

**Planning Proposal**

Jacaranda Ponds

Rezoning of Jacaranda Ponds:

103 Spinks Road, Glossodia

211 Spinks Road, Glossodia

213 Spinks Road, Glossodia

361 Spinks Road Glossodia,

11 James Street Glossodia

3 Derby Place, Glossodia

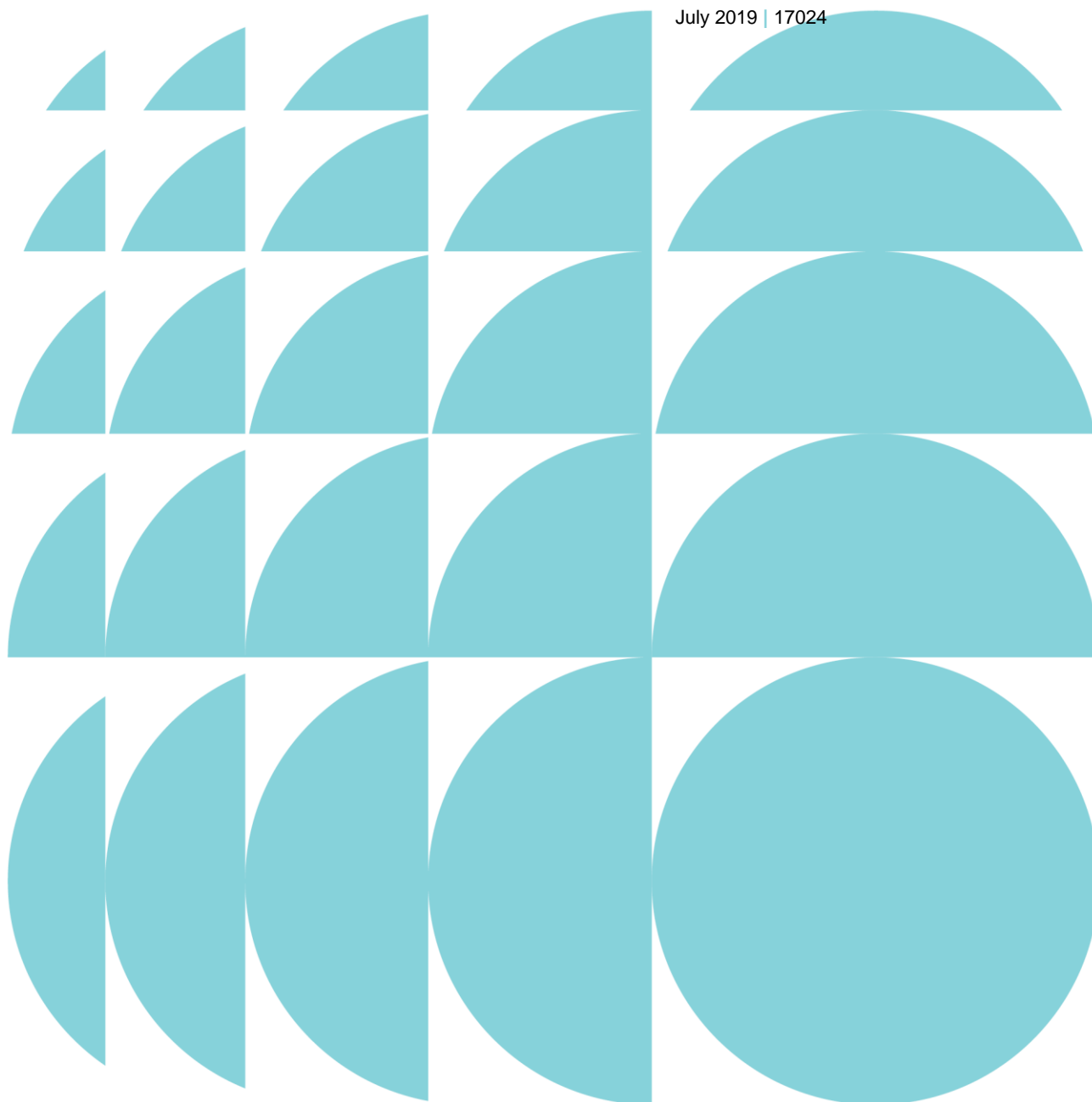
746A Kurmond Road, Freemans Reach

780A-780C Kurmond Road, North Richmond

Submitted to Hawkesbury City Council

On behalf of Celestino Pty Ltd

July 2019 | 17024



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*J. Wyndham Prince*

## 1.0 Introduction

This report has been prepared by Ethos Urban on behalf of Celestino Pty Ltd to accompany a Planning Proposal to amend the *Hawkesbury Local Environmental Plan 2012* (HLEP 2012). The proposed amendments relate to land identified as Jacaranda Ponds (the site), a new residential community within Glossodia.

Jacaranda Ponds was subject to a site specific LEP amendment which was gazetted in 2014. Following its gazettal, a number of detailed ecological studies were undertaken to inform the detailed design of the future development. However, the studies identified in more detail, the presence of significant vegetation and endangered habitat on the site, including the Cumberland and Alluvial Plain Woodlands which are listed as critically endangered and endangered ecological communities under the *Biodiversity Conservation Act 1995* (BC Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Each ecological community provides habitat for threatened fauna species including the Cumberland Plain Land Snail and several bat species listed as vulnerable under the BC Act.

The identification of these critically endangered species and ecological communities has necessitated further amendments to the LEP in order to ensure the future development has an acceptable ecological impact. This Planning Proposal seeks to provide the best ecological outcome with more than double the amount of vegetation conservation area proposed, while also applying best-practice design principles and deliver a community that is more liveable and resilient and is better connected to the existing Glossodia community.

This Planning Proposal seeks to:

- Introduce the E2 Environmental Conservation zone and increase the quantity of land zoned RE1 Public Recreation in portions of the site identified as containing significant vegetation and endangered habitat. This zoning will contribute to the delivery of a total of 62.23ha of vegetation conservation and recreation land across the site;
- Revise and redistribute the existing R2 Low Density Residential, R5 Large Lot Residential, RE1 Public Recreation and SP2 Infrastructure (Sewerage Works) zones across the site to better align with the site's significant vegetation and topographical features, and better utilise land that is dedicated to infrastructure purposes;
- Increase the quantity of RE1 Public Recreation zoned land on the site from 44.77ha to 52.64ha;
- Revise and redistribute the existing 10 metre height limit across the site to align to the revised zoning proposed; and
- Redistribute the existing minimum subdivision lot sizes (1000m<sup>2</sup>, 2000m<sup>2</sup> and 4000m<sup>2</sup>) to align with the revised land use zoning and heights while maintaining the current overall approved lot yield across the site.

This Planning Proposal has been prepared in accordance with Section 3.33 of the *Environmental Planning & Assessment Act 1979* (EP&A Act), and 'A Guide to Preparing Planning Proposals' prepared by the NSW Department of Planning and Environment. **Section 6** of this report sets out the strategic justification for the Planning Proposal and provides an assessment of the relevant strategic planning context, State Environmental Planning Policies, Ministerial directions and the environmental, social and economic impacts of the proposed LEP amendment. This report should be read in conjunction with the relevant expert consultant reports appended (see Table of Contents).

## 1.1 Background

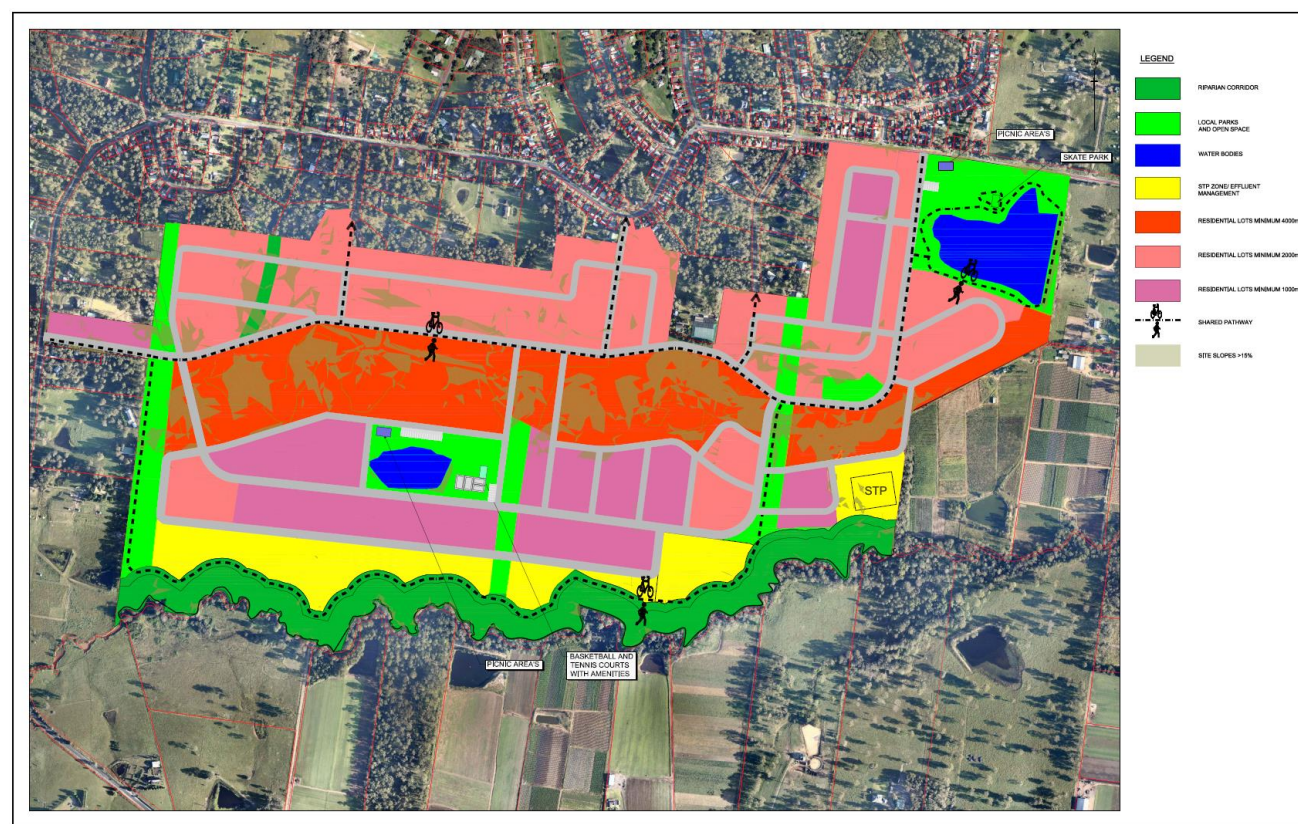
### 1.1.1 Existing Planning Proposal and Concept Masterplan

The site has been the subject of a previous Planning Proposal (PP\_2012\_HAWKE\_003\_00) which was gazetted on 19 December 2014. The Planning Proposal sought the following amendments to (the then) draft HLEP 2012:

- Rezoning of the site from RU1 Primary Production to R2 Low Density Residential, R5 Large Lot Residential, RE1 Public Recreation and SP2 Infrastructure (Sewage Systems);
- The introduction of a maximum 10m height control across the site; and
- The introduction of minimum subdivision lot sizes ranging from 1,000m<sup>2</sup>, 2,000m<sup>2</sup> and 4,000m<sup>2</sup> across the site.

These amendments were informed by a Concept Masterplan (**Figure 1** and **Appendix G**) which was intended to guide the future subdivision and development of the site and provide for:

- 580 large lot residential allotments;
- The creation of new public open space within the north-eastern portion of the site to accommodate walking and cycling, and spaces for active and passive recreation;
- Planting and rehabilitation of the riparian corridor along the entire Currency Creek boundary of the site;
- Three north-south ecological corridors and an east-west ecological corridor;
- The provision of infrastructure through the execution of both a State and local Voluntary Planning Agreement (refer to **Section 1.2.1**); and
- The retention of two large dams on site.



**Figure 1 - Adopted (existing) masterplan**

Source: J. Wyndham Price

Following more detailed ecological analysis, it has become apparent that the current zoning and Concept Masterplan do not deliver the best ecological outcome for the site. The existing Concept Masterplan and zoning arrangement would result in the removal of some of the site's most significant areas of vegetation and its associated habitat.

This Planning Proposal seeks to provide an improved ecological outcome while also applying best-practice design principles to deliver a community that is more liveable and resilient and is better connected to the existing Glossodia community.

### 1.1.2 Revised Planning Proposal

A revised Planning Proposal and Concept Masterplan was prepared for the site and lodged with Council on 27 March 2018. Following ongoing consultation with Council since lodgement, the Planning Proposal has been refined and amended (this report). The key milestones in the development of the revised Planning Proposal are shown in **Table 1**.

**Table 1 - Revised Planning Proposal milestones**

Date	Milestone
27 March 2018	Revised Planning Proposal lodged with Council
6 June 2018	Initial Council request for additional information ( <b>Appendix A</b> )
16 July 2018	Meeting with Council
16 August 2018	Council request for additional information ( <b>Appendix B</b> )
8 October 2018	Applicant response to Council's additional information requests ( <b>Appendix C</b> )
21 February 2019	Hawkesbury Local Planning Panel (LPP) meeting
27 March 2019	Hawkesbury LPP advice issued ( <b>Appendix D</b> )
17 April 2019	Meeting with Council Staff regarding LPP advice.

The primary issues raised by Council and the Hawkesbury Local Planning Panel since lodgement have been addressed and are incorporated within this amended Planning Proposal. These include:

- Replacement of land zoned E2 Environmental Conservation with additional land zoned RE1 Public Recreation, resulting in an increase in the amount of land zoned RE1 Public Recreation;
- Replacement of areas of land zoned R5 Large Lot Residential with land zoned E2 Environmental Conservation;
- Realignment of the main east-west collector road south of the ridge line to resolve topographical and environmental constraints, and relocation of the entry road to the western side of the Lake Park;
- Further justification on the proposed open space arrangements across the site, in particular the relocation and redistribution of the Central Open Space (The Village Green) along Currency Creek; and
- Further justification on the character envisioned for Jacaranda Ponds and its integration with the broader Glossodia Community.

