



Great River NSW Pty Ltd
LANDSCAPE DEVELOPMENT APPLICATION

Penrith, NSW

S18-0072

Issue L • 15/01/2025



NEPEAN BUSINESS PARK
LANDSCAPE DEVELOPMENT APPLICATION (AMENDMENT)

Prepared for

Great River NSW Pty Ltd

Prepared by

CLOUSTON Associates
Landscape Architects • Urban Designers • Landscape Planners
65-69 Kent Street • Sydney NSW 2000
PO Box R1388 • Royal Exchange NSW 1225 • Australia
Telephone +61 2 8272 4999 • Facsimile +61 2 8272 4998
Contact: Crosbie Lorimer
Email • sydney@clouston.com.au
Web • www.clouston.com.au

Document	Issue	Date	Status	Reviewed	Verified	Validated
S18-0072	A	11.12.2018	DRAFT	AD	JH	-
S18-0072	B	14.12.2018	FINAL	CC	JH	CL
S18-0072	C	19.12.2018	FINAL	AD	JH	JH
S18-0072	D	09.01.2019	FINAL	AD	CL	CL
S18-0072	E	26.02.2019	FINAL	AD	CL	CL
S18-0072	F	24.04.2020	DRAFT	CJ	CL	-
S18-0072	G	01.05.2020	FINAL	CJ	CL	CL
S18-0072	H	14.12.2020	DRAFT	CJ	CL	-
S18-0072	I	16.12.2020	DA	CJ	CL	-
S18-0072	J	17.12.2020	DA	CJ	CL	-
S18-0072	K	17.12.2020	DA	CJ	CL	CL
S18-0072	L	15.01.2025	DA (Amendment)	SC	JH	JH

Note: this document is preliminary unless validated.

LANDSCAPE DESIGN STATEMENT

The Nepean Business Park is a proposed employment business park. The site lies on the southern edge of the Penrith Lakes Parklands and is approximately 2km from Penrith CBD.

The proximity of the site to the Penrith Lakes Parklands and the site's location on the northern bank of the Nepean River with views to the Blue Mountains escarpment places the estate at the heart of one of Western Sydney's most important, ecological, recreational and scenic landscapes.

In recognising and reflecting this pivotal setting, the landscape design seeks to integrate the estate into its landscape context with simple design responses that recognise the industrial nature of the landuse and will:

- Enhance pedestrian and cycle connectivity
- Offer opportunities for future links to the Great River Walk along the Nepean River
- Conserve critical views to the Blue Mountains along east west streets
- Reflect the agricultural/post-industrial heritage of the site through public art
- Draw on the native species of the Nepean River Floodplain.

The design intent of core elements of the proposed landscape are briefly outlined below.

KEY VIEWS AND VISTAS

The main streets in the subdivision have been aligned east-west to ensure that long views to the Blue Mountains escarpment are retained, such as from the site entry off Lugard Street.

VEHICLE ARRIVAL AND ENTRIES

The two entries will feature distinctive tree planting, with entry signage at the Lugard Street entry and at the main entry on Old Castlereagh Road. Refer DA 6 for locations and DA 9 for types.

STREETSCAPE DESIGN

The streetscape will provide an important role as not only a functional space for movement and transportation but also establishing the character and identity of the estate.

Key components of the streetscape will include:

- Continuous pedestrian footpath and street crossing network of minimum 1.5m width for safe access through the estate
- A 3m wide shared path connecting Old Castlereagh Road and the existing Lugard St
- Large and small street trees of native trees, including indigenous River Plain species
- Future 3m wide shared path connection to extended Great River Walk.

STREET TREES

Street trees have been located on lot boundaries to allow for driveways to easily be located within the lots. Smaller tree species, with a maximum mature height of 8-10m have been selected for the majority of the street planting. This will ensure minimal impacts on large vehicle access to the industrial lots. Refer to the Tree Planting Design Strategy section for more information.

OLD CASTLEREAGH ROAD BOUNDARY

The existing row of trees immediately adjoining the old Castlereagh Road boundary will be retained and complemented by a hydroseed mix of shrubs, groundcovers and native grasses on the adjoining embankment within the site boundary.

MAINTENANCE AND PLANT HEALTH

All plant species, path surfaces and the likes have been chosen to be robust and of generally low maintenance suitable for the nature of the site.

2025 UPDATE

This document serves as an amendment to the previous Landscape Development Application, marked as Issue K and dated 17 December 2020.

