architectural and landscape features.
b) To provide a quality entrance statement and signage at Estate entrance points.
c) To minimise the visual impact of signage.
d) To prevent distraction to motorists and minimise the potential for traffic conflicts.
e) To permit the adequate display of information concerning the identification of premises, the name of the occupier, and the activity conducted on the land.

Controls

1) All advertising is required to be:
    - Constructed of high quality, durable materials;
    - Considered in conjunction with the design and construction of buildings;
    - Restricted generally to one sign identifying the name of the occupants and/or products manufactured or produced on the site; and
    - Contained wholly within the site.
2) Free standing pylon signage must not exceed 10m in height from finished ground level and 2m width. No signage is permitted in the bottom 2m of the structure.
3) Building identification signage should have a maximum advertising area of up to 0.5 square metres for every metre of lineal street frontage.
4) Sky signs and roof signs that project vertically above the roof of a building are not permitted.

5) Flat mounted wall signs for business identification signage are to be no higher than 15 metres above finished ground level.
6) Signs should generally be confined to the ground level of the building, awning or fascia, unless it can be demonstrated that the building is of a scale, architectural style and in a location that would be enhanced by signage at different elevations.
7) Signs are to be contained fully within the confines of the wall or awning to which it is mounted.
8) In the case of multiple occupancy of a building or site:
    - Each development should have a single directory board listing each occupant of the building or site;
    - Only one sign is to be placed on the face of each premises either located on or over the door; and
    - Multiple tenancies in the same building should use consistent sign size, location and design to avoid visual clutter and promote business identification.

Illuminated Signage

9) Illuminated signs are not to detract from the architecture of the building during daylight.
10) Illumination (including cabling) of signs is to be either:
    - Concealed;
    - Integral with the sign;
    - Provided by means of carefully designed and located remote or spot lighting.
11) A curfew may be imposed on the operation of illuminated signs where continuous illumination may adversely impact the amenity of residential buildings or the environment.
12) Up-lighting of signs is prohibited. External lighting of signs is to be downward pointing and focused directly on the sign and is to minimise the escape of light beyond the sign.
13) A maximum of one illuminated sign is permitted on each elevation of each building.
14) Illuminated signage shall be oriented away from residential receivers.

4.2.9 Safety and Surveillance

Objectives

a) To ensure personal safety for workers and visitors.
b) To ensure design minimises the opportunity for crime and maximises opportunities for passive surveillance.

Controls

1) A Crime Risk Assessment Report must be prepared for the development of new buildings.
2) Buildings should be designed to overlook public domain areas and provide casual surveillance.
3) Building entrances should be orientated towards the street to ensure visibility between entrances, foyers, car parking areas and the street.
4) Appropriate lighting should be provided to all cycle and pedestrian paths, bus stops, car parks and buildings.
5) Development should provide clear sight lines and well-lit routes between buildings and the street, and along pedestrian and cycle networks within the public domain.

6) Consideration should be given to the use of landscape elements so as to not compromise the perceived level of safety.

4.2.10 Lighting

Objectives

a) To provide adequate external security lighting for employment activities, whilst minimising adverse impacts on adjoining premises and surrounding rural-residential areas.

b) To provide suitable lighting along the road network to enhance landscaping.

c) To illuminate parts of the site for security reasons and to provide increased safety in accordance with Crime Prevention through Environmental Design (CPTED).

d) To encourage energy efficient lighting.

Controls

1) Lighting details shall be provided as part of development applications.

2) Lighting design should address the principles of CPTED where there is significant pedestrian activity, late night work-shifts or safety and security issues.

3) Adequate lighting shall be provided to meet security requirements without excessive energy consumption. Lighting powered by solar batteries or other renewable energy sources and the use of sensor lighting, both internally and externally, is encouraged.

4) Lighting is to be designed or directed so as to not cause light spill onto adjoining sites or sensitive receivers, such as rural-residential areas.

4.2.11 Fencing

Objectives

a) To ensure that the design and location of fencing is integrated within the development and is suitable for its purpose and setting.

b) To ensure that the security needs of the development are satisfied in a manner which complements the surrounding landscape design and streetscape quality.

c) To ensure fencing is located behind the landscaped front setback and is of a high quality.

d) To provide security where appropriate while maintaining open lines of sight from the street.

Controls

1) Fencing along street frontages should provide open style fencing, which does not obstruct views of landscaping from the street or reduce visibility.

2) Palisade fencing is encouraged.

3) Solid fences above 1 metre in height are not permitted along street frontages.

4) No fencing other than a low ornamental type may be erected at the front or secondary street site boundary.

5) High security fencing should be located either behind the landscape setback or alternatively within the landscaped area midway between the site front or secondary boundary and the building line (refer to Figure 22). The design of the landscape setback should consider site security management.

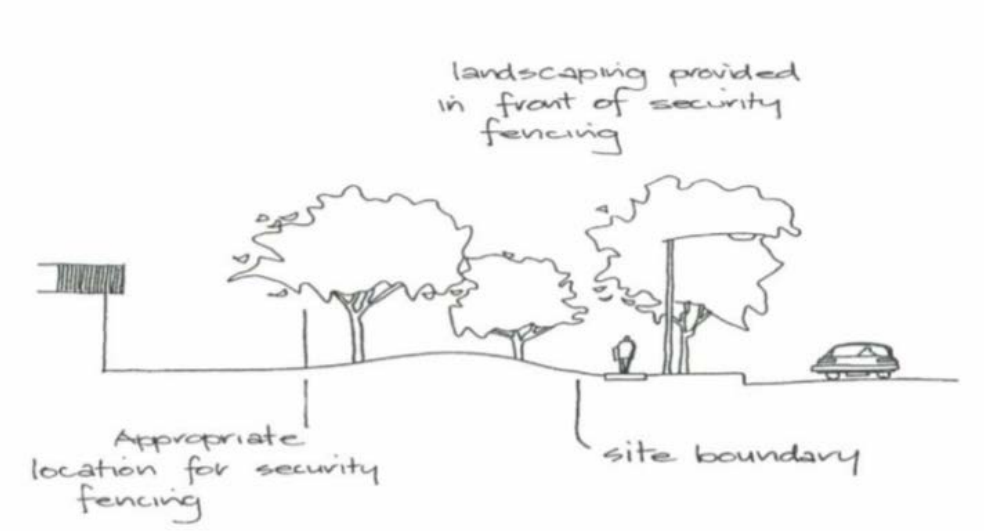

Figure 22. Location of security fencing adjoining public roads

4.3 Amenity

4.3.1 Noise and Vibration

Objectives

a) To ensure noise and vibration do not adversely impact human health and amenity.

b) To ensure building design adequately protects workers from 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) An Acoustic Report by a qualified acoustical engineer must be submitted where proposed development, including traffic generated by that development, will create noise and/or vibration impacts, either during construction or operation, that impacts on adjoining developments or nearby rural-residential areas. The Acoustic Report should outline the proposed noise amelioration strategies and management methods.

4) An Acoustic Report shall be prepared for developments within 500m of rural-residential areas and other sensitive receivers, including educational establishments.

5) Acoustic Reports for individual developments must assess cumulative noise impacts, including likely future noise emissions from the development and operation of the Precinct. The consultant should liaise with the relevant consent authority to determine acceptable amenity goals for individual industrial developments and background noise levels.

6) The use of mechanical plant and equipment may be restricted in areas close to sensitive receivers, such as adjoining rural-residential development and educational establishments.

7) Building design is to incorporate noise amelioration features. Roof elements are to control potential breakout noise, having regard to surrounding topography.

8) Boundary fences are to incorporate noise amelioration features and control breakout noise having regard to developments adjoining rural-residential areas.

9) Development shall comply with the relevant Australian Standards for noise and vibration.

10) A qualified acoustical consultant is to certify any acoustic design measures have been satisfactorily incorporated into the development at construction certificate stage and validate the criteria at occupation certificate stage.

4.3.2 Trading and Operating Hours of Premises

Objectives

a) To ensure the amenity of adjoining rural-residential areas is preserved.

b) To ensure development is provided the flexibility in trading/operating hours to ensure it is competitive and productive.

Controls

1) The consent authority shall have regard to the likely impact of the trading hours of a particular activity on the amenity of adjoining sensitive receivers including rural-residential areas and educational establishments.

4.3.3 Air Quality

Objectives

a) To maintain existing air quality or improve local air quality to protect public health.

b) To ensure future development does not adversely affect existing air quality.

Controls

1) Any development likely to, or capable of, generating air emissions must comply with the *Protection of the Environment Operations Act 1997* and associated regulations.

2) An Air Quality and Odour Assessment is required for development that may have an adverse impact on local and regional air quality, including construction impacts on adjoining rural-residential areas.

3) The Air Quality and Odour Assessment should be in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA 2017) and/or *The Technical framework - assessment and management of odour from stationary sources in NSW* (EPA 2006) and include but not be limited to:
    - Characterisation of all emissions;
    - Measures to mitigate air impacts, including best practice measures; and
    - Details of any monitoring programs to assess performance of any mitigation measures and to validate any predictions as a result of the assessment.

4) Developments that involve back up power generation of electricity with diesel equipment that has the capacity to burn more than 3 megajoules of fuel per second must include a best practice review of reasonable and feasible diesel emission reduction technology.

4.4 Earthworks and Retaining Walls

4.4.1 Development on Sloping Sites

Objectives

a) To ensure site planning considers the stability of land, its topography, geology and soils.

b) To ensure land is appropriately stabilised and retained.

c) To minimise the extent of earthworks when creating a building site.

d) To minimise disturbance of vegetation that stabilises land, particularly on sloping sites.

e) To encourage reuse of fill material from within the Precinct.

f) To ensure that earthworks and retaining wall construction is suitably designed and landscaped to ameliorate its visual presentation to and from the public domain and adjacent properties.

Controls

1) Site planning is to respond to the natural topography of the site and protect vegetation, particularly where it is important to site stability.

2) Where practicable, site design shall balance cut and fill and minimise the extent of earthworks and need for retaining walls (refer Section 3.1).

3) A Geotechnical Report is to be submitted with applications proposing to change site levels.

4) Excavation and fill shall be adequately retained and drained in accordance with Council's Engineering Works and Construction Standards.

5) Level transitions must be managed between lots and not at the interface to the public domain.

6) Finished ground levels adjacent to the public domain or public road shall be no greater than 1.0m above the finished road level (or public domain level).

7) Where a level difference must exceed 1.0m and adjoins the public domain or public road, the retaining wall must be tiered. Each retaining wall tier element shall be no more than 2.0m. A 1.5m wide deep soil zone with suitable landscaping is to be provided between each tier. An indicative tiered retaining wall is shown in Figure 23. The maximum cumulative height of any retaining walls adjoining the public domain is 6.0m.

8) The toe (fill retaining wall) or top (cut retaining wall) of all retaining walls are to be setback 2.0m into the property boundary and the setback is to be suitably landscaped.

