505 MINMI ROAD, FLETCHER

Urban Design Study - Site Analysis & Final Masterplan

Final Issue 21.12.21

moir
landscape architecture

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INTRODUCTION

INTRODUCTION

Moir LA were engaged by Barr Planning to prepare an Urban Design Study for the proposed development located at 505 Minmi Road, Fletcher.

The study includes the development of a Masterplan and underpinned by Urban Design Principles which consider the strategic planning context, site conditions and key factors around Liveability, Sustainability, Environment, Culture,Value and Resilience.

The development of the masterplan layout has been developed with respect to the following:

- Vehicle access and movement
- Pedestrian access and movement
- Site vegetation.
- Integration and connection of services and essential infrastructure
- Response to the site topography
- Aspect and orientation of lots.
- Site stormwater management
- Efficiency of road network and lot design.
- Options for consolidation and diversity of residential typologies
- Provision of amenity and connection with adjoining networks (cycleways, linear parklands etc)
- Integration of cultural, social and community values.
- Efficiency and constructibility of road networks and lots.
- Sustainability and resilience. Landscape theming and overall aesthetics

The purpose of the report is to facilitate further discussions and consultation with City of Newcastle council and relavent planning panels, particularly with regard to proposed open space and urban design treatments and to communicate the ideas, principles and opportunities identified for the 505 Minmi Road Site.

STRATEGIC CONTEXT

The development of the Masterplan and Planning Principles have been underpinned by the state and local planning context. In particular the framework and guides set out within the following Government Architect documents:

- Urban Design for Regional NSW 2020
- Better Placed 2017
- Urban Tree Canopy 2017
- Greener Places 2020
- Designing with Country 2020Draft Connecting with Country 2020

The Urban Design for Regional NSW outlines seven urban design strategies for regional NSW:

1. Engage with the history and culture of places
2. Integrate with the natural environment and landscape
3. Revitalise main streets and town centres
4. Prioritise connectivity, walkability, and cycling opportunities
5. Balance urban growth
6. Increase options for diverse and healthy living
7. Respond to climatic conditions and their impacts.

Better Placed is an integrated design policy for the built environment of NSW. The Policy sets out seven objectives to guide healthy, responsive, integrated, equitable and resilient places to inform the built form outcomes at Minmi:

- Better fit: contextual, local and of its place
- Better performance: sustainable, adaptable, and durable
- Better for community: inclusive, connected and diverse
- Better for people: safe, comfortable, and liveable
- Better working: functional, efficient and fit for purpose
- Better value: creating and adding value

In addition, a number of local strategic documents and Policies have been reviewed including the Great Newcastle Metropolitan Plan 2036, the Hunter Regional Plan 2036, the City of Newcastle's relevant DCP, Landscape Policy and Guidelines, Local Environmental Plan, State Environmental Planning Policies (SEPPs)

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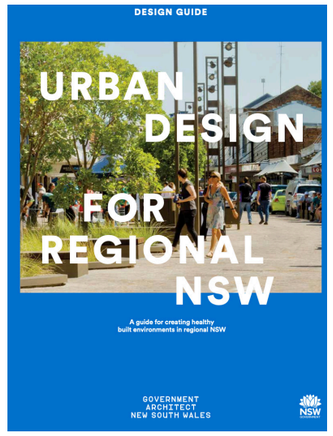
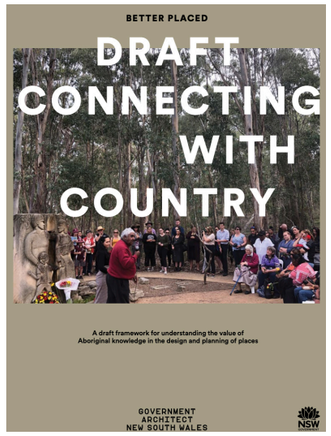
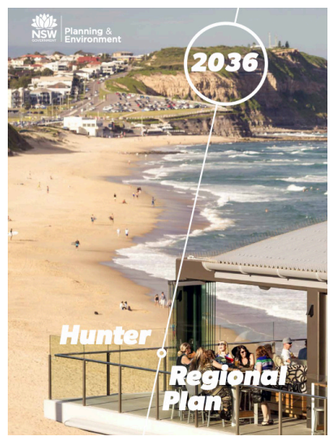






City of Newcastle

02

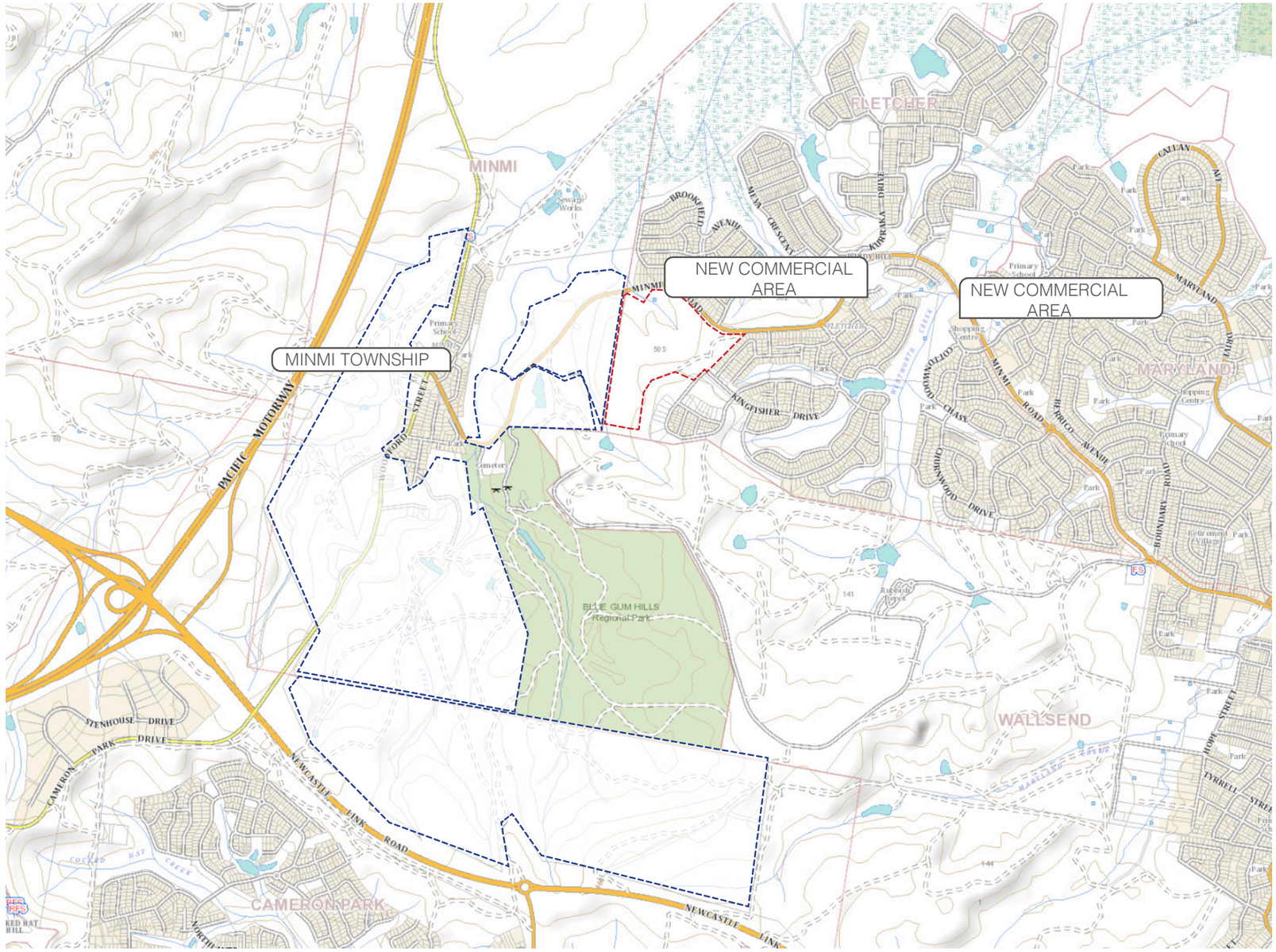
SITE ANALYSIS

SURROUNDING CONTEXT AND SITE

THE SITE
Fletcher is part of the Newcastle City Council and is bordered Wallsend, Minmi and Cameron Park, approximately 15km to the west of Newcastle CBD. The Site (including conservation areas) has an area of 260 hectares, and is located south of Minmi Road.