Since the 2020 issue, changes to the road network have resulted in the central road being truncated and ending in a cul-de-sac.

This revised version incorporates the updated road layout provided by the civil engineers. It removes trees and turf from areas where the road is no longer planned and introduces new trees and turf around the cul-de-sac turning head. All plans and schedules within this report have been updated to reflect these changes.

TREE PLANTING DESIGN STRATEGY

PLANNING BACKGROUND

A number of local and state government policies and guidelines have a direct bearing from varying perspectives on the selection of tree species and planting design for the Nepean Business Park. These include:

- Greener Places (Government Architect of NSW) – Urban Tree Canopy guidelines (draft) that adopts the GSC urban canopy coverage target for Sydney. The guide recognises that urban canopy coverage will vary by urban context and land use, ranging from 15% for CBD sites to 25% for medium/high density/light commercial areas and 40% for low density areas
- Greater Sydney Commission (GSC); Planning Priority C16 - Increasing urban tree canopy cover and delivering Green Grid connections. This proposes recognising an optimal urban tree canopy coverage target for Greater Sydney that will vary by land use. No formal targets are set specifically for commercial and industrial land uses (recent projects of this nature are typically achieving 15-25%)
- NSW Climate Change Policy Framework – includes various initiatives and policy directions related to tree planting to reduce heat island impacts and offset carbon
- Penrith City Council; Native Plant Species Fact Sheet and Small Trees List - lists of species and tree types suitable to the Penrith local government area
- Penrith Development Control Plan 2014 - D4 Industrial Development – identifies preferred site layouts and streetfront planting
- Penrith City Council: Cooling the City Strategy, 2015 - seeks to promote various Green Infrastructure initiatives to enhance cooling, including tree planting in road reserves

The strategy addresses all of these documents and seeks to strike the best practical balance between them, based on the stated Objectives below. The site is also adjacent to 2000+ha of parkland and river which will assist in cooling the local environment.

STRATEGY OBJECTIVES

The core objectives for the Tree Planting Strategy for the Nepean Business Park are to:

- Connect the site to its river landscape context both ecologically and visually
- Provide shade for site users and visitors
- Mitigate Heat Island impacts through optimised urban tree canopy cover particularly focussed on shading roads and other heat sink areas
- Offer amenity to all those working at, visiting or passing through the Park.

CONSTRAINTS AND OPPORTUNITIES

A range of constraints and opportunities arise in seeking to meet the above Goals and Objectives, including some conflicts in reconciling those Objectives with the Planning requirements and goals mentioned above.

Planning and Land Use Context

- By the very nature of its land use, the fully developed Nepean Business Park will have a significant built form footprint (buildings, streets and paths etc), with the principal tree planting opportunities necessarily centred on the streets and boundaries

- There is a significant number of existing trees on site adjacent to Old Castlereagh Road which will be retained and which will assist in heat island mitigation impacts.
- There is a significant number of existing trees on site adjacent to Nepean River-front land which will be retained and which will assist in heat island mitigation impacts.

Design Context

- Traffic within the Park will include regular movements of large trucks on the streets and on lots; truck heights may be up to 4.5 metres. Tree canopy adjoining all roads and driveways will need to address this constraint
- The lot entry and exit locations cannot be finalised at this DA stage and thus tree planting must be located to minimise any impact should trees need to be removed to construct driveways and crossovers
- Sightlines at street junctions and at lot driveway entries and exits must not be obscured by tree trunks
- Road verges on the streetfronts to the lots will be wide enough for healthy tree growth but cannot replicate the root soil extent of a natural setting; hence mature heights and canopy widths may be less than typically published for each species (see Plant Schedule for estimated sizes for this site).