9) The highest retaining wall element is to be suitably fenced for safety.

10) Imported fill it is to be Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) and validated by a suitably qualified person.

11) Where possible, fill material should be sourced from within the Precinct.

12) On sloping sites, site disturbance is to be minimised by using split level or pier foundation building designs.

13) All retaining walls proposed for the site are to be identified in the development application for the proposed development.

14) Retaining wall design and materials shall complement architectural and landscape design.

15) Topsoil shall be preserved on site and suitably stockpiled and covered for re-use.

16) Earthworks in the floodplain must address Section 2.5 and Clause 33H of the WSEA SEPP.

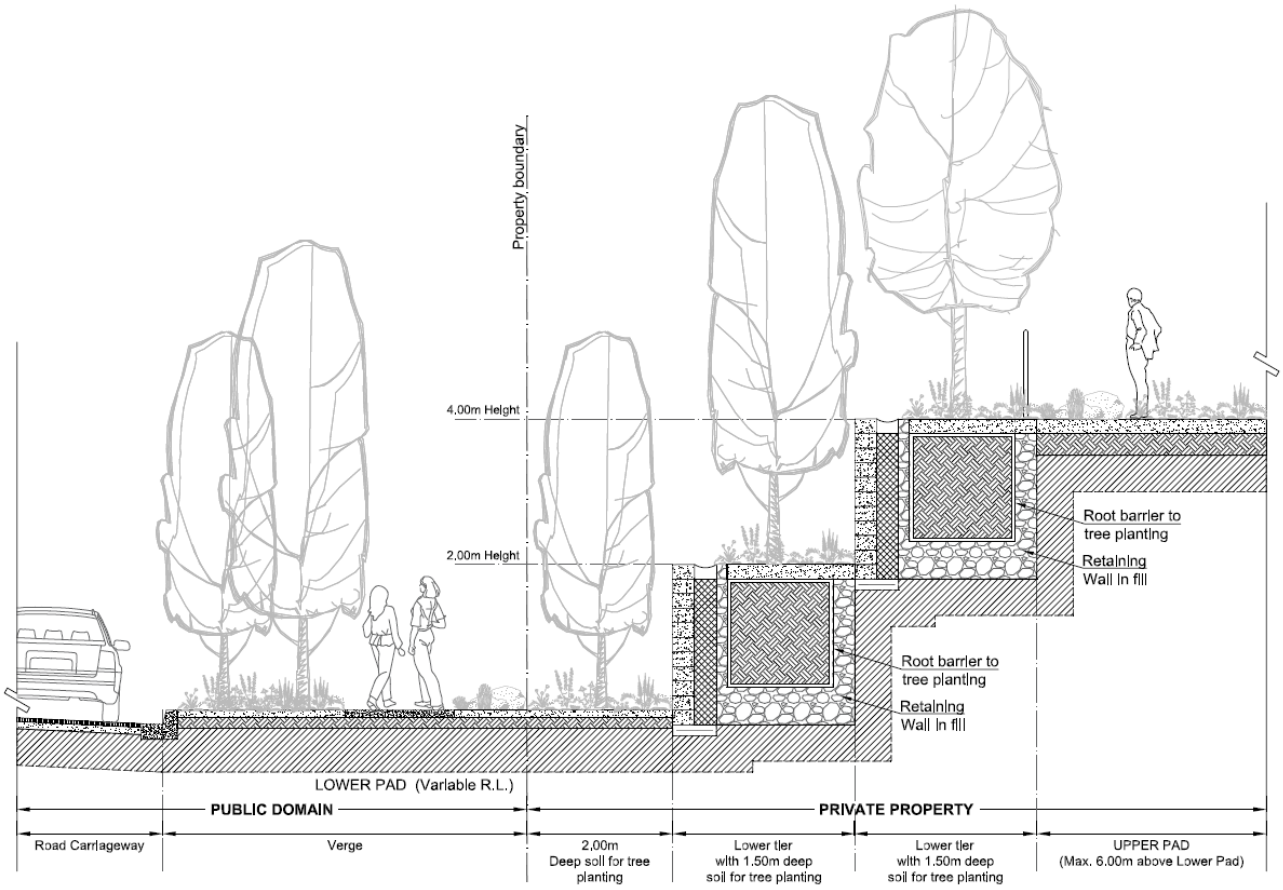

Figure 23. Indicative tiered retaining wall cross-section

4.4.2 Erosion and Sediment Control

Objectives

a) To protect the health of Wianamatta-South Creek and its tributaries from construction and building runoff and meet the water quality objectives.

b) To encourage vegetation retention, protect vegetation during construction and operation, and facilitate prompt rehabilitation through revegetation strategies.

c) To minimise site disturbance during construction, reduce the amount of erosion, and stabilise construction works as quickly as possible following completion.

Controls

1) Development applications must include an Erosion and Sediment Control Plan (ESCP) prepared by a Certified Professional in Erosion and Sediment Control (CPESC).
2) The ESCP is to be implemented under the supervision of a CPESC. The relevant consent authority will require the CPESC to regularly audit and certify that the works are suitable to protect Wianamatta-South Creek and its tributaries, including audit reports.
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 to the satisfaction of the relevant consent authority.
4) Development is to comply with the construction phase targets in Table 5.

5) Erosion and sediment control measures are to be installed in accordance with best practice (including *Managing Urban Stormwater – Soils and Construction and Best Practice Erosion and Sediment Control, IECA*).
6) The ESCP is to consider the following measures:
    - Identify all areas likely to cause pollution of waterways from stormwater run-off and implement appropriate devices to stop the risk of pollution;
    - Divert clean water around the construction site to prevent contamination;
    - Retain as much natural vegetation as possible and limit site disturbance;
    - Control stormwater that enters the construction site from upstream;
    - Divert stormwater from undisturbed upper slopes onto stable areas;
    - Retain and stockpile all excavated topsoil for future landscaping;
    - Prevent sediment/silt from entering adjoining property by installing sediment control devices at the low side of sites and wash down areas;
    - Install high efficiency sediment basins to ensure compliance with the water quality target throughout the construction and building phases;
    - Provide a single, stabilised entry/exit point to the site;
    - Prevent sediment, including building materials, from reaching the road or stormwater system. Sediment is to be removed by sweeping, shovelling or sponging. Under no circumstances shall sediment be hosed;
    - Where a work zone permit over public property is applicable, debris control devices are to prevent spillage of building materials into stormwater drains;
    - Compact all drainage lines when backfilling;
    - Connect downpipes to the stormwater system as early as possible;
    - Revegetate all disturbed areas, after on-site works are completed; and
    - Maintain all sediment control devices during earthworks and construction.

4.5 Waste Minimisation and Management

Objectives

a) To facilitate sustainable waste management in accordance with ESD principles.
b) To manage waste in accordance with the 'Waste Hierarchy' to:
    - Avoid producing waste in the first place;
    - Minimise the amount of waste produced;
    - Re-use items as many times as possible to minimise waste;
    - Recycle once re-use options have been exhausted; and
    - Dispose of what is left, as a last resort, in a responsible way to appropriate waste disposal facilities.
c) To achieve waste minimisation targets as set out in the *Waste Avoidance and Resource Recovery Act 2001* and *NSW Waste Avoidance and Resource Recovery Strategy* (2007).
d) To support the circular economy in line with the *NSW Circular Economy Policy Statement.*

Controls

1) Development applications shall include a Waste and Resource Recovery Management Plan (WRRMP)[6] developed by an appropriate specialist. The WRRMP is to outline the

[6]Two publications to consult when developing a waste management plan are: (1)'The Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (EPA, December 2012); and, (2) 'The Better

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.

2) The WRRMP should 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; and
    - Ongoing management of waste during the operational phase of the development.
3) Waste storage and collection areas should be:
    - Flexible in their design to allow for future changes in the activities and tenancies;
    - Located away from primary street frontages, where applicable;
    - Suitably screened from public areas to minimise noise, odour and visual impacts;
    - Designed and located to consider possible traffic hazards (pedestrian/vehicular);
    - Accessible to collection vehicles;
    - Compatible with the collection service(s) to be used;and
    - Designed to encourage the separation of materials.
4) The design of waste storage and collection areas must consider:
    - Separating dry recyclables for recycling on-site, including containers, paper, cardboard and toners for printers and photocopiers;
    - Placing food scraps in specialised containment bins, with regular collection;
    - Providing refrigerated garbage rooms where there are large quantities of perishable wastes and infrequent collections; and
    - Placing clinical or hazardous and liquid waste in specialised containment bins for collection by specialised services.
5) Grease traps must be provided where there is a likelihood of liquid waste entering the drainage system (contact Sydney Water to obtain trade waste requirements).
6) For communal storage/collection facilities, each tenant should have a designated area.

4.6 Access and Parking

4.6.1 Parking and Manoeuvring Areas

Objectives

a) To facilitate an appropriate number of vehicular spaces having regard to the activities proposed on the land, the nature of the locality and the intensity of the use.

b) To promote efficient and safe vehicle circulation, manoeuvring and parking (including service vehicles and bicycles).

c) To reduce pedestrian and vehicle conflicts on development sites.

d) To minimise the visual impact of on-site parking.

e) To support the complementary use and benefit of public and active transport.

Practice for Public Place Recycling' (DEC 2005) provides information on standards for recycling systems in public places, such as parks, shopping centres, footpaths, bus-stops, etc.

Controls

Provision of Parking Spaces

1) On-site car parking is to be provided to a standard appropriate to the intensity of the proposed development as set out in Table 11. Parking is to meet AS 2890 and AS 1428.
2) For activities not identified in Table 11, the TfNSW's (formerly RTA) *Guide to Traffic Generating Developments* (ISBN 0 7305 9080 1) and AS 2890 should be referred to as a guide.
3) Car parking and associated internal manoeuvring areas provided over and beyond the requirements of this DCP shall be calculated as part of the development's gross floor area.

Table 12. 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 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)

Design of Parking and Manoeuvring Areas

4) The design of car parks and spaces must comply with the relevant Australian Standards.
5) The movement of pedestrians throughout the car park shall be clearly delineated and be visible for all users of the car park to minimise conflict with vehicles.
6) Car parking areas for heavy vehicles should be constructed of hard standing, all weather material, with parking bays and circulation aisles clearly delineated. Permeable paving materials should be used where practicable.