## 1.2 Planning Framework

### 1.2.1 Voluntary Planning Agreements (VPAs) / State Infrastructure Contributions

#### State VPA

A State VPA has been executed between the developer and the Department of Planning and Environment. The VPA is in the form of a monetary contribution of \$10,000 per subdivision lot. The contribution is to be used for upgrades to the local State road network and North Richmond / Bells Line of Road. The State VPA relates to the following land parcels:

- 103 Spinks Road, Glossodia (Lot 2, DP 533402 and Lot 52, DP 1104504);

- 213 Spinks Road, Glossodia (Lot 20, DP 214753);
- 361 Spinks Road, Glossodia (Lot 75, DP 214752);
- 11 James Street, Glossodia (Lot 3, DP 230943);
- 3 Derby Place, Glossodia (Lot 44, DP 214755);
- 746A Kurmond Road, Freemans Reach (Lot 50, DP 751637); and
- 780A-780C Kurmond Road, North Richmond (Lot 1, 2 and 3, DP 784300).

The residential yield proposed under this Planning Proposal is unchanged from that previously considered suitable for the site at the time the VPA's were executed. Therefore, the demand for infrastructure and community facilities also remains unchanged and no changes are proposed to the existing VPAs for the site in this regard.

### Local VPA

A local VPA was executed between the developer and Hawkesbury City Council for the site on 30 January 2017. The VPA provides for the contribution of local infrastructure including road works, new open space and community facilities and the dedication of land zoned RE1 Public Recreation. The VPA relates to each land parcel within the site, including:

- 103 Spinks Road, Glossodia (Lot 2, DP 533402 and Lot 52, DP 1104504);
- 211 Spinks Road, Glossodia (Lot 19, DP 214753);
- 213 Spinks Road, Glossodia (Lot 20, DP 214753);
- 361 Spinks Road, Glossodia (Lot 75, DP 214752);
- 11 James Street, Glossodia (Lot 3, DP 230943);
- 3 Derby Place, Glossodia (Lot 44, DP 214755);
- 746A Kurmond Road, Freemans Reach (Lot 50, DP 751637); and
- 780A-780C Kurmond Road, North Richmond (Lot 1, 2 and 3, DP 784300).

The residential yield proposed under this Planning Proposal is unchanged from that previously considered suitable for the site at the time the VPAs were executed. Therefore, the demand for infrastructure and community facilities also remains unchanged and no changes are proposed to the existing VPAs for the site in this regard.

However, the Planning Proposal now seeks to increase the provision of RE1 Public Recreation zoned land and introduce land zoned E2 Environmental Conservation, both of which are proposed to be dedicated to Council. The VPA will need to be amended to reflect this change, as well as the desire to dedicate stormwater infrastructure to Council.

A copy of the existing VPAs for the site is provided at **Appendix E**.

### 1.2.2 Biodiversity

This Planning Proposal is subject to Biodiversity Certification under Part 7AA of the *Threatened Species Conservation Act 1995* (TSC Act). Although the TSC Act was repealed on 24 August 2017 and replaced with the new *Biodiversity Conservation Act 2016*, the site can continue to be determined under Part 7AA of the TSC Act by virtue of Clause 37(2) of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*.

Clause 37(2) of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017* relevantly states:

*(2) The Minister may, by order published in the Gazette within 3 months after the commencement of the new Act, declare that any such proposed application may be made under Part 7AA of the Threatened Species Conservation Act 1995 and determined under this clause. The order is to specify the period (not exceeding 2 years after the commencement of the new Act) within which the application must be made.*



The Order prepared by the Minister under Clause 37(2) is provided at **Appendix F**. Jacaranda Ponds is listed under Clause 4(7) of the Order as a proposed application capable of being submitted and determined using the Biodiversity Certification provisions under Part 7AA of the TSC Act.

Biodiversity Certification and Biobanking are considered the most appropriate tools for the delivery of strategic biodiversity outcomes for the site. The assessment protects areas of high biodiversity value and provides for the in-perpetuity protection and management of the conservation lands under an enforceable regime of management, monitoring and reporting.

The areas to be conserved for the site have been developed in close consultation with the project's ecologist, Eco Logical Australia. The information and analysis that has been provided is appropriate for this stage in the planning and design process. Council is aware that the Biodiversity Assessment Report, which will form part of the formal Biobanking Application to OEHL, will not be finalised until Council has provided their support for the Concept Masterplan.

Once the land has been certified, future development is taken as development that is *'not likely to significant affect any threatened species, population or ecological community under the TSC Act'*. That is, there is no requirement to obtain concurrence from the Office of Environment and Heritage at subsequent development stages and the planning authority is not required to take into consideration the likely impact of development on biodiversity values, despite the provisions of the EP&A Act.

Importantly, the Biodiversity Certification application can only be made by a Planning Authority, and so Council's support is required for this process. It is noted for reference that Celestino have already successfully executed a Bio certification Agreement and delivered biobanks within the Hills Shire Council.

Subject to the conservation measures proposed and agreement between all relevant parties, the residual land can be owned either by a private entity, or Council, as a Biobank site with funds for future management held in Trust to provide for the in-perpetuity management of the lands. That is, lands are secured and managed in perpetuity to protect and enhance their biodiversity values.

Consultation undertaken with Council and the Office of Environment and Heritage (OEHL) in relation to biodiversity certification is shown in **Table 2**.

Refer to **Section 4.3** for additional information and location (refer to **Figure 24**) of the proposed Biobank areas within the site.

**Table 2 - Biodiversity certification milestones**

Date	Milestone
21 August 2018	Biodiversity Certification briefing meeting with Council chaired by Eco Logical Australia
22 August 2018	Meeting with OEHL and Council to discuss Bio certification process
30 August 2018	Jacaranda Ponds Site Visit 1 with OEHL and Council
20 September 2018	Jacaranda Ponds Site Visit 2 with OEHL and Council
9 October 2018	Meeting with Council
24 October 2018	OEHL supports Vegetation Mapping (shown in <b>Figure 4</b> )
25 January 2019	Meeting with Council staff to resolve biobanking issues

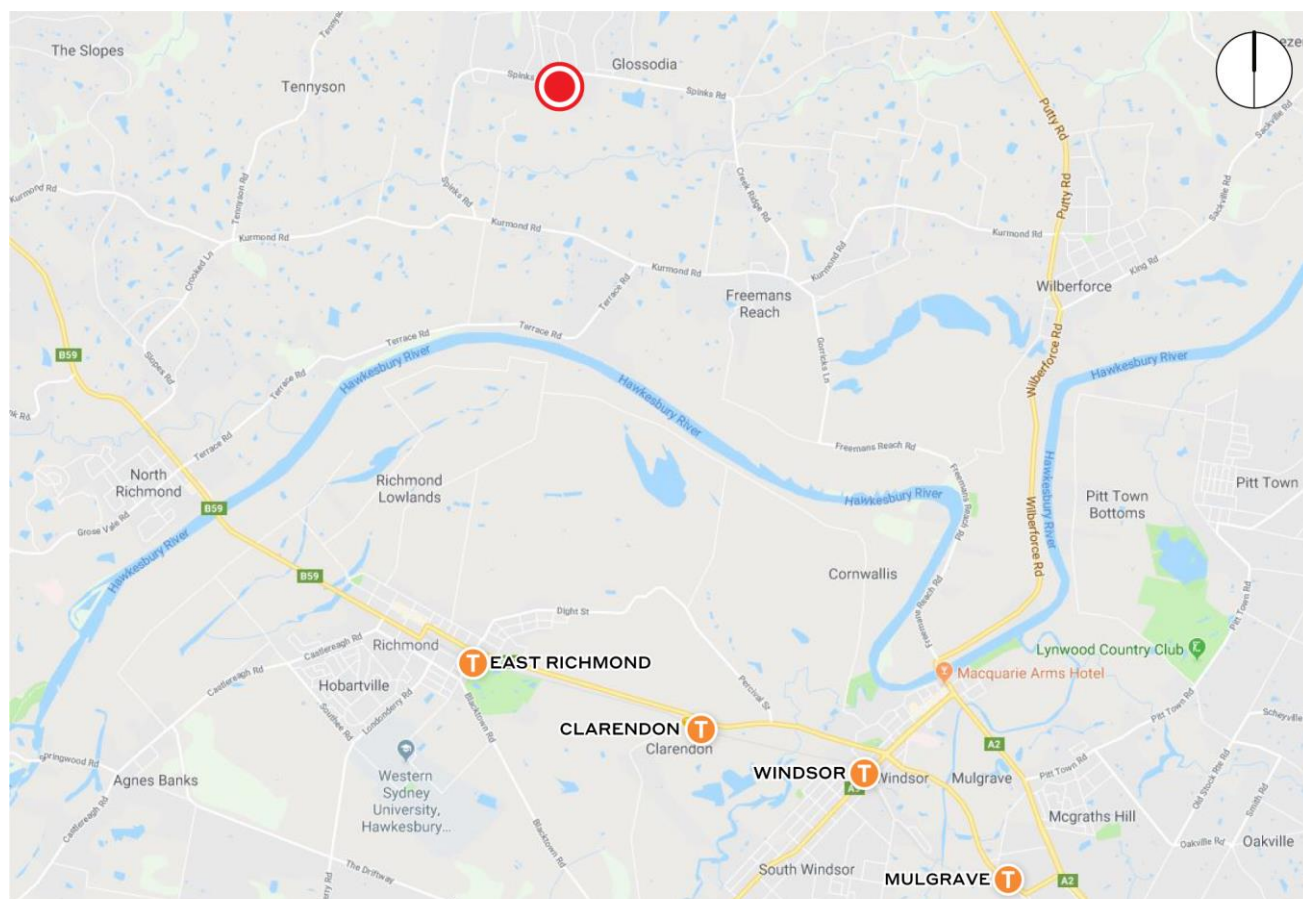


## 2.0 The Site

### 2.1 Site Location and Context

The site is located in Glossodia within the Hawkesbury Local Government Area (LGA) approximately 65km north-west of Sydney. The site is located 7km and 9km north of Richmond and Windsor respectively, both of which are the LGA's major centres.

The locational context of the site is shown in **Figure 2**.



### The Site

**Figure 2 - Site context map**

Source: Google maps and Ethos Urban

## 2.2 Site Description and Existing Development

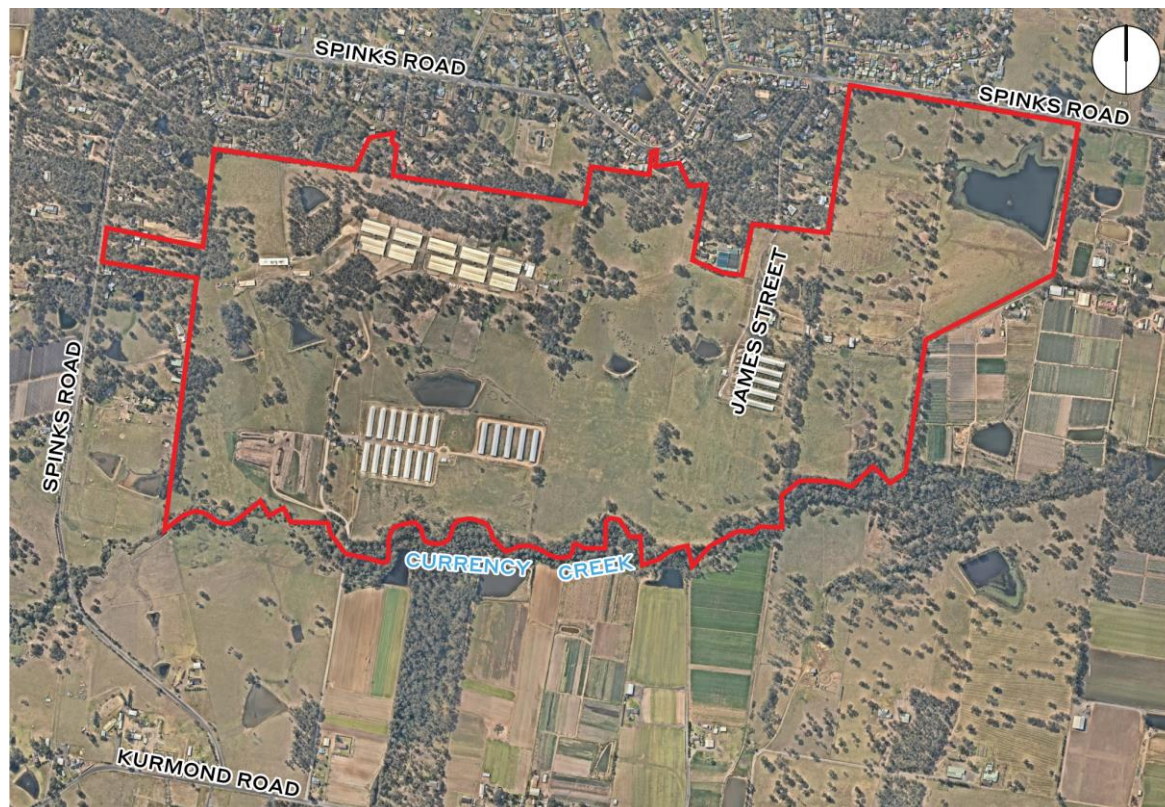
The site is irregular in shape and occupies approximately 185.3ha of predominately rural land bound by Spinks Road to the north and Currency Creek to the south (**Figure 3**). The site is comprised of several separate land parcels as summarised in **Table 3**.

