

*Mamre West Land
Investigation Area
Development Control Plan*

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Jennifer Cooper
Senior Consultant	David Lousick
Job Code	SA5682
Report Number	DCP_20160516

© Urbis Pty Ltd
ABN 50 105 256 228

All Rights Reserved. No material may be reproduced without prior permission.

You must read the important disclaimer appearing within the body of this report.

URBIS
Australia Asia Middle East
urbis.com.au

TABLE OF CONTENTS

1	Introduction	1
1.1	Aims and Objectives of DCP	1
1.2	Structure of the DCP	1
1.3	Land to which DCP Applies	2
1.4	Relationship to Other Plans.....	3
1.5	Future Rezoning in the Precinct	3
2	Urban Design Principles	4
3	Land Use and Staging	6
3.1	Subdivision	6
3.2	Utility Services	7
3.3	Urban Design and Built Form	8
3.4	Landscape Design	11
4	Transport, Access and Car Parking	13
5	Stormwater and Flooding	15
5.1	Flood Management.....	15
5.2	Stormwater Quality Management	16
5.3	Stormwater Drainage Management.....	17
5.4	Rainwater Harvesting and Re-use.....	17
6	Environmental Management	19
6.1	Biodiversity	19
6.2	Heritage Conservation	21
6.3	Non-Indigenous Heritage.....	23
6.4	Ecologically Sustainable Development	24
6.5	Noise and Vibration	24
6.6	Air Quality and Odour	24
6.7	Waste Management	25
6.8	Site Contamination	25
6.9	Bushfire Risk Management	26
6.10	Hazards and Risks.....	26

Figures:

Figure 1	– Land to Which the DCP Applies.....	2
Figure 2	– Site Opportunities and Constraints Map	4
Figure 3	– Industrial Subdivision Road setback	8
Figure 4	– Mamre Road Setback	9
Figure 5	– Access Strategy	14
Figure 6	– Stream Orders and Riparian Corridors	20
Figure 7	– Archaeological Potential.....	21
Figure 8	– Former Erskine Park Public School Location.....	23

1 Introduction

1.1 AIMS AND OBJECTIVES OF DCP

This Plan is known as the Mamre West Land Investigation Area Development Control Plan 2016 ('Mamre West DCP'). It has been prepared in accordance with the provisions of Division 6 of the Environmental Planning and Assessment Act 1979 and Part 3 of the Environmental Planning and Assessment Regulation 2000.

The principal aims of the Mamre West Land Investigation Area are listed as follows:

- To integrate State and local planning inputs to enable the delivery of environmentally, economic and socially sustainable development.
- To provide suitably located industrial land to support the economic growth of the city.
- To provide connections to required services to meet the future needs of the Precinct.
- To facilitate development that is integrated with local road and freight networks.

The primary aim of the Mamre West DCP is to facilitate the redevelopment of the land zoned IN1 General Industrial under the provisions of State Environmental Planning Policy (Western Sydney Employment Area) 2009. (WSEA SEPP').

The DCP includes specific objectives that address the principal development standards listed within the WSEA SEPP and the planning principles developed during the precinct planning process. The associated controls have been designed to address the key environmental impacts identified as part of the technical investigations undertaken to inform the SEPP amendment.

1.2 STRUCTURE OF THE DCP

The DCP is structured into six sections as outlined within the following table.

TABLE 1 – STRUCTURE OF DCP

PART	DESCRIPTION
1 - Introduction	Outlines the principal aims and objectives of the DCP, the land to which it applies and its relationship to other plans
2 – Land Use and Staging	Provides detailed development controls to guide the siting and design of the future development of the site, including subdivision, staging, urban design principles, built form and streetscape and landscape design
3 – Transport, Access and Car Parking	Details the transport and traffic-related matters, including traffic generation, vehicle access, car parking, public transport, cycling, walking and road widening
4 – Stormwater and Flooding	Outlines the stormwater and flooding issues, including flood management, stormwater quantity and quality management and rainwater harvesting and re-use.
5 – Environmental Management	Describes the key environmental issues relevant to the site and its context and the potential impacts arising from future development. These include biodiversity, heritage conservation, ecologically sustainable development, noise and vibration, air quality and odour, waste management and environmental risk management.

PART	DESCRIPTION
6 – Utility Services and Infrastructure Delivery	Identifies the utility services and upgrades, including water, sewer, electricity and telecommunications

1.3 LAND TO WHICH DCP APPLIES

The DCP applies to land within the Mamre West Land Investigation Area that has been released and zoned IN1 General Industrial under the provisions of the WSEA SEPP.

As shown in **Figure 1** below, the affected land includes the majority of 585-649 Mamre Road, Orchard Hills (Lot 2171 in Deposited Plan 1153854) which is owned by the proponent. The remaining land includes a portion of the eastern area of the Precinct to the north of Lot 2171 up to the James Erskine Drive and Mamre Road intersection. The area to which the DCP applies is predominantly unaffected by flooding.

FIGURE 1 – LAND TO WHICH THE DCP APPLIES



LEGEND	
—	PRECINCT BOUNDARY
▨	LAND TO WHICH THE DCP APPLIES

1.4 RELATIONSHIP TO OTHER PLANS

This DCP has been prepared to provide detailed development controls to guide the preparation and assessment of development proposals on land located within the Mamre West Land Investigation Area and zoned IN1 General Industrial under the WSEA SEPP.

Penrith Local Environmental Plan 2010 and Penrith Development Control Plan 2014 do not apply to land within the WSEA SEPP. The land use provisions and development standards within the WSEA SEPP and the detailed development controls within this DCP comprise the principal planning provisions relevant to the development of the Mamre West Land Investigation Area.

1.5 FUTURE REZONINGS IN THE PRECINCT

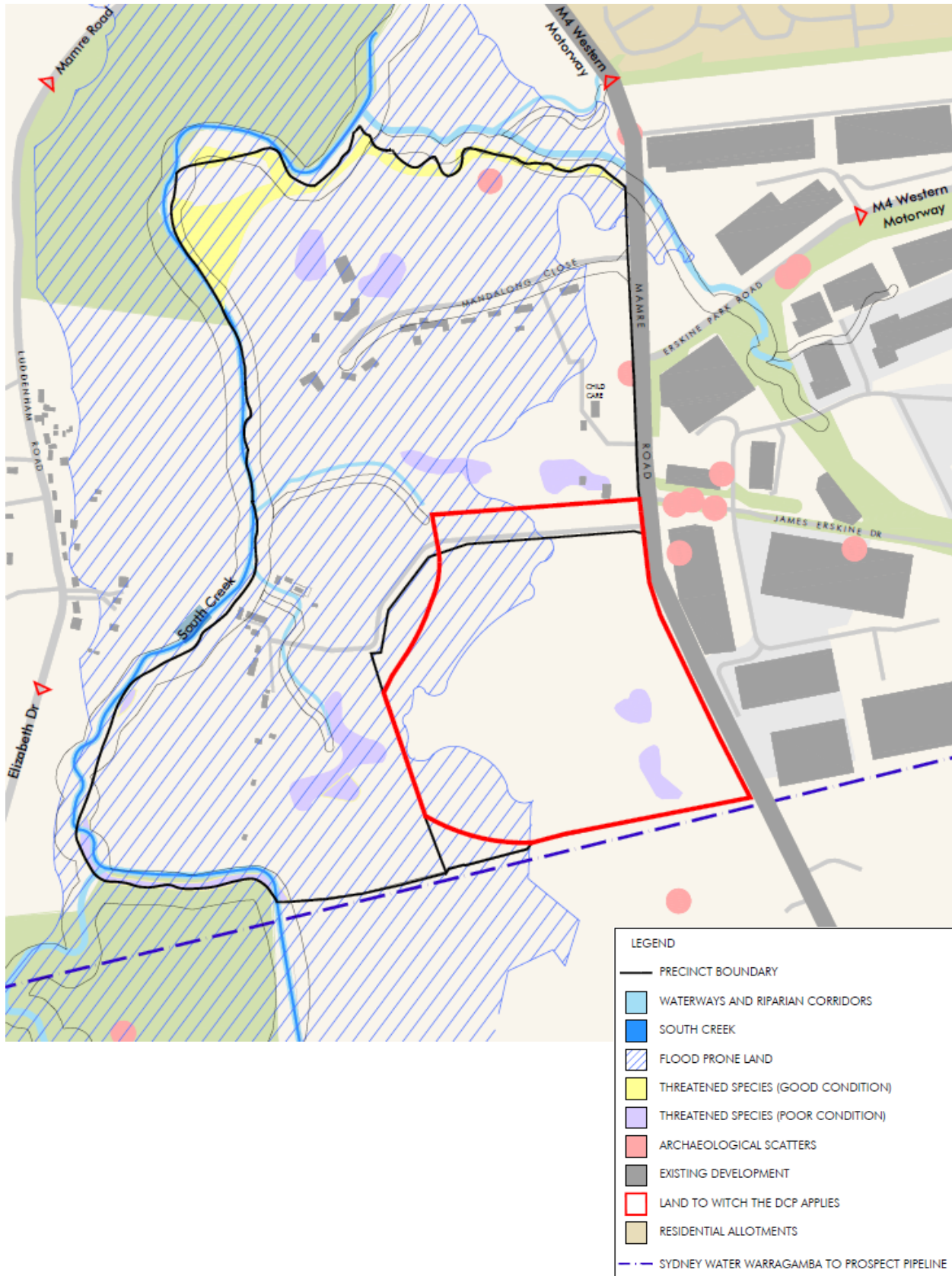
The release of additional land within the Precinct for industrial uses will need to pay particular attention to the following key principles:

- Ensure that future development is sympathetic to residential development in the surrounding area.
- Ensure that future development takes into consideration the overland flooding levels associated with South Creek and its tributaries.
- Provide suitable access to future developments, while maintaining vehicular safety along Mamre Road.
- Ensure suitable public amenities and service infrastructure is provided to accommodate development.
- Ensure future development does not result in pollution of waterways, in particular South Creek and its tributaries.
- Ensure future development appropriately identifies and respects areas of significant biodiversity and cultural value.

2 Urban Design Principles

The urban design principles for the site were established in the precinct planning process, including a comprehensive assessment of the site opportunities and constraints as outlined in **Figure 2**.

FIGURE 2 – SITE OPPORTUNITIES AND CONSTRAINTS MAP



The site investigations identified that a significant part of the Mamre West Land Investigation Area is affected by flooding, predominantly to the west, adjacent to South Creek. Parts of the developable land have already been developed, including the recently opened child care centre on Mamre Road and the large rural-residential dwellings on Mandalong Close.

The south-eastern portion of the Precinct will be released initially and will allow industrial uses, such as warehouse and distribution centres, and provide employment opportunities in accordance with the objectives for the WSEA. The initial land release does not rely upon the redevelopment of other areas in the Precinct and will also not compromise the future development opportunities of other areas in the Precinct.

The developable area of the Precinct, above the floodway, is on relatively flat land with access to the existing regional road network and utility services. It is relatively free of environmental constraints with areas of higher heritage and ecological significance generally located on land within the floodway, which will not be affected by future development.

The site is adjacent to the existing Erskine Park employment area and forms a logical extension of the existing industrial zone. The future industrial development of the Precinct will be compatible with the scale and types of uses that are already operating nearby. Detailed consideration has been given to the existing and likely future development within the balance of the Mamre West Precinct, including the rural-residential dwellings to the north and west, the child care centre to the north and the potential future use of the developable land to the north.

The controls in this DCP have been included to address the potential impacts on the amenity of the existing development in the Precinct, including views and acoustics. Consideration has been given to the potential future urban footprint within the Precinct, having regard to the way in which access, traffic and utility services could be integrated together.

3 Land Use and Staging

3.1 SUBDIVISION

Objectives

- (a) To provide a subdivision layout that will accommodate industrial buildings and an appropriate density of development, while minimising the impacts on the natural topography and biodiversity significance of the land.
- (b) To provide an internal road network with a high level of access for all forms of transport which connects to the state road network.
- (c) To provide for a coordinated approach to on-site stormwater detention, including water quantity and water quality control measures, which meet the likely needs of future industrial development

Controls

- (a) Industrial lots are to be sited and designed to achieve the criteria listed in **Table 2**. The lot sizes and frontages may be varied where required for utility installations or utility undertakings (eg electricity substation) or environmental protection works (e.g. water quantity and quality control measures).

TABLE 2 – LOT SIZES AND FRONTAGES

CONTROL	REQUIREMENT
Minimum Lot Size	10,000m ²
Minimum Frontage	60 metres

- (b) Lots adjoining or containing watercourses shall be designed to achieve the recommended riparian corridors and buffer zones in accordance with **Table 4** and **Figure 6**.
- (c) Lots are to be sited and designed to enable the retention of the natural features of the site including remnant vegetation and important fauna habitats.
- (d) A development application for industrial subdivision is to be accompanied by a detailed contour plan that identifies the finished contour levels of the site with details provided on the earthworks required to achieve the finished contours.
- (e) The intersection with Mamre Road and the internal road network is to be designed to accommodate all traffic, with no direct vehicle access to individual industrial lots being permitted from Mamre Road.
- (f) Suitable water quantity and quality control measures are to be implemented with future development to avoid detrimental impacts on the natural watercourses and downstream properties. These measures should be designed to be above the 1% AEP flood level.
- (g) Details of retaining walls and extents shall be submitted with any subdivision and/or built form application. When visible from public roads, particular consideration shall be given to landscaping and stepped retaining wall treatments, with high quality materials utilised to reduce visual impacts.

3.2 UTILITY SERVICES

Objectives

- (a) To develop the site in a logical manner, taking into account the availability of existing utility services and required upgrades.
- (b) To provide for the timely provision and funding of extended and/or upgraded services.

Controls

Water and Sewer

- (a) Development consents will include a condition requiring the applicant to provide evidence that arrangements satisfactory to Sydney Water have been made for water supply and sewer services to the development.
- (b) Applicants will be required to fund the design and construction of water and sewer services upgrades required to meet the anticipated demands of future industrial users. This may include:
 - A direct connection is to be made to the existing trunk water main in Mamre Road.
 - A lead-in main to provide a sewer connection to the site.

Electricity

- (a) Electricity services are to be provided in accordance with the relevant energy services provider.
- (b) Applicants will be required to obtain a certificate from the service provider outlining their notification of arrangements for servicing the site including the provision of street lighting.
- (c) Electricity infrastructure is to be placed underground in shared trenches.

Gas

- (a) Gas services are to be provided in accordance with the requirements of the relevant services provider based on the specific demand for gas.
- (b) Gas supply infrastructure shall be installed underground in shared trenches (if required).

Telecommunications

- (a) Telecommunications services are to be provided in accordance with the requirements of the relevant services provider (eg Telstra).
- (b) Telecommunications services shall be funded by the applicant, including completion of consultation and design certification required to provide a fibre ready pit and pipe in accordance with Telstra guidelines.

3.3 URBAN DESIGN AND BUILT FORM

3.3.1 SITE COVERAGE AND BUILDING SETBACKS

Objective

- (a) To limit the density of development.
- (b) To provide landscaped setbacks which minimise the potential visual impact of development.
- (c) To ensure buildings are appropriately sited and designed to respect the heritage, cultural and scenic value of the precinct and minimise the potential visual impact of development.
- (d) To allow for the future widening of Mamre Road.