7) The design of parking and access areas is to address WSUD principles (refer Section 2.4), including the use of permeable pavement materials in light vehicle parking areas.
8) Parking areas should incorporate dedicated parking bays for electric vehicle charging.
9) Vehicle access is to be integrated into the building design as to be visually recessive.
10) Vehicular access must be swept path tested for the largest vehicle that will access a particular site e.g. 30m PBS Level 2 Type B or 36.5m PBS Level 3 Type A vehicles.
11) Turning circles shall accommodate the largest type of truck reasonably expected to service the site. A standard truck must be able to complete a 3-point or semi-circular turn on-site without interfering with parked vehicles, buildings, landscaping, storage and work areas.
12) Internal directional signs are to be provided to assist site visitors in locating parking areas.
13) Car park design is to promote passive surveillance, incorporate active measures (e.g. cameras and security patrols) where necessary, and minimise dark areas through lighting.
14) Access to security parking shall be designed to ensure the access mechanism is accessible to the vehicle driver on the entry side of the driveway.
15) Provision should be made for all vehicles to enter and exit a secure (i.e. boom-gated) area in a forward direction.
16) Visitor parking should be provided outside the secured parking areas.
17) The design of car parks should ensure staff/visitor parking is given safe separation from loading dock circulation areas for heavy vehicles.
18) Vehicular ramps less than 20m long must have a maximum grade of 1 in 5 (20%).
19) Development shall provide on-site loading facilities to accommodate the anticipated heavy vehicle demand for the site.
20) All loading and unloading areas are to be:
    - Integrated into the design of developments;
    - Separated from car parking and waste storage and collection areas;
    - Located away from the circulation path of other vehicles; and
    - Designed for commercial vehicle circulation and access.
21) Vehicular access to the loading / unloading area(s) is preferred off rear lanes, side streets and right of ways. Where appropriate, consider a single vehicular access point for the loading/unloading area(s) and waste collection area(s).
22) Car park surfaces should use finishes that minimise heat retention e.g. painted in light coloured paint.
23) Potential entrapment points shall be avoided (e.g. blind corners, wide columns) and lighting and mirrors used when unavoidable.
24) Access, parking, manoeuvring and loading facilities shall be in accordance with AS 2890 and Performance Based Standards *An introduction for road managers* (National Heavy Vehicle Register, May 2019) to accommodate vehicle types outlined in Table 12. The design shall have regard to the Standard Vehicle Turning Templates of the former RMS publication *Policies Guidelines and Procedures for Traffic Generating Developments.*

Table 13. Minimum design vehicle requirements for industrial developments

Site Area	Design Vehicle
Up to 1,500m^2	Medium Rigid Vehicle (MRV)
1,500m^2 to 4,000m^2	Heavy Rigid Vehicle (HRV)
4000m^2 to 20,000m^2	Articulated Vehicle (AV)

Site Area	Design Vehicle
Greater than 20,000m^2	30m PBS Level 2 Type B

Note: Transport depots and warehouses may be required to cater for vehicles larger than the minimum specified above.

Bicycle Parking, Facilities and Storage

25) The following bicycle destination facilities for staff are to be provided:
    - For ancillary office and retail space with a gross floor area over 2500m^2, at least 1 shower cubicle with ancillary change rooms;
    - For industrial activities with a gross floor area over 4000m^2, at least 1 shower cubicle with ancillary change rooms;
    - Change and shower facilities are to be located close to the bicycle storage areas; and
    - Where the building is strata-titled, the facilities are to be available to all occupants.
26) Bicycle parking, facilities and storage must be in convenient locations, visible, secure, and provide weather protection for the bicycle.

4.6.2 Driveways

Objectives

a) To ensure satisfactory access to any development or new allotment created by subdivision.
b) To ensure access accommodates traffic generated by the development and the minimum design vehicle type.
c) To minimise the impact of vehicle access points on the quality of the public domain and streetscape.
d) To ensure accessways and driveways provide safe access from a property to a public road.
e) To ensure driveways do not negatively impact on pedestrian mobility and safety.

Controls

1) The road access to the site must provide for safe entry and exit, with appropriate traffic sight distance. All vehicles should enter/exit the site in a forward direction.
2) Driveways and access roads shall be designed in accordance with AS2890.1 and 2 - 2004.
3) The design of driveways shall consider traffic volumes on the surrounding road network and to and from the development.
4) Driveways should be:
    - Provided from lanes and secondary streets rather than the primary street;
    - Located taking into account any services within the road reserve, such as power poles, drainage inlet pits and existing street trees;
    - Designed to avoid conflict between heavy vehicle and staff, customer and visitor vehicular and cycle movements, preferably by providing separate access driveways;
    - Located to minimise amenity impacts to adjacent rural-residential development;
    - Designed to avoid direct access across a site boundary with a major road. Auxiliary lanes (deceleration and acceleration) may need to be provided to minimise conflicts between entering / leaving traffic and fast moving through traffic; and

- For driveways with high traffic volumes, located away from major roads, intersections, opposite other intense developments, high pedestrian zones, and where right turn movements would obstruct traffic.

5) Driveway widths must have swept turning paths tested for larger vehicle types such as 30m PBS Level 2 Type B vehicles and 36.5m PBS Level 3 Type A vehicles where appropriate.
6) The required threshold should be set within the property to prevent cross fall greater than 4% within the footway area.
7) Driveways are to be sealed from the public road up to the parking areas.
8) New allotments must have direct access to dedicated public roads.

5. Other Developments

5.1 Employment Service Hubs

Employment service hubs will meet the daily convenience needs of the local workforce and visitors to the employment area, including neighbourhood shops, cafes and other small-scale retail outlets. The hubs are intended to be clusters of services or retail activity that connected to the active transport network to encourage walking and cycling and will be co-located with open space and landscaping to create a comfortable, activated space. The locations shown in the Structure Plan are indicative only, and clusters of activity may be appropriate in other locations, subject to assessment.

Objectives

a) To facilitate the development of employment service hubs that provide consolidated small-scale retail and services to meet the daily convenience needs of the local workforce.

Controls

1) Indicative locations for employment service hubs are identified in the Mamre Road Precinct Structure Plan (refer Figure 2). An alternate location for an employment service hub may be considered, if:
    - It is located at least 1km from other existing and/or planned employment service hubs; and
    - It does not preclude the provision of an employment service hub in a more accessible location.
2) Development applications must demonstrate that the size, function and proposed use serves the daily convenience needs of the workforce in the zone or is for the benefit of the local workforce and businesses.
3) Employment service hubs must not have an unreasonable impact on the viability of any other nearby established centre within an industrial or business zone.
4) Uses are to be located within the primary street frontage to generate activity and interest on the street.
5) Active transport paths and bicycle parking should be prioritised and incorporated into the design of the development.
6) The built form should address co-located open space areas.
7) Outdoor furniture and shading shall be provided.

Appendix A Dictionary

Term	Definition
1% AEP flood	a flood that may be referred to as a 1 in 100 chance per year flood. A flood that has a 1% chance of occurring in any given year within a 100-year cycle.
5G	is the fifth-generation cellular network technology.
Acid sulfate soils	As defined under the Standard Instrument - Principal Local Environmental Plan.
Aerotropolis	is a metropolitan area whose infrastructure, land-use and economy are centred on the Western Sydney International Airport and includes the outlying corridors, and aviation orientated business and residential development that benefit from each other and their accessibility to the Western Sydney International Airport. See **Western Sydney Aerotropolis**
Allotment (or lot)	means an area of land contained within the boundaries as detailed in its certificate of title.
Amalgamation	two or more lots joined to form a single development site.
Ancillary Structures	Structures that are subordinate or subservient to the dominant purpose for which a site is used or proposed to be used.
Annual Exceedance Probability (AEP)	means the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage.
Arterial Road	Same meaning as in the RTA Guide to Traffic Generating Developments Version 2.2 (October 2002).
Articulation	the architectural treatment of the exterior of a building using the different building elements that make up that part of the building. It involves how the building's exterior surfaces, edges, corners and materials unite to give the building its form.
Asset protection zone	a fuel-reduced area surrounding a built asset or structure which provides a buffer zone between a bush fire hazard and an asset. The APZ includes a defendable space within which firefighting operations can be carried out. The size of the required asset protection zone varies with slope, vegetation and Fire Danger Index (FDI).
Australian Standard (AS)	are documents published by Standards Australia setting out specifications and procedures designed to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to. These standards establish a common language which defines quality and safety criteria.
Awning	means a predominantly horizontal structure that projects from the host building to provide weather protection, such as for a window or pedestrian area
BC Act	*Biodiversity Conservation Act 2016*
Bicycle Parking facility	means an area reserved or designed for short term parking of bicycles, and includes a device to which the bicycle frame and wheels can be locked.
Biodiversity	Refer to State Environmental Planning Policy (Western Sydney Employment Area) 2009

Term	Definition
Biodiversity offsets	measures that compensate elsewhere for the adverse impacts of an action, such as clearing for development. Biodiversity offsets protect and manage biodiversity values in one area in exchange for impacts on biodiversity values in another.
Biodiversity Offset scheme (BOS)	Refer to the *Biodiversity Conservation Act 2016*.
Biofiltration (swale)	is a grassed or landscaped channel that both treats and conveys stormwater
Blue-green grid	an interconnected network of natural and designed landscape components, including water bodies and green and open spaces.
Buffer	means a distinct separation between developments or land-uses that require separation for amenity, environmental protection or other reason/s.
Bush fire prone land	Refer to the *Environment Planning & Assessment Act 1979.*
Bushland	means land on which there is vegetation which is either a remainder of the natural vegetation of the land or, if altered, is still representative of the structure and floristics of the natural vegetation.
Classified roads	Refer to the *Roads Act 1993.*
Clearing vegetation	As defined under the Standard Instrument - Principal Local Environmental Plan.
Climate change	a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.
Collector road	is a local road that carries local traffic to the sub-arterial and arterial roads, and/or provides access to attractors within the precinct such as retail, commercial and educational facilities.
Communal open space	outdoor space located within the site at ground level or on a structure that is within common ownership and for the recreational use of employees of the development. Communal open space may be accessible to employees only, or to the public.
Communication, Navigation and Surveillance facilities (CNS facilities)	are facilities that allow: (a) pilots to navigate when on route between airports; (b) pilots to utilise terminal area navigation aids to conduct instrument approach procedures; (c) dialogue between pilots and Air Traffic Control (ATC); and (d) Air Traffic Control to monitor and confirm an aircraft location.
Consent Authority	Refer to *Environment Planning & Assessment Act 1979.*
Conservation (heritage)	means all the processes of looking after a place so as to retain its cultural significance. This includes preservation, protection, maintenance, restoration, reconstruction and adaptation

Term	Definition
Conservation (vegetation management)	means all the processes and actions of looking after a place so as to retain its natural significance and includes protection, maintenance and monitoring. Conservation may also include regeneration, restoration, enhancement, reinstatement, preservation or modification, or a combination of more than one of these. Conservation includes conserving natural processes of change (as opposed to artificially accelerated changes).
Contaminated land	Refer to *Environmental Planning and Assessment Act 1979* and *State Environmental Planning Policy No. 55.*
Contributions plan	Refer to *Environment Planning & Assessment Act 1979.*
Conveyance	means a direct measure of the flow carrying capacity of a particular cross-section of a stream or stormwater channel. (For example, if the conveyance of a channel cross-section is reduced by half, then the flow carrying capacity of that channel cross section will also be halved).
CPCP	Cumberland Plain Conservation Plan
Crime prevention through environmental design (CPTED)	is a multi-disciplinary approach to deterring criminal behaviour through environmental design. Crime prevention through environmental design strategies rely upon the ability to influence offender decisions that precede criminal acts. The four principles of the approach are: • surveillance • access control • territorial reinforcement; and, • space management.
Critical Infrastructure	means infrastructure providing services that are essential for everyday life such as energy, water, transport, communications or health
Dedicated freight corridor	A strip of land protected from incompatible development to allow the future delivery of a dedicated freight road which would provide dedicated movement for freight between the future intermodal terminal and development sites in the Mamre Road Precinct.
Deep soil	the soft landscaped part of the site area used for growing trees, plants and grasses, unimpeded by buildings or structures above and below ground providing opportunities for groundwater infiltration and canopy trees. Deep soil permeable zones exclude impervious surfaces including car parks, driveways and roof areas.
Development	Refer to *Environment Planning & Assessment Act 1979.*
Development application	Refer to *Environment Planning & Assessment Act 1979.*
Development control plan	Refer to *Environment Planning & Assessment Act 1979.*
Drip line of a tree	means the horizontal extent of the canopy of the tree projected to ground level.

