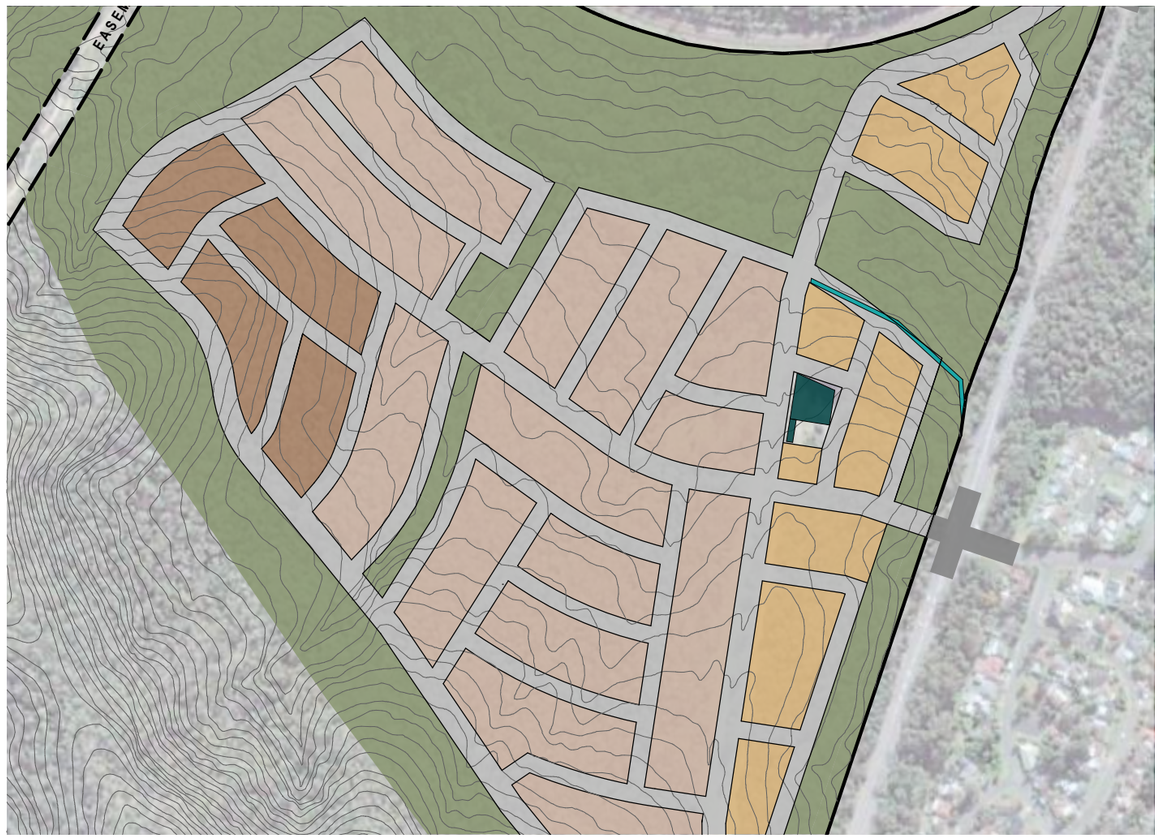
LANDCOM

Fennell Bay
urban design report



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paa DESIGN
architecture
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Peter Andrews + Associates
PTY LTD

CONTENTS

Peter Andrews + Associates Pty Ltd
paa.design architecture planning urban design landscape architecture

PO Box 494 Terrigal NSW 2260
Level 1 . 56 Terrigal Esplanade Terrigal
Studio 67 Windmill Street Millers Point
P::+61 2 4385 9126
E::info@paadesign.com.au
W::www.paadesign.com.au

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1.0 Introduction

Landcom's development site at Fennell Bay, as shown on Figure 1, is well located being approximately 12 kilometres south west of Newcastle and with the residential areas of Fennell Bay to the south,Teralba to the north and Woodrising to the east.