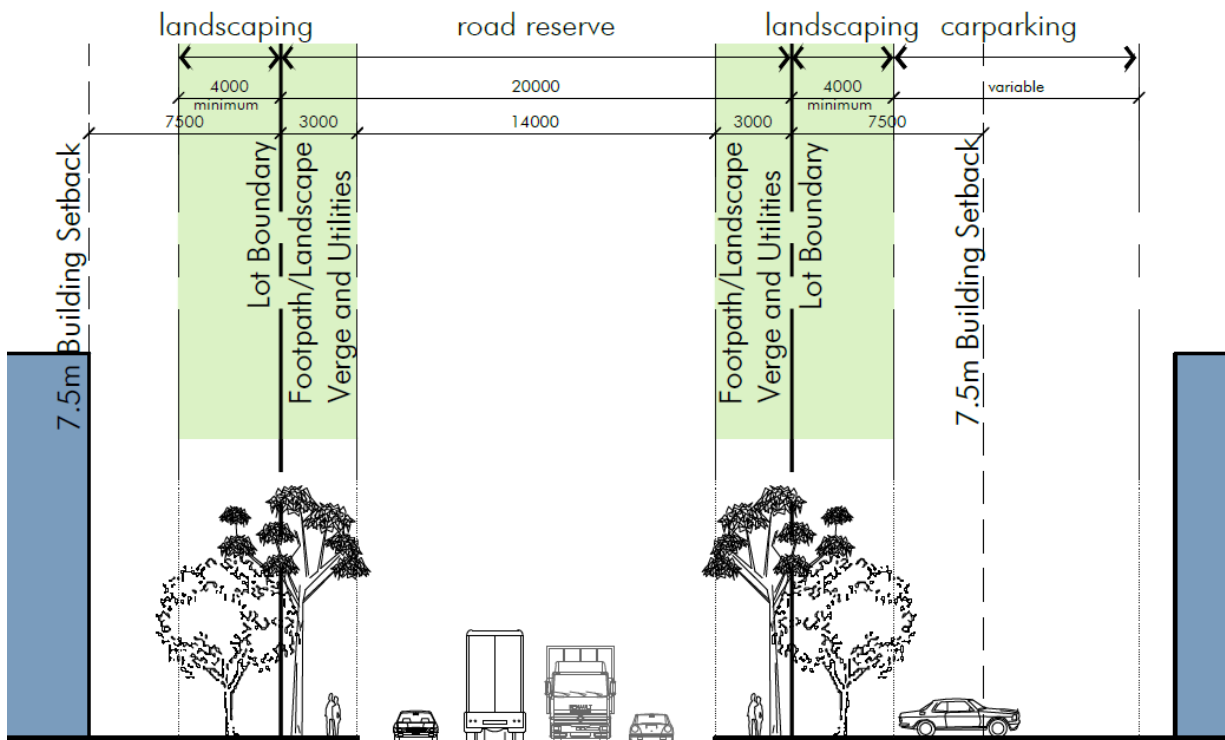
Controls

- (a) Building setbacks are to be as detailed in **Table 3**, and as illustrated in **Figures 3** and **4**. Reduced setbacks may be considered on the secondary road frontage for buildings located on a corner allotment.

TABLE 3 – BUILDING SETBACKS

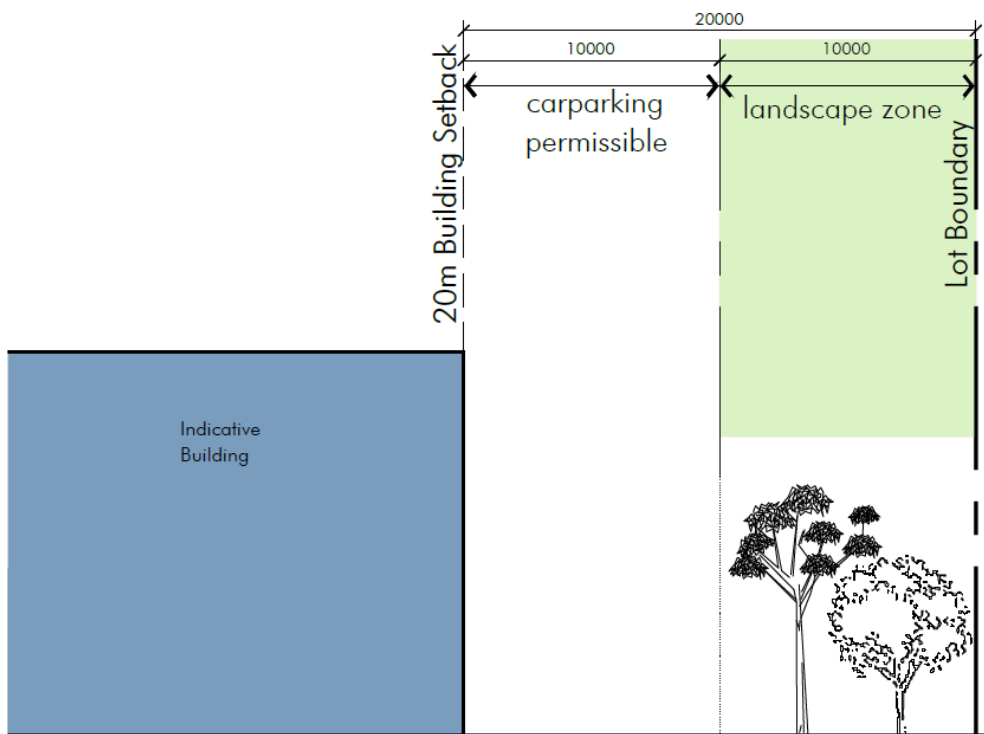
SETBACK TYPE	SETBACK DISTANCE
Mamre Road	20 metres
Subdivision road	7.5 metres
Rear and side setbacks	5 metres
Water supply pipeline corridor boundary	5 metres

FIGURE 3 – INDUSTRIAL SUBDIVISION ROAD SETBACK



- (b) No development is to be provided within the first 10 metres of the Mamre Road setback apart from:
- Landscaping
 - Utility services installation
 - Approved signage
 - Drainage works
- Car parking may be provided behind the 10 metre setback.

FIGURE 4 – MAMRE ROAD SETBACK



- (c) No development is to be provided within any of the other setbacks apart from:
- Car parking
 - Landscaping
 - Utility services installation
 - Accessways and driveways
 - Approved signage
 - Street furniture
 - Drainage works
- (d) Walls should be articulated where possible to provide more varied streetscapes when viewed from public roads.
- (e) Service areas and related infrastructure (e.g. water tanks) should not be located within front setback areas, particularly to Mamre Road.

3.3.2 BUILDING HEIGHT

Objectives

- (a) To provide for an appropriate scale of development that responds to the topography of the site and the scale of existing development.
- (b) To provide for development which will meet the market demand for industrial development, including the warehousing and freights logistics industry.
- (c) To minimise the potential impact of development on views, particularly from residential development.