Term	Definition
Easement	means a right to use or travel over a specified strip of land belonging to another. For example, easements may be required for repairs, drainage of sewage, electricity purposes, services, water supply and right of access.
Ecologically sustainable development	Refer to *Environment Planning & Assessment Act 1979.*
Emergency	means a situation due to an actual or imminent occurrence (such as fire, flood, storm, earthquake, explosion, terrorist act, accident, epidemic or warlike action) which: endangers, or threatens to endanger, the safety or health of persons or animals in the State, or destroys or damages, or threatens to destroy or damage, property in the State, and which requires a significant and co-ordinated response.
Endangered ecological community	Refer to *Biodiversity Conservation Act 2016 and/*or *Environment Protection and Biodiversity Conservation Act 1999* (Cth).
Endemic	means local and restricted to a particular area, although the level of endemism can be very broad (e.g. endemic to Australia) or very narrow (e.g. endemic to land in a certain locality).
Environmental planning instrument	Refer to *Environment Planning & Assessment Act 1979.*
Environmentally sensitive area	Same meaning as in *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.
Erosion	means the process by which the detachment, drawing in, suspension and transport of soil occurs by wind, water or gravitational effects. Erosion leads to sedimentation.
Fabric (heritage)	means all the physical material of the place including elements, fixtures, contents and objects.
Façade	means the external face of a building, generally the principal face, facing a public street or space.
Flood	The covering of normally dry land by water that has escaped or been released or the normal confines of any lake, river, creek or any other natural watercourse, whether or not altered or modified; or, any reservoir canal or dam.
Flood Hazard	means the potential for damage to property or persons or community due to flooding.
Flood hazard (high) or high flood hazard	occurs when there is possible danger to life and limb; there is potential for structural damage; and social disruption and financial losses could be high.
Mamre Road Precinct Flood planning level	means the level of a 1% AEP (100 year average recurrence interval (ARI)) flood event plus 0.5 metres freeboard.
Flood planning level	Is the combination of flood level from the defined flood event and the freeboard selected for flood risk management purposes (Department of Infrastructure, Planning and Natural Resources (2005). *Floodplain Development Manual – the management of flood liable land*)

Term	Definition
Floodplain	an area of land which is subject to inundation by floods up to and including the probable maximum flood event, that is, flood prone land.
Flood prone land	means land impacted up to the level of the probable maximum flood and identified in a map adopted by the relevant council or published by the Government.
Flood Prone Land maps	means maps held by Penrith City Council or Government which indicate relevant flood information
Flood storage areas	means those parts of the floodplain that have the important flood function of temporary storage of floodwaters during the passage of a flood.
Floodplain Development Manual	As per the *Local Government Act 1993* and its supporting guidelines which facilitate the implementation of the NSW Flood Prone Land Policy
Floodways	means those areas of the floodplain whose flood function results in a significant discharge of water during floods. They are often aligned with naturally defined channels. Floodways are areas that, even if only partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.
Greater Sydney Region	the region comprising the local government areas within the boundary shown on the map in the *Greater Sydney Region Plan* and Schedule 1 of the *Greater Sydney Commission Act 2015*.
Green infrastructure	the network of green and blue spaces which includes waterways, bushland, parks, open spaces and tree canopy that are strategically planned, designed and managed to support a good quality of life in an urban environment.
Groundwater	means any moving or stationary body of water or moisture occurring underneath the land surface, but not below the geological basement
Habitat	includes: a) an area periodically or occasionally occupied by a species or ecological community, and b) the biotic and abiotic components of an area.
Hardstand area	means the area of a site through which water cannot infiltrate, and includes the area of the building footprint, garages, water tanks, outbuildings, and non-porous driveways, paths and courts, but excludes the water surface area of swimming pools
Harm an Aboriginal object	Refer to the *National Parks and Wildlife Act 1974*
Hazardous material	Means materials that have the potential to pose a significant risk to human health, life or property, or to the biophysical environment. These may include materials that are radioactive, flammable, explosive, corrosive, oxidising, asphyxiating, bio-hazardous, toxic, pathogenic, or allergenic. Compressed gases and liquids or hot materials that may be hazardous in specific circumstances may also be included.

Term	Definition
Hazardous waste	means any waste that because of its physical, biological or chemical properties, is capable of causing a danger to the life or health of any living thing if it is released into the environment, and/or is, or contains a hazardous material described in the Protection of the Environment Operations Act 1997, e.g. can include dangerous goods, poisons, coal tar or coal tar pitch waste, lead-acid or nickel-cadmium battery waste, lead paint waste arising from non-residential premises and other waste containing hazardous components.
Impervious surface	means land or material that is not readily penetrable by water. Impervious areas occur where the soil surface is sealed, eliminating rainwater infiltration and natural groundwater recharge
Infill development	the erection of a new building or buildings on land within an existing developed area. It may involve erection of building/s on a vacant site or following the total demolition of existing building/s.
Integrated freight network	the network of freight only corridors including the north-south spine and fire access roads.
Integrated water cycle management	an approach to the management of water that considers aspects of water including rainwater, stormwater, groundwater, water supply and use, reuse and treatment.
Kerb	means a raised edge used for bordering the carriageway of a road.
Landmark building	means a building of high quality and unique architectural style designed to be highly responsive to a specific site and its features, that utilises architectural elements to be easily seen and recognised as a point of reference and navigating tool for pedestrians, cyclists and vehicles.
Landscaped area	Part of a site used for growing plants, greases and trees, but does not include any building, structure or hard paved area.
Local environmental plan	Refer to *Environment Planning & Assessment Act 1979.*
Local road	is a road that has a low speed limit and a small footprint, serves local communities and that is generally conducive to walking and cycling. These roads are used primarily for access to abutting properties.
Major road	means an arterial or sub-arterial road.
Managing Urban Stormwater: Soils and Construction (Blue Book)	means *Managing Urban Stormwater: Soils and Construction (4th edition, Landcom, 2004)*, commonly referred to as the “Blue Book” and as in force at the commencement of *State Environmental Planning Policy (Infrastructure) Amendment 2018*.
Mean Annual Runoff Volume (MARV)	Mean annual runoff volume of a development measured in ML/hectare/annum.
Natural state of a waterway	A waterway that functions in the absence of human induced disturbances.

Term	Definition
Operational airspace	is the volume of airspace above a set of imaginary surfaces, the design of which is determined by criteria established by the International Civil Aviation Organisation (ICAO). These surfaces are established with the aim of protecting aircraft from obstacles or activities that could be a threat to safety. Operational airspace includes: (a) prescribed airspace (Commonwealth Airports); (b) Obstacle Limitation Surface (OLS) and Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS) (other NSW Strategic Airports); (c) the area identified on any Height Restriction Map for Defence Airfields.
Performance outcome	a general statement of the means of achieving the intent of the applicable objectives of this development control plan.
Pervious surface	a surface which permits or facilitates the infiltration or penetration of water e.g. grass areas, landscaping, porous paving and the like.
Planning for Bush Fire Protection	means the version of the NSW Rural Fire Service Publication *Planning for Bush Fire Protection* prescribed by the *Environmental Planning and Assessment Regulation 2000*.
Probable maximum flood (PMF)	the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation, and where applicable, snow melt, coupled with the worst flood producing catchment conditions.
Public domain	any permanent space, whether publicly or privately owned, that can be accessed and used by the public and/or is publicly visible or any publicly owned temporary space that can be accessed and used by the public and/or is publicly visible.
Raingarden	is a small bioretention system with vertical sides, typically located on residential lots, that treats stormwater runoff by filtration through special soil and plants. Treated stormwater is discharged from the garden to an external stormwater drainage system
Remediation	Same meaning as in State Environmental Planning Policy No 55—Remediation of Land
Retaining wall	means a wall which is external to a building or work and is used to retain cut or fill and may incorporate provision for drainage.
Right of way	As per the *Conveyancing Act 1919*.
Riparian corridor	the channel which comprises the bed and banks of a watercourse (to the highest bank) and the vegetated riparian zone adjoining the channel.
Riparian zone	means the terrestrial environment adjoining the channel within a riparian corridor (see diagram for riparian corridor).

Term	Definition
Road reserve	includes the following components: • footway • kerb and gutter • road carriageway • ancillary items to any of the above - any stormwater drainage asset, road/street furniture, edging, lighting, poles, services, signage etc.
Salinity	the salt content in water or soil.
Scale	means the size of a building and/or its elements and its relationship with the surrounding elements of the built environment or landscape, viewed from ground/pedestrian level.
Secondary road	Defined under the *Roads Act 1993*.
Sediment	means solid material, either mineral or organic, that is in suspension, is being transported, or has been moved from its site of origin by air, wind, water or gravity
Sedimentation	means the deposition of sediment, usually in such locations as a watercourse, gully, depression, sediment trap or dam, or along a fence line or an area of low slope.
Sensitive receivers	Includes, but is not limited to, rural-residential properties, dwellings and educational establishments.
Signage	As defined under the Standard Instrument - Principal Local Environmental Plan.
Site	site means the allotment(s) of land on which a development is located or is proposed to be carried out.
Site audit	Defined under *Contaminated Land Management Act 1997.*
Siting	means the placement of the structure, both on its lot and within the wider landscape. It includes setbacks and the direction that the building faces, for example, whether it is sited parallel to the street (in the usual manner), sideways (to face the side boundary), or set at an angle relative to the street.
Solar access	is the ability of a building, part of a building or open space to continue to receive direct sunlight without obstruction from other surrounding buildings or impediments, not including trees.
Species	includes: (a) a defined subspecies, and (b) a taxon below a subspecies, and (c) a recognisable variant of a subspecies or taxon, and (d) a population of a particular species (being a group of organisms, all of the same species, occupying a particular area
Stack parking	means a parking arrangement in which two or more vehicles are stacked one above another using a car-stacker system.