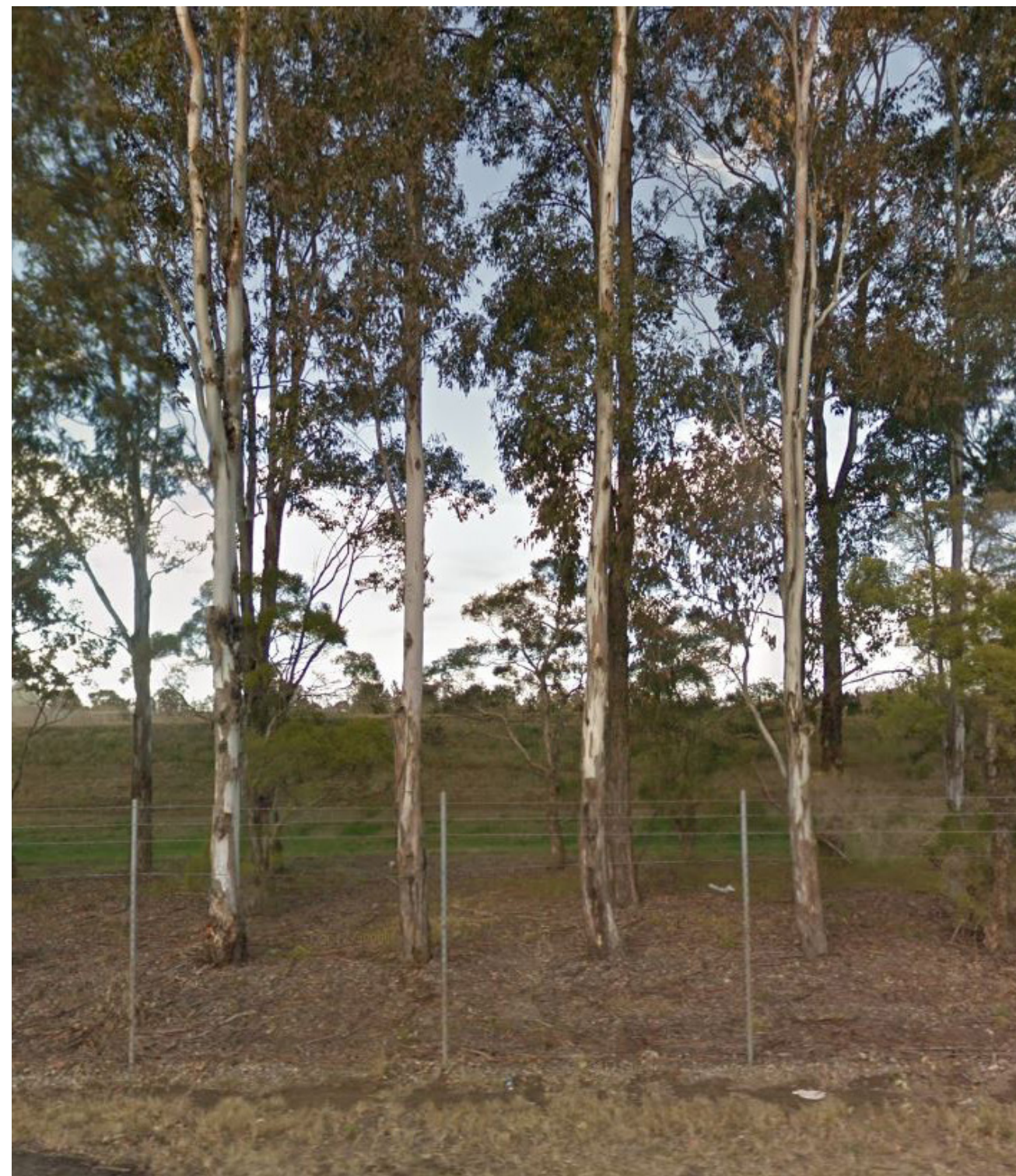
Tree Species Performance

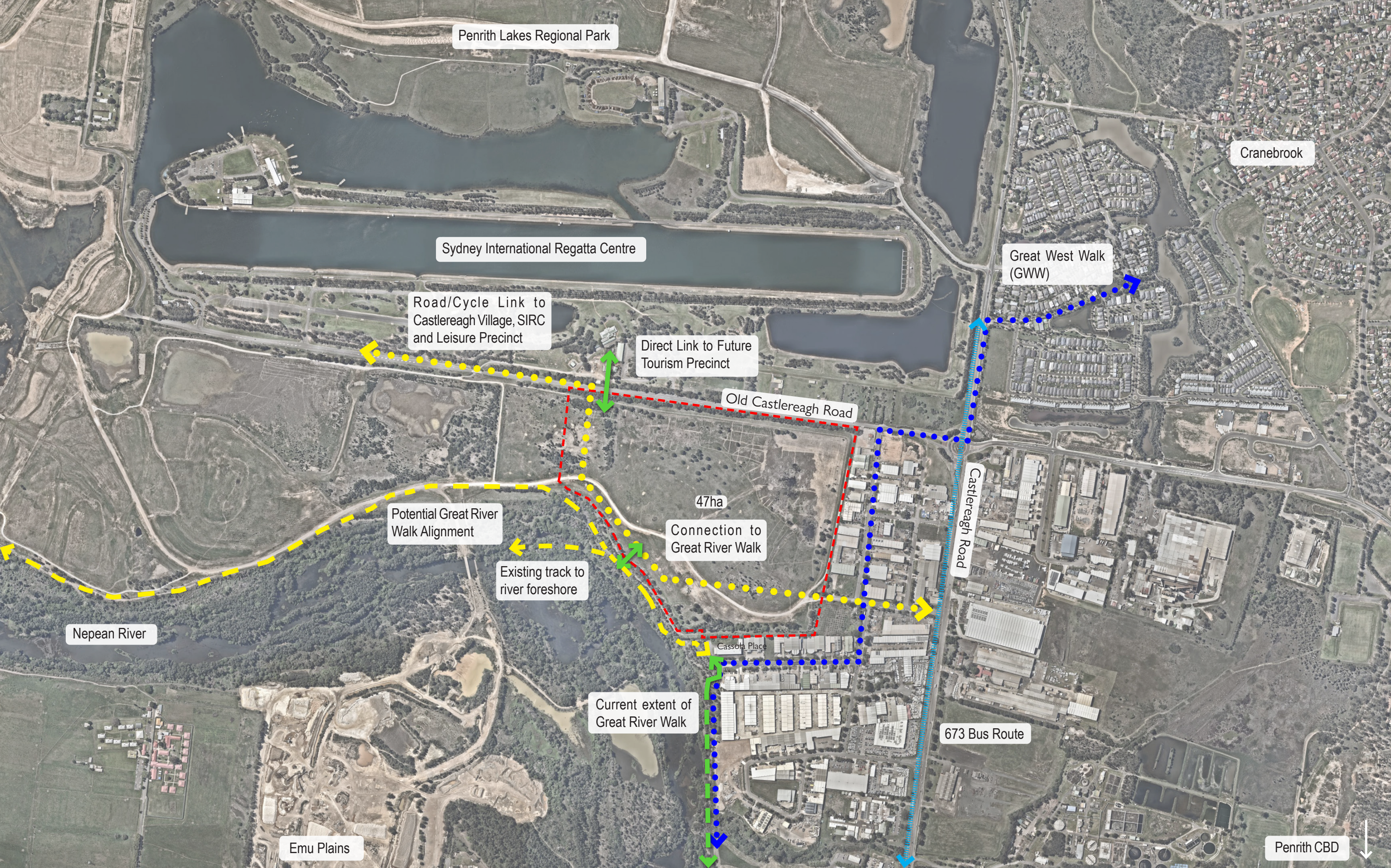
- Using tree species that are native to this Nepean River landscape is desirable, but not all such trees perform well in an urbanised environment - such as at the Park - or form a dense and wide mature canopy to assist heat island impacts
- In general, denser canopies will have more heat island mitigation impact (ie reduction in ambient temperature), but many native species such as Eucalyptus typically have more open canopies
- Larger trees will typically have a large canopy spread, but given the need to accommodate large trucks on site, suitable large species will need to be carefully located and have larger clear trunk heights at maturity to avoid damage to trucks and trees.

DESIGN PROPOSAL

To address the above constraints and opportunities the design strategy illustrated in Drawings DA 6 includes:

- A balance of locally native trees and other Australian natives to optimise ecological values and heat island impact mitigation
- A combination of large and small tree species has been proposed. Larger species give structure and smaller species are arranged with a different species in each street to assist with sense of place and wayfinding
- Use of larger tree canopy species at the lot boundaries where they should not be impacted by varied locations of lot driveway entry and exit locations
- Use of smaller tree species (of moderately fast growth and relatively dense canopies) across lot frontages at relatively close centres to achieve early heat mitigation
- Use of smaller trees across lot fronts (as above) to minimise impacts if selected trees need to be removed for future driveway locations
- By incorporating trees of different heights, the shadows cast during morning and afternoon are different lengths thereby spreading out the 'footprint' of shade.