VEGETATION
The study area and nearby surrounds are currently heavily vegetated which includes areas of Lower Hunter Spotted Gum Ironbark Forest (EEC).

ZONING
The site is currently zoned as E4 Environmental Living. x Approximately half of the site is proposed to be zoned R2 Low Density Residential. and the other half is proposed to be zoned E2 Environmental Conservation.



Legend

----- The Site

----- New Subdivisions in Planning Stages

SURROUNDING CONTEXT AND SITE

REGIONAL CONTEXT
The predominant land use in the area is low density residential development. The Site is surrounded by both natural and re-vegetated bushland to the north, south and west with residential development to the east. However, there are a number of subdivisions currently in planning stages. It is likely this will impact on the existing bushland areas surrounding the site.

The region is characterised by a range of landscapes from steep sloping peaks to gently undulating foothills. Within the area there exists a variety of landscape types including highly scenic natural landscapes, established and new residential areas, commercial and industrial areas.

The area is identified as a future urban area within the Hunter Regional Plan 2036.

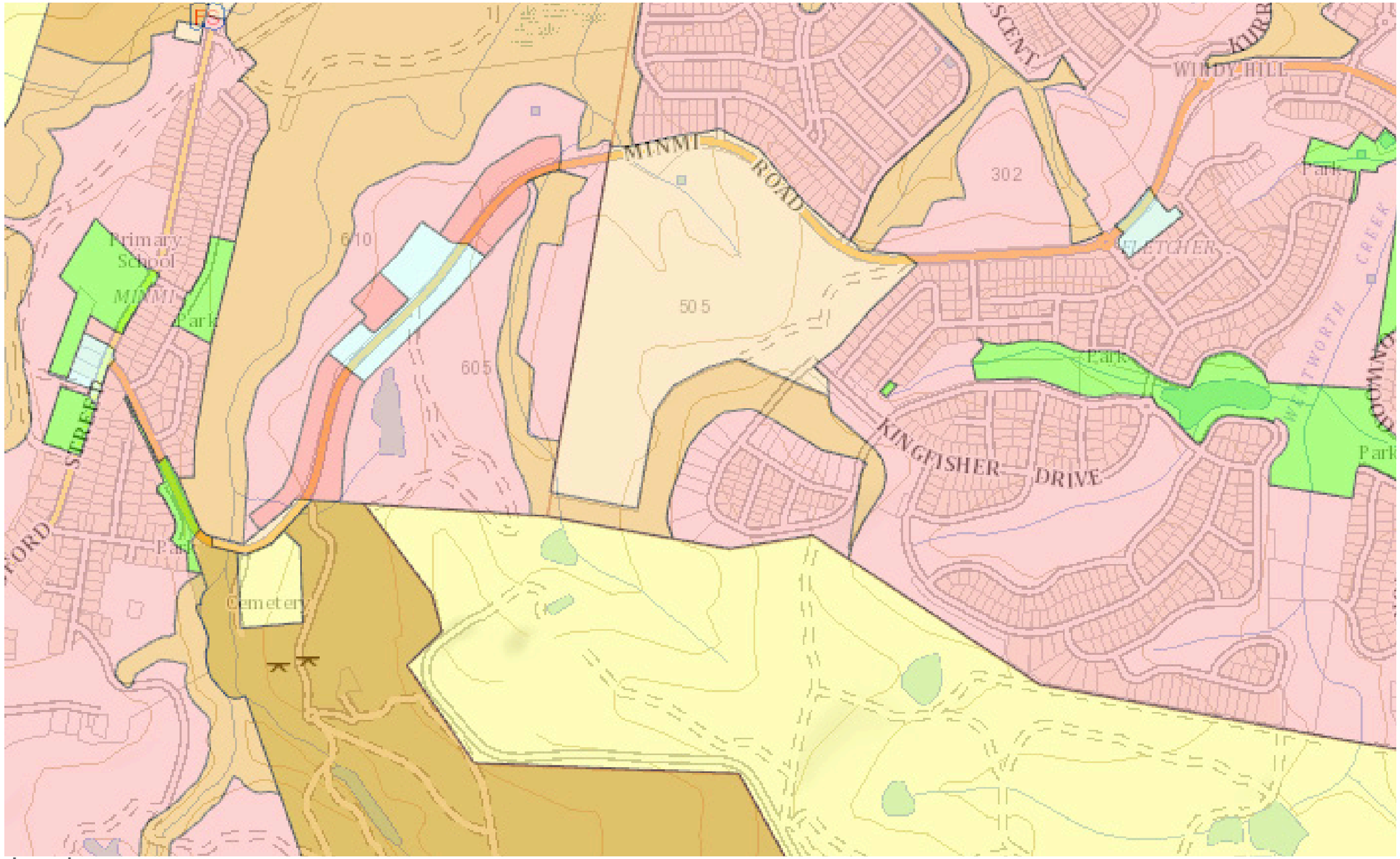
NEARBY COMMERCIAL HUBS

SURROUNDING ESTABLISHED TRAILS RECREATION AREAS

SURROUNDING BUSHLAND CHARACTER

SURROUNDING LOW DENSITY RESIDENTIAL CHARACTER

CURRENT ZONING



Legend

- B1 Neighbourhood Centre
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- E3 Environmental Management
- E4 Environmental Living
- IN1 General Industrial
- R2 Low Density Residential
- R3 Medium Density Residential
- RE1 Public Recreation