Term	Definition
State environmental planning policy	Refer to *Environmental Planning and Assessment Act 1979*.
State Environmental Planning Policy (Western Sydney Employment Area) 2009	the NSW Government established the Western Sydney Employment Area to provide businesses in the region with land for industry and employment, catering for transport and logistics, warehousing and office space.
Stormwater	untreated water that originates from rainfall or snow/ice melt and soaks into the ground (infiltrate), is held on the surface and evaporates, or runs off to streams, rivers or other water bodies (surface water).
Stormwater management	means the processes or practices used to control stormwater.
Streetscape	the character of a street and its close surrounds defined by the spatial arrangement and visual appearance of built and landscape features when viewed from the street.
Sub-arterial road	Same meaning as in the RTA Guide to Traffic Generating Developments Version 2.2 (October 2002).
Threatened ecological community	Refer to *Biodiversity Conservation Act 2016*, and *Environment Protection and Biodiversity Conservation Act 1999*.
Threatened species	Refer to *Biodiversity Conservation Act 2016*, and *Environment Protection and Biodiversity Conservation Act 1999*.
Transport corridor	means a linear tract of land dedicated to at least one main line for transport. Transport corridors can be road, rail or canal and are generally high capacity routes. Transport corridors typically connect two major 'anchor' destinations, with many destinations in between
Tree	A tree as "a perennial plant with a self-supporting stem which has a girth of 300mm or more, measured at a distance of 400mm above the ground and has a height in excess of 2.0 metres).
Tributary	a river or stream flowing into a larger river or lake.
Water Management Authority	Means the same as stormwater drainage manager.
Under awning sign	means a sign that is below and attached to the underside of the awning of a building.
Urban canopy	means the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.
Urban heat island effect	an agglomeration of hard and dark-coloured surfaces such as roads and roofs cause excessive localised warming.
Verge (also footway)	means that part of a road as is set aside or formed as a path or way for pedestrian traffic (whether or not it may also be used by bicycle traffic).

Term	Definition
Visually prominent site	means a site that is situated at a highly visible location including ridge top locations, escarpments, environmentally sensitive sites on sloping land, elevated allotments, corner sites, road bends, vista end points and any site that has the potential to dominate the visual amenity.
Waste	Refer to *Protection of the Environment Operations Act 1997*
Water sensitive urban design	is an approach that integrates water cycle management into urban planning and design. It is used to help mitigate and reduce the impacts of development on our local waterways and retain water in the landscape.
Waterway	As defined under the Standard Instrument - Principal Local Environmental Plan.
Western Parkland City	is made up on the council areas of Penrith, Liverpool, Campbelltown, Hawkesbury, Wollondilly, Camden, Fairfield and Blue Mountains, and incorporates the existing centres of Liverpool, Greater Penrith and Campbelltown-Macarthur, with the new Airport and Aerotropolis geographically at its centre.
Western Sydney Aerotropolis	encompasses 11,200 hectares of land roughly bounded by the Warragamba pipelines to the north, Kemps Creek to the east, Bringelly Road to the south and the future Outer Sydney Orbital Road to the west.
Western Sydney Airport	a Commonwealth business enterprise established in August 2017 to build the new Airport.
Wianamatta-South Creek	Wianamatta-South Creek runs from Narellan to Hawkesbury and forms part of the Hawkesbury-Nepean catchment.
Wianamatta-South Creek Catchment	includes most of the Cumberland Plain of Western Sydney and is a defining central element of the Western Parkland City and the Aerotropolis.
Wianamatta Street Tree	A street tree connected to the stormwater system to allow for passive irrigation, capturing urban stormwater for reuse and nutrient take up. The trees are planted within pits with gravel beds and lining to ensure minimal subsurface infiltration and allowing the tree to take up water as needed to optimise tree health. This design includes extended detention (either above tree or within tree sump/pit) of 0.6 m^3/tree, with pits to include subsurface gravel trenches, lined with waterproof membranes to minimise soil reactivity. All water is to be pre-screened with 200 micron mesh to maximise longevity.
Wildlife buffer	Refer to Aerotropolis SEPP.
WSEA	Western Sydney Employment Area.

Appendix B Lodgement Requirements

The following subsections provide a description of each input and the high level requirements for each study or plan. The main body of the DCP outlines when the study or plan is required. This Section should be read in conjunction with the requirements of *Environmental Planning and Assessment Act 1979* and *Environmental Planning and Assessment Regulation 2000*.

Acoustic Assessment

An acoustic assessment prepared by a suitably qualified acoustic consultant must be submitted with any Development Application for the design, construction and operation for:

- New or modified industrial development;
- Commercial and mixed used development;
- Subdivision of land where there could be potential for the development of multiple noise sources in each lot;
- Sensitive development adjoining and in the vicinity of rail corridors, high-volume roads and industrial development (Note: sensitive development including places of public worship and child-care facilities are permitted in industrial zones);
- Road traffic generating development; and
- New or modified infrastructure.

The acoustic assessment is to be prepared with consideration of the relevant guideline documents, including the:

- the *Noise Policy for Industry (2017)*, which sets assessment noise levels, provides methods to measure and reduce noise levels, and is the recommended guideline for assessing noise from new developments and some existing developments
- the *Interim construction noise guideline (DECC, 2009)*, which advises on work practices to better manage construction noise, including from industrial developments.
- *Assessing vibration* a technical guideline *(DEC, 2006)* which presents preferred and maximum vibration values that should not be exceeded, and recommends effective measurement and evaluation techniques, including for industrial premises.
- the *NSW Road Noise Policy (DECCW, 2011)* establishes criteria to help plan and design the operation of roads to assess the impacts of road traffic noise on the community and help reduce road traffic noise levels.
- the *Rail Infrastructure Noise Guideline (EPA, 2013)* provides guidance to ensure noise and vibration impacts associated with particular rail development projects are evaluated in a consistent and transparent manner.
- the noise requirements of the *State Environmental Planning Policy (Infrastructure) 2007* need to be satisfied while the *development near rail corridors and busy roads - interim guideline* provides information to guide the development in areas that are in or adjacent to rail corridors or high volume roads.
- comply with the *Protection of the Environment Operations Act 1997*, including the *Protection of the Environment Operations (Noise Control) Regulation 2017 .*
- comply with the requirements of relevant Australian Standards and State and Local Government Policies.

The acoustic assessment should include but not be limited to; the location of all sensitive receptors, an assessment of background noise; noise emission goals (including sleep disturbance); the identification and assessment of all potential noise and vibration sources associated with the development; hours of operation, the potential impact of any road traffic noise

and proposed hours of operation. The assessment must also outline the noise and vibration mitigation, monitoring and management measures. This should include but not necessarily be limited to mitigation and management measures, siting, orientation and architectural design of buildings etc and validation processes.

Architectural Plans

Architectural Plans are to include the following plans types.

Plan type	Description
Site Plan	The site plan must clearly identify the site boundaries, existing and proposed site access arrangements, existing and proposed development on the site and its position in relation to boundaries and neighbouring developments.
Demolition Plans	Demolition plans are required when a DA involves the demolition of any existing structures or buildings on a site. Elements to be demolished should be shown in a red dotted line.
Floor Plans	Floor plans provide a birds-eye view of the proposed development and the internal layouts for each level and basement in a building, including the locations of doors and windows. Floor plans should also indicate the different uses associated with different parts of a building.
Elevation Plans	Elevation plans show a side view of a development from the boundary and are required when for all new buildings or when alternations or additions result in changes to the external appearance of a building.
Section Plans	A Section is a diagram that cuts through the proposed development to illustrate overall height and floor heights, and the relationship between the building and the public domain and neighbouring sites.
Schedule of Materials	The Schedule of Materials illustrates the materials to be sued and the proposed façade composition of the building. A Schedule of materials is required are required for all new buildings or when alternations or additions result in changes to the external appearance of a building.
Signage Plans	Signage plans are required for any proposal involving new signage or advertising zones. The plans are to illustrate the size of the signage zone how it will be fixed to a building or the site and any illumination details.

All plans are to:

- Be presented at a suitable scale (e.g. 1:100 or 1:200); and
- Include a title block with the site address, applicant's name, architect, plan number, date produced, scale and position of true north.

Aboriginal Heritage Impact Permit

An Aboriginal Heritage Impact Permit is to be prepared in accordance with the relevant legislation and guidelines under the *National Parks and Wildlife Act 1974*.

Access Report

An access report is required by section 4.2.5 of this DCP to be prepared by a suitably qualified consultant and must demonstrate how issues of access for all users are addressed through the development in accordance with the requirements of the Building Code of Australia and the *Disabilities Discrimination Act 1992*.

Acoustic Report

An Acoustic Report in accordance with Section 4.3.1 of this DCP must be prepared by a suitably qualified acoustic consultant who possesses the qualifications to render them eligible for membership of the Australian Acoustical Society or employed by an Association of Australasian Acoustical Consultants (AAAC) member firm. The report should refer to the relevant Australian Standards and State Government policies and guidelines relating to noise.

Aquatic Ecological Environmental Assessment

An aquatic ecological environmental assessment is to be prepared in accordance with the *Fisheries Management Act 1994* as outlined in Section 2.3.

Air Quality and Odour Assessment

An Air Quality and Odour Assessment in accordance with Section 4.3.3 of this DCP must detail the potential impact of their development on local and regional air quality in the region and mitigation measures to minimise impacts. The assessment is to be undertaken by a suitably qualified Air Quality Professionals under the CAQP Scheme administered by the Clean Air Society of Australia and New Zealand (CASANZ) or Suitably qualified Environmental Practitioner under the CEnvP Scheme administered by the Environment Institute of Australia and New Zealand (EIANZ).

Aviation Safeguarding Assessment

The following table details the matters and various documents that are required as part of an Aviation Safeguarding Assessment.