Client:
Great River NSW Pty Ltd

1:10000 @A3

0 80 160 240 320 400m

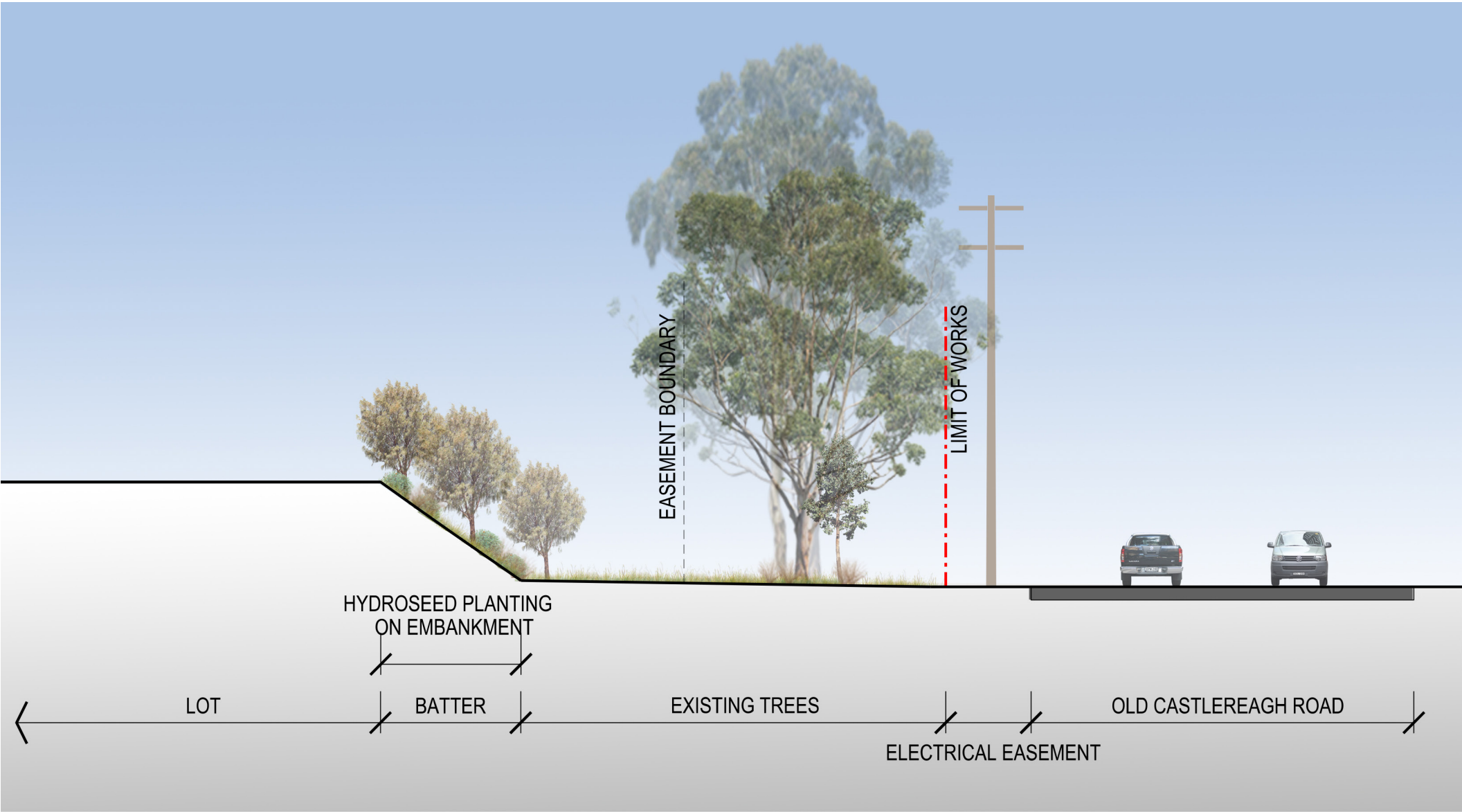


Nepean Business Park • PENRITH, NSW

CONNECTIONS AND OPPORTUNITIES

S18-0072 DA 5

15/01/2025 Issue L



Client:
Great River NSW Pty Ltd

1:200 @A3

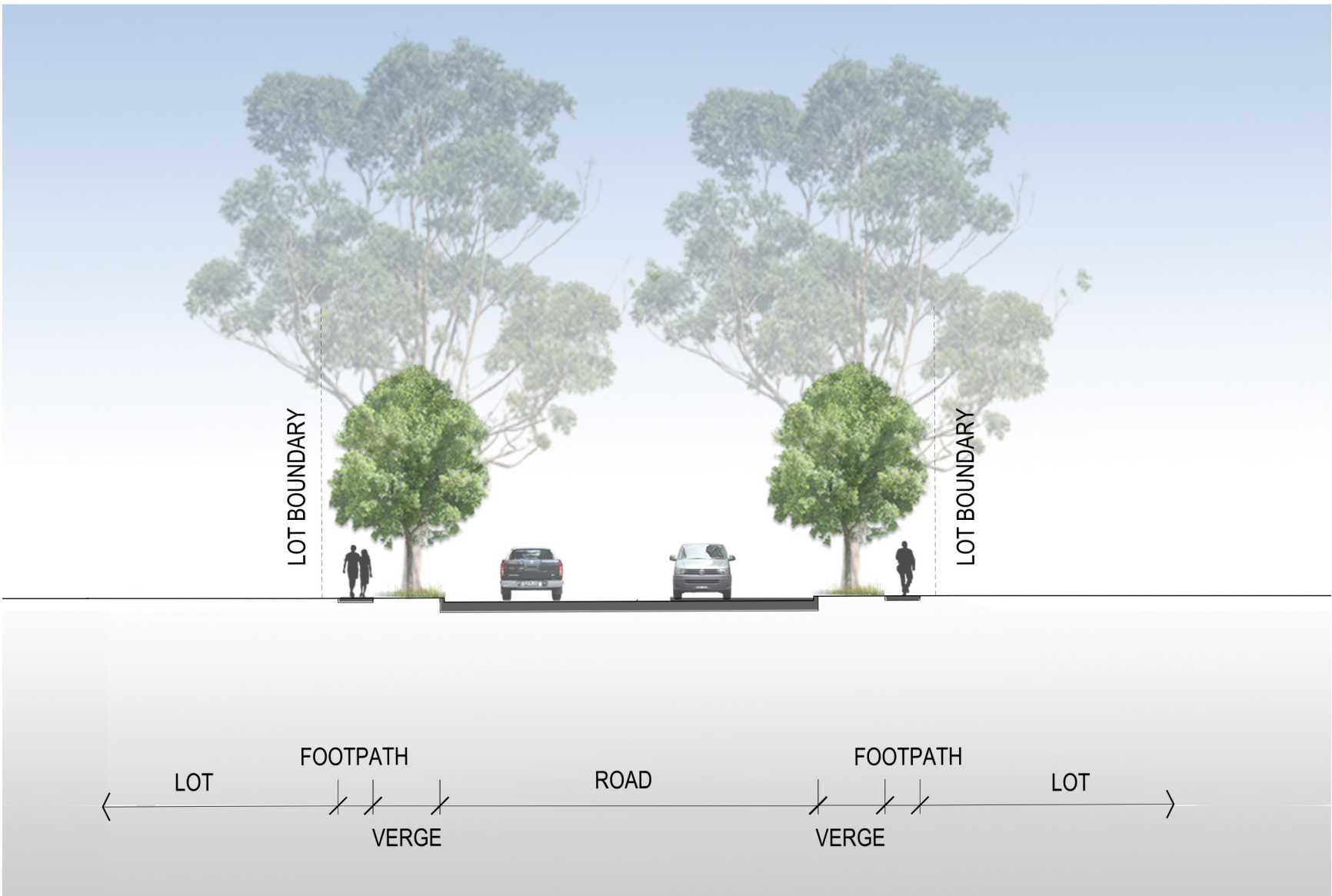


Nepean Business Park • PENRITH, NSW

OLD CASTLEREAGH ROAD - SECTION AA

S18-0072 DA 7

15/01/2025 Issue L



Client:
Great River NSW Pty Ltd

1:200 @A3



Nepean Business Park • PENRITH, NSW

TYPICAL ROAD - SECTION BB

S18-0072 DA 8

15/01/2025 Issue L

S1 - MAIN ENTRY SIGNAGE - PLAN

S2 - SECONDARY ENTRY SIGNAGE - PLAN



S1 - MAIN ENTRY SIGNAGE - ELEVATION

S2 - SECONDARY ENTRY SIGNAGE - ELEVATION

Note:
Refer DA 6 for location.