**Table 3- Summary of property details**

Address	Lot	Deposited Plan
103 Spinks Road, Glossodia	2	DP 533402
103 Spinks Road, Glossodia	52	DP 1104504
211 Spinks Road, Glossodia	19	DP 214753
213 Spinks Road Glossodia	20	DP214753
361 Spinks Road Glossodia	75	DP 214752
11 James Street Glossodia	3	DP230943
3 Derby Place Glossodia	44	DP214755
746A Kurmond Road, Freemans Reach	50	DP751637
780A-780C Kurmond Road, North Richmond	1, 2 and 3	DP784300

The predominant development on the site comprises chicken farm for free range egg production operated by Pace Eggs in the north-western and south-western portions of the site, and a chicken rearing farm operated by Baiada within the central portion of the site. Combined, the farming operations include eight (8) dwellings and several ancillary farm buildings / sheds.

The remaining portions of the site are predominately devoid of any significant development and comprise open rural land and sporadic tree coverage. Eight (8) dams are also located across the site.



 The Site

**Figure 3 - Site plan**

Source: Nearmaps and Ethos Urban



## 2.3 Site Topography

The site is undulating with a varying topography. The key topographic features include:

- A ridgeline which runs west to east across the north of the site;
- A general north to south slope towards Currency Creek;
- Slopes ranging from 2-12% in the southern portion of the site; and
- A downhill slope (4-6%) towards the existing dam within the north-eastern portion of the site.

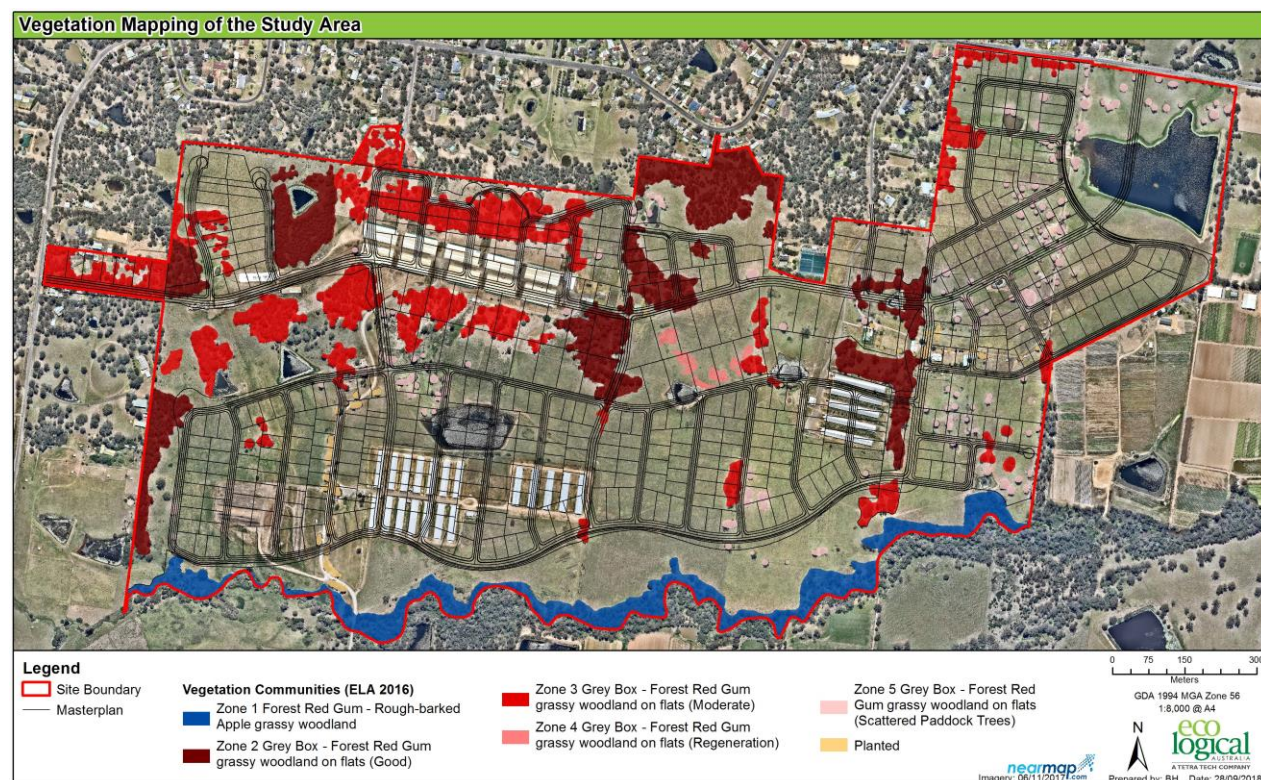
## 2.4 Biodiversity

### 2.4.1 Flora

Field surveys undertaken by Eco Logical Australia identified four vegetation communities within the site (refer to **Table 4** and **Figure 4**). Only the Alluvial Woodland and Cumberland Plain Woodland are considered to have ecological value.

**Table 4 - Existing flora on site**

Flora	Plant Community Equivalent	Listing	Approximate area (ha)
Cumberland Plain Woodland (Shale Plain Woodland)	Grey-Box – Forest Red Gum grassy woodlands on flats of the Southern Cumberland Plain, Sydney Basin Bioregion	Critically endangered ecological community under the EPBC Act and BC Act.	29.84
Alluvial Woodland	Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin	Endangered ecological community under the BC Act.	7.29
Cleared land	N/A	N/A	147.30
Planted natives	N/A	N/A	0.74



**Figure 4 - Vegetation communities within the site**

Source: Eco Logical Australia

## 2.4.2 Fauna

The flora detailed above is known and predicted to provide habitat for the following threatened species within the site.

- *Meridolum corneovirens* (Cumberland Plain Land Snail) - listed as vulnerable under the BC Act;
- *Miniopterus australis* (Little Bent-wing Bat) - listed as vulnerable under the BC Act;
- *Miniopterus schreibersii oceanensis* (Eastern Bentwing-bat) - listed as vulnerable under the BC Act;
- *Mormopterus norfolkensis* (Eastern Freetail-bat) - listed as vulnerable under the BC Act;
- *Myotis macropus* (Southern Myotis) - listed as vulnerable under the BC Act; and
- *Pteropus poliocephalus* (Grey-headed Flying-fox) - listed as vulnerable under the BC Act and EPBC Act.

## 2.5 Heritage

The site is not identified as a heritage item, nor is it located within a heritage conservation area under the HLEP 2012.

### 2.5.1 Aboriginal and Non-Aboriginal Heritage

The site has been the subject of a previous Aboriginal and Non-Aboriginal Heritage Assessment, undertaken by GML Heritage Consultants (GML) in support of the previous Planning Proposal relating to the site (PP\_2012\_HAWKE\_003\_00).

Previous investigations identified four Aboriginal sites within the site, including:

- Two single isolated artefacts on existing road surfaces;
- A ridge located within the north-eastern portion of the site potentially containing Aboriginal objects; and
- A ridge running east to west along the site's northern boundary potentially containing archaeological deposits by Aboriginal stakeholders.

Notwithstanding the above, no items of non-Aboriginal significance were identified. A revised Heritage Impact Assessment prepared by GML Consultants (**Appendix T**) does not identify any additional or new Aboriginal or non-Aboriginal areas of significance within the site.

## 2.6 Watercourses and Flooding

The site has the following watercourses:

- Currency Creek, which runs along the site's southern boundary. Currency Creek is identified as a fourth order water stream; and
- Three unnamed streams which run north to south at the northern boundary. Each stream is a tributary of Howes Creek and are classified as first order streams.

## 2.7 Site Access and Public Transport

### 2.7.1 Vehicle Access

Vehicular access to the site is achieved from Spinks Road via Creek Ridge Road and Kurmond Road. Putty Road which becomes Wilberforce Road and then Windsor Road provides vehicular access to Kurmond Road across the Hawkesbury River from Windsor and southward towards the M7 Motorway and greater Sydney.

Alternatively, Hawkesbury Valley Way provides vehicular access to the site from Kurmond Road via Richmond.

### **2.7.2 Public Transport**

The site is in close proximity to bus route 668 which provides services from Windsor to Richmond via Wilberforce, Glossodia and North Richmond. This bus route services both Richmond and Windsor Railway Stations, providing access to the T1 Western Line and subsequent rail access across greater Sydney.

### **2.7.3 Flooding**

The Currency Creek riparian corridor within the southern portion of the site is subject to flooding with predicted depths between 0.30 and 1.00 metres at the 1% AEP flood event. The remainder of the site is not flood prone, with the exception of north-eastern portion of the site (upstream of the large farm dam adjacent to the eastern site boundary), which is subject to flooding due to external catchments west of the site and north of Spinks Road.

## **2.8 Surrounding Development**

The site is surrounded by predominately rural residential allotments with detached residential dwellings, as well as agricultural / farming land. Specifically:

- Land directly south of the site, across Currency Creek comprises a turf farm;
- Land along the northern and western boundary adjoin numerous rural residential allotment which front Spinks Road; and
- Land along the eastern boundary of the site comprises land for agricultural purposes and rural allotments.

### 3.0 Current Planning Controls

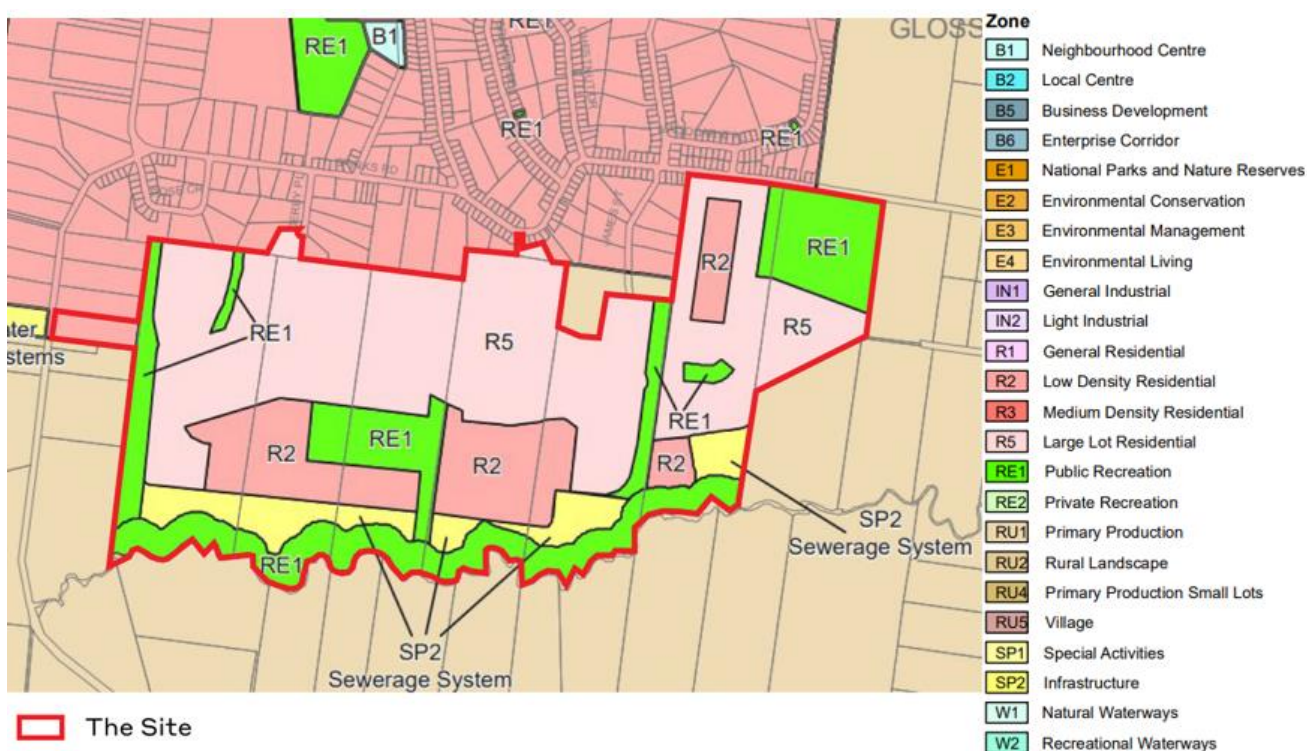
The primary environmental planning instrument applying to the site is HLEP 2012. The key planning controls that currently apply to the site are detailed below.

#### 3.1 Land Use Zoning

The site currently comprises a combination of recreational, residential and special use zones, including:

- RE1 Public Recreation.
- R2 Low Density Residential
- R5 Large Lot Residential.
- SP2 Infrastructure (Sewerage System).

The site's current zoning is detailed in **Figure 5**. **Table 5** provides a summary of the objectives and land use permissibility of each zone.