Controls

- (a) The maximum height for buildings is 20 metres.
- (b) Buildings should be sited and designed to minimise their visual impacts, taking into account required earthworks (cutting and filling) and potential impacts on the overall height of the building measured from the existing ground level.
- (c) Landscaping species should be selected having regard to the proposed building height, expanse of blank walls and opportunities to screen the building. Particular consideration is to be given to any zone boundary interfaces and rural residential development

3.3.3 MATERIALS AND FINISHES

Objectives

- (a) To encourage a high standard of architectural design through the selection of appropriate building materials and finishes
- (b) To provide an attractive and interesting streetscape that integrates the architectural design of the building with the landscape design of the setbacks and surrounding areas
- (c) To minimise the perceived bulk and scale of the industrial buildings and reduce the potential visual impact on the public domain
- (d) To encourage the use of sustainable building materials and fixtures to minimise the potential environmental impacts

Controls

- (a) Front elevations and street facing elevations are to be designed to present a building form that is of an appropriate quality and architectural merit with varying materials to 'break up' the expanse of large walls
- (b) Other building elevations are to be designed with consideration of their potential for public view, including use of different materials and colours, where appropriate and necessary to moderate the potential visual impact of the building
- (c) Ancillary offices and administration areas are to be designed as an architectural feature which enhances and enlivens the streetscape, with a clear and identifiable entry and adequate natural surveillance
- (d) The siting, design and materials within industrial buildings are to consider the location of the landscaped areas and setbacks, including opportunities to screen large blank walls and/or complement the architectural style of the building

- (e) Loading and outdoor storage areas should be screened from public view by walls or screens that are of a compatible design with the industrial building and/or landscaping that is consistent with the treatment in other parts of the site

3.3.4 SIGNAGE AND ESTATE IDENTIFICATION

Objectives

- (a) To provide for business identification signage that is appropriate for the industrial use of the land, including the need for legible way finding signage for vehicle drivers and visitors.
- (b) To deliver signage that is of an appropriate appearance and quality and is consistent and compatible with the built form and landscape character of the precinct.
- (c) To avoid signage design and positioning from causing a safety hazard for motorists or pedestrians.

Controls

- (a) All signage is to be constructed of high quality and durable materials that are compatible with the architectural design and construction of the associated industrial building.
- (b) A maximum of one business identification sign shall generally be provided for each tenant unless the allotment has more than one road frontage and additional signage is required to enable the identification of the use.
- (c) A decorative masonry entrance wall and high quality estate signage may be provided at access entries to the Precinct on Mamre Road, outside of the road reserve.

3.4 LANDSCAPE DESIGN

3.4.1 LANDSCAPE AREAS

Objectives

- (a) To provide a landscape character and amenity that is appropriate to the scale and nature of the industrial development.
- (b) To respect the scenic, cultural and historic use of the site for agriculture and animal grazing.
- (c) To provide a visual buffer between the industrial development and surrounding rural residential land uses.

Controls

- (a) A landscape plan is to be prepared and submitted with development applications for the construction of new buildings and/or major alterations and additions to existing buildings.
- (b) Landscaped front setbacks should include canopy trees, shrubs and groundcovers to provide shade and screen hardstand areas from public view.
- (c) Vegetation screening is to be provided along the northern zone boundary interface to screen industrial development from residential dwellings.
- (d) Island planter beds should be provided throughout the car park to provide shade, reduce the 'heat effect' and minimise the visual impact of the hardstand area.
- (e) Outdoor recreation areas for staff should be integrated with the landscaped areas to provide shade and an appropriate level of amenity and comfort.

3.4.2 FENCING

Objectives

- (a) To address the security needs of industrial developments while avoiding unacceptable visual impacts on the streetscape and landscape design.
- (b) To ensure that fencing is of a consistent high quality of construction and uses appropriate materials.

Controls

- (a) Security fencing is to be located behind the landscaped setback.
- (b) Where site security is required, fencing shall be constructed of black plastic coated 'Chain-link' fence or an approved alternative such as a metal palisade type fence. The overall height of fencing shall be no more than 2.4m. 'Chain-link' or similar fences are not suitable to the site frontage
- (c) Service yards and external storage areas shall be screened from public view by a solid fence or wall located behind the building line.

3.4.3 LIGHTING

Objectives

- (a) To provide lighting that improves the safety and amenity of the industrial uses and the public domain.
- (b) To locate and design lighting in such a way that it does not have significant detrimental off-site impacts, particularly for rural-residential dwellings.

Controls

- (a) External lighting within the industrial lots is to comply with the provisions of *Australian Standard AS4282-1997 Control of Obtrusive Effects of Outdoor Lighting*.
- (b) Street lighting along the internal roads is to be provided in accordance with the provisions of *Australian Standard AS1158 Lighting for Roads and Public Spaces*
- (c) Lighting design should address the principles of Crime Prevention Through Environmental Design having regard to the operating hours of individual tenants and any safety and security issues.
- (d) Lighting design should seek to avoid unnecessary energy consumption. Where feasible, lighting is to be powered by solar or other forms of renewable energy. Sensor lighting should be incorporated for both internal and external spaces, where appropriate.

4 Transport, Access and Car Parking

Objectives

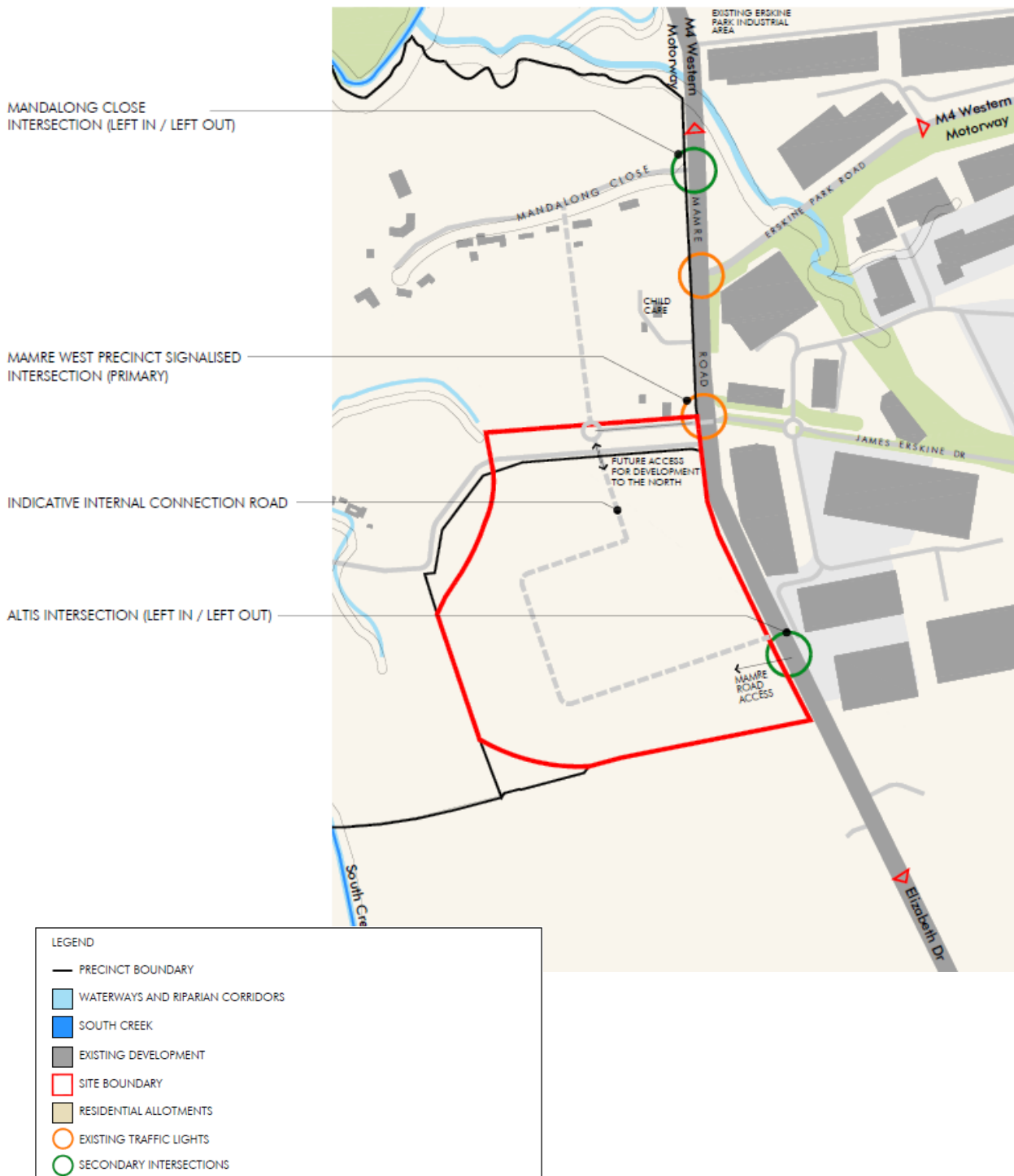
- (a) To create a road network that provides safe and efficient access to the precinct while avoiding unacceptable impacts on Mamre Road.
- (b) To site and design industrial development to accommodate freight traffic movements.
- (c) To provide adequate car parking that meets the expected demand while avoiding unacceptable impacts on the surrounding road network.
- (d) To encourage the use of alternative forms of transport where practical.
- (e) To provide an interim access arrangement to the south-eastern portion of the Precinct prior to the development of the north-eastern portion.