This report analyses the characteristics of the site and surrounding area and the opportunities and constraints of the site to determine an appropriate developable area. The analysis then assists in forming the parameters for the concept master plan for the site.

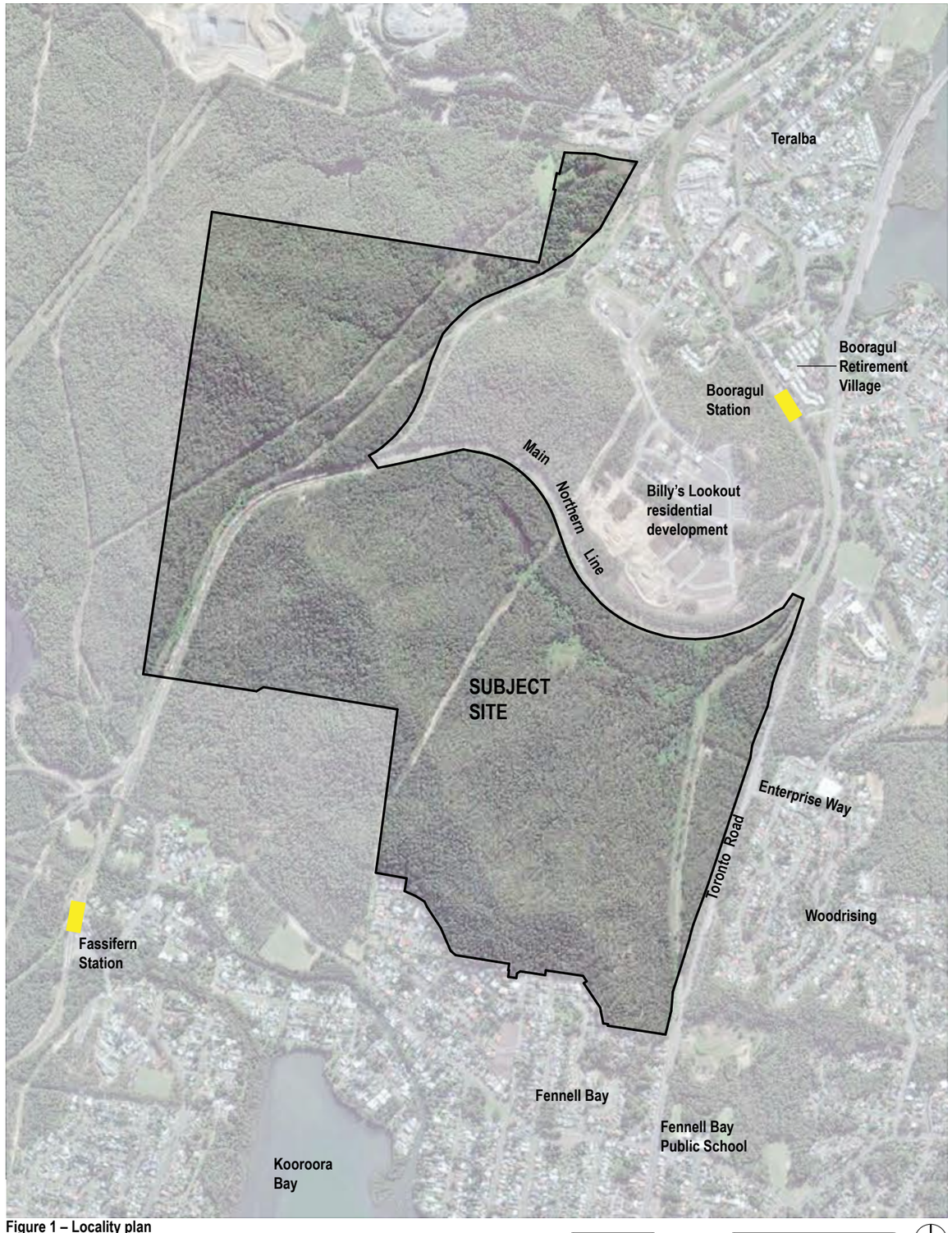

Figure 1 – Locality plan
Source: Google maps 2017

2.0 Site analysis

2.2 Surrounding area

The Main Northern Railway line forms part of the northern boundary of the site and traverses across part of the site.