0m 100m 300m 500m

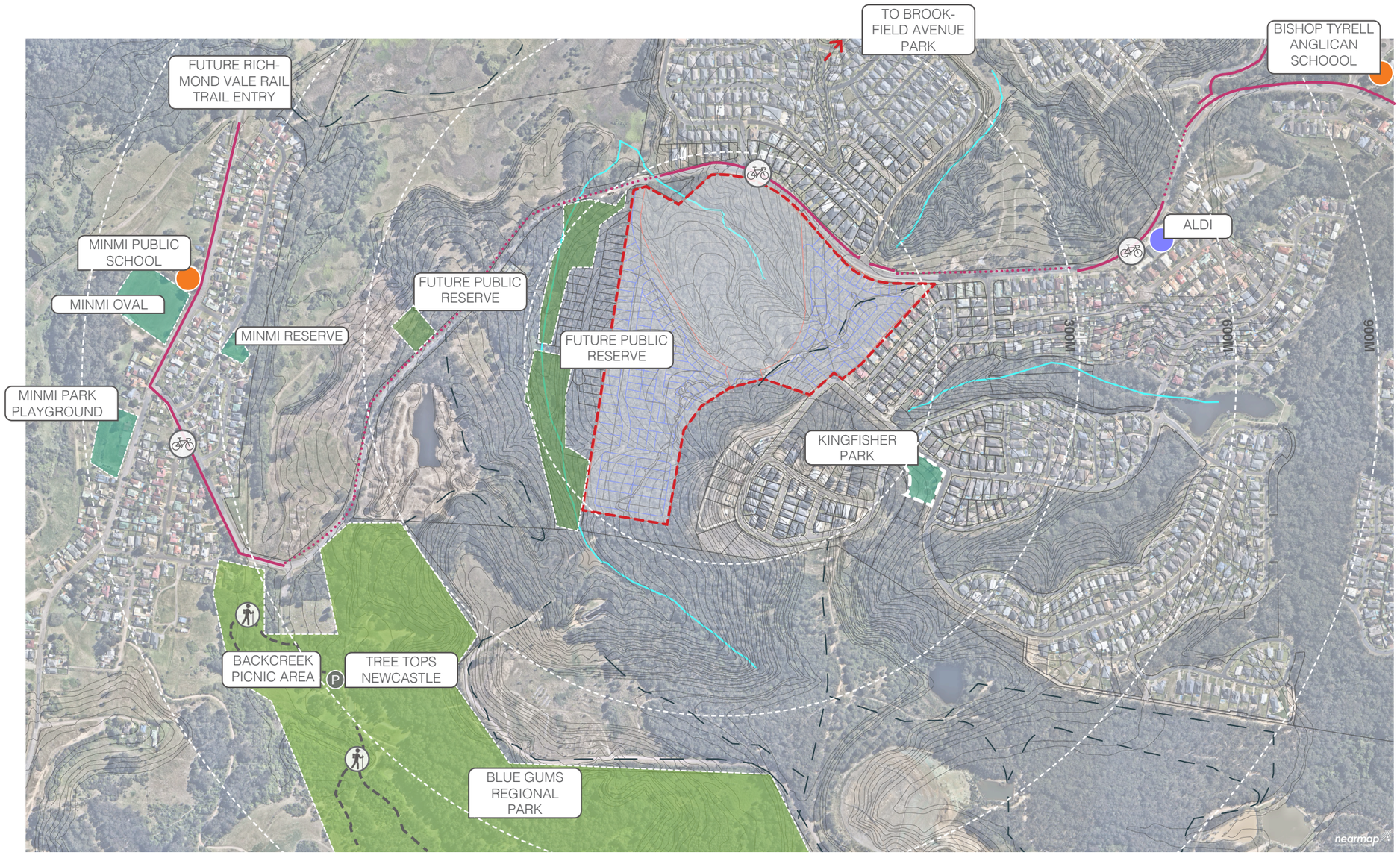
EXISTING OPEN SPACE AND CONNECTIVITY

The 505 Minmi Road development occupies a unique location, nestled between existing and proposed residential areas, surrounded by large tracts of native bushland and nearby the existing Minmi Town Centre (located approximately 2km away) and surrounding newer commercial hubs.

The newer commercial area is located approximately 650 metres east of the development and the connection includes shared pathways creating a readily walkable distance and an easily achieving walkable distance, promoting connectivity.

The Site is also located within cycling or walking distance of a variety of Public Reserves, Parks, Schools and National Parks.

Existing formal shareway and footpath connections in addition to informal bushtracks provides an opportunity for the development to link into the overall open space and connectivity network, encouraging and active lifestyle.



Legend

- On-road cycleway
- Shareway
- Formal walking trail
- Informal Walking trails (to be investigated)
- National Parks and Reserves
- Parks and Playgrounds.
- Future Public Reserves

300m
0m

KEY CHALLENGES

The 505 Minmi Road development site has a number of unique challenges.

The site is predominantly made up of Low Hunter Spotted Gum EEC and as such provides habitat to local fauna.

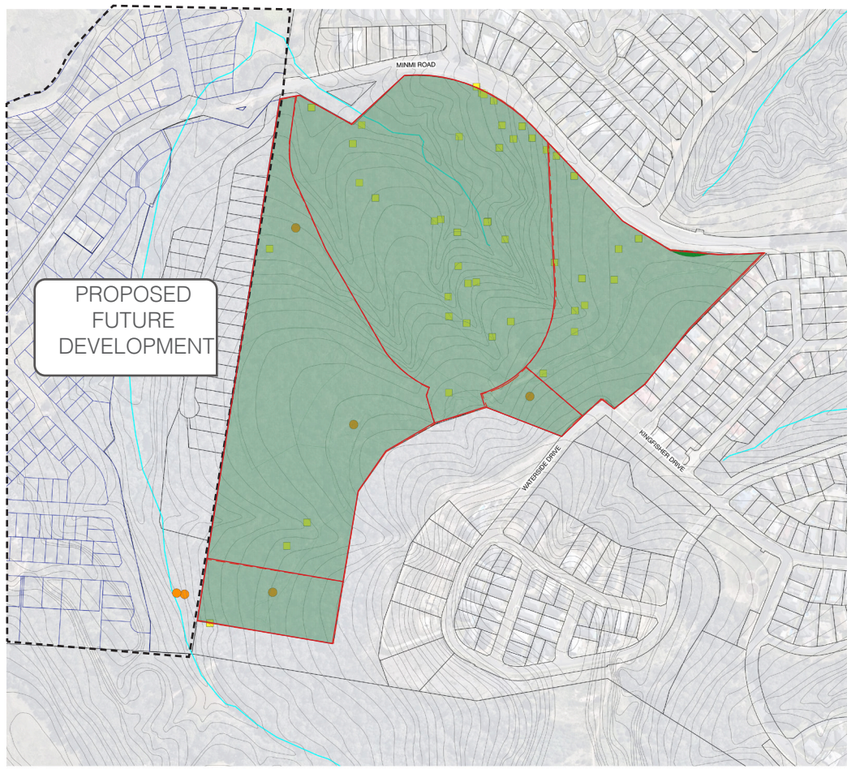
As part of Bushfire requirements the site is also subject to asset protection zones.

A key challenge and objective of the development of the masterplan will be retaining and protecting EEC areas, where possible, whilst fulfilling the Bushfire Protection requirements.

A number of hollow bearing trees were identified through the Ecological Studies. A key principle of the masterplan will include the inclusion of nest boxes and tracts of habitat areas to encourage the continuation of fauna movement corridors.

Three areas of potential archaeological deposit and an isolated artefact have been recorded within the site. A key element to the development of the site will be through referencing the cultural and historical framework of the site and interpreting this through a wayfinding and interpretation strategy.

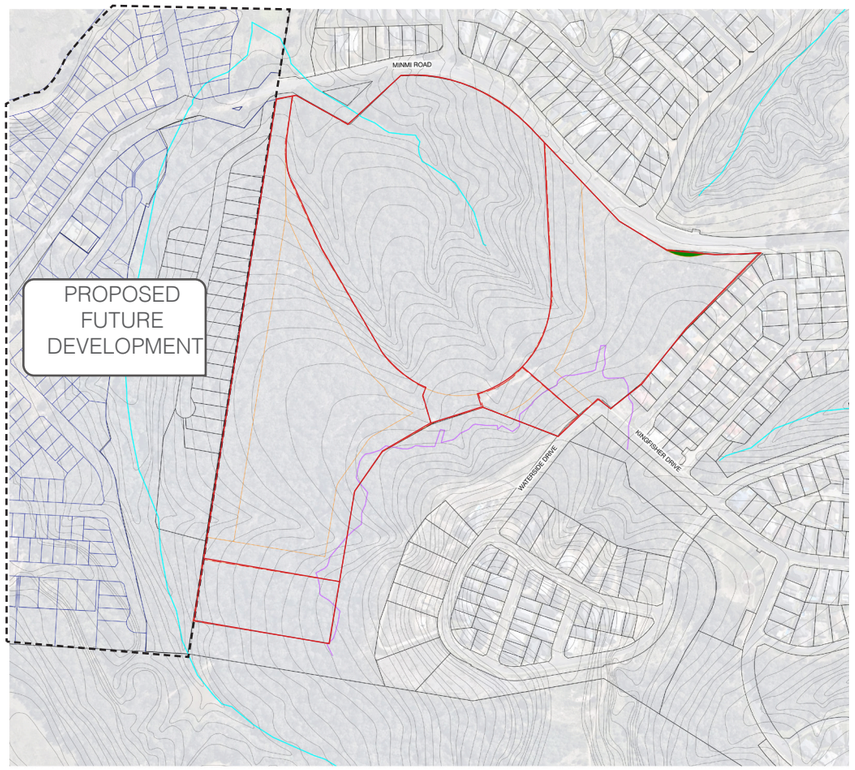
Minmi's rich history as a mining town has impacted upon the site with mining works detected within the site boundaries.