Controls

- (a) Access to the industrial land will be provided via two new intersections with Mamre Road in accordance with RMS requirements (refer to **Figure 5**) and the following:
 - The primary access to the Precinct will be provided via a new western connection to the existing signalised T-intersection of Mamre Road with James Erskine Drive. The WSEA SEPP will include provisions ensuring land within the Precinct can obtain access to the primary access intersection where direct access is not currently available.
 - The secondary access to the Precinct will be provided via a left-in/left-out priority controlled intersection located approximately 500 metres south of the existing intersection with James Erskine Drive.
- (b) An interim access arrangement may be negotiated between a landholder and the relevant roads authority, and will be subject to road safety audits and analysis at Development Application stage.
- (c) The intersections will be designed in accordance with the relevant Australian Standards and guidelines.
- (d) No direct vehicle access will be permitted to and from individual industrial lots via Mamre Road. All access will be provided by way of the internal industrial subdivision road.
- (e) The internal industrial subdivision roads shall comprise a 20.6 metre road reserve and including:
 - Two x 3.8 metre verge widths (including a 1.5 metre concrete footway within each verge)
 - A 13.0 metre carriageway, comprising 7.0 metres for travel lanes in both directions and two x 3.0 metre parking lanes
- (f) Industrial developments shall be sited and designed to accommodate the largest type of vehicle expected to access the site, with adequate manoeuvring areas that enable all entry and exit movements to and from the site being made in a forward direction.
- (g) On-site car parking is to be provided in accordance with the following rates:
 - One space per 300m² of warehouse GFA
 - One space per 40m² of ancillary office GFA
 - One space per 100m² of industrial/manufacturing GFA

- (h) Car parking areas are to be designed in accordance with the provisions of the relevant Australian Standards AS/NZ 2890.1:2004, AS/NZ 2890.2:2002 and AS/NZ 2890.6:2009.
- (i) Consideration is to be given to the delivery of infrastructure and/or the implementation of management measures that encourage the use of alternative forms of transport, which could include:
 - Safe storage/parking areas for bicycle facilities
 - Shower and change room facilities for staff
 - Flexible working arrangements to enable start/finish times based on the bus timetable
- (j) All roads and intersections shall be designed to accommodate 25m B-Double vehicles as a minimum.

FIGURE 5 – ACCESS STRATEGY



5 Stormwater and Flooding

5.1 FLOOD MANAGEMENT

Objectives

- (a) To avoid development that results in significant adverse flooding impacts
- (b) To minimise the potential impact of development on flood affected land, including damage to property or risks to loss of life.

Controls

- (a) A flood assessment is to be undertaken for lots adjacent to flood affected in proximity to South Creek, adjacent flood plain and watercourses surrounding the Site. The assessment is to demonstrate that the development will not increase flood hazard or damage to other properties within acceptable limits.
- (b) Development consent may be granted for development (including filling) within the 1 in 100 year Average Recurrence Interval (ARI) event where it is demonstrated that the development does not result in significant increases to flood hazard or damage to other properties. Development consent will not be granted for development within the high hazard floodway due to its function as the main flowpath for flood waters and the potential significant threat to life and property in a major flood.
- (c) The following matters are to be considered by the relevant consent authority with regard to the assessment of development within land within the 1 in 100 year ARI event.
 - Floor levels of development are to consider both South Creek and local overland flooding.
 - Flood levels are not increased by more than 0.1m by the proposed filling
 - Downstream velocities are not increased by more than 10% by the proposed filling
 - Proposed filling does not redistribute flows by more than 15%
 - The potential for cumulative effects of possible filling proposals in that area is minimal
 - There are alternative opportunities for flood storage
 - The development potential of surrounding properties is not adversely affected by the filling proposal
 - The flood liability of buildings on surrounding properties is not increased
 - No local drainage flow/runoff problems are created by the filling
 - The filling does not occur within the drip line of existing trees
- (d) For industrial and commercial buildings, the floor level is to incorporate a minimum 500mm freeboard above the 1 in 100 year ARI event.
- (e) Buildings within a flood prone area are to be constructed with approved materials, resistant to damage by immersion by flood waters for prolonged periods, to the satisfaction of the relevant consent authority.

5.2 STORMWATER QUALITY MANAGEMENT

Objectives

- (a) To safeguard the environment by improving the quality of stormwater run-off entering receiving waters
- (b) To minimise urban runoff pollutants to watercourses

Controls

- (a) Stormwater quality requirements for developments are to achieve the following pollution load reductions:
 - 90% reduction in the post development mean annual load total gross pollutant (greater than 5mm);
 - 85% reduction in the post development mean annual load of Total Suspended Solids (TSS);
 - 60% reduction in the post development mean annual load of Total Phosphorus (TP);
 - 45% reduction in the post development mean annual load of Total Nitrogen (TN);
 - 90% Free Oils and Grease with no visible discharge.
- (b) Modelling for the determination of the mean annual loads of land uses must be undertaken in MUSIC and in accordance with the associated WSUD Technical Guidelines.
- (c) Any changes to the flow rate and flow duration within the receiving watercourses as a result of the development shall be limited as far as practicable. Natural flow paths, discharge point and runoff volumes from the site should also be retained and maintained as far as practicable.
- (d) A Water Sensitive Urban Design (WSUD) Strategy prepared in accordance with Council's associated WSUD Technical Guidelines is to be submitted with a development application.
- (e) Impervious areas directly connected to the stormwater system shall be minimised. Where practical, WSUD measures such as directing stormwater runoff to grassed or pervious areas, filter strips, raingardens and other WSUD measures are encouraged to be used on development sites.
- (f) Where stormwater treatment measures are located in riparian corridors, they must be installed in a manner consistent with the requirements of the NSW Office of Water.
- (g) Stormwater treatment measures (including WSUD) for individual development sites must be located on private land under the maintenance of the owner or occupier.
- (h) Future development must assess the potential impacts on groundwater (levels, flow or quality) and groundwater dependent ecosystems.
- (i) Excavation beneath the established groundwater table should not be permitted without a hydrological assessment.