Matter to be addressed	Details / assessment required
Protection of Airspace	• Details of any crane or construction machinery must be included with the application material. Details are to include maximum heights, for example when crane jibs are stowed. • Landscaping plans must not include plants which, at maturity, will extend into the protected airspace.
Wildlife Hazards **(Wildlife Hazard Assessment and Wildlife Management Plan)**	• Applications for the following uses within the 8 km wildlife buffers must be accompanied with a wildlife hazard assessment and wildlife management plan that incorporates relevant mitigation and monitoring measures: - Agricultural produce industry - Agriculture - Aquaculture - Garden Centre

Matter to be addressed	Details / assessment required
Wildlife Hazards **(Wildlife Hazard Assessment and Wildlife Management Plan)**	- Livestock processing industry* - Plant nursery - Recreation facility (outdoor) - Recreational area - Sewage treatment plant - Waste or resource management facility* - Waste or resource transfer station* - Water storage facility • Applications for the following uses within the 13 km wildlife buffer must be accompanied with a wildlife hazard assessment and wildlife management plan that incorporates relevant mitigation and monitoring measures: - Livestock processing industry* - Waste or resource management facility* - Waste disposal facility* - Sewage treatment plant • Wildlife hazard assessment reports must assess the wildlife attraction risk of the land use, the design of the building and ancillary works including proposed landscaping, water facilities (incl. stormwater infrastructure), waste management, and temporary risks associated construction activity. • The Wildlife Management Plan must respond to the findings and recommendations of the wildlife hazard assessment. • Where monitoring is required to be undertaken in accordance with the management plan, copies of the report are to be submitted to the airport lessee company within 28 days of completion. • A waste management plan for the operation of the use must be submitted for the following uses within the 3km, 8km and 13km buffer: - Agriculture - Agricultural produce industry - Aquaculture - Eco-tourist facility - Food and Drink Premises - Garden Centre - Kiosk - Livestock processing industry* - Plant Nursery - Recreation facility (outdoor)

Biodiversity Development Assessment Report (BDAR)

A Biodiversity Development Assessment Report prepared by an accredited person in accordance with section 6.12 of the BC Act and Section 2.2.2 of this DCP.

A Biodiversity Development Assessment Report (BDAR) is an assessment report required under the Biodiversity Conservation Act 2016 which applies the Biodiversity Assessment Method. The report provides guidance on how a proponent can avoid and minimise potential biodiversity impacts and identifies the number and class of biodiversity credits that need to be offset to achieve a standard of 'no net loss' of biodiversity. The report must assess:

- All the impacts of the proposed development. This includes cumulative, direct and indirect impacts, as well as the impacts of Asset Protection Zones (APZ's), the provision of services (water and sewer, etc) and stormwater management.
- Consistency with draft CPCP.
- Consistency with the DPIE requirements for threatened species surveys and assessment.
- All existing native vegetation on the development site and those that are proposed to be removed or retained.
- The impacts of this on the urban tree canopy target demonstrate consistency with all applicable avoidance and minimisation measures of the BC Act and accompanying methodology.
- The proposed means of protecting trees to be retained prior to and during both construction of subdivision works and construction of buildings, in accordance with AS 4970-2009 and Council requirements.
- The proposed landscaping including the locations and species of trees, shrubs and ground cover to be planted as part of subdivision works.

Building Code of Australia Compliance Report

- A Building Code of Australia Compliance Report (BCA Report) is required for all new developments.
- A BCA report presents the findings of an assessment of the proposed building against the Performance Requirements of the Deemed-to Satisfy provisions of the Building Code of Australia and identifies whether the development will rely on an Alternate Solution based assessment.
- A BCA assessment and report must be undertaken by an accredited certifier suitably qualified to prepare the report.

Bushfire Assessment Report

A Bushfire Assessment Report, prepared in accordance with Planning for Bushfire Protection 2019 (PBP) (as amended) by a qualified bushfire consultant, is required for development applications on land identified as bush fire prone land on the Bushfire Prone Land Map.

Chemical Use and Storage Report

- A report on the storage, handling, transportation and/or processing of chemical and liquid substances is to be submitted in accordance with Section 4.2.7 of this DCP and include:
  - Detailed description of the use and all methods/procedures associated with the use, including flow diagrams.
  - A floor plan of the subject premises depicting the dimensions of the building and indicating the internal layout of all equipment, storage and display areas.
  - A comprehensive list of all chemicals/goods/liquid substances and quantities proposed to be utilised in the activity and actually stored on the subject premises.
  - A description of the method of storage of chemicals/goods/liquid substances on the premises, and the type of containment or packaging to be used.

- A description of the method of transportation of chemicals/goods/liquid substances to/from the premises (include the size and nature of vehicles, proposed routes and frequency of delivery to and from the site).
- Details regarding the number of vehicles likely to be involved with the use at any one time and the provision and allocation of storage/standing areas for such vehicles.
- Details of onsite water quality control.
- Details of waste treatment and transportation.

Construction Environmental Management Plan

A Construction Environmental Management Plan is to be submitted and will include:

- Pre-construction surveys prior to removal or disturbance (seasonally dependent, before torpor) to human made structures, to ensure roosting habitat for microbat species including mine shafts, storm water tunnels, old or derelict buildings, bridges and culverts are retained where possible to ensure any individuals are dispersed or relocated as per best practice.
- A pre-clearance assessment for any native fauna immediately prior to any clearing of native vegetation to ensure that arboreal mammals, roosting and hollow-using birds, bats and reptiles are stopped from accessing any vegetation to be cleared, and are removed if present prior to clearing according to EES' policy on the Translocation of Threatened Fauna in NSW.
- Incorporation of best practice site hygiene protocols to manage the potential spread of Phytophthora and Myrtle Rust for land adjacent to land zoned E1 National Parks and Nature Reserves, E2 Environmental Conservation or lands managed as a reserve. In accordance with the best practice guideline 'Arrive Clean, Leave Clean: Guidelines (Commonwealth of Australia, 2015).
- The locations for weed management, site rehabilitation and nest boxes are to be installed on development adjoining land zoned E1 National Parks and Nature Reserves, E2 Environmental Conservation or lands managed as a reserve.
- A tree-felling protocol is to be implemented to avoid impacts to birds, arboreal mammals and reptiles, raptor nests (almost all large raptors in Wilton are threatened), dreys, dens, hollows and other nests in trees that are to be cleared.
- Demonstration of how construction traffic will avoid remnant wildlife corridors and native vegetation communities by:
    - Using clearly defined access and egress points to and from a development site;
    - Keep to designated routes within the development site and to and from the site;
    - Position parking and equipment and material laydown areas away from land with biodiversity values;
    - Adhere to construction zone speed limits of 20km/h across a subject site;
    - Install temporary fencing prior to site works commencing to limit areas impacted by the works and accessible by construction traffic ;
    - Site design must allow public access to fencing for ongoing maintenance; and
    - The integrity of site fencing must be protected during construction.

Contamination Assessment (Stage 1 and Stage 2 Site Investigations)

- Contamination Assessments are required by Section 2.10 of this DCP.
- Stage 1 Preliminary Site Investigation and Stage 2 Detailed Site Investigation Reports are to be prepared in accordance with State Environmental Planning Policy No 55 – Remediation of Land and the *Contaminated Land Management Act 1995*.
- All investigation, reporting and identified remediation works must be in accordance with the protocols of the NSW Environment Protection Authority's Guidelines for Consultants Reporting on Contaminated Sites.

- Reports submitted with development applications must be approved by a consultant certified under either the Environmental Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

Crime Risk Assessment Report

A Crime Risk Assessment Report must assess the crime risk relating to the proposed development application in the Mamre Precinct. This Crime Risk Assessment is to use qualitative and quantitative measures of the physical and social environment to analyse and minimise crime opportunity. The assessment is to review the proposed development against Crime Prevention Through Environmental Design (CPTED) principles and provides recommendations for the design, construction and future management practices of the development.

Due Diligence Investigation

A due diligence investigation is to be prepared for all development applications which will have any ground disturbance in accordance with DPIE and/or best practice guidelines (e.g. Due Diligence Code of Practise for the Protection of Aboriginal Objects in NSW).

Erosion and Sediment Control Plan (ESCP)

The ESCP must consider the potential for soil erosion and sedimentation during all stages of the development – demolition, construction, building and operation (where applicable i.e. landscape supplies or similar unstabilised activity) or the development. The ESCP must demonstrate compliance with the construction phase target (80% of all flows leaving the construction site achieves total suspended solids of 50mg/L or less and a pH of 6.5 – 8.5) throughout the construction and building phases until the site is stabilised and landscaped. The ESCP must be developed and certified by a Certified Professional in Erosion and Sediment control (CPESC) and illustrate that appropriate controls have been planned which will, when implemented, minimise erosion of soil from the site and, accordingly, sedimentation of drainage systems and waterways.

The ESCP must be submitted in accordance with Managing Urban Stormwater Soils and Construction, also known as the Blue Book (current edition); and form part of the engineering design drawings and be documented in the construction plans. They must include a set of plans drawn to scale which show the layout of appropriate sedimentation and erosion control and outline of appropriate sedimentation and erosion control measures. The drawings must be developed and certified by the CPESC who developed the ESCP.

Flood Impact Risk Assessment

A Flood Impact Risk Assessment (FIRA) is required for development on land identified as fully or partially flood affected. The FIRA should utilise Council's existing data and is to provide an understanding of existing flooding condition and developed conditions consistent with the requirements of the NSW Flood Prone Land Policy and Floodplain Development Manual and to support assessment of the requirements of this DCP. The FIRA shall determine:

- A detailed flood behaviour for existing and developed scenarios for the full range of flooding including the 5% AEP, 1% AEP, 0.5% AEP, 0.2% AEP and the PMF;
- Flood Function (floodways and flood storage areas);
- Flood Hazard; and
- Flood constraints including evacuation constraints (if applicable).

The levels on the survey are required to be verified during construction by a survey certificate. The study shall incorporate:

- A survey of the main watercourse;

- A survey of the site; and
- A detailed flood investigation which establishes the estimated 20% AEP, 1% AEP (100 year ARI) 0.2% AEP and Probable Maximum Flood (PMF) levels including overland flow paths.

Flora and Fauna Assessment

A Flora and Fauna Assessment is an assessment report that identifies all potential species located on the subject site and where applicable surrounds.

This report is used to determine the potential impacts of a proposed development on the identified species. Where wildlife impacts are likely to arise the proponent may be requested to carry out additional fauna surveys to determine the likely impacts on biodiversity. Impacts may trigger the requirement to complete a BDAR.

The assessment and fieldwork are required to be undertaken by suitably qualified and experienced consultants.

Geotechnical Report

A Geotechnical Report is to be submitted in accordance with Section 4.4.1 of this DCP. The report must detail the ground conditions of a site and any risks associated with ground stability or proposed excavation. The report is to detail the findings from desk top review of the site and borehole testing where necessary. The report should also recommend appropriate temporary and permanent site support and retention measures.

A Geotechnical Report must provide:

- The location and extent of the earthworks on the site;
- Justification for the need to change the land levels in terms of the overall development;
- Any other impacts from the changed land levels as a consequence of the earthworks.

The assessment should be undertaken by a qualified Geotechnical Engineer.

Heritage Impact Statement

A Heritage Impact Statement must be prepared by an experienced and qualified heritage consultant in accordance with the requirements of Section 2.6 of this DCP.