**Figure 5 - Existing land use zoning**

Source: Hawkesbury Local Environmental Plan 2012 (Sheet LZN\_008C)



### 3.1.1 Zone Objectives and Permissible Uses

Table 5 - Existing zone objectives and permissibility

Zone objectives	Permitted without consent	Permitted with consent	Prohibited
<b>RE1 Public Recreation</b>			
<ul style="list-style-type: none"> <li>To enable land to be used for public open space or recreational purposes.</li> <li>To provide a range of recreational settings and activities and compatible land uses.</li> <li>To protect and enhance the natural environment for recreational purposes.</li> <li>To protect and enhance the natural environment for environmental purposes.</li> <li>To restrict development on land required for future open space purposes.</li> </ul>	Environmental protection works.	Boat sheds; Centre-based child care facilities; Charter and tourism boating facilities; Community facilities; Environmental facilities; Extensive agriculture; Farm buildings; Flood mitigation works; Food and drink premises; Forestry; Helipads; Information and education facilities; Jetties; Kiosks; Markets; Moorings; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Roads; Signage; Water recreation structures; Water storage facilities	Any development not specified in permitted with consent or permitted without consent.
<b>R2 Low Density Residential</b>			
<ul style="list-style-type: none"> <li>To provide for the housing needs of the community within a low density residential environment.</li> <li>To enable other land uses that provide facilities or services to meet the day to day needs of residents.</li> <li>To protect the character of traditional residential development and streetscapes.</li> <li>To ensure that new development retains and enhances that character.</li> <li>To ensure that development is sympathetic to the natural environment and ecological processes of the area.</li> <li>To enable development for purposes other than residential only if it is compatible with the character of the living area and has a domestic scale.</li> <li>To ensure that water supply and sewage disposal on each resultant lot of a subdivision is provided to the satisfaction of the Council.</li> <li>To ensure that development does not create unreasonable demands for the provision or extension of public amenities or services.</li> </ul>	Bed and breakfast accommodation; Environmental protection works; Home occupations	Animal boarding or training establishments; Boarding houses; Building identification signs; Business identification signs; Camping grounds; Caravan parks; Centre-based child care facilities; Community facilities; Dwelling houses; Educational establishments; Environmental facilities; Exhibition homes; Exhibition villages; Extensive agriculture; Farm buildings; Flood mitigation works; Group homes; Health consulting rooms; Home-based child care; Home industries; Hospitals; Neighbourhood shops; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Registered clubs; Respite day care centres; Roads; Tourist and visitor accommodation; Veterinary hospitals; Water storage facilities	Any development not specified in permitted with consent or permitted without consent.
<b>R5 Large Lot Residential</b>			
<ul style="list-style-type: none"> <li>To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.</li> <li>To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.</li> <li>To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.</li> <li>To minimise conflict between land uses within this zone and land uses within adjoining zones.</li> <li>To provide primarily for low density residential housing and associated facilities.</li> </ul>	Bed and breakfast accommodation; Environmental protection works; Home occupations	Animal boarding or training establishments; Building identification signs; Business identification signs; Camping grounds; Caravan parks; Centre-based child care facilities; Community facilities; Dwelling houses; Educational establishments; Entertainment facilities; Environmental facilities; Exhibition homes; Exhibition villages; Extensive agriculture; Farm buildings; Flood mitigation works; Home-based child care; Home industries; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Registered clubs; Respite day care centres; Roads; Tourist and visitor accommodation; Veterinary hospitals; Water storage facilities	Any development not specified in permitted with consent or permitted without consent.
<b>SP2 Infrastructure</b>			
<ul style="list-style-type: none"> <li>To provide for infrastructure and related uses.</li> <li>To prevent development that is not compatible with or that may detract from the provision of infrastructure.</li> </ul>	Environmental protection works; Home occupations	Roads; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose	Any development not specified in permitted with consent or permitted without consent.

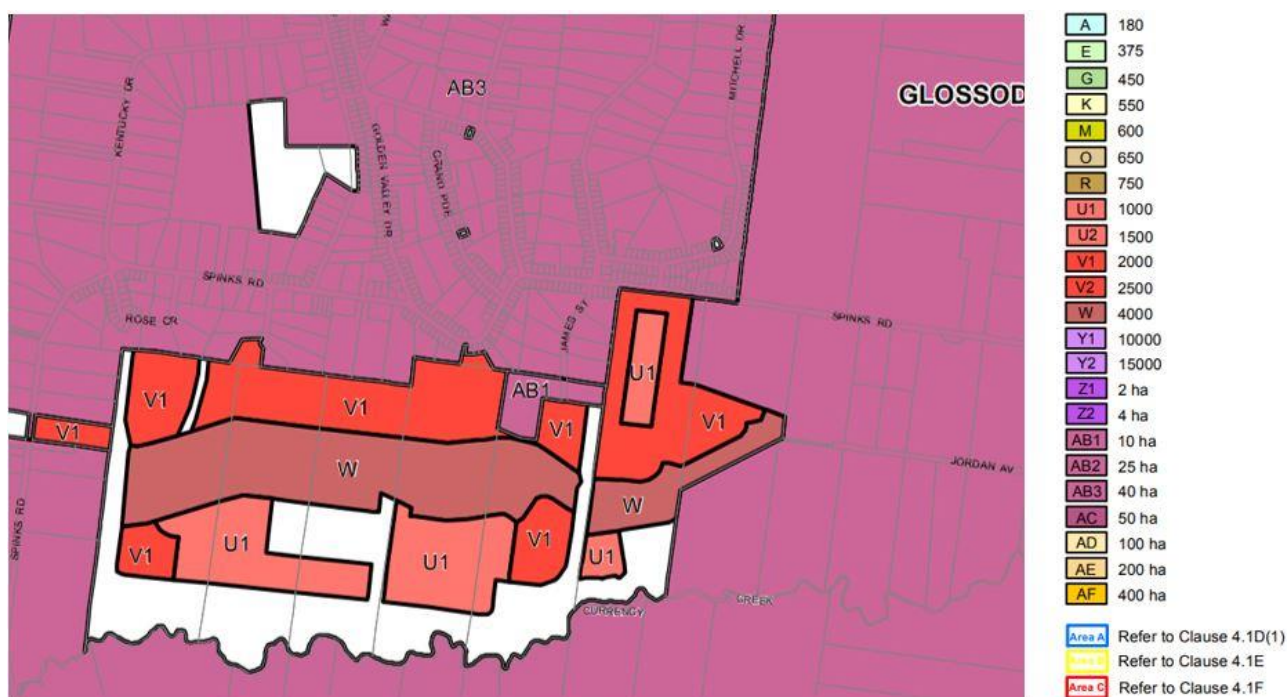
### 3.2 Minimum Subdivision Lot Size

The site is subject to the following minimum subdivision lot sizes (refer to **Figure 6**). The lot sizes have been distributed to respect adjoining land uses and the site's topography.

- 1,000m<sup>2</sup>;
- 2,000m<sup>2</sup>; and
- 4,000m<sup>2</sup>.

#### 3.2.1 Clause Objectives

- To ensure that the pattern of lots created by subdivision and the location of any buildings on those lots will minimise the impact on any threatened species, populations or endangered ecological community or regionally significant wetland, waterways and groundwater as well as any agricultural activity in the vicinity.
- To ensure that each lot created in a subdivision contains a suitable area for the erection of a dwelling house, an appropriate asset protection zone relating to bush fire hazard and a location for on-site effluent disposal if sewerage is not available.
- To ensure a ratio between the depth of the lot and the frontage of the lot that is satisfactory having regard to the purpose for which the lot is to be used.



**Figure 6 - Existing minimum subdivision lot size map**

Source: Hawkesbury Local Environmental Plan 2012 (Sheet LSZ\_008C)

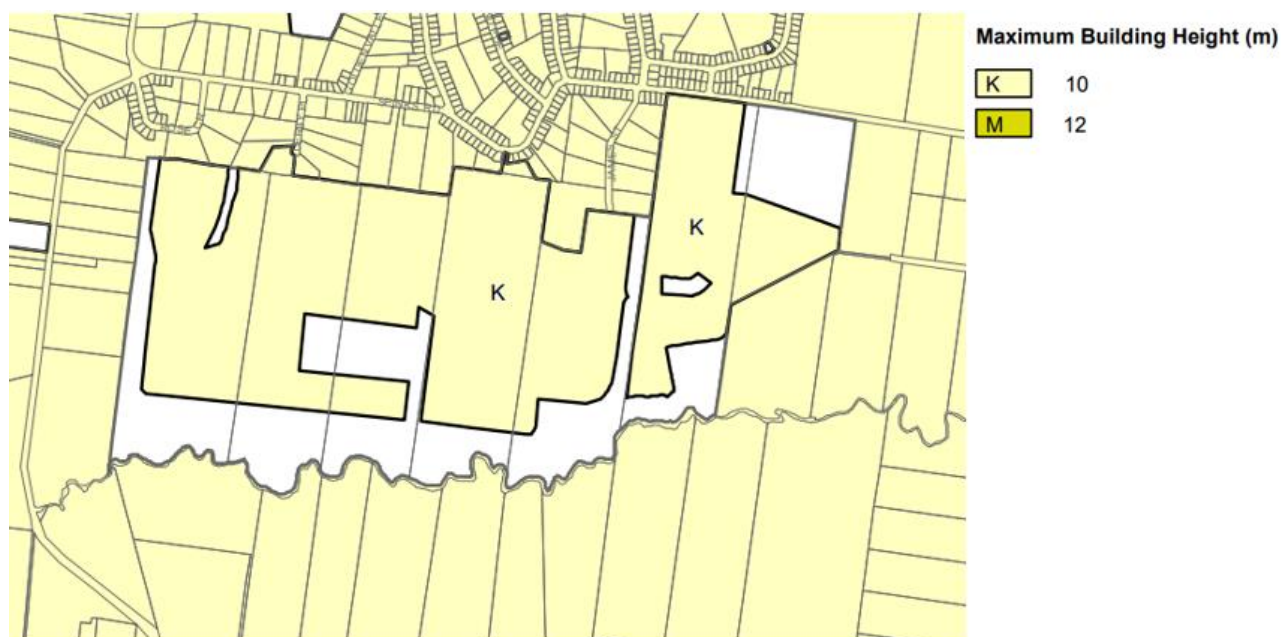


### 3.3 Height of Buildings

The site has a maximum mapped building height limit of 10 metres (refer to **Figure 7**).

#### 3.3.1 Clause Objectives

- *To protect privacy and the use of private open space in new development and on adjoining land.*
- *To ensure that the bulk of development is not excessive and relates well to the local context.*
- *To nominate heights that will provide a transition in built form and land use intensity.*
- *To ensure an appropriate height transition between new buildings and heritage items.*



**Figure 7 - Existing Height of Buildings Map**

Source: Hawkesbury Local Environmental Plan 2012 (Sheet HOB\_008C)

## 4.0 Concept Masterplan

### 4.1 Overview of Proposal

To support the proposed amendments to HLEP 2012, a Proposed Concept Masterplan has been developed for the site (**Figure 8** and **Figure 9**).

It is important to note that the Proposed Concept Masterplan has the same residential yield as the Current Concept Masterplan and that it retains many of the core elements and principles of the Current Concept Masterplan. However, the Proposed Concept Masterplan has been developed through a detailed design process and extensive consultation with Council over an 18-month period with the intention of achieving two key aims:

- To better retain and protect significant ecological site features and existing vegetation, and deliver improved environmental outcomes; and
- To apply best-practice design principles and deliver a community that is more liveable and resilient and is better connected to the existing Glossodia community, while maintaining key outcomes of community consultation including the Lake Park entry from Spinks Road, larger (2,000 sqm) lots abutting adjoining residential development, and a total yield of 580 lots.

These aims will ultimately inform the site-specific Development Control Plan (DCP) prepared to guide the future fine-grain development of Jacaranda Ponds.

This section of the Planning Proposal explains the key principles, features and desired outcomes of the Proposed Concept Masterplan. **Section 4.3** provides a summary of the key similarities and differences between the Current and Proposed Concept Masterplans and identifies the improved outcomes that are intended to be delivered through the Proposed Concept Masterplan. A more detailed explanation of each key component of the Proposed Concept Masterplan is provided in **Section 4.4** to **Section 4.9**.



**Figure 8 - Proposed Concept Masterplan**

Source: Onecollective



## 4.2 Urban Design Principles – Liveability and Placemaking

Rather than just being another typical residential subdivision, the vision for Jacaranda Ponds is focused on creating a real community extending on the existing Glossodia community, where people can enjoy an affordable yet high amenity lifestyle, and a place that people are proud to call home. The visioning, planning and design process undertaken to produce the Proposed Concept Masterplan placed strong emphasis on applying best-practice community design principles in terms of liveability, placemaking and resilience based around four key drivers:

### A Living Community

A place where people can enjoy a healthy, quality and contemporary lifestyle within a community that has a distinctive rural character based around larger lots and extensive open space areas and green corridors.

### A Sense of Community

A community that has a strong identity with high-quality community spaces and recreational areas that encourage social interaction and connection to existing Glossodia community.

### A Green Community

A community that retains and enhances its ecological features and green setting and one that will be sustainable and resilient into the future.

### A Connected Community

A place that is integrated with and enhances the existing Glossodia community through a shared character and an integrated network of linkages and community spaces that promote community interaction, walking and cycling, and a healthy outdoor lifestyle.



**Figure 9 - Artist impression of proposed Concept Masterplan**

Source: Onecollective

### 4.3 Comparison with Existing Concept Masterplan

**Table 6** provides a comparison between the Current and Proposed Concept Masterplans, identifying the key similarities and differences, and summarising the improved outcomes that are intended to be delivered under the Proposed Concept Masterplan.