5.3 STORMWATER DRAINAGE MANAGEMENT

Objectives

- (a) To prevent stormwater damage to the built and natural environment by controlling flooding, stabilising the land form and avoiding erosion
- (b) To avoid generating stormwater discharges that exceed the capacity of the existing drainage network or cause a nuisance to adjoining development
- (c) To provide a stormwater system that provides an efficient use of land and is compatible with adjoining uses
- (d) To protect the floodplain and avoid exacerbating geomorphic instability

Controls

- (a) Stormwater systems shall be designed and constructed to provide for rainwater events from the 1 in 5 year Average Recurrence Interval (ARI) event up to, and including, the 1 in 100 year ARI event. New developments and redevelopments are not to increase stormwater peak flows in any downstream areas.
- (b) On-site stormwater detention systems must release water after any rainfall event to maximise future capacity. Systems cannot include rainwater tanks, water retention basins or dams.
- (c) Detention storage is to be located at a level that considers flooding.
- (d) On-site detention systems are to be designed using a catchment wide approach and having regard to input from Penrith City Council.
- (e) All designs shall be prepared by a suitably qualified civil engineer.
- (f) On-site stormwater detention mechanisms are to be designed to restrict post-development flows to pre-development levels and should have a maintenance program in place.
- (g) On-site stormwater detention mechanisms should be placed on the title of the relevant allotment/property to ensure their retention and maintenance.
- (h) All roads shall be designed and constructed above the 1 in 100 year ARI flood level.
- (i) Local overland flow and drainage paths need to be integrated into the design at Development Application stage. Diversion of local drainage paths is to be completed in accordance with Penrith City Council engineering requirements.
- (j) The post development duration of stream forming flows, commonly referred to as the Stream Erosion Index (SEI), shall be no greater than 3.5 times the pre-developed duration of stream forming flows.
- (k) Development shall not cause (or exacerbate) bed and bank instability.

5.4 RAINWATER HARVESTING AND RE-USE

Objectives

- (a) To appropriately locate and design rainwater tanks to minimise the visual impact on the rural, scenic or landscape character of the locality
- (b) To minimise the entry of contaminants into any water that may be harvested for drinking purposes

Controls

- (a) Rainwater tanks are to be sited and designed to be compatible with the architectural style of the industrial building, including materials and colours, and are to have a non-reflective finish.
- (b) Rainwater tanks must utilise prefabricated materials or be constructed from prefabricated elements designed and manufactured for the purpose of construction of a rainwater tank.
- (c) The rainwater tank, and any stand for the tank, must be assembled and installed in accordance with the manufacturer's specifications and be structurally sound.
- (d) Rainwater tanks must not collect water from a source other than gutters or down pipes on a building or a water supply service pipe.
- (e) A rainwater tank must be enclosed and inlets screened or filtered to prevent the entry of foreign matter or creatures.
- (f) The following controls apply for all buildings not covered by SEPP BASIX:
 - Development installing any water use fittings must demonstrate minimum standards defined by the Water Efficiency Labelling and Standards (WELS) Scheme. Minimum WELS ratings are 4 star dual-flush toilets, 3 star showerheads, 4 star taps (for all taps other than bath outlets and garden taps) and 3 star urinals. Water efficient washing machines and dishwashers are to be used wherever possible.
 - Rainwater tanks are to be installed to meet 80% of non-potable demand including outdoor use, toilets and laundries.
 - Passive cooling methods are to be incorporated that rely on improved natural ventilation to supplement or preclude mechanical cooling.
- (g) Water use within public open space (for uses such as irrigation, pools, water features, etc.) should be supplied from sources other than potable water mains water (e.g. treated stormwater or greywater) to meet 80% water use demand.

6 Environmental Management

6.1 BIODIVERSITY

Objectives

- (a) To identify and protect areas that have a high biodiversity value, including areas of contiguous remnant vegetation,
- (b) To provide riparian corridors that are appropriate for each of the identified drainage lines within the Mamre West Land Investigation Area.

Controls

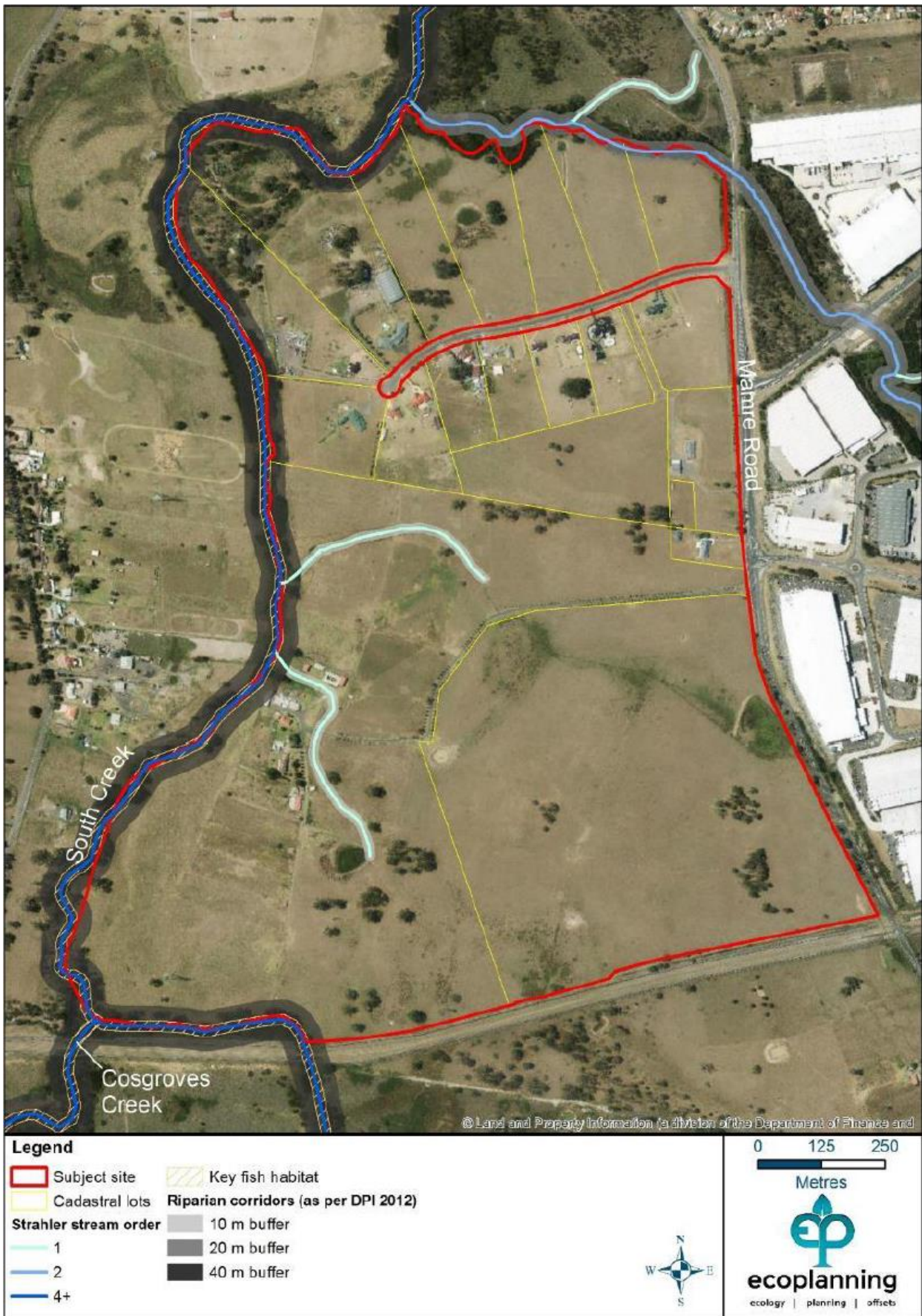
- (a) Future development should seek to maximise the retention of hollow bearing trees and areas of contiguous vegetation, where achievable, particularly along the riparian corridors of South Creek and its tributaries.
- (b) Riparian corridors are to be provided in accordance with the *Guidelines for Riparian Corridors on Waterfront Land* for each of the drainage lines listed in the following table and figure. Buffers are to be applied from the top of bank in accordance with the guidelines.
- (c) A riparian buffer zone of 100 metre from the top of bank is to be provided to South Creek as a Type 1 – Highly Sensitive Key Fish Habitat and Class 1 – Major Key Fish Habitat in accordance with the provisions of *Policy Guidelines for Fish Habitat Conservation and Management*.
- (d) Any proposed construction, crossing or alteration to the creek bed, banks or riparian vegetation community of South Creek and Cosgrove Creek should follow the recommended approach outlined by the *Policy Guidelines for Fish Habitat Conservation and Management* and in particular, Chapter 3.3.2 ‘Standard Precautions and Mitigation Measures’.