Client:
Great River NSW Pty Ltd

Nepean Business Park • PENRITH, NSW

S18-0072 DA 9

ENTRY SIGNAGE CONCEPTS

15/01/2025 Issue L

Trees



Eucalyptus saligna
Sydney Blue Gum

Small Trees



Angophora bakeri
Narrow Leafed Apple



Elaeocarpus reticulatus
Blueberry Ash

Native Grasses



Lomandra fluviatilis 'Shara'
Lomandra 'Shara'



Lomandra longifolia 'Tanika'
Lomandra 'Tankia'



Corymbia eximia
Yellow Bloodwood



Agonis flexuosa
Willow Myrtle



Backhousia citriodora
Lemon Myrtle



Poa labillardieri 'Eskdale'
Poa 'Eskdale'



Imperata cylindrica
Blady Grass



Client:
Great River NSW Pty Ltd

Nepean Business Park • PENRITH, NSW

S18-0072 DA 10

INDICATIVE PLANTING PALETTE

15/01/2025 Issue L

Batter Planting



Microlaena stipoides
Weeping Grass



Acacia ulicifolia
Prickly Moses



Callistemon pallidus
Lemon Bottlebrush



Themeda triandra
Kangaroo Grass



Hardenbergia violacea
Purple Coral Pea



Kennedia rubicunda
Dusky Coral Pea



Client:
Great River NSW Pty Ltd

NEPEAN BUSINESS PARK - PLANT SCHEDULE *

CODE	BOTANICAL NAME	COMMON NAME	ORIGINS	Indicative mature height at NBP (metre)	Indicative mature canopy width at NBP (metre)	Indicative clear trunk height at maturity at NBP (metre)	Max mature height in natural setting (metre)	Max mature canopy width in natural setting (metre)	QUANTITY
TREES									
Cex	<i>Corymbia eximia</i>	Yellow Bloodwood	New South Wales	12-15m	8-12m	6-8m	20m	15m	28
Esa	<i>Eucalyptus saligna</i>	Sydney Blue Gum	New South Wales	20-40m	15-20m	10-15m	50m	25m	118
SMALL TREES									
Afle	<i>Agonis flexuosa</i>	Willow Myrtle	Western Australia	8-10m	4-6m	3-4m	12m	8m	145
Aba	<i>Angophora bakeri</i>	Narrow Leafed Apple	New South Wales	8-10m	6-8m	3-4m	15m	10m	48
Bci	<i>Backhousia citriodora</i>	Lemon Myrtle	Eastern Australia	8-10m	6-8m	3-4m	15m	10m	30
Ere	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	Eastern Australia	8-10m	4-6m	3-4m	12m	8m	61

* As detailed in the Tree Planting Strategy, in this urban context tree species are not expected to achieve the same height and canopy spread as they would typically achieve in natural settings. This table details the estimated mature heights and canopy spreads based on observed performance of those species in other urban environments. These dimensions are used to calculate total mature canopy spread based on the planting plan.

CODE	BOTANICAL NAME	COMMON NAME	Indicative mature height (metre)	Pot Sizes	Indicative densities (p/m ²)
NATIVE GRASS PLANTING MIX					
Dre	<i>Dianella revoluta</i>	Blue Flax-Lily	1m	Tube	6
Lfl 'Sha'	<i>Lomandra fluviatilis 'Shara'</i>	Lomandra 'Shara'	0.4m	Tube	3
Llo 'Tan'	<i>Lomandra longifolia 'Tanika'</i>	Lomandra 'Tanika'	0.8m	Tube	4
Pla 'Esk'	<i>Poa labillardieri 'Eskdale'</i>	Poa 'Eskdale'	0.7m	Tube	6
Tau	<i>Themeda triandra</i>	Kangaroo Grass	1.2m	Tube	8
BATTER PLANTING HYDROSEED MIX					
	<i>Acacia ulicifolia</i>	Prickly Moses	3m	Seed	3%
	<i>Bothriochloa macra</i>	Red Leg Grass	1m	Seed	15%
	<i>Callistemon pallidus</i>	Lemon Bottlebrush	5m	Seed	2%
	<i>Chloris truncata</i>	Windmill Grass	1m	Seed	15%
	<i>Danthonia tenuior</i>	Wallaby Grass	1.2m	Seed	20%
	<i>Hardenbergia violacea</i>	Purple Coral Pea	0.5m	Seed	5%
	<i>Kennedia rubicunda</i>	Dusky Coral Pea	0.5m	Seed	5%
	<i>Microlaena stipoides</i>	Weeping Grass	0.7m	Seed	15%
	<i>Themeda triandra</i>	Kangaroo Grass	1.2m	Seed	20%



Client:
Great River NSW Pty Ltd