Toronto Road adjoins the eastern boundary and provides access to the site.

Fassifern and Booragul railway stations are in close proximity providing services travelling from Sydney to Newcastle on the Main Northern line. Booragul railway station is approximately 800 metres from the northern site boundary.

Billy's Lookout is a multi-staged residential development to the north of the site. The subdivision has been mostly finalised and incorporates a range of small to large lots. Residential dwellings have been and are being constructed within the subdivision.

Further to the north, Teralba is characterised by a mix of industrial uses and low density residential development.

The residential area of Woodrising is located to the east of the site and Fennell Bay to the south of the site. Various services including a shopping centre, preschool and primary and high schools are located within a short distance of the subject site.

2.2 Site characteristics

The existing site encompasses a range of conditions including a former mine, creeks, drainage channels and dams, open meadows and forested areas with native vegetation as well as utility corridors with overhead power lines.

Site analysis and investigations have identified the following general constraints as shown on Figure 2 including:

- Existing utilities cross the site in a north south direction including an overhead low voltage power line in cleared areas located along the Old Main Road and an overhead high voltage power line in the centre of the site and west of the Main Northern Railway line.
- Former mining activities including a historic mine shaft.
- Existing pump station in the east near the Old Main Road.
- Main Northern Railway corridor, which will require a continuous 20 metre buffer to residential development.
- Existing dams and water bodies.
- Existing road infrastructure including the Old Main Road.
- Unknown service locations including the gas line.