**Table 6 - Comparison between existing and proposed Concept Masterplan**

Element	Existing Masterplan (PP_2012_HAWKE_003_00)	Proposed Masterplan	Desired / Improved Outcome
Residential - R2 and R5	<ul style="list-style-type: none"> <li>580 lots.</li> <li>R2 and R5 residential land uses only.</li> </ul>	<ul style="list-style-type: none"> <li>580 lots.</li> <li>R2 and R5 residential land uses only.</li> <li>Increased proportion of R2 zoned land.</li> </ul>	<ul style="list-style-type: none"> <li>Same lot yield maintained.</li> <li>Same land uses maintained.</li> <li>Increasing proportion of R2 land whilst maintaining same lot yield allows greater diversity of lot sizes within 1000sqm-2000sqm range.</li> <li>R5 land maintained along all interfaces to existing residential to provide transition of larger lots.</li> </ul>
Public Recreation - RE1	<ul style="list-style-type: none"> <li>44.77 ha of Council maintained open space.</li> </ul>	<ul style="list-style-type: none"> <li>53.48 ha, comprising:               <ul style="list-style-type: none"> <li>33.71 ha Council maintained open space; and</li> <li>19.77 ha bio banked / funded open space.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Greater provision of passive and active open space across the site.</li> <li>Council will receive funding for the maintenance of the Bio banked open space in perpetuity via the biobank trust (paid for by the developer).</li> </ul>
Environmental Conservation - E2	-	<ul style="list-style-type: none"> <li>8.75 ha</li> </ul>	<ul style="list-style-type: none"> <li>Improved environmental outcome provides dedicated areas for wildlife and vegetation conservation which will ensure the critically endangered Cumberland Plain and Alluvial Woodlands are protected from development.</li> <li>Habitat for the endangered Cumberland Plain Land Snail and threatened microbat species is therefore also protected.</li> <li>Coincides with land suitable for passive recreational use.</li> </ul>
Infrastructure - SP2	<ul style="list-style-type: none"> <li>12.4 ha</li> </ul>	<ul style="list-style-type: none"> <li>0.82 ha</li> </ul>	<ul style="list-style-type: none"> <li>Reduction and consolidation of SP2 zoned land is resultant of ongoing design development and advances in infrastructure and services technology, which has reduced the spatial requirements for the wastewater needed to service the site. This results in the better utilisation of land for recreational purposes.</li> </ul>

### 4.4 Land Uses

#### 4.4.1 Residential Land Uses

The residential yield for the site will continue to be 580 dwellings. The existing R2 and R5 residential land uses as per the Current Masterplan have also been retained.

The Proposed Concept Masterplan seeks to deliver lot sizes that will provide a diversity of living options, whilst responding to the site's topographical and ecological constraints. Lots will range in size from 1,000 sqm to 4,000 + sqm with the larger lots being positioned in the central zone of the site where the steepest slopes occur and along the periphery of the site to provide a transition to the larger lots and the character of surrounding areas.

The importance of providing larger lots along the boundary of the site to create a transition to existing residential has always been identified as a key guiding principle and this has been maintained in the Proposed Concept Masterplan. The location and extent of larger lots within the Proposed Concept Masterplan will ensure that the site's unique character and topography is respected and that an appropriate interface with adjoining development is provided in line with the existing rural residential character of the area, and the principles established by the current minimum lot sizes under the HLEP 2012.

Initial market research undertaken by the developer indicates that future residents to the area will be looking for and prefer lots in the 1,000 sqm to 1,500 sqm range, with this being driven in part by affordability but also a feeling that lots of this type will provide a large backyard and the 'sense of space' that people are looking for. This being without the significant increase in maintenance associated with the larger lots in the 2,000 sqm to 4,000 sqm plus range.

There is also a current shortfall of existing lots between the 1,000 sqm to 1,500 sqm range within existing Glossodia Village. This can be seen in the Lot Size Analysis undertaken by Council (refer to **Appendix I**). In particular, of the total 873 lots within the existing Glossodia Village:

- Only 19 (2%) have a lot size of 1,000 sqm;
- Only 17 (1.9%) have lots between 1,000 and 1,500 sqm; and
- Only 20 (2%) have a lot size of 2,000 sqm.

The lots of 1,000 sqm to 1,500 sqm proposed for Glossodia will increase the capacity of the Glossodia community to meet the growing trend for smaller lot sizes, which currently make up a nominal part of the lot size stock of the area.

The Lot Size Analysis also removes the false misconception that the planning proposal will provide lots which are smaller than those currently within Glossodia Village. The lots proposed for Jacaranda Ponds have minimum lot sizes of 1,000 sqm + and the predominant lot sizes within Glossodia Village are less than 1,000 sqm.

The approach of increasing the proportion of R2 land but maintaining the same number of lots has been undertaken to reflect these preferences but also as it will result in larger average lot sizes and a greater diversity of lot sizes within the R2 zoned land. In other words, rather than having the majority of lots within the R2 land being close to or exactly 1,000 sqm, the increase in net R2 land under the Proposed Concept Masterplan allows for an average lot size of approximately 1,250 sqm for lots within the R2 zone. Whilst the final lot mix will be subject to detailed design, the intention is to provide scope for a larger variety and greater average lot size within the project.

#### 4.4.2 Public Recreational Land

Under the Proposed Concept Masterplan the overall quantity of public recreational open space (zoned RE1) has increased from 44.77ha to 52.64ha (refer to **Figure 10**), providing an increase in the quantity and accessibility of active and passive recreation areas, as well as improving the conservation of existing vegetation, site features and areas of ecological significance.

In order to ensure that this increase in public recreation land does not create an additional maintenance cost for Council, a bio banking agreement between Council and Celestino is being developed where approximately 28.52ha will be bio bank funded. This means the the amount of public recreation land for use and benefit of the community across the site will increase (refer to **Figure 24**), without generating a financial burden to Council for its maintenance. The recreational land within the bio bank agreement (being 28.52ha) will still be required to be maintained by Council however the bio bank agreement will ensure Council is provided funding in perpetuity for maintenance of this land in the form a management trust fund paid by the developer.

When compared to the existing Concept Masterplan, the Proposed Concept Masterplan provides an improved quantity and distribution of major and secondary open spaces, and recreation nodes for passive and active use across the site (refer to **Figure 11**). The Current Masterplan follows a traditional model for open space provision based around two main park spaces, with the balance of public recreation land being made up of the linear open space along Currency Creek and smaller linear open spaces connections through the site.

Whilst it is acknowledged that these linear open space areas provide an important function in terms of conserving vegetation and natural site features, establishing a connected pedestrian / cyclist and open space network, and bringing more residents within 400m waking distance to open space from their homes, under the Current Masterplan they have not been designed to include active and passive nodes meaning that they have not maximised their recreational opportunities and value.

Rather than following a traditional open space model, the Proposed Concept Masterplan adopts a multiple-use approach which aims to create a more accessible and connected network of open space, increase amenity and

integration with natural features, and improve the management and maintenance of open space - all while still meeting the general standards for open space access and provision required under a traditional open space model. As with the Current Masterplan, the Proposed Masterplan has two major park spaces, the Village Green and Lake Park, and these have been designed to be a size and shape that will be capable of accommodating a wide variety of recreational facilities and opportunities, such as those that would be delivered under the Current Masterplan and the desired standards outlined in the *Government Architects Open Space and Recreation Guide* (The Guide).

To further ensure that these two key park spaces would be of a size and shape suitable for their desired function and capable of providing a broad range of recreational facilities and opportunities, preliminary concept plans have been developed to show how the Village Green and Lake Park could accommodate the key open space and community facilities required under the VPA (refer to **Figure 16** and **Figure 20**).

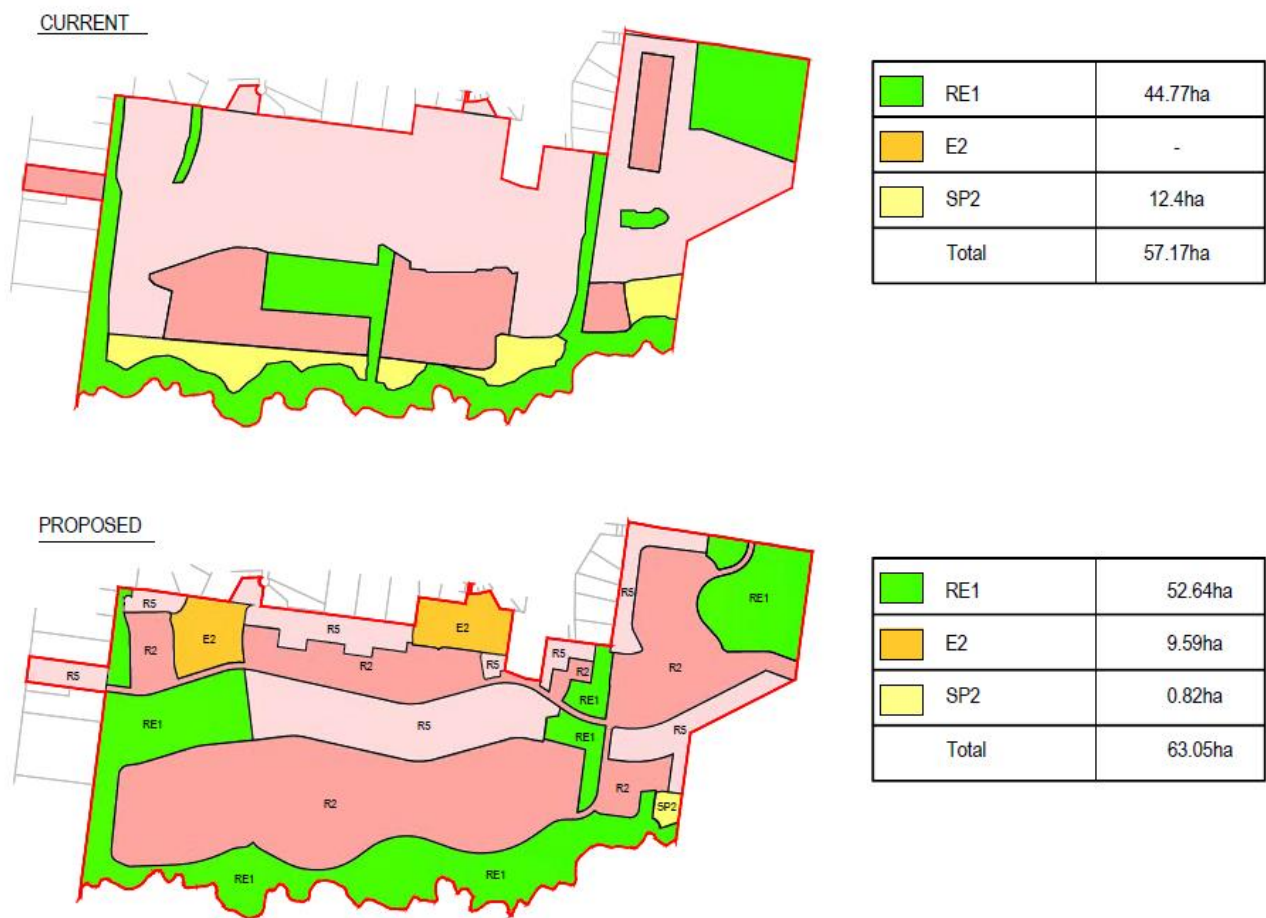
A key benefit of the Proposed Masterplan is that, whilst the plan still provides these two key park spaces and ensures that they are large enough to provide a diverse range of recreational opportunities and accommodate their desired functions and facilities, the Plan also provides a greater variety of smaller active and passive spaces and green linkages which creates a more accessible and well distributed network of green spaces across the site.

The linear open space areas provided in the Current Masterplan have been maintained but widened and integrated with larger conservation areas and passive recreation spaces to improve their recreational opportunities and value. The key principles, recreational features and improved outcomes that will be delivered for open space through the Proposed Concept Masterplan are described in detail in **Section 4.5**.

Whilst it is acknowledged that the arrangement of open space under the Current Masterplan satisfies the minimum land size requirements and accessibility requirements prescribed in *Government Architects Open Space and Recreation Guide* (The Guide), it is important to note that a detailed assessment of the Proposed Masterplan against The Guide has also been undertaken and provided to Council that demonstrates how the Proposed Masterplan satisfies the desired standards and outcomes. Key points noted in this assessment include:

- The arrangement of open space under the Proposed Concept Masterplan provides an increased quantity and diversity of large public open spaces (increasing the size of both the Village Green and Lake Park as well as introducing new passive recreation spaces) across the site to support a greater range of active and passive uses (in accordance with the performance indicator for open space quantity in the Guide).
- The proposed arrangement of open space provides a greater quantity of recreational land along Currency Creek, three new areas of conservation land for passive use along the northern portions of the site, and a significantly larger portion of recreational land along the eastern boundary of the site.
- The arrangement of open space under the Proposed Masterplan provides an improved maintenance and management outcome for the site which is beneficial to Council and important to ensuring the future sustainability and use of the open space network. Large parts of the RE1 land will be retained as Biobanking, therefore ensuring Council has funding in perpetuity to maintain this recreational land.
- Under the Current Masterplan approximately 90% of residents would be within a 400m walk of open space (when the linear open space and passive recreation areas are taken into account). Under the Proposed Concept Masterplan, this figure increases to close to 95%. In addition, the linear open spaces which support access across the site are far larger in the Concept Masterplan, incorporate additional passive recreation areas and retain more of the site's vegetation and natural features which creates an open space network that is more attractive, integrated and improves pedestrian accessibility and recreational opportunities.