ECOLOGY AND HISTORICAL ARTEFACTS

Legend

- Proposed Zoning Boundary
- Creek
- Lower Hunter Spotted Gum Ironbark Forest (EEC)
- Aboriginal Cultural Heritage
- Hollow Bearing Tree



MINING EXTENTS

Legend

- Proposed Zoning Boundary
- Creek
- APZ
- Extent of Mine Works

KEY OPPORTUNITIES & OBJECTIVES

There are a number of key objectives and desired outcomes for the development and are as follows:

OBJECTIVES:

- Provide a sensitive transition with proposed and current neighbouring residential developments.
- Provide a transition from the surrounding bushland character.
- Minimise the overall visual impact of future housing through retention of existing vegetation where possible and supplementary tree planting in the streetscape and public domain.
- Optimising and making features of the site's intrinsic natural and cultural assets.
- Incorporation of native vegetation where possible to provide habitat.
- Minimise fuel loads through species selection and planting.

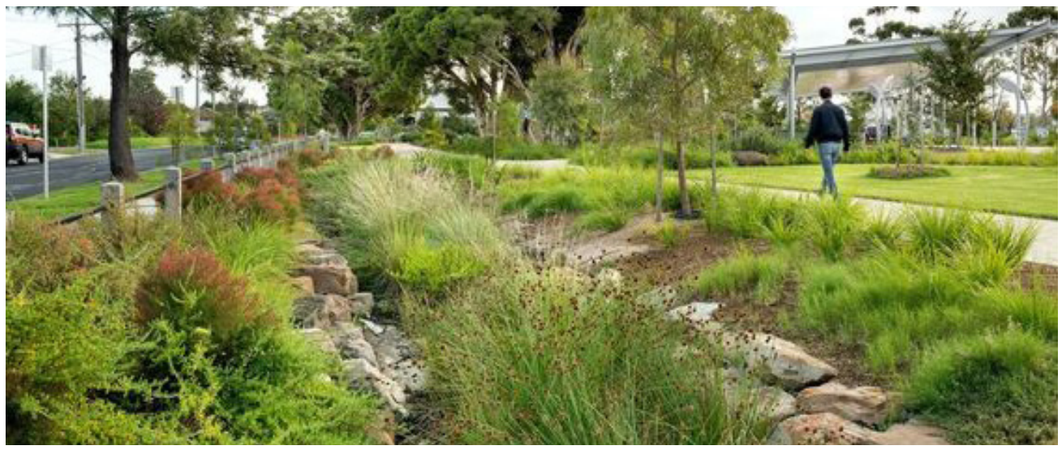
DESIRED OUTCOMES:

- Lot layouts that accentuate views and allow for solar access.
- Establishing a strong unique landscape theme throughout the site that ensures a pleasant living environment, and reflects the landscape setting the site is a part of.
- The provision of street trees to assist in defining the road hierarchy and providing a transition between existing residential areas and surrounding bushland.
- Siting lots to take advantage of distant views and views to open space and bushland.
- Setbacks to contribute to the bushland ambience and provide visual separation to sensitive locations.
- Utilise APZ areas as crucial open space linkages and recreation areas whilst following the NSW Bushfire Protection Guidelines.
- Leverage on the surrounding green space and commercial offerings through the provision of through connections and entries.
- Investigate low impact uses for conservation areas including trails, and wayfinding.
- Investigate ways to celebrate the surrounding unique natural assets and cultural history.

PEDESTRIAN AND CYCLEWAY CONNECTIONS

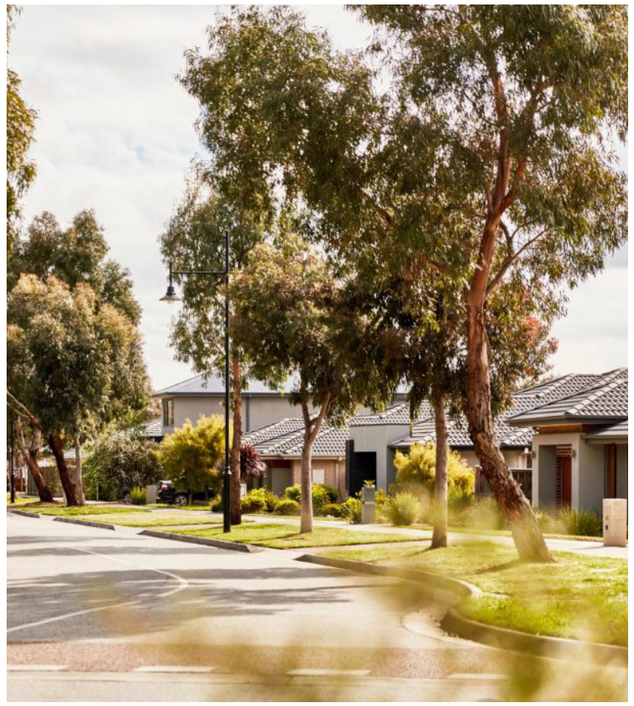
RETAINED VEGETATION

LANDSCAPE BASIN



WATER SENSITIVE URBAN DESIGN

PASSIVE RECREATION SPACE

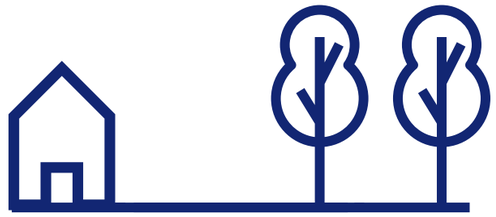


STREET TREE PLANTING

03

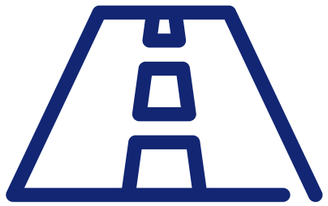
THE PROPOSAL

OVERARCHING PRINCIPLES



BUFFERS

Provide a 10m buffer (retained EEC vegetation) to Minmi Rd which will maintain a natural corridor for fauna, assist in screening views to the development from Minmi Rd. and help to integrate the development into the surrounding context.

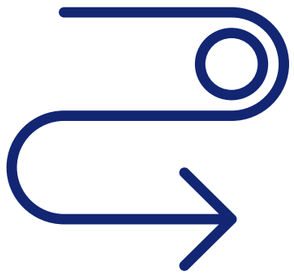


ROADS

Minimise cut and fill to retain more existing vegetation by developing a road network that follows the existing ridgelines and topography of the site.
Provide an internal road network that utilises two entries from Minmi Road.

HIERARCHY & ENTRIES

Provide a logical street hierarchy and entry sequence to assist visitors and residents easily navigate the development.



CONNECTIVITY

Connect the site to the wider open space and pathway network via the provision of through-development connections and network of internal pattern of walkways.

GREENSPACE

The unique bushland character and the requirement for APZ provides an opportunity to utilise open space not suitable for development to be used as recreational lands and connectivity corridors. Whilst there are limitations to how this land can be used it may be suitable for walking trails, passive seating areas and WSUD initiatives. The open space and existing bushland is a key feature of the development, providing green views and access to nature for residence.

INTEGRATING ENVIRONMENTAL INITIATIVES

Integrate ecological principles into the overall design of the development through WSUD initiatives within road corridors and open space, appropriate tree and material selection to suit the ecological outcomes and introducing nesting boxes.

THE MASTERPLAN

The development of the Landscape Master Plan has been inspired by the principles and applications of best practice design, coupled with the desire to provide a quality living environment for new residents of the Minmi Development.

The development includes a range of lot sizes located within a network of walkways, road and open spaces. The principal design components of the masterplan include:

- A 10m buffer zone located between the development and Minmi Road .
- Connectivity both within the site and to the existing pattern of roads and walkways in the area.
- An internal road hierarchy that utilises two entries and is empathetic to existing topography.
- A walkway connection to both surrounding proposed developments as well as the existing shared pathway along Minmi Road.
- A greenspace network within the site including a greenspace running west – east, and north - south within available APZ areas.
- Low density residential lots that capitalise on solar access, green views and orientation.
- A comprehensive internal pattern of walkway and cycleway connections.
- Integrated environmentally focused initiatives.

The principal urban drivers on which the masterplan has been developed include the following components:

- A desire to deliver range of lot site sizes that will enable an affordable range of options for purchasers.
- The ability to connect, by road cycleway and walkway, to available networks outside of the site and the establishment of a connected network within the site.
- The inclusion of appropriate setbacks from Minmi Road and neighbours.
- Recognition of the cultural and historical importance of Minmi and the Awabakal people enabling visual and physical connections.
- Retention and protection where possible of existing tree communities and hollow bearing trees.