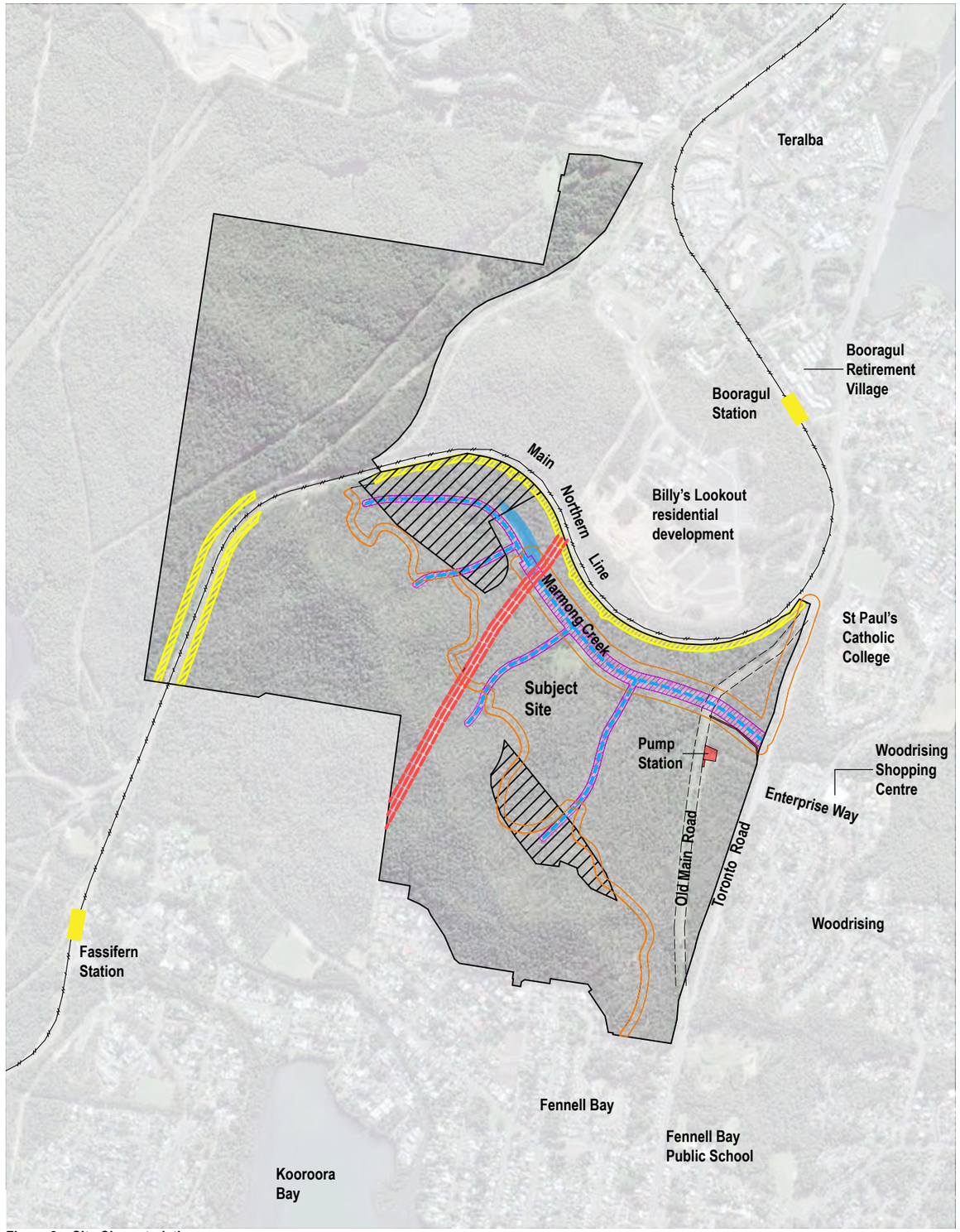

Figure 2 – Site Characteristics
Source: Google maps 2017

Site analysis (cont.)

2.1 Environmental Considerations

Environmental analysis has been undertaken by GHD showing the proposed conservation and developable area identified for the site as shown on Figure 3 and including:

- Marmong Creek and associated riparian drainage corridors in the lower-lying northern and eastern portion of the site.
- Flora and Fauna species located within and surrounding the site.
- A ridge in the southern portion of the site extends to the north west. Steeper grades are located towards the upper slopes. The ridge gradually lessening near Marmong Creek.
- Area subject to the proposed road acquisition along Toronto Road.