The following issues must be addressed in the Heritage Impact Statement:

- The impact of the proposed development on the heritage significance, visual curtilage and setting of the heritage item;
- Details of the size, shape and scale of, setbacks for, and the materials to be used in, any proposed buildings or works;
- Details of any modification that would reduce the impact of the proposed development on the heritage significance of the heritage item; and
- Proposals for subdivision should define an appropriate setting or 'curtilage' for the heritage building as part of the Heritage Impact Statement or Conservation Management Plan.

Landscape Plans

A Landscape Plan prepared by a Landscape Architect is to be submitted with all Development Applications in accordance with Section 4.2.3 of this DCP. The Landscape Plan should detail:

- All existing trees on the development site and those that are proposed to be removed or retained.
- Tree protection works for all trees to be retained during both construction of subdivision works and construction of buildings.

- Planting scheme including trees, shrubs, grasses and ground covers.
- The relationship of the proposed landscaping to native vegetation, including weed or exotic species invasion and the contribution of the proposed landscaping to the creation of habitat values and ecological linkages throughout the Precinct.
- The prioritisation of remnant native trees as street trees and diverse local native tree species for street planting over non-native tree species where appropriate.
- Parking and associated access driveways.
- Paved and grassed areas.
- Boundary fencing to adjoining properties.
- Loading/unloading areas.
- Any outside storage areas.
- Any open space and any outdoor furniture.

Note: Engineering and hydraulics plans are to be consistent with the landscape plan, e.g. storm water lines and excavation should not be within the drip line of trees to be retained.

Overland Flow Study

An Overland Flow Study, required by Section 2.5 of this DCP, is to be prepared in accordance with Penrith City Council's Stormwater Drainage Specification for Building Developments.

Plant List

See Appendix C for a plant list of plants that reduce the risk of fauna strike.

Reflectivity Statement

- A Reflectivity Statement is to detail the façade composition of a new building and provide an assessment of the exterior reflectivity created by the façade in accordance with Section 4.2.5 of this DCP.
- Details of samples of external materials and finishes shall be submitted with the Development Application.
- External materials should not have an index of reflectivity above 20%.

Salinity Analysis

- A detailed salinity analysis is to be prepared where initial investigation shows the site is saline or affected by salinity prepared by a qualified soil scientist required by Section 2.9 of this DCP.
- Investigations and sampling for salinity are to be conducted in accordance with the requirements of Site Investigations for Urban Salinity.
- The detailed salinity analysis is to include a Salinity Management Plan.
- The author of the salinity analysis must sign off on the project on completion of works.

Shadow diagrams

- Shadow Diagrams are required by Section 4.2 of this DCP.
- Shadow Diagrams determine the resulting solar impacts of a development on adjoining properties, public footpaths, open space and environmental areas.
- Shadow Diagrams are to be prepared by an architect and are to illustrate the shadows cast at the winter solstice (June 21) at 9am, 12pm and 3pm.

Site Analysis

A Site Analysis is to identify the key features of a site and surrounding sites to reveal the opportunities and constraints of development in accordance with Section 4.1 of this DCP.

Site analysis should include plan and section drawings of the existing features of the site at the same scale as the site and landscape plan. That plan should include the following minimum elements:

- The site's dimensions and areas.
- North point and the site's orientation (e.g. solar access).
- Topography (with 0.5m to 1m contours).
- Road and pedestrian access points.
- Services and infrastructure (e.g. electricity poles, stormwater drainage lines, natural drainage, kerb crossings and easements).
- Rights of way.
- Views to and from the site.
- Site overland flows and drainage patterns.
- Geotechnical characteristics of the site and suitability for development.
- Location of site in relation to shops, community facilities and transport.
- Heritage items on site or on adjoining properties.
- Form and character of adjacent and opposite buildings in the streetscape, including both sides of any street that the development fronts.
- Location and use of any existing buildings or built features on the site.
- Location and important characteristics of adjacent public, communal and private open spaces.
- Location of significant vegetation on the site.
- Location of any significant noise sources on and in the vicinity of the site.
- Assessment of site contamination and/or remediation.

Soil Salinity and Sodicity Assessment

The intent of a soil salinity and sodicity assessment is to help applicants in the Mamre Precinct manage their groundwater to minimise salinity, sodicity and toxicity hazards. A Soil Salinity and Sodicity Assessment is to be conducted in accordance with the general requirements of the Site Investigation for Urban Salinity (Department of Land and Water Conservation, 2002).

This assessment aims to provide an indication of the potential risk of salinity and aggressivity occurring within a site proposed for development and must address the suitability of land within the Precinct for its proposed land use(s).

Statement of Environmental Effects / Environmental Impact Statement

A Statement of Environmental Effects (SEE) is a written statement that describes the proposed development and provides an assessment of the proposal against the planning controls. The SEE must address the matters for consideration under Section 4.15 of the Environmental Planning and Assessment Act 1979.

It should also explain the likely impacts of the development during and after construction and how these impacts will be minimised or managed.

All development applications require a SEE. An Environmental Impact Statement (EIS) is required for state significant development (rather than a SEE).

Survey Plan

A survey plan provides the locations of site boundaries, the site area, the locations of existing buildings and any easements and details the topography of the site.

A survey plan must be prepared by a registered surveyor.

Transport Management and Accessibility Plan (TMAP) and Traffic Report

A Transport Management and Accessibility Plan (TMAP) is to be prepared for all significant developments. The TMAP is to address the objectives and controls in Section 3.4.

The Traffic Report should detail the assessed impact of projected pedestrian and vehicular traffic associated with the proposal, with recommendations on the extent and nature of the traffic facilities necessary to preserve or improve the safety and efficiency of the adjacent road system.

Any Traffic Report or Traffic Impact Statement is required to address the following objectives and controls under Section 3.4 of this DCP:

- Transport and land use;
- Traffic management and safety;
- Traffic generating developments;

The study is to be prepared by a suitably qualified traffic engineer.

Note: Any development identified in Schedule 3 of State Environmental Planning Policy (Infrastructure) 2007 is either referred to RMS (Column 2 developments) or Council's Local Traffic Development Committee (Column 3 developments) for assessment and conditions as required.

Utilities Plan

Development plans must show, where applicable, the siting of utilities in relation to proposed works and include a risk mitigation strategy for the construction phase and identification of how ongoing access for maintenance will be retained in accordance with Section 2.14 of this DCP.

Vegetation Management Plan

A Vegetation Management Plan (VMP) for the rehabilitation and conservation of native vegetation and habitat is to be prepared for land located within E2 Environmental Conservation, RE1 Public Recreation or a Riparian Corridor. The VMP is to be prepared in accordance with the requirements of NSW Natural Resources Assessment Regulator and the Department of Planning, Industry and Environment.

Visual Impact Assessment

A Visual Impact Assessment considers the impacts of a development on the visual qualities of the landscape. The Visual Impact Assessment must demonstrate that the building height controls meet the requirements of Sections 3.2 & 4.2 of this DCP. The assessment is to document the landscape qualities of the site and surrounds to guide improved design outcomes and avoid negative impacts of the proposal.

Waste and Resource Recovery Management Plan

A Waste and Resource Recovery Management Plan ('the Plan') must be submitted in accordance with Section 4.5 of this DCP.

The Plan must include details of:

- The types and volumes of wastes and recyclables likely to be generated as a result of the development;
- How waste and recyclables will be stored and treated on site;
- How the residual non-reusable or non-recyclable wastes and recyclables are to be disposed of; and

- How ongoing waste management will operate once the development is complete (for the life of the development).

The Plan must be supported by scaled waste management drawings that are to assist in demonstrating compliance with the provisions of this Plan.

A Waste and Resource Management Plan will also be required for applications for a Complying Development Certificate.

Water Management Strategy

All development proposals must include a Water Management Strategy in accordance with Section 2.4.

The Water Management Strategy must be prepared by a suitably qualified engineer and include:

- Estimates required water demand and sources including the use of alternative water sources such as stormwater and recycled water;
- Documents appropriate modelling to demonstrate compliance with maximum stormwater flow and quality targets provided in this DCP;
- Details of connections to any relevant regional stormwater infrastructure, or interim arrangements where this infrastructure is not operational at the time of lodgement. Where no satisfactory interim arrangements are proposed or agreed, development consent may be deferred until the required regional infrastructure is delivered;
- Details the proposed approach to water sensitive urban design, with the principle aim of retaining and reusing stormwater within the development footprint (including development lots and streets) through measures such as:
    - Pervious surfaces including deep soil setbacks, green space and permeable paving (where appropriate) to allow for infiltration of stormwater;
    - Rainwater tanks connected to appropriate end use such as irrigation (on-site landscaped areas, central open spaces or other reuse opportunities), industrial processes, evaporative cooling, toilet flushing or other non-drinking purposes;
    - On-street stormwater retention systems including street trees and bioretention systems designed to maximise stormwater losses through evapotranspiration and overflow to the stormwater drainage system;
    - Innovative design such as green roofs/walls, evaporative misting and estate-based stormwater harvesting schemes.

Weed Eradication and Management Plan

Weed Eradication and Management Plan outlining weed control measures during and after construction is to be submitted with the development application. Weed Eradication and Management Plans are to include specific measures to manage the spread of weeds on known populations of the following threatened flora species: *Acacia bynoeana, Cynanchum elegans, Dillwynia tenuifolia, Genoplesium baueri, Grevillea juniperina subsp. juniperina, Grevillea parviflora subsp. parviflora, Persoonia nutans* and *Pultenaea parviflora.*

Appendix C Plant List

Suggested plant species and their common name for planting in the Mamre Road Precinct.