LOT LAYOUT AND YIELD

The lots have been developed to provide a range of sizes to appeal to a variety of potential buyers.

The existing bushland character which envelops most of the site provides green views from a high proportion of lots. We have endeavoured to increase the lots sizes within areas that front onto existing bushland areas.

The adjacent plan demonstrates the proposed lot layout and yield.

Legend

- Site Boundary
- Eastern Precinct
- Western Precinct

INTERNAL OPEN SPACE NETWORK & CONNECTIVITY

The eastern and western precinct areas within the development are located around the central horseshoe road, entered from both Kingfisher Drive and Minmi Road. This provides access to the internal connecting roads which allows for good visual connectivity within the development.

The main axis continues through the masterplan to the northern edges, allowing for a simple pedestrian connections in addition to connections to the wider network. The central conservation area prohibits a visual connection between the precincts. However, the layout allows for a clear identifiable view shaft toward the green space associated with the main central road.

The open space patterns are located along the road network with the principle green space running west-east and pockets of passive spaces along the southern boundary and surrounding basin areas. This provides a green space of an appropriate scale for passive activities, considering the wider active recreational offerings easily accessible from the development.

This central green reserve is also highly visible from dwellings and road connections, alleviating CPTED issues. Design controls ensure that all dwellings facing the central reserve space have full visual accessibility, with no solid fencing to the area.

Legend

- Proposed Zoning Boundary
- Main Pedestrian Circulation
- Secondary Pedestrian Circulation
- Conservation Lands
- Open Space (within APZ)
- 10m Buffer to Minmi Rd
- External Green Space

WIDER OPEN SPACE NETWORK & CONNECTIVITY

EXTERNAL WALKWAYS AND CONNECTIVITY
The proposed development has considered potential linkages to the wider community and existing trails and facilities. To the north of the development there is potential to create links to the existing cycleway along Minmi Rd. This would allow future residents within the development to access the wider trail network around the Minmi township, local schools and commercial areas.

There is also an opportunity to link into the proposed development to the west and Kingfisher estate to the south of the development, accessing proposed and existing play and kick about spaces.

Legend

- Proposed Lot Layout
- External Bikeway
- External connection
- External Green Space

OPEN SPACE CHARACTER (within APZ)

The open space character is designed to provide a sensitive transition between the existing bushland and proposed development as well as a place of respite for surrounding residents.

It is proposed that these areas include passive recreation areas with shaded footpaths that connect into main thoroughfares, seating, interpretive signage, drainage basins and potential picnic settings to encourage community gathering and an active lifestyle for residents.

The picnic settings, seating and interpretive signage will be placed at strategic locations such as important view corridors, existing points of interested to optimise and make features of the site's intrinsic natural assets.

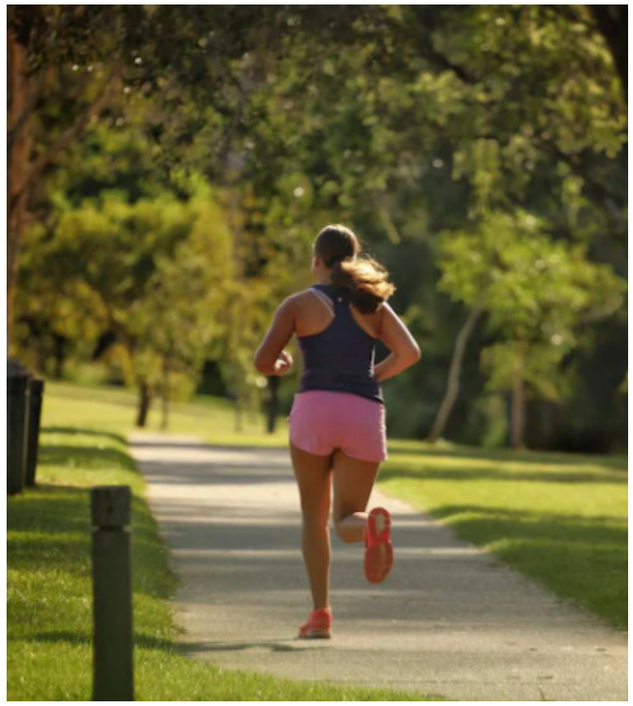
Tree planting is to comprise of native vegetation where possible to provide habitat and shade. Sensitive species selection and tree locations is required to minimise fuel loads and will be finalised in collaboration with bushfire consultant and ecologist.

It is proposed that sandstone be utilised within drainage basins and retaining walls. Sandstone helps to filtrate and purify water from roadways as the water passes through its sediments. Sandstone is mostly pH neutral and water filtering through it usually results in the same pH levels. As a natural material, it will also integrate into the bushland character and provide a cost effective design solution.

SANDSTONE RETAINING WALLS

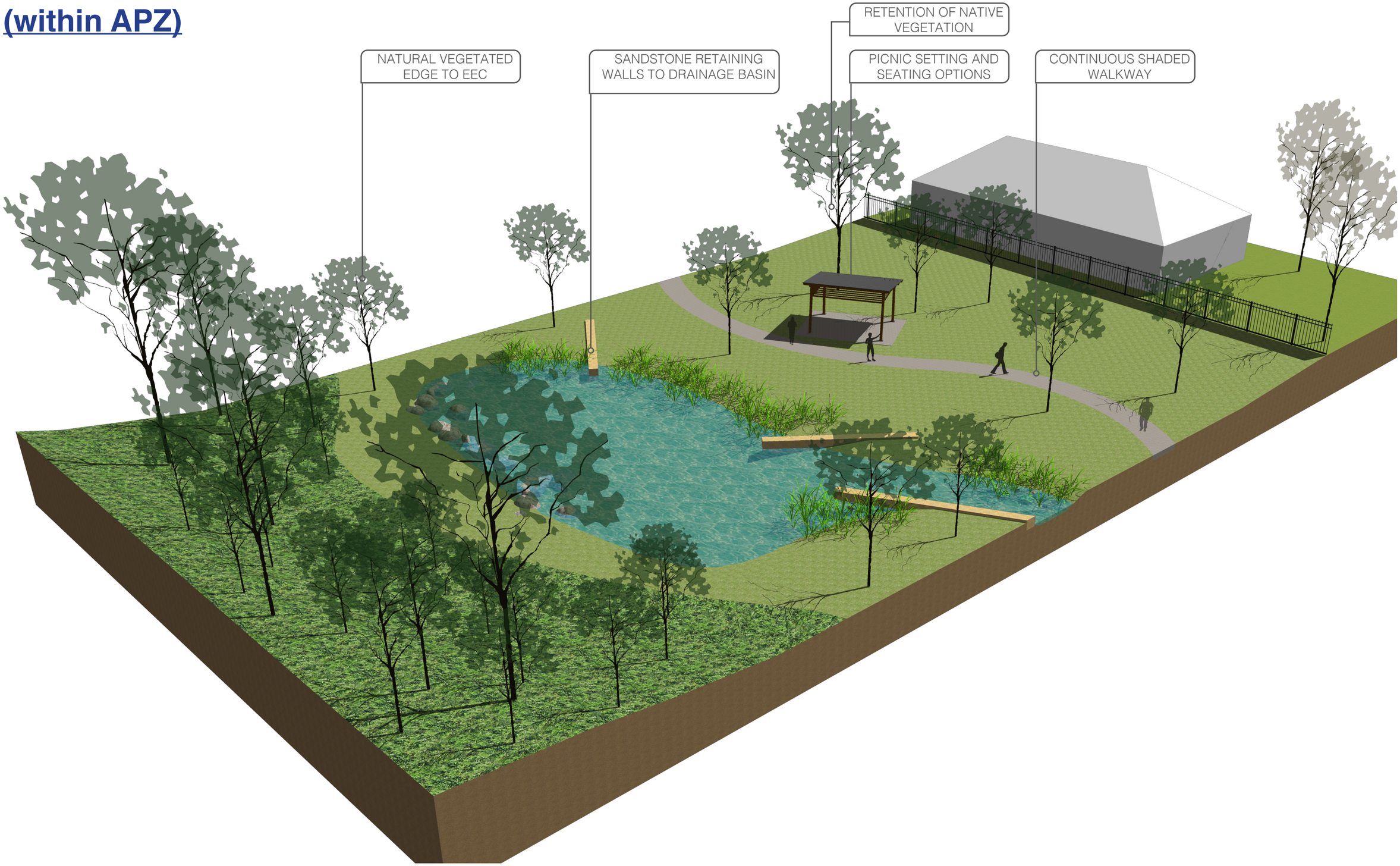
BUSHLAND CHARACTER - PICNIC SETTING AND SEATING