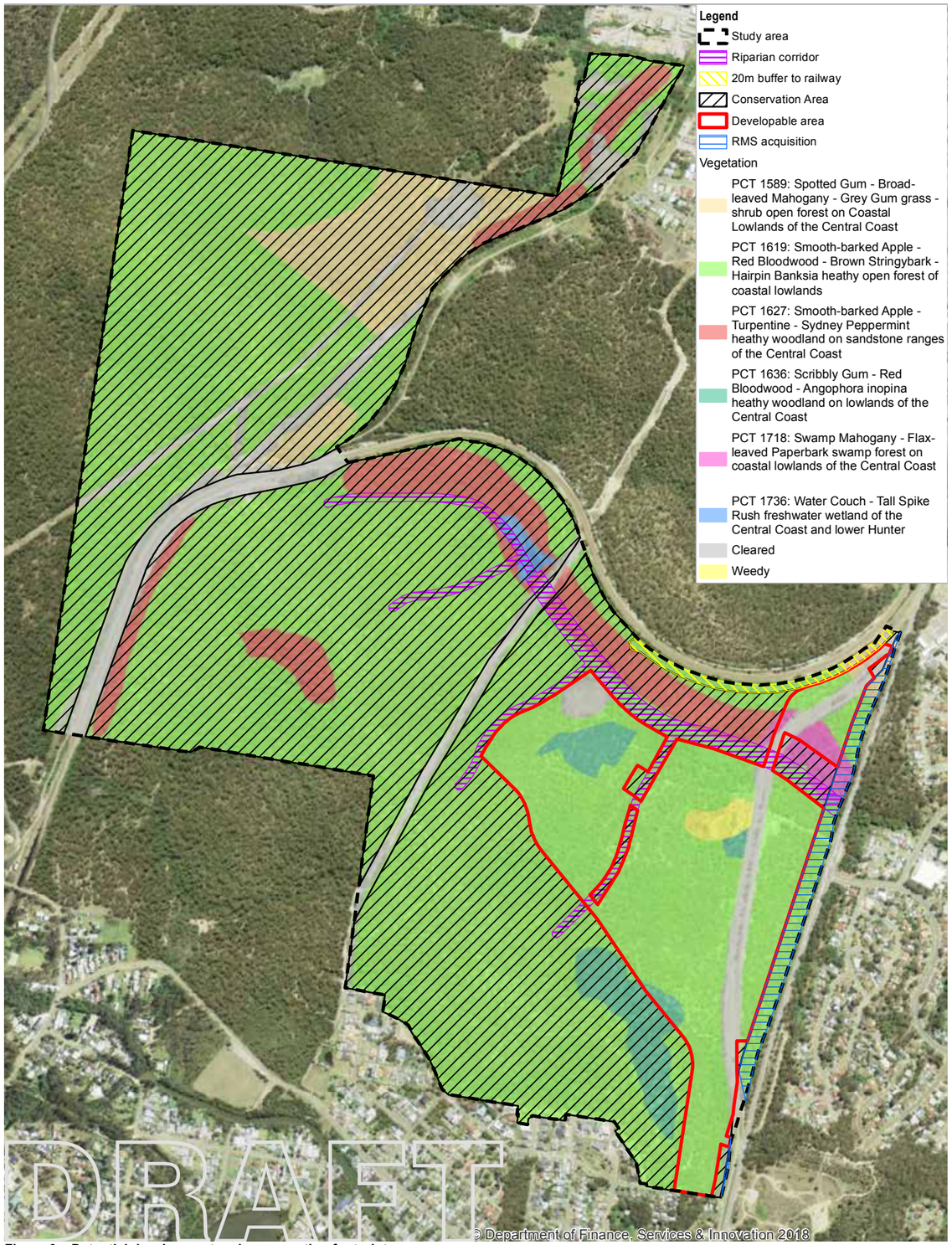

Figure 3 – Potential development and conservation footprints
Source: GHD 2018

Site analysis (cont.)

Marmong Creek wetland

Existing overhead services

Billy's Lookout development to the north of the site

Toronto Road looking south towards Enterprise Way

Marmong Creek riparian corridor

Old Main Road looking south

Billy's Lookout development to the north of the site

Booragul Railway Station

Drainage corridor

Main Northern Railway Line and acoustic wall

Billy's Lookout development to the north of the site

Residential development to the south of the site

Figure 4 – Site characteristics

Figure 5 – Images of surrounding development / infrastructure

Site analysis (cont.)

2.2 Development opportunities

Opportunities for the development of the site as shown on Figures 6 to 9 generally include:

- Retention of the ridge line to the south, west and north west
- Retention of extensive land incorporating areas of threatened flora and fauna species to the south, west and north west.
- Incorporation of Marmong Creek, its tributaries and riparian zones as part of the open space network for the site.
- Retention of flora and fauna corridors along drainage corridors and adjacent bushland.
- Utilise the existing landform to create an integrated site solution including locating roads and residential development along contour lines.
- Direct connection to Toronto Road intersecting with Enterprise Way to provide access to services within Woodrising and the Booragul train station.
- Incorporation of the existing Old Main Road within the development of the site.
- Open space for recreation along the riparian zones.
- Incorporation of heritage elements and interpretation of former site uses including mining.