TABLE 4 – RIPARIAN CORRIDORS

DRAINAGE LINE	STRAHLER STREAM ORDER	CORRIDOR WIDTH ON EACH BANK	TOTAL RIPARIAN CORRIDOR
Two unnamed tributaries on Lot 2172 (refer to light blue lines on Figure 3)	1 st order	10 metres	20 metres + channel width
Unnamed tributary on northern boundary	2 nd order	20 metres	40 metres + channel width
Cosgrove Creek South Creek*	4th order and greater	40 metres	80 metres + channel width

* South Creek is also affected by a riparian buffer zone – refer to control (c) above

FIGURE 6 – STREAM ORDERS AND RIPARIAN CORRIDORS



6.2 HERITAGE CONSERVATION

6.2.1 ABORIGINAL HERITAGE

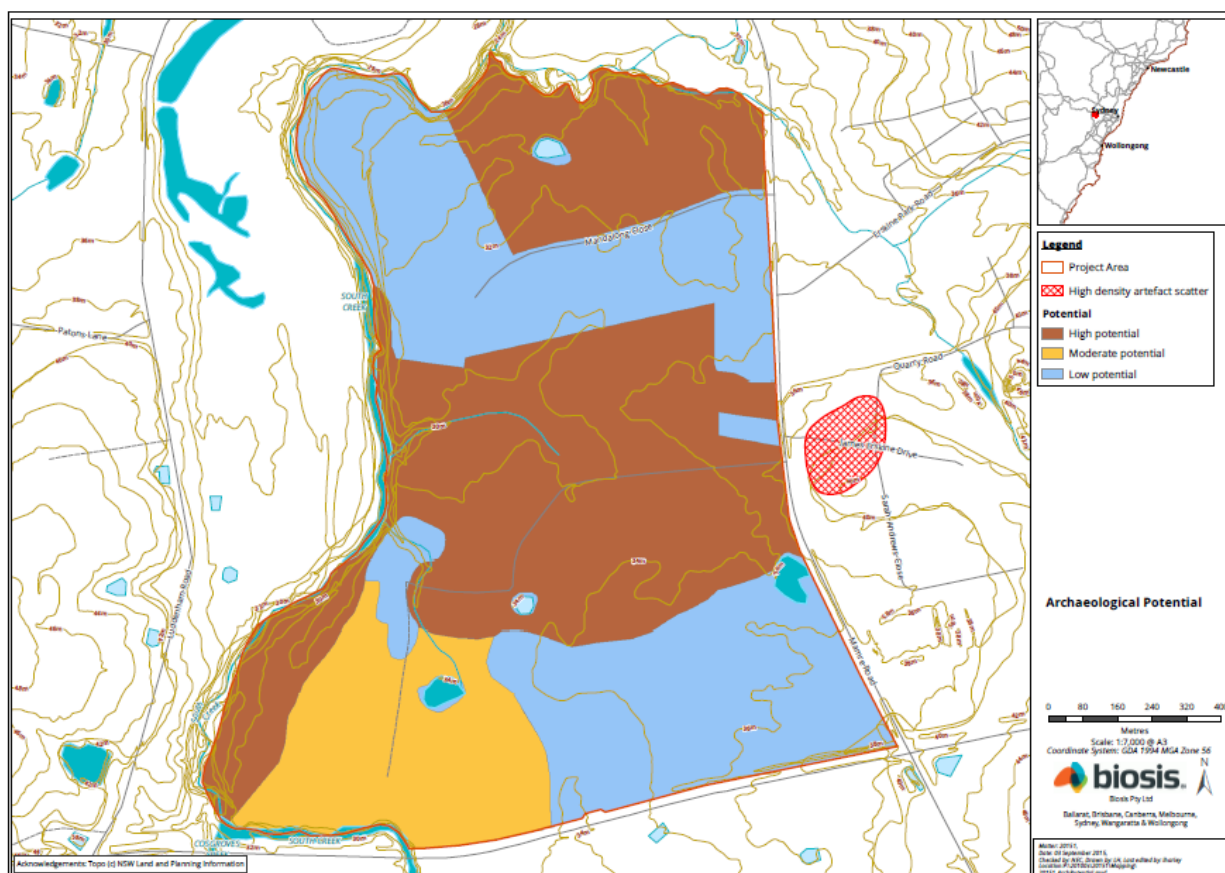
Objectives

- (a) To identify and assess the potential for items and sites of Aboriginal archaeological significance within the Mamre West Land Investigation Area.
- (b) To consult with the Aboriginal community regarding the heritage management of the Mamre West Land Investigation Area.

Controls

- (a) Development applications for land identified as an area of archaeological potential are to be accompanied by an indigenous heritage assessment report.

FIGURE 7 – ARCHAEOLOGICAL POTENTIAL



- (b) Should any Aboriginal objects be encountered, work must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations, which may include notifying the OEHS and Aboriginal stakeholders.
- (c) Should any Aboriginal objects be uncovered during construction, excavation or disturbance of the area shall cease immediately and the National Parks Division of the Office of Environment and Heritage is to be informed in accordance with Section 91 of the *National Parks and Wildlife Act 1974*.
- (d) If any suspected human remains are discovered during any activity, all work must be ceased immediately at that location and not further moved or disturbed. The NSW Police and OEHS's Environmental Line must be contacted on 131 555 as soon as practicable and provided with

details of the remains and their location. Work at that location cannot be recommenced unless authorised in writing by OEH.

- (e) The proponent should inform Aboriginal stakeholders about the management of Aboriginal cultural heritage sites throughout the life of the project.
- (f) The final *Aboriginal Cultural Heritage Assessment Report* will be sent to the Registered Aboriginal Parties, the client, OEH and the AHIMS register for their records.