Trees	
Botanic Name	Common Name
Acacia binervia	Coast wattle
Acacia decurrens	Black/Green wattle
Acacia implexa	Hickory
Acacia parramattensis	Sydney Green Wattle
Acacia pendula	Boree
Acacia decurrens	Black/Green wattle
Acacia implexa	Hickory
Acacia parramattensis	Sydney Green Wattle
Acacia pendula	Boree
Acacia decurrens	Black/Green wattle
Acacia implexa	Hickory
Acacia parramattensis	Sydney Green Wattle
Acacia pendula	Boree
Agonis flexuosa	Willow Myrtle
Acer buergerianum	Trident Maple
Acer x freemanii ‘Jeffersred’ Autumn Blaze	Autumn Blaze Maple
Acer palmatum	Japanese Maples
Alectryon oleifolius	Rosewood
Alectryon subcinereus	Native quince, birds-eye
Allocasuarina littoralis	Black She-oak
Alphitonia excelsa	Red ash
Angophora costata	Smooth Barked Apple
Angophora bakeri	Narrow Leaf Apple
Angophora floribunda	Rough Barked Apple
Angophora subvelutina	Broad leaved Apple
Araucaria cunninghamii	Hoop Pine
Araucaria heterophylla	Norfolk Island Pine
Atalaya hemiglauca (whitewood – inland clay – soil areas)	Whitewood
Auranticarpa (Pittosporum) rhombifolium	
Backhousia citriodora	Lemon Myrtle
Backhousia myrtifolia	Grey Myrtle
Brachychiton acerifolium	Illawarra flame ree

Trees	
Brachychiton populneus	Kurrajong
Brachychiton rupestris	Bottle tree
Buckinghamia celsissima	Ivory Curl Tree
Callitris endlicheri	Black cypress pine
Callitris rhomboidea	Port Jackson pine
Callitris verrucosa	Mallee pine
Cassia brewsteri	Brewster's cassia
Callistemon salignus	
Callistemon viminalis	
Castanospermum australe	Blackbean
Casuarina cristata	Belah
Casuarina cunninghamiana	River Oak
Casuarina glauca	Swamp Oak
Ceratopetalum gummiferum	NSW Christmas Bush
Clerodendrum tomentosum	Lollybush
Corymbia citriodora	Lemon Scented Gum
Corymbia maculata	Spotted Gum
Ehretia acuminata	Koda
Elaeocarpus reticulatus	Blueberry Ash
Eucalyptus amplifolia	Cabbage Gum
Eucalyptus baueriana	Blue Box
Eucalyptus crebra	Narrow Leaf Red Ironbark
Eucalyptus elata	River White Gum
Eucalyptus eugenioides	White Stringybark
Eucalyptus fibrosa	Red Ironbark
Eucalyptus globoidea	
Eucalyptus microcorys	Tallowwood
Eucalyptus moluccana	Grey Box
Eucalyptus pilularis	Blackbutt
Eucalyptus punctata	Grey Gum
Eucalyptus sclerophylla	Scribbly Gum
Eucalyptus sideroxylon	Mugga Ironbark
Eucalyptus tereticornis	Forest Red Gum
Ficus rubiginosa	Port Jackson Fig
Flindersia australis	Crow’s Ash

Trees	
Fraxinus 'Urbanite'	Urbanite Ash
Geijera parviflora	Wilga
Glochidion ferdinandi	Cheese Tree
Hibiscus heterophyllus	
Hymenosporum flavum	Native Frangipani
Jacaranda mimosifolia	Jacaranda
Koelreuteria paniculata	Golden Rain Tree
Lagerstroemia indica	Crepe Myrtle
Leptospermum petersonii	Lemon Scented Tea Tree
Liquidambar styraciflua	Sweetgum
Lophostemon confertus	Brushbox
Melia azedarach	White Cedar
Melaleuca decora	White Paperbark
Melaleuca styphelioides	Prickly Paperbark
Melaleuca linarifolia	Narrow-leaved paperbark
Myrsine variabilis	Muttonwood
*Nyssa sylvatica	Tupelo
Owenia acidula	Gruie, colane
Podocarpus elatus	Plum pine
Quercus sp	Oaks
Rhodosphaera rhodanthema	Deep yellow wood
Syncarpia glomulifera	Turpentine
*Tibouchina spp. and hybrids	Lasiandra
Waterhousea floribunda	Weeping Lilly Pilly
Shrubs	
Botanic Name	**Common Name**
Acacia rubida	Red wattle
Acacia spectabilis	Mudgee wattle
Acer palmatum	Japanese Maples
Alyogyne huegelii	
Atriplex nummularia	Old-man saltbush
Baeckea virgata	Tall Baeckea
Brachychiton discolor	Lacebark
Breynia oblongifolia	Coffee Bush
Bursaria spinosa	Blackthorn

Shrubs	
Botanic Name	**Common Name**
Callistemon citrinus	Bottlebrush varies
Coronidium elatum	White paper daisy bush
Correa alba	White correa
Correa reflexa	Native fuchsia
Cotinus spp	Smoke bush
Crotalaria cunninghamii	Rattlepod
Cryptandra amara	Bitter cryptandra
Cryptandra spinescens	
Daviesia ulicifolia	
Dodonea viscosa	Giant Hop Bush
Doryanthes excelsa	Gymea Lily
Eremophila mitchellii	Budda
Grevillea juniperina	Juniper Grevillea
Guoia semiglauca	
Hakea salicifolia	Willow Hakea
Hakea sericea	Needlebush
Indigofera ausrtralis	Australian Indigo
Kunzea ambigua	Fringed Heath Myrtle
Kunzea capitata	Tickbush

Ground Covers		
Botanic Name	**Common Name**	**Additional Notes/Requirements**
	Couch grass	
Adiantum aethiopicum	Maidenhair Fern	
Ajuga australis	Austral bugle	
Alternanthera sp. A / A. denticulata		
Aristida ramosa	Purple Wiregrass	Subject to monitoring and/or maintenance plan
Arthropodium milleflorum	Vanilla lily	
Asperula conferta		
Bothriochloa macra	Red-leg grass	Subject to monitoring and/or maintenance plan
Bracteantha bracteata	Yellow paper daisy	
Brunoniella australis	Blue Trumpet	

Ground Covers		
Botanic Name	**Common Name**	**Additional Notes/Requirements**
Caesia parviflora	Pale grass-lily	
Carex appressa	Tall Sedge	Subject to monitoring and/or maintenance plan
Cayratia clematidea	Native Grape	
Chloris truncata	Windmill Grass	Subject to monitoring and/or maintenance plan
Chrysocephalum apiculatum	Billy-buttons	
Cissus antarctica	Kangaroo Vine	
Cissus hypoglauca	Water vine, native grape	
Clematis aristata	Old Mans Beard	
Clematis glycinoides	Guwulyari, headache vine	
Clematis microphylla	Old Mans Beard, travellers joy	
Commelina cyanea	Scurvyweed	
Cymbonotus lawsonianus	Bear's-ear	
Cymbopogon refractus	Barbed Wire Grass	Subject to monitoring and/or maintenance plan
Dampiera stricta	Goodeniaceae	
Desmodium varians	Tick-trefoil	Subject to monitoring and/or maintenance plan
Dianella caerulea	Flax Lily	Subject to monitoring and/or maintenance plan
Dianella longifolia	Flax Lily	Subject to monitoring and/or maintenance plan
Dichelachne micrantha	Short Hair Plume Grass	Subject to monitoring and/or maintenance plan
Dichondra repens	Kidney Weed	
Dichopogon fimbriatus	Chocolate lily	
Doodia aspera	Prickly Rasp Fern	
Echinopogon ovatus	Hedgehog Grass	
EinadiA hastata	Saloop	
EinadiA nutans subsp linifolia		
Entolasia marginata	Panic Grass	
Entolasia stricta	Wiry Panic	
Eremophila debilis (sun. Myoporum debile)	AMulla, Winter apple	

Ground Covers		
Botanic Name	**Common Name**	**Additional Notes/Requirements**
Eremophila maculata	Emu-bush	
Eustrephus latifolius	Wombat berry	
Gahnia aspera	Saw Sedge	Subject to monitoring and/or maintenance plan
Geitonoplesium cymosum		
Goodenia hederacea	Ivy Goodenia	
Gynochthodes (Morinda) jasminoides		
Hardenbergia violacea	Purple Coral Pea	
Hibbertia dentata	Trailing guinea flower	
Hibbertia scandens	Climbing Guinea Flower	
Hydrocotyle peduncularis		
Imperata cylindrica	Cogon Blady Grass	Subject to monitoring and/or maintenance plan
Isolepis nodosa	Nobby Clubrush	Subject to monitoring and/or maintenance plan
Jasminum suavissimum		
Juncus usitatus	Common Rush	Subject to monitoring and/or maintenance plan
Lomandra filiformis	Wattle Mat Rush	Subject to monitoring and/or maintenance plan
Lomandra fluviatilis	Mat Rush	Subject to monitoring and/or maintenance plan
Lomandra longifolia	Common Mat Rush	Subject to monitoring and/or maintenance plan
Lomandra multiflora		
Lotus australis		
Mentha diemenica	Native pennyroyal	
Microlaena stipoides var.stipoides	Weeping Grass	Subject to monitoring and/or maintenance plan
Murdannia graminea		
Myoporum parvifolium	Creeping boobialla	
Marsdenia viridiflora subsp Viridiflora		
Oplismenus aemulus	Basket Grass	Subject to monitoring and/or maintenance plan

Ground Covers		
Botanic Name	**Common Name**	**Additional Notes/Requirements**
Oxytes (Desmodium) brachypoda	Tick-trefoil	
Pandorea pandorana	Wonga Vine	
Parsonsia straminea	Silkpod	
Passiflora cinnabarina	Red passionflower	
Passiflora herbertiana		
Pelargonium inodorum		
Pennisetum clandestinum	Kikuyu	
Pimelea spicata		
Plectranthus parviflorus	Cockspur Flower	
Poa labillardieri	Tussock	Subject to monitoring and/or maintenance plan
Pratia purpurascens	Purpleroot	
Pseuderathemum variabile	Pastel flower	
Pultenaea parviflora		
Pycnosorus globosus (Craspedia)	Drumsticks, billy buttons	
*Pyrostegia venusta	Orange trumpet creeper	wildlife buffer, where supported by , confirming landscape design minimises n.
RhodAnthe anthemoides	Chamomile Sunray	
Scaevola albida		
Scutellaria humilis	Skullcap	
Senna artemisioides		
Senna clavigera		
Sorghum leiocladum	Wild sorghum	Subject to monitoring and/or maintenance plan
Smilax glyciphylla	Sweet sarsaparilla	
Stackhousia monogyna	Creamy candles	
Stackhousia muricata	Western stackhousia	
Stackhousia viminea	Slender stackhousia	
Stephania japonica	Snake vine	

Ground Covers		
Botanic Name	**Common Name**	**Additional Notes/Requirements**
Themeda australis	Kangaroo Grass	Subject to monitoring and/or maintenance plan
Thysanotus tuberosus	Fringe lily	
Trachelospermum jasminoides	Chinese Star Jasmine	
Tricoryne elatior	Autumn lily	
Veronica plebeia	Speedwell	
Viola betonicifolia	Native violet	
Viola hederacea	Native Violet	
Wahlenbergia communis	Tufted bluebell	
Wahlenbergia planiflora	Bluebell	
Wahlenbergia stricta	Tall bluebell	
Wisteria sp	Wisteria	
Zornia dyctiocarpa	Twinleaf	

Appendix D Further Information on the Waterway Health Objectives

Waterway Health Objectives

The waterway health objectives are derived from 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.

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
Frequency (number per year)	6.9 ± 0.4	19.2 ± 1.0
Average Duration (days per year)	6.1 ± 0.4	2.2 ± 0.2
Freshwater Flows (L/Ha)		
≥ 75th and ≤ 90th Percentile Daily Flow Volume	327.1 to 2048.4	2642.9 to 10091.7
Frequency (number per year)	4.0 ± 0.9	24.6 ± 0.7
Average Duration (days per year)	38.2 ± 5.8	2.5 ± 0.1
Cease to Flow		
Proportion of Time per Year	0.34 ± 0.04	0.03 ± 0.007
Duration (days per year)	36.8 ± 6	6 ± 1.1

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