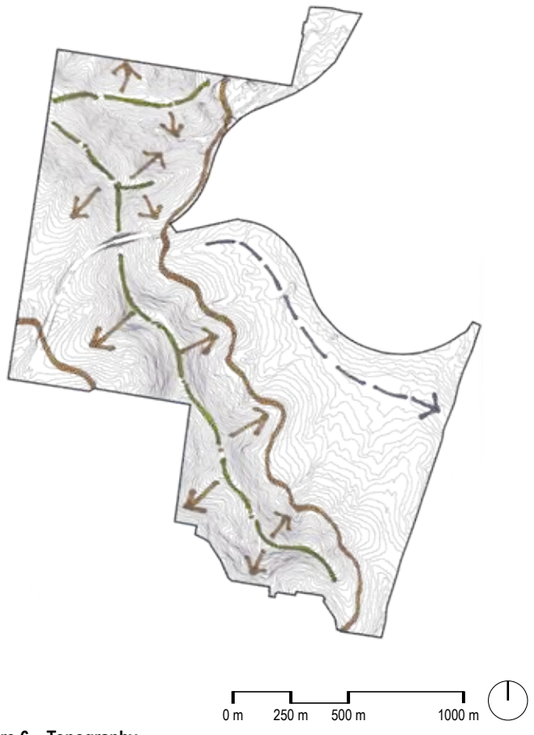

Figure 6 – Topography

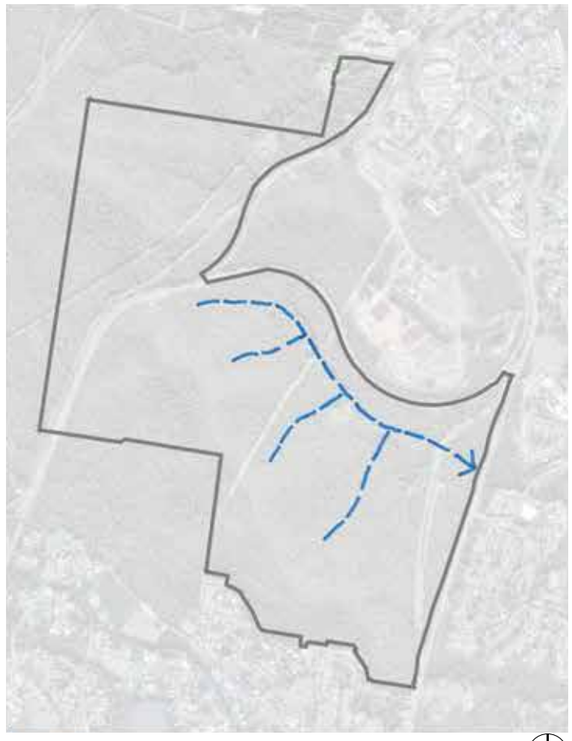

Figure 7 – Riparian corridors

Figure 8 – Developable area + open space

Figure 9 – Road connections + hierarchy

3.0 Master plan

3.1 Key urban design principles

The master plan concept has been developed based on the existing environmental and infrastructure opportunities and constraints as shown on Figure 10. The key urban design principles for the concept are:

- Central open space corridor along the existing Marmong Creek is preserved to manage water from drainage lines and the primary overland flow from the south. The corridor is edged by streets and contains cycle and pedestrian paths, which connect the green areas to residential dwellings.
- Linear open spaces are located along riparian corridors that link to the central open space corridor.
- Edge streets to provide a managed interface with open space, riparian corridors and bush land.
- Streets and lots are generally orientated east west and north south to primarily work with the topography and maximise solar orientation.
- Dwellings to be sited to take advantage of solar orientation, views and passive surveillance to open space.
- Diversity in lot sizes to provide a range of dwelling types. Higher density lots along the eastern edge and adjoining open space corridors.
- Larger lots located in the west to enable tree retention near bushland areas
- The local parks are positioned as central focal points for the neighbourhood. The parks are edged by streets and fronted by housing for passive surveillance. The parks will provide passive and active recreational opportunities.