INTERPRETIVE SIGNAGE



CONNECTED SHADED WALKWAY

OPEN SPACE CHARACTER (within APZ)



PRESENTATION TO MINMI ROAD

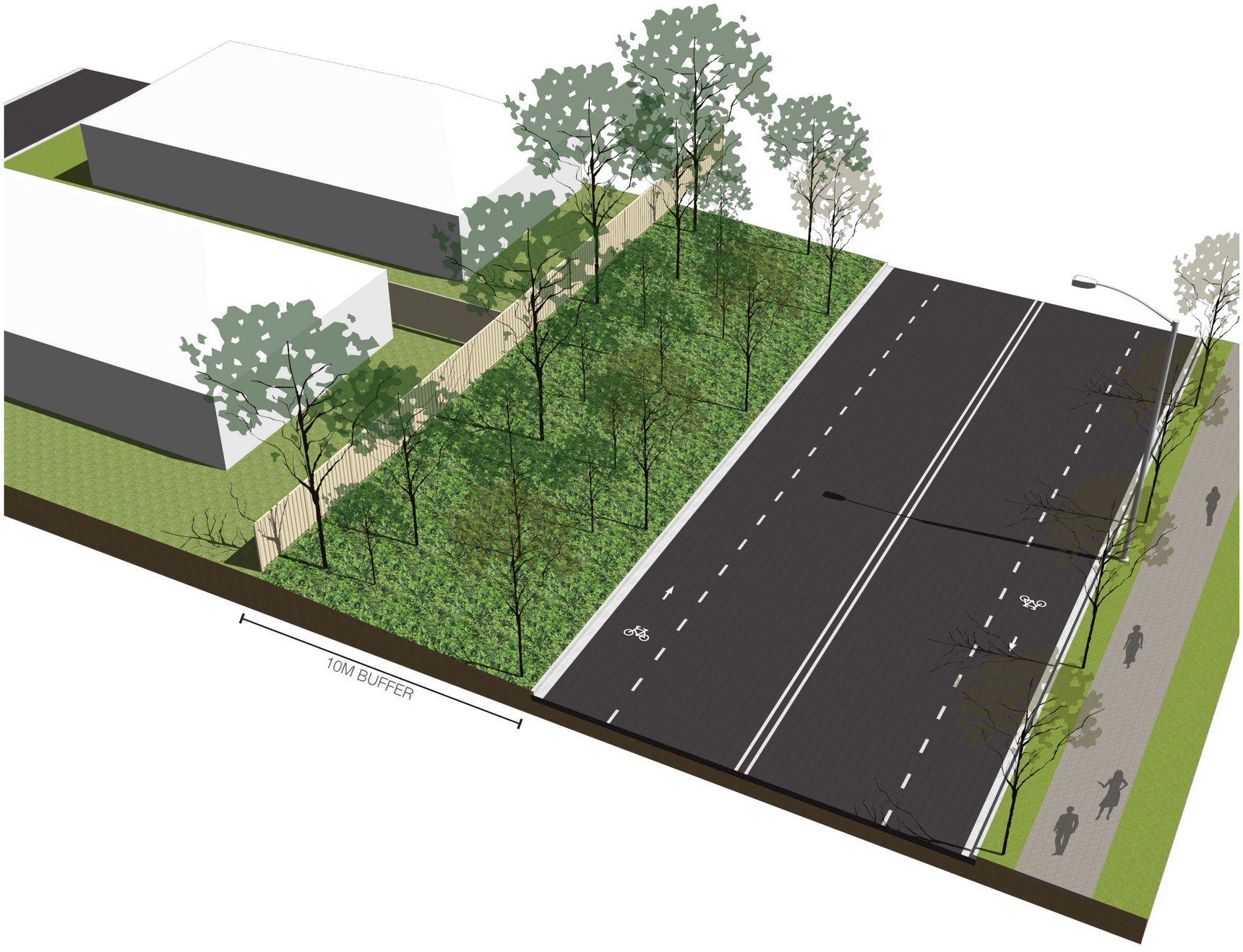
It is proposed that a consistent fence treatment be applied between the rear of lots and the vegetated setback area from Minmi Road.

The following is proposed:

1. A 10 metre setback between Minmi Road and the proposed lot boundaries. It is proposed that the existing EEC vegetation is retained, where possible, in keeping with the bushland character of the surrounding area. It is noted that it may be necessary to reduce the canopy coverage to reduce fuel loads.

2. Within that setback fencing is permitted on lot boundaries to 1.8m high as per Newcastle SEPP 2008. The fencing material shall be of a bushfire proof standard and of a colour that blends into the surrounding landscape.

The perspective illustrates the above elements.



WATER SENSITIVE URBAN DESIGN

It is proposed that a range of WSUD elements be integrated into the development of the masterplan to improve the overall health of nearby creeklines and habitat areas. These include within road reserves and integrated within recreation areas and drainage basins.

In urban areas, hard surfaces such as roads, roofs, driveways and paths stop water being absorbed by the ground. Vehicles create pollutants that settle on these hard surfaces and when it rains, stormwater carries the polluted water down drains and eventually to creeks and rivers. WSUD aims to improve the ability of urban environments to capture, treat and re-use stormwater before it has the chance to pollute and degrade creeks and rivers.

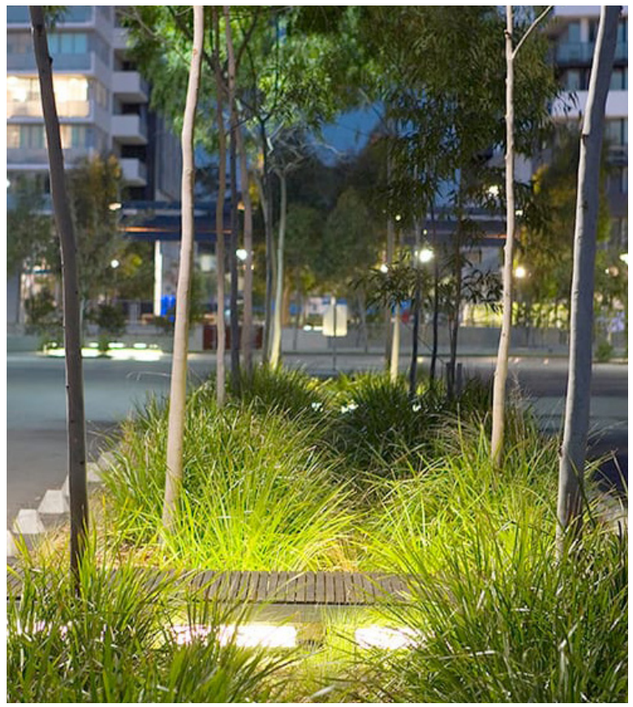
There are a number of benefits associated with

- Reducing the quantity of stormwater runoff
- Improving the quality of stormwater runoff
- Protecting and restoring creeks and rivers
- Improving wildlife habitat
- Improving the appearance of streets and parks
- Cooling our local environment by retaining water