**Figure 10 - Adopted (existing) and proposed zoning including distribution of E2 and RE1 land**

Source: OneCollective

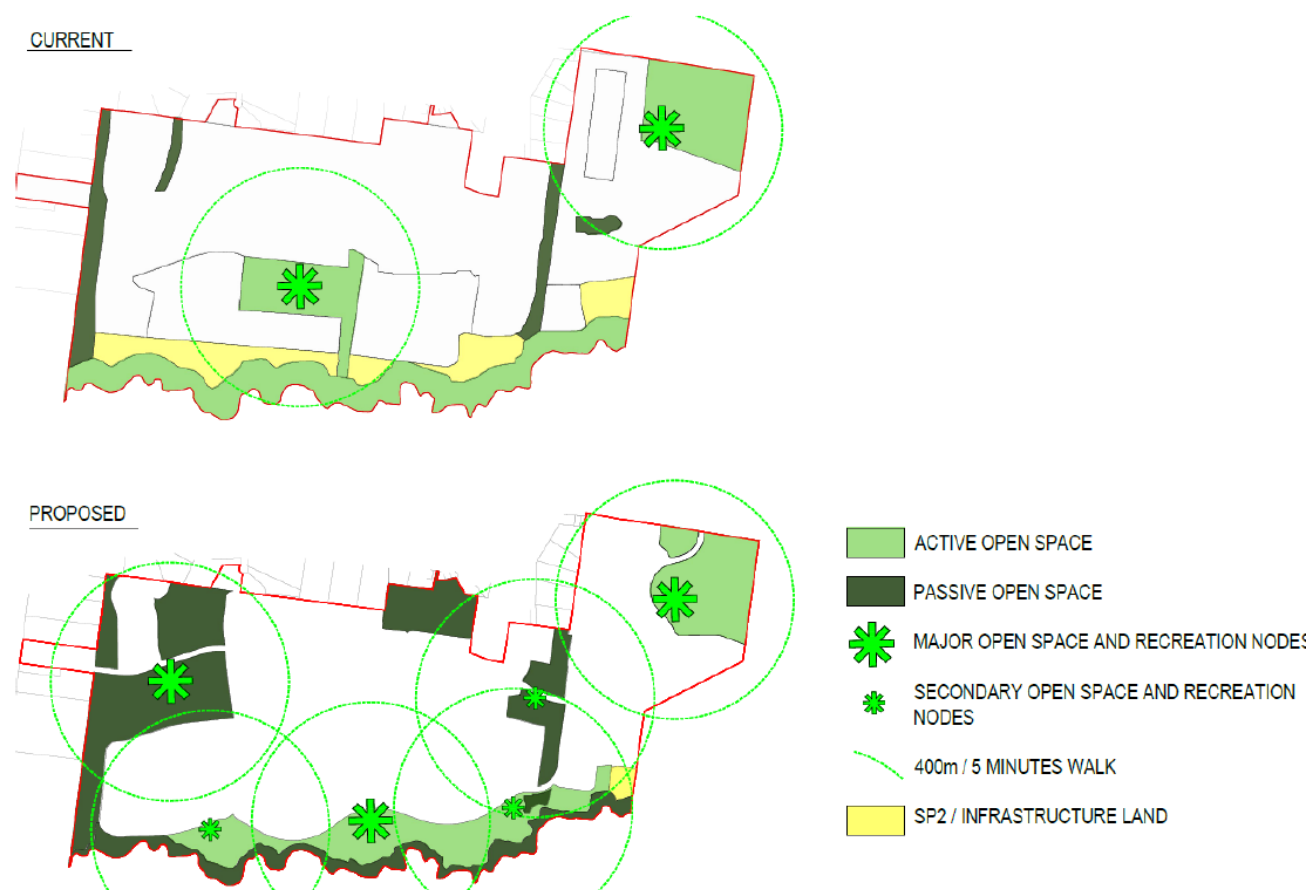


Figure 11 - Access and distribution of open space under the existing and proposed Concept Masterplan

Source: OneCollective

#### 4.4.3 Environmental Conservation Land

The Proposed Concept Masterplan provides a significantly improved ecological outcome for the site and retains significant land for conservation. The portions of land dedicated to conservation (being land zoned E2 and RE1) coincides with portions of the site identified as containing significant vegetation and threatened species habitat including Cumberland Plain and Alluvial Woodlands listed as critically endangered and endangered under the BC Act and EPBC Act, as well as several fauna species including the Cumberland Plain Snail and the Little Bent-Wing and Eastern Bent-Wing Bat listed as vulnerable under the BC Act.

Whilst the primary purpose of the conservation land is to conserve the site's ecological significance, this land will also be accessible to the public for active and passive recreational use. It is noted that even though more conservation land is provided (and an improved ecological outcome is achieved), the biobanking scheme for the site ensures the maintenance of this land does not become burden into the future.

#### 4.4.4 Infrastructure – SP2

A portion of land within the south-eastern corner of the site will continue to be zoned SP2 Infrastructure (Sewerage System) for infrastructure and servicing. A water recycling facility is proposed in this location to treat wastewater at the site and to supply Jacaranda Ponds with recycled water for non-potable uses such as toilet flushing, irrigation and washing (refer to **Section 7.6**).

The ability to consolidate the SP2 Infrastructure zoned land into a single area is the result of ongoing design development and advances in infrastructure and services technology, which has reduced the spatial requirements for the system. As a result, the large area of land that was zoned SP2 Infrastructure along Currency Creek for recycled water irrigation is no longer required.



This part of the subject site can be better utilised, as shown in the Proposed Concept Masterplan, for open space and residential purposes following rezoning of that part of the subject site to part RE1 Public Recreation and R2 Low Density Residential. This will also remove the significant and ongoing maintenance that would have been required for this land.

The Concept Masterplan incorporates a stormwater strategy to manage stormwater quality and quantity in accordance with Council's requirements. The stormwater infrastructure is located on residential and recreation zoned land and is proposed to be dedicated to Council.

It is noted that IPART is currently finalising a WICA license assessment. If successful, this will grant Flow Systems a network operator's licence permitting them to operate a sewerage and recycled water facility at Jacaranda Ponds. IPART is due to make a determination by the end of August 2019. As Council did not make a submission of the 2016 public exhibition of the licence application, IPART wrote to Council on 12 October 2018 with targeted questions for Council's input. We believe Council had the opportunity to respond to IPART by 12 November 2018.

#### 4.4.5 Other Land Uses

No other land uses, apart from the abovementioned, are proposed under the Proposed Concept Masterplan. The residential uses proposed are capable of accommodating small scale (neighbourhood shops) and community facilities. This is important in supporting liveable communities, especially in relation to improving the overall liveability and access to daily convenience needs of residents.

Notwithstanding, community consultation already undertaken with the Glossodia community has identified concerns over potentially introducing new retail or community facilities within Jacaranda Ponds due to the current underutilisation and lack of financial viability of the existing shops and facilities in Glossodia, and the potential negative impact that this may have on the existing traders in Glossodia Village (refer to **Section 4.4.9**).

Given the above, and in light of the fact that neighbourhood shops and community facilities are permissible with consent in the R2 residential zone, no additional land uses are proposed. Future land uses specifically aimed at providing a neighbourhood or local centre within Jacaranda Ponds (as recommended by the Hawkesbury LPP), will be subject to detailed economic assessment and feasibility, informed by the community and performance of existing retail and facilities.

It is also noted that portions of land proposed to be zoned R5 Large Lot Residential have value for conservation purposes because they contain Grey Box – Forest Red Gum grassy woodland. Irrespective of this, the R5 zone (compared to a E4 Environmental Living zone) is still considered most suitable for this portion of land because it is still a residential zone yet primarily seeks to minimise impacts of environmentally sensitive land (refer to **Section 6.1**).

### 4.5 Open Space and Recreation

#### 4.5.1 Open Space Network - Hybrid / Multiple-Use Approach

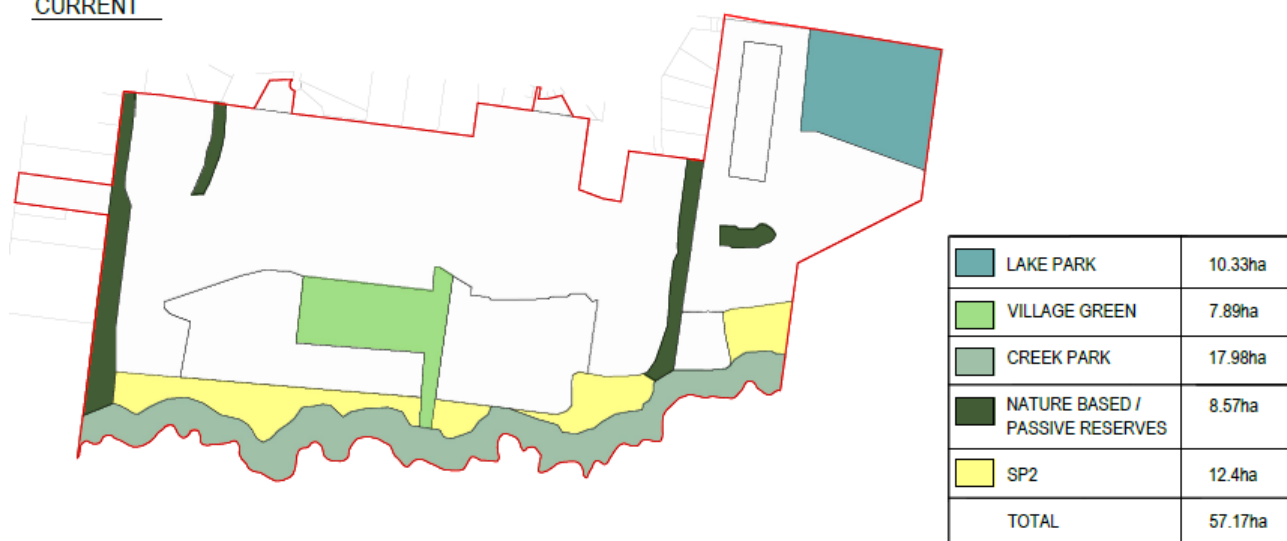
The Proposed Concept Masterplan has adopted a multiple-use approach as a core guiding principle in its design of open space across the site. Whilst it is acknowledged that this approach, in some ways, represents a shift away from a 'standard' solution, it very closely reflects the 'hybrid' approach outlined in the Government Architect of NSW Open Space and Recreation Guide (the Guide) which promotes dual use and multiple-use open spaces with the aim of encouraging *innovation in public open space planning and to promote higher community use of, and satisfaction with, public open space* (refer to Page 15 of the Guide).

Through the application of the Hybrid / Multiple Use Approach, the Proposed Concept Masterplan will deliver open space that better reflects changing recreational trends and community preferences. It will also support the multiple-use and management of open space whilst at the same time still meeting general standards for open space access and provision.

The following section describes the key open space features incorporated within the Proposed Concept Masterplan and explains the guiding principles and improved outcomes that will be delivered in terms of usability, amenity, access and connectivity and maintenance.

The overall open space areas and typology proposed is shown in **Figure 12**. **Figure 13** shows the key recreational nodes and how they have been integrated through network of open space and pedestrian and cycling trails.

### CURRENT



### PROPOSED



preliminary only and subject to detailed engineering and surveying input. all dimensions and areas are indicative only.

**Figure 12 - Overall open space areas and typology comparison including location of existing and proposed Village Green and Lake Park**

Source: OneCollective



Figure 13 - Proposed Masterplan open space network and key community and recreational nodes

Source: OneCollective

#### 4.5.2 The Lake Park

The guiding principle behind the Lake Park is to provide an open space outcome that improves the interface and connectivity between the park and adjoining residential areas whilst also increasing the accessibility, usability and activation of the park area overall.

The key design drivers of the Lake Park include (refer to **Figure 14** to **Figure 16**):

- Redistributing the main entry point of the site from Spinks Road to provide a safer intersection connection while creating a sense of openness, maximising view corridors and access around the lake;
- Curve the entry drive around the edge of the lake to help activate and increase access to the eastern portions of the Lake Park, while providing a greater diversity of recreational nodes and facilities; and
- Providing a deliberately curvilinear form, character and landscape treatment of the collector road to slow vehicle speeds and improve safety, accessibility and connectivity to the Lake Park from adjoining residential areas.

The Guide recommends a shift towards an approach of *planning based on recreation opportunities* with the aim of providing open space which more closely reflects the way people use open space and the types of open space that they value most. To achieve this aim, the Guide identifies six core performance criteria to be considered in the design and delivery of open space for recreation. A response to each of these performance criteria is provided in **Table 7**.