Figure 10 – Master plan concept

3.2 Lot sizes and housing diversity

The site has been planned to provide a range of lot sizes and diversity of housing. A mix of lot sizes is proposed providing for more affordable choices.

The proposed lot mix for the concept is:

Lot size	Yield	Percentage
200 - 300m^2	140	24.5%
300 - 450m^2	355	63.0%
450 - 600m^2	70	12.5%
Total	**565**	

Master plan (cont.)

3.3 Connectivity

The proposed master plan has been developed to provide permeability through the site and connectivity to the local surrounding areas including the train station and local shops and services by either vehicle, cycle or walking.

Pedestrian

- Dwellings are generally within 400 metres of a proposed local park.
- Dwellings are generally within 400 metres of open space corridors.
- The street network is highly connected allowing for multiple routes choices and facilitating a walkable community.

Cycleways and open space

- High level of public amenity including wide vegetated open space corridors.
- Incorporation of a number of parks and open spaces within the development site for recreation opportunity.
- Cycle network utilising the central and perimeter roads to provide safe accessible paths of travel.
- Main access point to Toronto Road at the intersection with Enterprise Way.
- Additional access point to Toronto Road to the South

Local shops and services

- Vehicle, cycle and pedestrian connection to Toronto Road and Enterprise Way intersection.
- Connection to the Woodside shopping centre generally within 300 metres from the eastern boundary.
- Connection to local schools is generally within 800 metres, Fennell Bay Public School and St Pauls High School.
- Connection to the Booragul Railway Station is approximately 800 metres from the northern part of the site.