6.3 NON-INDIGENOUS HERITAGE

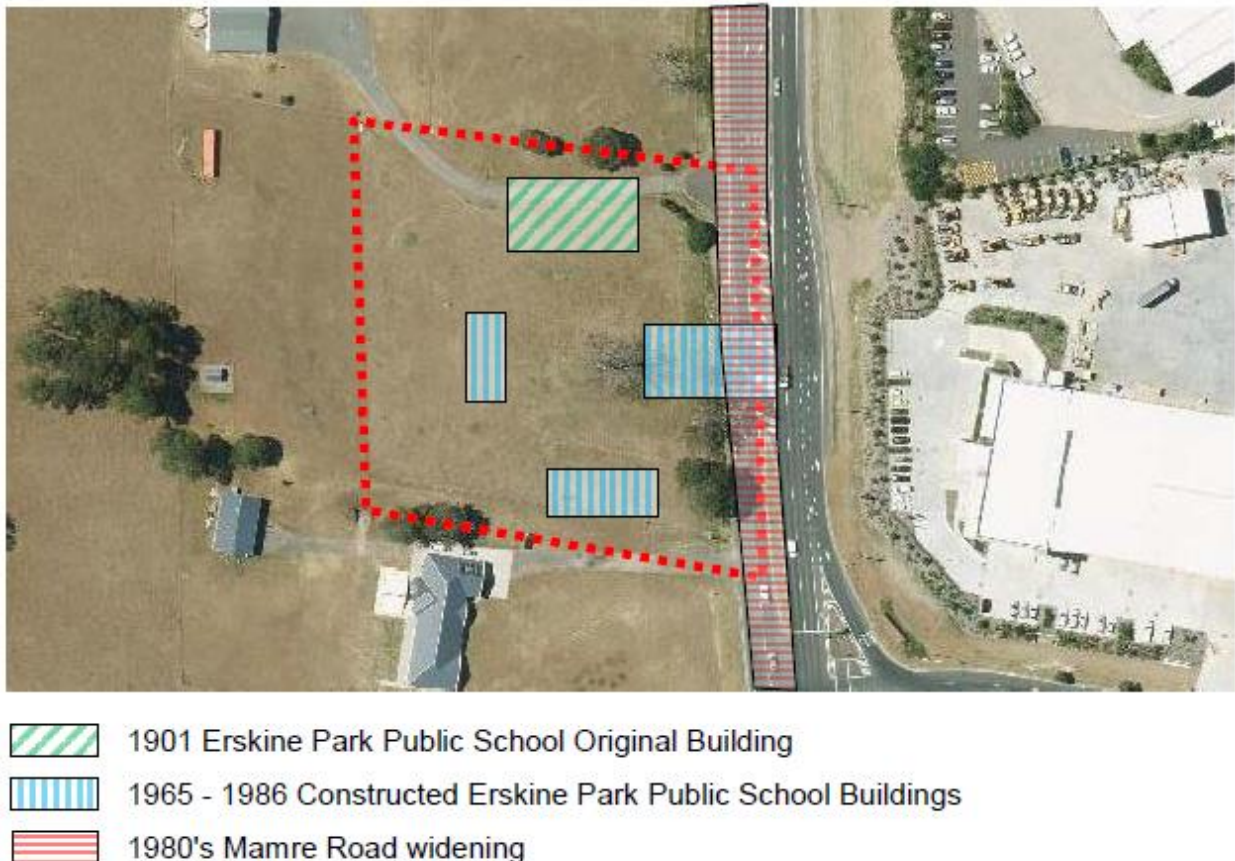
Objectives

- (a) To identify and protect areas that have particular heritage, cultural or scenic value either from major roads, identified heritage items or other public places
- (b) To ensure development in these areas is located and designed to minimise its visual impact

Controls

- (a) A minimum landscape setback of 10 metres is to be provided along Mamre Road to maintain a sense of open agricultural landscape.
- (b) A Historical Archaeological Assessment is to be undertaken prior to earthworks commencing on land potentially affected by the former Erskine Park Public School as shown in **Figure 8**.
- (c) If any evidence of a European archaeological site or relic is found during earthworks, all works on the site are to cease and the Office of Environment and Heritage are to be contacted immediately. All relics are to be retained in situ unless otherwise directed by the Office of Environment and Heritage.

FIGURE 8 – FORMER ERSKINE PARK PUBLIC SCHOOL LOCATION



6.4 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Objectives

- (a) To encourage development that incorporates measures to minimise potential energy use
- (b) To include water minimisation initiatives within the proposed subdivision and development of the site

Controls

- (a) Development is to include sustainable building technologies and materials and use energy efficient fixtures within the building fit-out.
- (b) Water saving devices and techniques are to be included within the design and fit-out of industrial buildings, including rainwater harvesting, dual flush toilets, use of non-potable water for irrigation and the like.

6.5 NOISE AND VIBRATION

Objectives

- (a) To avoid significant environmental impacts arising from industrial development that generates noise or vibration
- (b) To facilitate the appropriate siting and design of industrial buildings to minimise the potential for noise impacts to the sensitive noise receivers within the locality

Controls

- (a) Where feasible, industrial developments should be sited and designed to provide for screening of potential noise generating activities, such as external loading and unloading, forklift movements and the like.
- (b) An acoustic assessment prepared by a suitably qualified acoustic consultant should be submitted with any development application for the construction of a new industrial building, or any major modifications to an existing industrial development, that could give rise to concerns regarding potential acoustic impacts. The assessment is to be prepared with consideration of the relevant guideline documents, including the *NSW Industrial Noise Policy*, the *NSW Road Noise Policy* and the *Interim Construction Noise Guideline*. The acoustic assessment should specifically identify:
 - Noise emission goals for the site (including sleep disturbance) and demonstrate compliance.
 - Proposed numbers of vehicles movements associated with the use, and consider impacts associated with road traffic noise.
 - Any noise generating activities to be conducted onsite (such as mechanical plant and equipment) and activities in external areas (such as use of forklifts, truck washes or similar).
 - Recommended noise attenuation and mediation methods.

6.6 AIR QUALITY AND ODOUR

Objectives

- (a) To avoid adverse impacts arising from new development with regard to existing air quality
- (b) To manage potential impacts on air quality during the construction phase

Controls

- (a) A development application seeking approval for the construction of a new building, major alterations and additions to an existing building and/or the occupation of an existing building may be required to be accompanied by an assessment of the potential impacts of the development on air quality in the region.
- (b) All development should be designed to avoid potential air quality impacts, including the appropriate selection of plant and equipment, minimising emissions and the like.

6.7 WASTE MANAGEMENT

Objectives

- (a) To facilitate sustainable waste management practices during the demolition, construction and operational phases of the development
- (b) To minimise the environmental impacts of waste through waste avoidance, minimisation, re-use and recycling.

Controls

- (a) A Waste Management Plan is to be prepared and lodged with a development application involving demolition, construction and/or changes of use.
- (b) A Waste Management Plan shall include details regarding:
 - The types and volumes of waste and recyclables generated during the demolition, construction and operational phases,
 - Details of on-site storage and/or treatment of waste during the demolition, construction and operational phases,
 - Disposal of waste generated during the demolition and construction phases which cannot be re-used or recycled,
 - Ongoing management of waste during the operational phase of the development.

6.8 SITE CONTAMINATION

Objectives

- (a) To minimise the risk to human health or any other aspect of the environment from the development of potentially contaminated land.
- (b) To provide for the detailed assessment and remediation of potentially contaminated land at the subdivision stage.

Controls

- (a) Development consent is required for the remediation of all contaminated land within the Penrith local government area.

6.9 BUSHFIRE RISK MANAGEMENT

Objectives

- (a) To minimise the risk to human life and impacts to property from the threat of bushfire, while having due regard to development potential, on-site amenity and protection of the environment.
- (b) To make adequate provision for safety and access for emergency personnel, vehicles and equipment

Controls

- (a) Land identified as 'bushfire prone land' on the Penrith City Council Bushfire Prone Land Map is to address the bushfire protection measures in *Planning for Bushfire Protection 2006*.
- (b) A development application for construction of a building or major alterations and additions on bush fire prone land should include a bush fire protection report.

6.10 HAZARDS AND RISKS

Objectives

- (a) To ensure that the transport, storage and use of dangerous goods or chemicals that are potentially hazardous occurs in a safe and responsible manner that minimise the risk of accidental injury or loss of life
- (b) To ensure that the storage and use of potentially polluting substances occurs in a responsible manner and will not have detrimental impacts on the environment

Controls

- (a) Development applications involving the transport, storage or use of dangerous goods or chemicals are to be prepared in accordance with State Environmental Planning Policy No 33 -- Hazardous and Offensive Development.
- (b) The siting and design of industrial developments is to minimise the potential risks associated with dangerous goods, chemicals and polluting substances by:
 - Incorporating storage areas (preferably internal) that are appropriately located and designed to mitigate potential risks
 - Providing appropriate infrastructure to manage potential incidents, such as spill containment areas, bunding and the like

Sydney

**Level 23, Darling Park Tower 2
201 Sussex Street
Sydney, NSW 2000
t 02 8233 9900**

Brisbane

**Level 7, 123 Albert Street
Brisbane, QLD 4000
t 07 3007 3800**

Melbourne

**Level 12, 120 Collins Street
Melbourne, VIC 3000
t 03 8663 4888**

Perth

**Level 1, 55 St Georges Terrace
Perth, WA 6000
t 08 9346 0500**