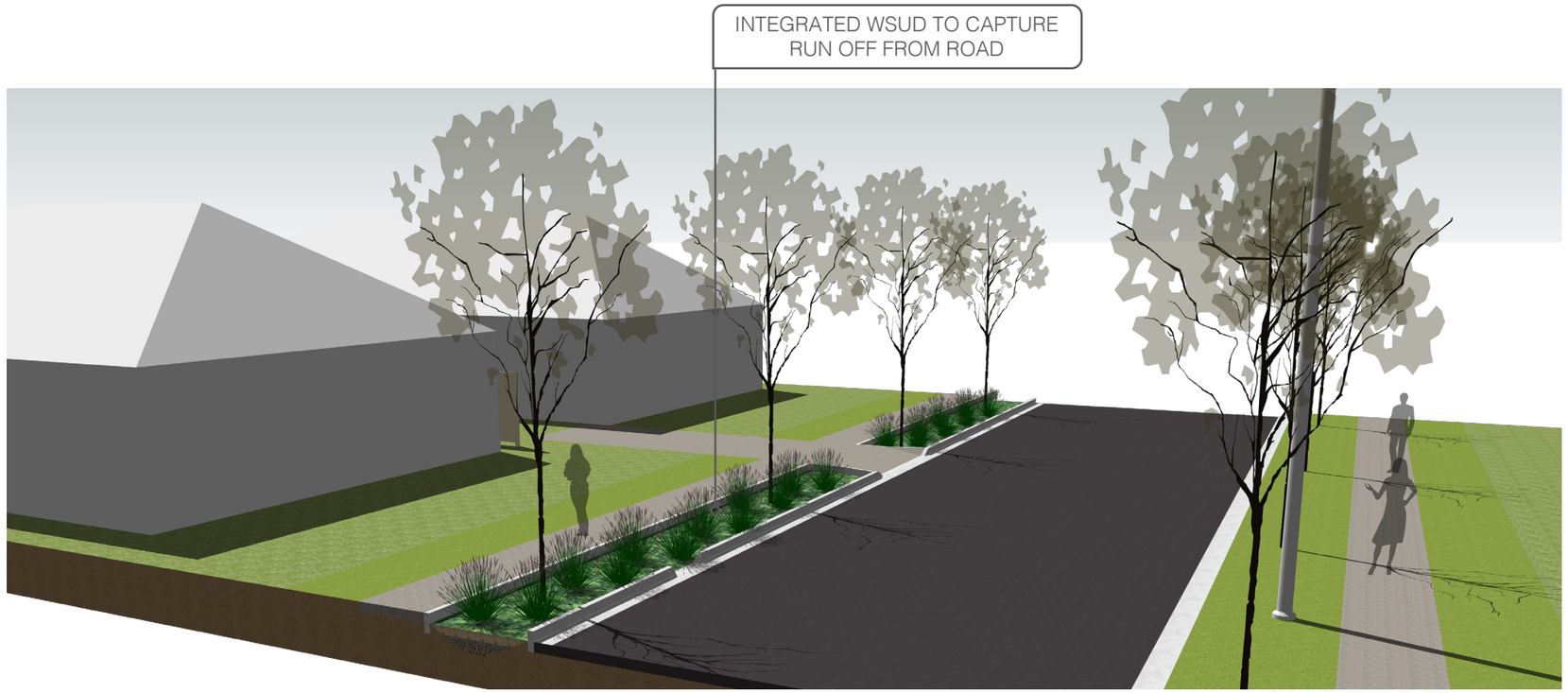
PUBLIC AWARENESS

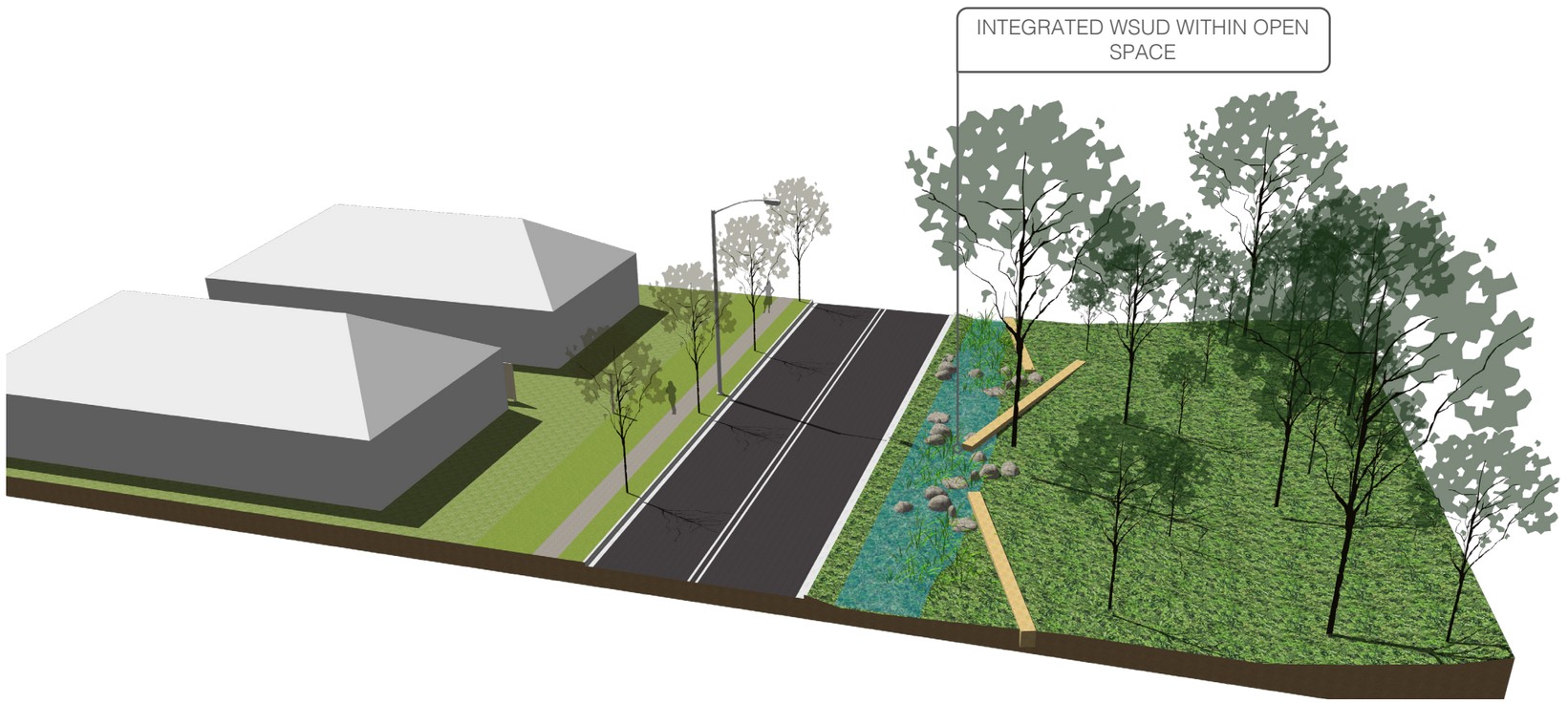

WATER SENSITIVE URBAN DESIGN


WSUD INTEGRATED INTO RECREATION AREAS


WSUD IN ROAD RESERVES

WATER SENSITIVE URBAN DESIGN





STREET HIERARCHY

The street hierarchy has been defined to provide visitors a positive first impression and assist in wayfinding. It is based upon the City of Newcastle's Street Tree Masterplan and DCP.

The hierarchy character will be represented in the proposed landscape theming, verge widths and street tree planting consisting of predominantly native tree species with endemic species to the edges adjoining bushland.