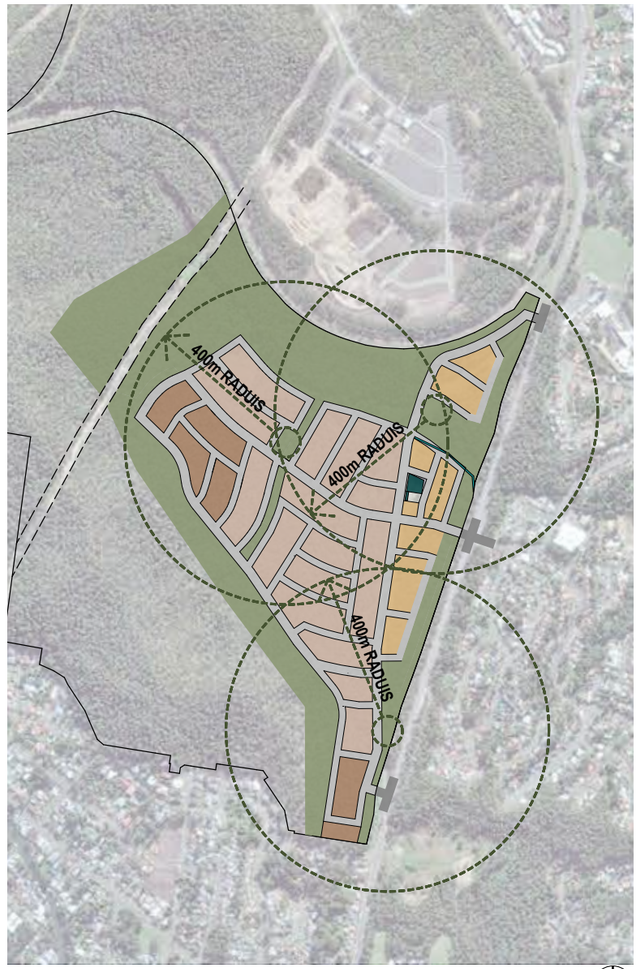

Figure 11 – Pedestrian connectivity

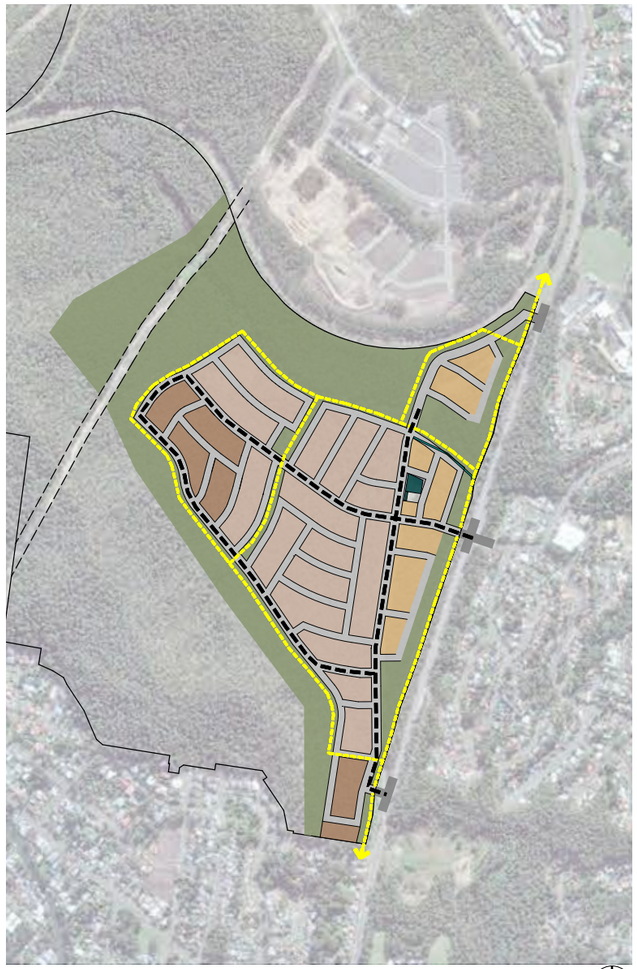

Figure 12 – Pathways and open space connectivity

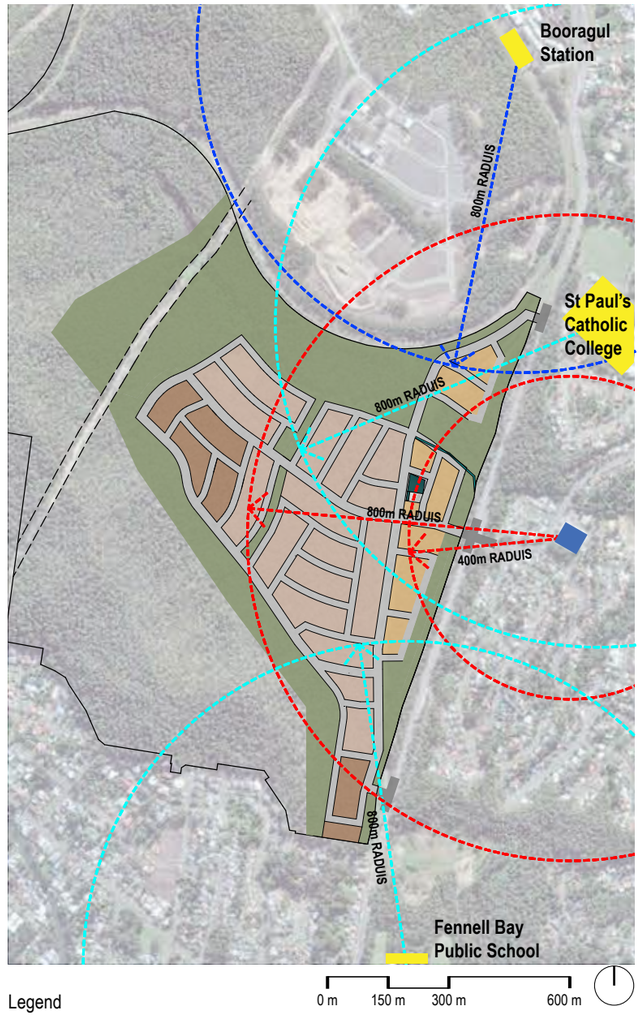

Figure 13 – Local area connectivity