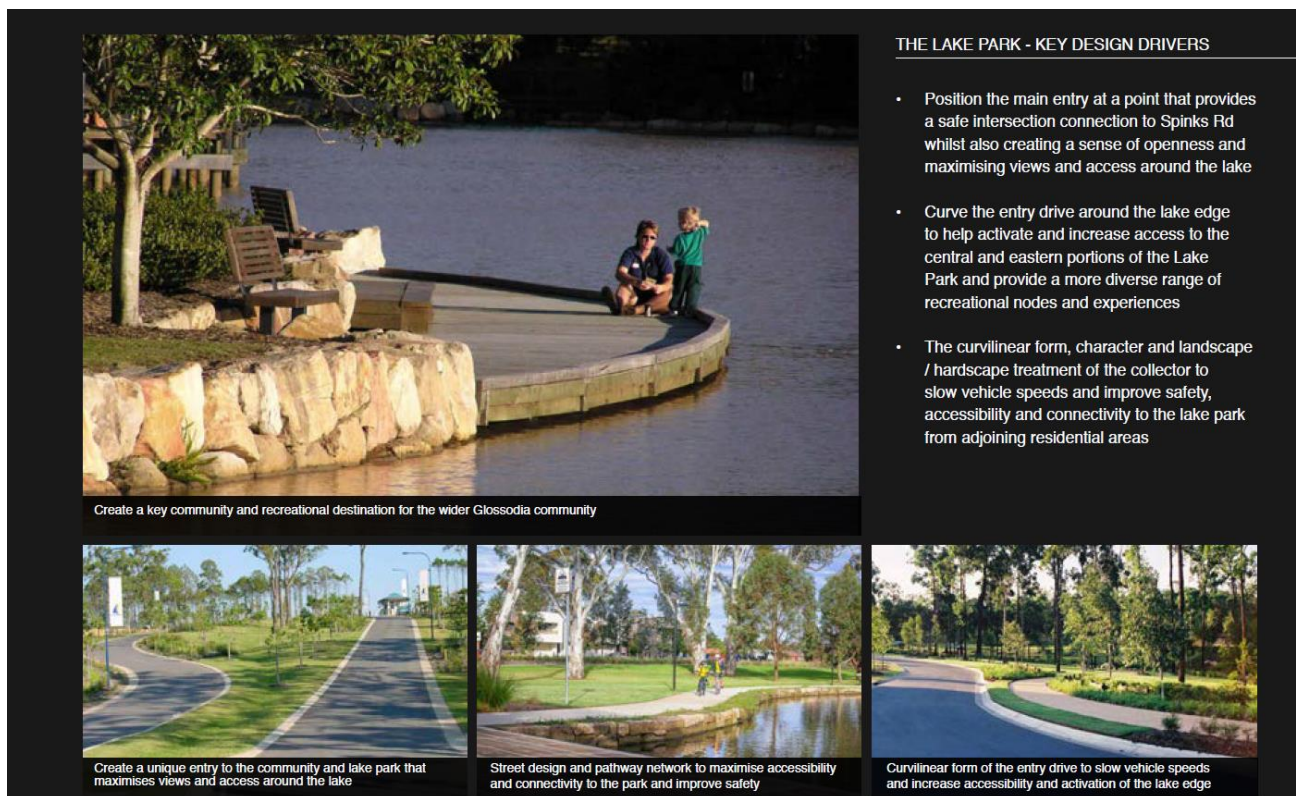


Figure 14 - Lake Park vision and character

Source: Onecollective

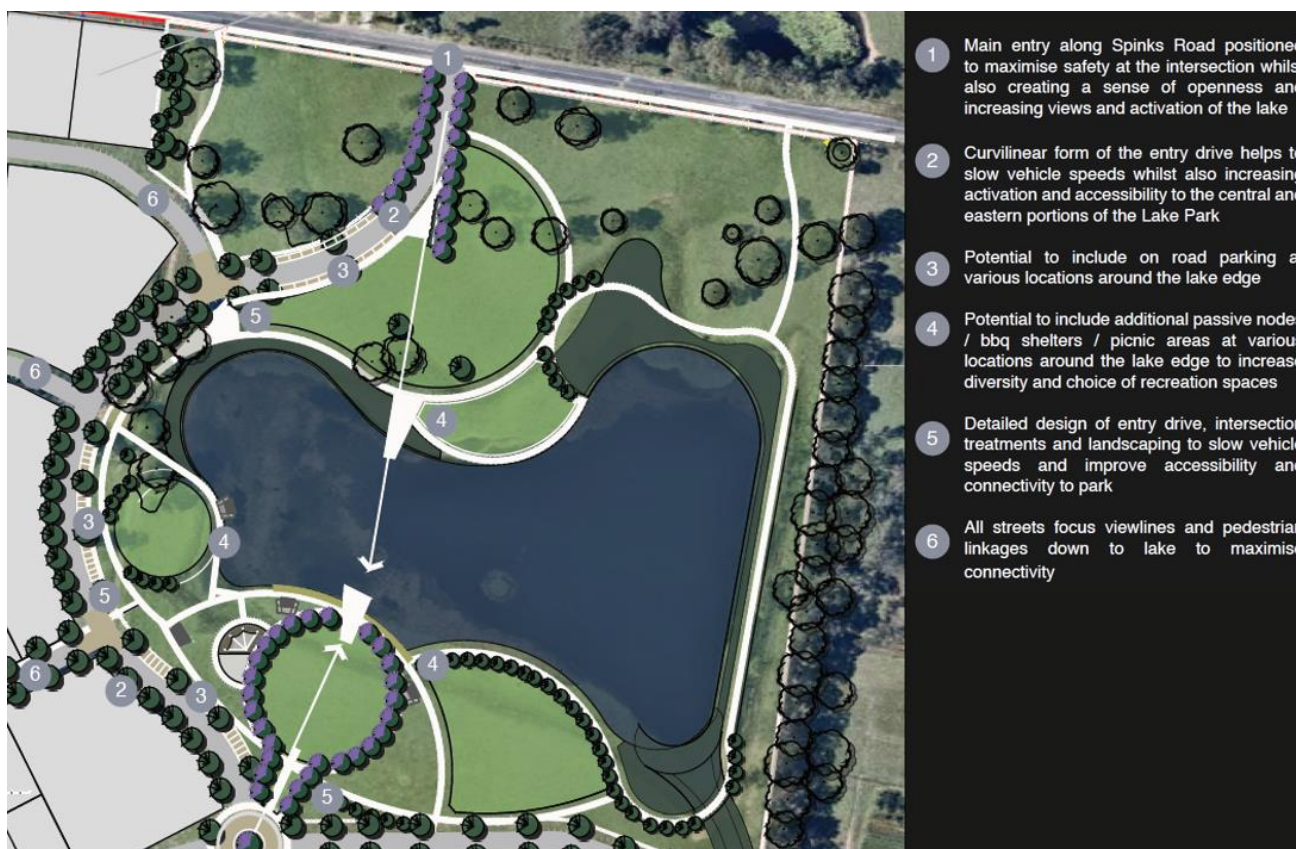


Figure 15 - Lake Park concept and key principles

Source: Onecollective





Figure 16 - Lake Park proposed recreational facilities

Source: Onecollective

Table 7 - Response to the Government Architect's Open Space Guide in relation to the Lake Park

Performance Criteria	Performance Indicator	Provided under the Proposed Concept Masterplan	Achieved
<b>Accessibility and connectivity</b> Ease of access is critical for the community to enjoy and use public open space and recreation facilities.	For a medium- to low-density neighbourhood: 5 minutes' walk / 400m walking distance to a local, district, or regional park	<ul style="list-style-type: none"> <li>For the broader open space network of Jacaranda Ponds, which includes the Lake Park, 92% of residents will be located within 400m from a local park or open space.</li> <li>The main entry drive to the site has been shifted from the western edge of the Lake Park (under the existing Concept Masterplan) to a more central location. This disperses vehicular traffic and improves accessibility and connectivity between the Lake Park and adjoining residential areas.</li> <li>Relocating the main entry drive also provides the opportunity to activate and increase accessibility to the eastern side of the Lake Park, particularly for people visiting and using the park from outside of Jacaranda Ponds.</li> <li>The Proposed Concept Masterplan has a fine grain, lower order street network which maximises the number of pedestrian and visual connections from the adjoining residential areas towards the Lake Park.</li> <li>In terms of visual access, the Lake Park will have 100% esplanade frontage along the northern, western and southern edges, and all residential streets will open towards views of the open space area. By relocating the main entry drive, the accessibility, activation and passive surveillance of the eastern side of the park is significantly improved.</li> </ul>	✓
<b>Distribution</b> The ability of residents to gain access to public open space within an easy walk from	Distance of open space from houses by size - 400 m.	<ul style="list-style-type: none"> <li>The broader open space network of Jacaranda Ponds, including the Lake Park, 92% of residents will be located within 400m from a local park or open space.</li> </ul>	✓



Performance Criteria	Performance Indicator	Provided under the Proposed Concept Masterplan	Achieved
home, workplaces, and schools is an important factor for quality of life. The geographic distribution of open space is a key access and equity issue for the community.			
<b>Size and shape</b> Size and shape of open space has a direct bearing on the capacity of that open space to meet and accommodate a range of recreation activities and needs.	<ul style="list-style-type: none"> <li>Desirable minimum size of a local park is 3000 sqm.</li> <li>Sporting facilities also have specific size and shape requirements that need to be met to provide functional space for their use.</li> </ul>	<ul style="list-style-type: none"> <li>The Lake Park provides an area of 10.89ha of open space.</li> <li>The lake is separated into two distinct but linked water bodies, whilst maintaining generous and usable. This creates a 'Figure 8' type arrangement for the pathway system which improves the recreational opportunities by creating smaller and larger loop options, whilst also helping to activate and provide improved safety for the eastern side of the lake.</li> <li>This arrangement and improved access to the Lake Park (due to the relocation of the main entry), improves the access and activation of the eastern side of the Park and provides an improved setting for combining a more diverse range of active and passive uses into one location.</li> </ul>	✓
<b>Quantity</b> In high-density areas, good provision of public open space is essential to compensate for the lack of private open space to support active living and contribute to a more liveable neighbourhood.	<ul style="list-style-type: none"> <li>Quantity should be considered in the number of opportunities available. Larger public open space areas mean more opportunities can be provided in one location.</li> <li>Quantity of land available, along with size and shape, are critical in adequately meeting sporting needs. There are minimum areas needed for different sporting outcomes</li> </ul>	<ul style="list-style-type: none"> <li>The Lake Park in the adopted Concept Masterplan has a total area of approximately 10.33ha. The Proposed Concept Masterplan increases the area allocated for the Lake Park to 10.89ha, however relocates the entry drive to help activate and provide improved accessibility and usability to the eastern side of the park.</li> <li>By centralising the entry drive, the Proposed Concept Masterplan increases accessibility and activation of the eastern side of the park and provides an increased number of recreation nodes to improve the level of diversity, choice and recreational opportunities and reducing the potential for overcrowding and overuse.</li> </ul>	✓
<b>Quality</b> The quality of park embellishment and ongoing maintenance and management is critical to attracting use and activation of the open space network.	Key characteristics of open space that influence quality include: <ul style="list-style-type: none"> <li>visual and physical access</li> <li>landscape setting</li> <li>condition of facilities and equipment</li> <li>maintenance</li> <li>number of activations within the space</li> <li>size, shape, and topography</li> <li>adjacent land uses</li> <li>amount of vegetation</li> <li>biodiversity outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Providing the central entry drive improves the visual and physical access and activation of the eastern side of the Lake Park.</li> <li>Providing the central entry drive creates a lower order street interface to the southern and western edges of the Lake Park which improves the accessibility and connectivity from the adjoining residential areas.</li> <li>The entry drive and lake configuration in the revised Concept Masterplan creates a 'Figure 8' type arrangement for the lake and pathway system which creates smaller and larger loop options that increase the choice of jogging, cycling and walking trails and increases the opportunity to include additional recreation nodes around the lake.</li> <li>The Lake Park provides a series of recreation nodes (seating, BBQ shelters etc) that will be provided around the eastern side of the lake which will provide a greater spread, choice and flexibility of recreational spaces.</li> <li>Portions of the Lake Park coincide with significant vegetation which will be protected.</li> </ul>	✓
<b>Diversity</b> The range of open space setting types within a given area will determine the diversity of recreation opportunity for a community.	Outdoor recreation opportunities are categorised as: <ul style="list-style-type: none"> <li>local play for the very young</li> <li>local children's play</li> <li>older children's activity space</li> <li>youth recreation space</li> </ul>	<ul style="list-style-type: none"> <li>The main recreational facilities will be provided within the western side of the Lake Park which maximises accessibility and safety for adjoining residential areas. The central entry of the eastern side of the park is increased which improves the overall usability of the park. The revised Proposed Concept Masterplan proposes a series of recreation nodes (seating, BBQ shelters etc) will be provided around the eastern side of the lake which will provide a greater spread, choice and flexibility of recreational spaces.</li> <li>The entry drive and lake configuration in the Proposed Concept Masterplan creates a 'Figure 8' type arrangement for the lake and</li> </ul>	✓

Performance Criteria	Performance Indicator	Provided under the Proposed Concept Masterplan	Achieved
	<ul style="list-style-type: none"> <li>• <i>local recreation space</i></li> <li>• <i>active recreation space</i></li> <li>• <i>large community outdoor recreation area</i></li> <li>• <i>fitness and exercise space</i></li> <li>• <i>trail and path-based recreation</i></li> <li>• <i>organised sport and recreation</i></li> <li>• <i>off-leash dog exercise area</i></li> <li>• <i>large community outdoor recreation area</i></li> </ul>	pathway system that provides smaller and larger loop options which increase the choice of jogging, cycling and walking trails and increases the opportunity to include additional recreation nodes around the lake.	

### 4.5.3 Village Green

The existing Concept Masterplan provides a more centralised Village Green which is largely dependent on street connections. In the Proposed Concept Masterplan, the Village Green is redistributed along Currency Creek which improves overall accessibility and connectivity by creating a more integrated open space, bicycle and pedestrian network.

The guiding principle behind the Village Green (refer to **Figure 17** to **Figure 20**) is to provide an open space outcome which better reflects changing recreational trends and community preferences. The Village Green also seeks to improve the multiple-use opportunities and management of the open space whilst at the same time still meeting general standards for open space access and provision. This approach reflects the aim of the Guide, which is *to allow more innovation in planning, more efficient use of land for recreation, and a focus on the quality of the outcome rather than just the quantity.*

Consistent with the approach for the Lake Park, the Village Green has been designed to respond to the performance criteria of the Guide (refer to **Table 8**). Compared to the existing Concept Masterplan, the Village Green under the Proposed Concept Masterplan provides an improved open space outcome in terms of accessibility, quality and quantity, and distribution.