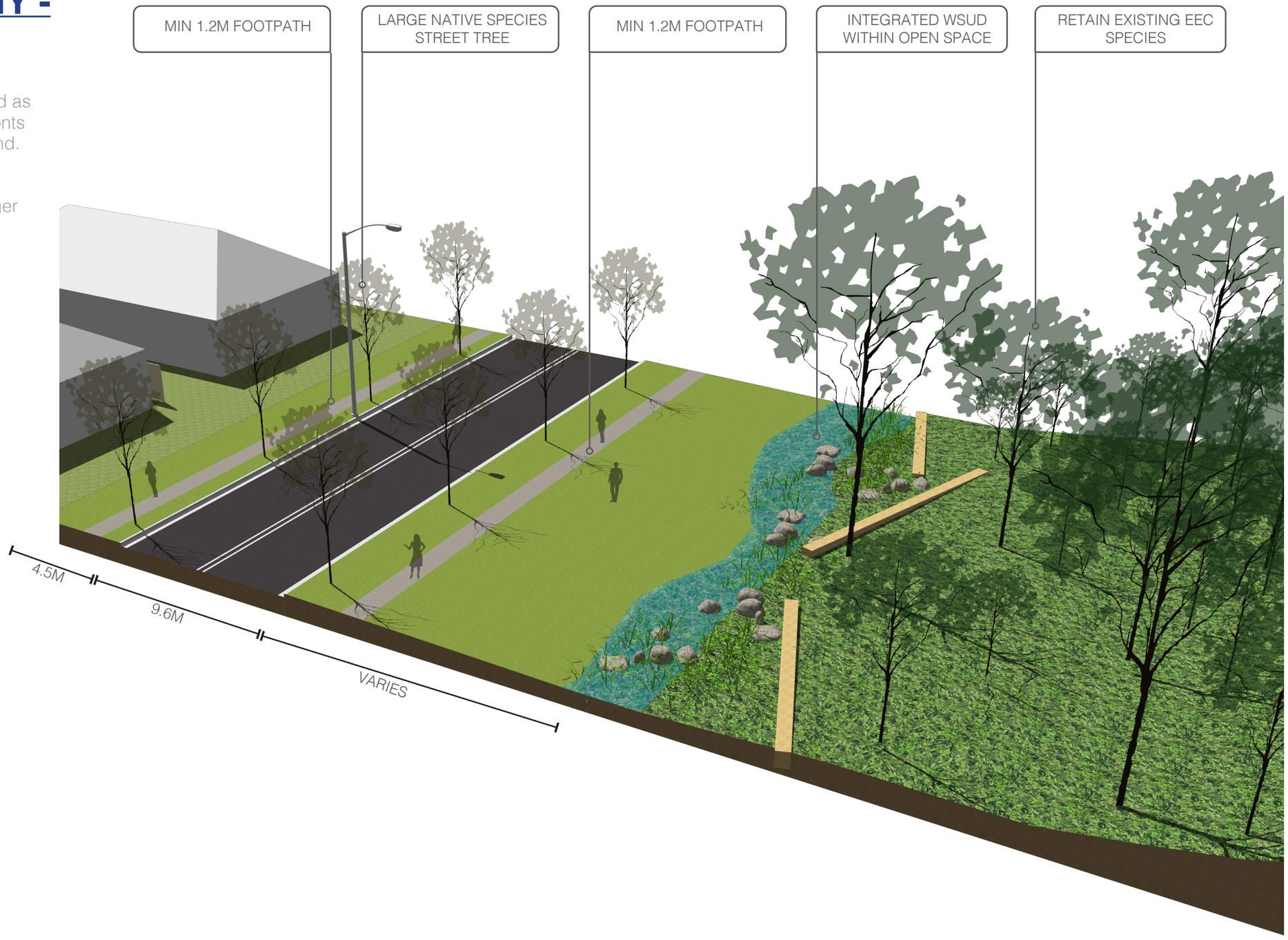
Legend

- Boulevard (19.3m road reserve)
- Minor Road (17m road reserve)

STREET HIERARCHY - BOULEVARD

The Boulevard horseshoe road is designed as the main street of the development and fronts onto the open space adjoining the bushland.

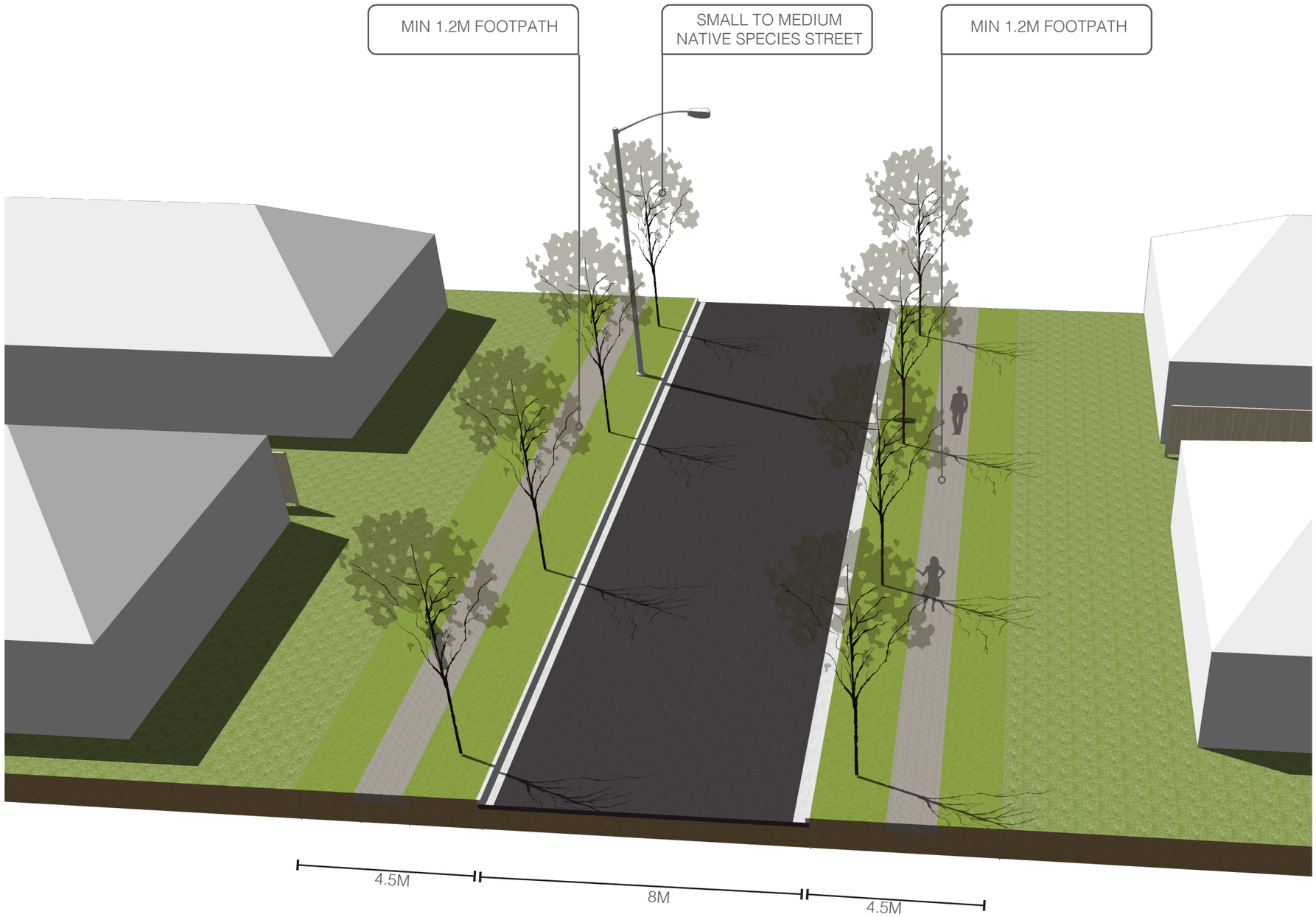
This features a wider road verge width to allow for parking and planting area for larger specimen native vegetation. There will be footpaths on either side of the road with a minimum of 1.2m wide.



STREET HIERARCHY - MINOR ROAD

The minor road is designed as a residential street within the development.

It features a 17m wide road reserve with 4.5m verges to allow for street tree planting and footpaths on either side of the road.



MATERIALITY

Site planting will include a variety of native species with clusters of feature trees to create focal points and rest spaces.

Streetscape elements will utilise regional materiality such as sandstone, hardwood, steel and native vegetation.

These materials will weave through the entry signage, fencing, street tree planting, furniture elements, paving and wayfinding signage to create a site wide character that integrates within and reflects the surrounding landscape and character.

SANDSTONE ENTRY SIGNAGE


FURNITURE AND PAVING


NATIVE STREET TREES


HARDWOOD TIMBER FENCING

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