Figure 17 - Village Green vision and character

Source: Onecollective

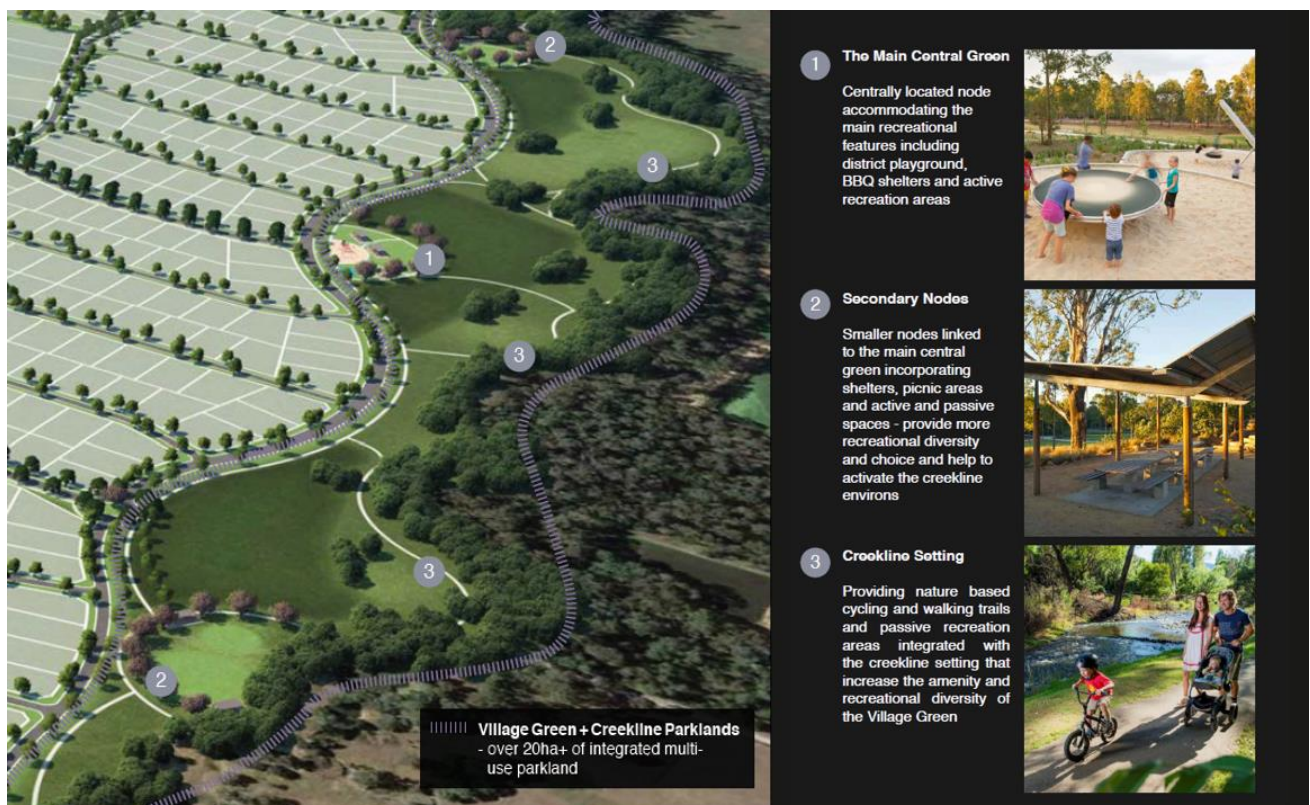


Figure 18 - Village Green concept and key principles

Source: Onecollective





Figure 19 - Village Green concept and key community and recreational nodes

Source: Onecollective



Figure 20 - Central village Green and proposed recreational facilities

Source: Onecollective



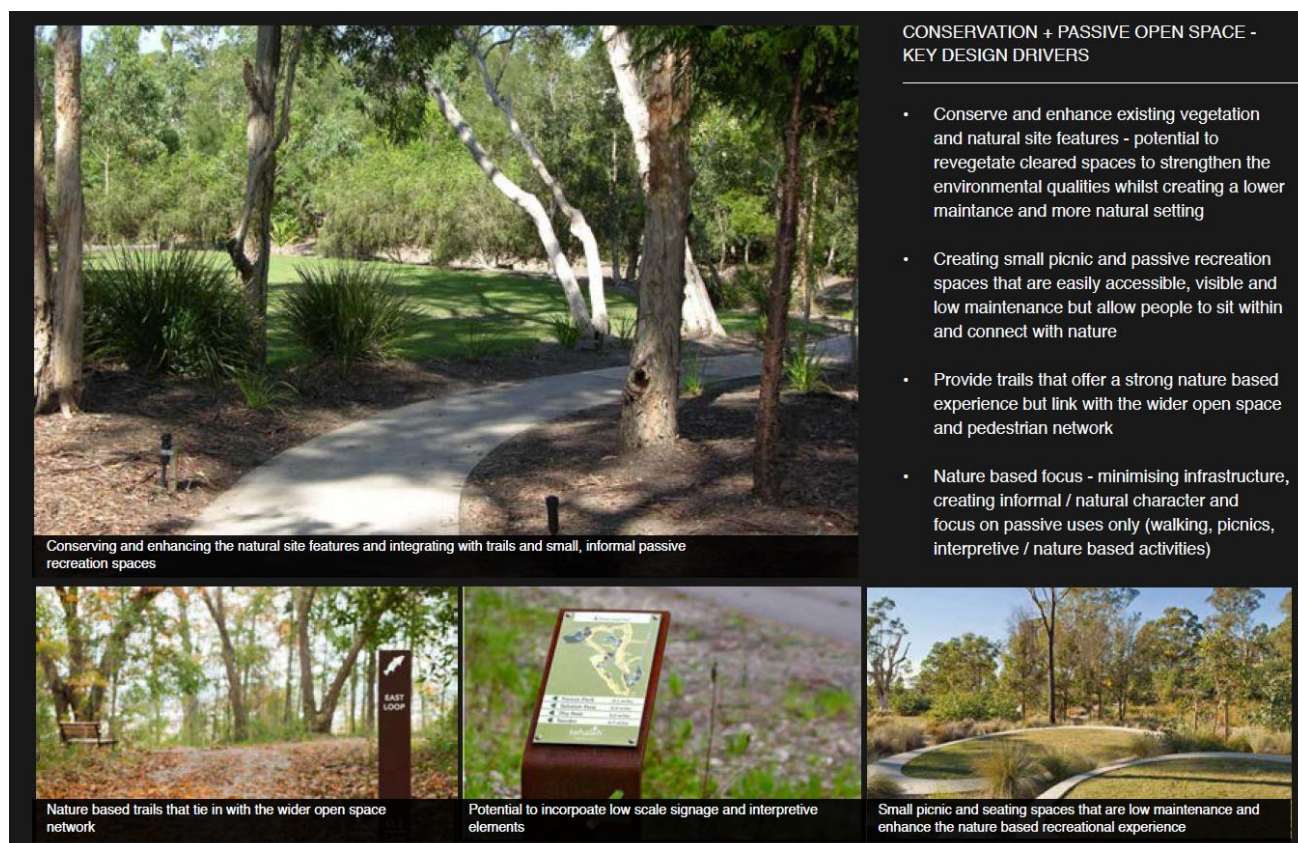
**Table 8 - Response to GA Open Space Guide in relation to the Lake Park**

Performance Criteria	Performance Indicator	Provided under the Proposed Masterplan	Achieved
<b>Accessibility and connectivity</b> Ease of access is critical for the community to enjoy and use public open space and recreation facilities.	For a medium- to low-density neighbourhood: 5 minutes' walk / 400m walking distance to a local, district, or regional park	<ul style="list-style-type: none"> <li>The Village Green is located directly adjoining Currency Creek which improves overall accessibility and connectivity by creating a more integrated open space, bicycle and pedestrian network.</li> <li>Over 165 households will be within 400m walking distance of the major activity node within the Village Green. However, when the secondary activity nodes and the open space of Currency Creek are included, the number of households within a 400m walking distance increases to 345. Further, if consideration is given to the broader open space network (and the number of households that are within 5 minutes' walk of an open space link that directly connects to the Village Green and Currency Creek environs are included) this figure increases to 535 (92%).</li> <li>By better integrating the Village Green with Currency Creek, the Proposed Masterplan achieves a stronger overall open space network that offers better safety, amenity and recreational opportunities and improves overall accessibility and connectivity. This directly supports the aim of the Guide to "create healthier, more liveable and sustainable urban environments by improving community access to recreation and exercise, supporting walking and cycling connections."</li> <li>With respect to visual access, the Village Green and Currency Creek open space areas will have 100% esplanade frontage along the residential interface, and all residential streets will have views down towards the open space area. By removing the SP2 land, and by incorporating a series of activation nodes interfacing with Currency Creek, the revised Village Green improves the interface to Currency Creek and helps to activate and improve safety and passive surveillance over this area.</li> </ul>	✓
<b>Distribution</b> The ability of residents to gain access to public open space within an easy walk from home, workplaces, and schools is an important factor for quality of life. The geographic distribution of open space is a key access and equity issue for the community.	Distance of open space from houses by size - 400 m.	<ul style="list-style-type: none"> <li>The Village Green forms one of two main recreational areas (the other being the Lake Park). Access to these areas is provided in the form of two north-south green linkages through the site, and along Currency Creek. This interconnects a wider range of active and passive spaces across the site.</li> <li>Whilst the Village Green has been relocated within the Proposed Concept Masterplan to interface with Currency Creek, an additional major open space area has been introduced in the north-west of the site which will retain significant vegetation and natural features, whilst incorporating passive recreation areas. This results in an improved distribution of open space when compared to the adopted Concept Masterplan.</li> </ul>	✓
<b>Size and shape</b> Size and shape of open space has a direct bearing on the capacity of that open space to meet and accommodate a range of recreation activities and needs.	<ul style="list-style-type: none"> <li>Desirable minimum size of a local park is 3000 sqm.</li> <li>Sporting facilities also have specific size and shape requirements that need to be met to provide functional space for their use.</li> </ul>	<ul style="list-style-type: none"> <li>The Village Green in the adopted Concept Masterplan has a rectilinear shape and a total area of approximately 7.89ha. Whilst the proposed Concept Masterplan proposes a more irregular shape, the area allocated for the Village Green has been increased to 14.51ha. By directly interfacing the Village Green with the Currency Creek open space, the opportunity for informal active and passive recreation spaces and multi-use is increased, with a combined total open space area of over 19ha (refer to <b>Figure 5</b>).</li> <li>By integrating the Village Green with the natural environs of Currency Creek, it provides an improved setting and opportunity for combining a more diverse range of active and passive uses into one location, and will provide a better setting to create pathway trails for activities such as jogging, cycling and walking which is identified in the Guide as the most preferred forms of physical activity.</li> <li>The Village Green provides areas of an appropriate size and shape to meet a variety of sporting needs, including a 120m x 120m space suitable for a range of informal sporting and community activities.</li> </ul>	✓
<b>Quantity</b> In high-density areas, good provision of public open space	<ul style="list-style-type: none"> <li>Quantity should be considered in the number of opportunities available.</li> </ul>	<ul style="list-style-type: none"> <li>The Village Green is 6.62ha larger than the Village Green under the adopted Concept Master Plan.</li> </ul>	✓

Performance Criteria	Performance Indicator	Provided under the Proposed Masterplan	Achieved
<i>is essential to compensate for the lack of private open space to support active living and contribute to a more liveable neighbourhood.</i>	<p>Larger public open space areas mean more opportunities can be provided in one location.</p> <ul style="list-style-type: none"> <li>Quantity of land available, along with size and shape, are critical in adequately meeting sporting needs. There are minimum areas needed for different sporting outcomes</li> </ul>		
<p><b>Quality</b></p> <p>The quality of park embellishment and ongoing maintenance and management is critical to attracting use and activation of the open space network.</p>	<p>Key characteristics of open space that influence quality include:</p> <ul style="list-style-type: none"> <li>visual and physical access</li> <li>landscape setting</li> <li>condition of facilities and equipment</li> <li>maintenance</li> <li>number of activations within the space</li> <li>size, shape, and topography</li> <li>adjacent land uses</li> <li>amount of vegetation</li> <li>biodiversity outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Integrating the Village Green with the Currency Creek environs improves visual and physical access for the overall community by increasing its accessibility through the broader open space network. Visual access is also improved as the design increases the activation of the Currency Creek corridor.</li> <li>The Guide states that the "connection with nature and green environments is a fundamental goal for all open space planning." By integrating the Village Green with the Currency Creek environs, the Proposed Concept Masterplan provides an improved landscape setting and increases the connection with nature through the existing vegetation and Creek features.</li> <li>By integrating the Village Green with the Currency Creek environs, the opportunity to create jogging, cycling and walking trails and connections that link with nature and encourage physical activity are significantly improved when compared to the adopted Concept Masterplan. Integrating the Village Green with the Currency Creek environs also increases the opportunity for multiple-use spaces (e.g. open grass areas within the Creek Park can be used for informal active and passive uses).</li> <li>The Village Green coincides with the areas of the site identified to contain significant vegetation habitat, supporting an improved biodiversity outcome.</li> <li>The Village Green will provide a series of central and secondary nodes for facilities, linked by open space connections. This will activate the Currency Creek frontage whilst also providing a greater diversity and choice of recreation spaces for the community. The land is also relatively flat and suitable to accommodate a range of active and passive uses that can be adapted over time.</li> </ul>	✓
<p><b>Diversity</b></p> <p>The range of open space setting types within a given area will determine the diversity of recreation opportunity for a community.</p>	<p>Outdoor recreation opportunities are categorised as:</p> <ul style="list-style-type: none"> <li>local play for the very young</li> <li>local children's play</li> <li>older children's activity space</li> <li>youth recreation space</li> <li>local recreation space</li> <li>active recreation space</li> <li>large community outdoor recreation area</li> <li>fitness and exercise space</li> <li>trail and path-based recreation</li> <li>organised sport and recreation</li> <li>off-leash dog exercise area</li> <li>large community outdoor recreation area</li> </ul>	<ul style="list-style-type: none"> <li>The Village Green is only one of a total of three (3) major recreation nodes and three (3) secondary recreation nodes across the site which will provide a diversity of active and passive uses which will significantly improve the diversity of landscape settings for a range of activities.</li> <li>Integrating the Village Green with the Currency Creek environs creates an open space experience that has a high level of amenity and will provide a new attraction and experience for the broader Glossodia community to enjoy.</li> <li>Integrating the more formal parkland of the Village Green with the more natural setting of Currency Creek creates an open space that will offer a greater diversity of landscape settings for a range of activities in one location.</li> </ul>	✓

#### 4.5.4 Conservation and Passive Open Space

Land specifically dedicated to environmental conservation under the Proposed Masterplan (being portions of the site zoned E2 and RE1) will continue to be available for passive recreation, supporting the overall quantity and quality of open spaces across Jacaranda Ponds. The key design drivers and vision for this portion of Jacaranda Ponds are shown in **Figure 21** and **Figure 22**.



**Figure 21 - Conservation and passive open space vision and character**

Source: Onecollective



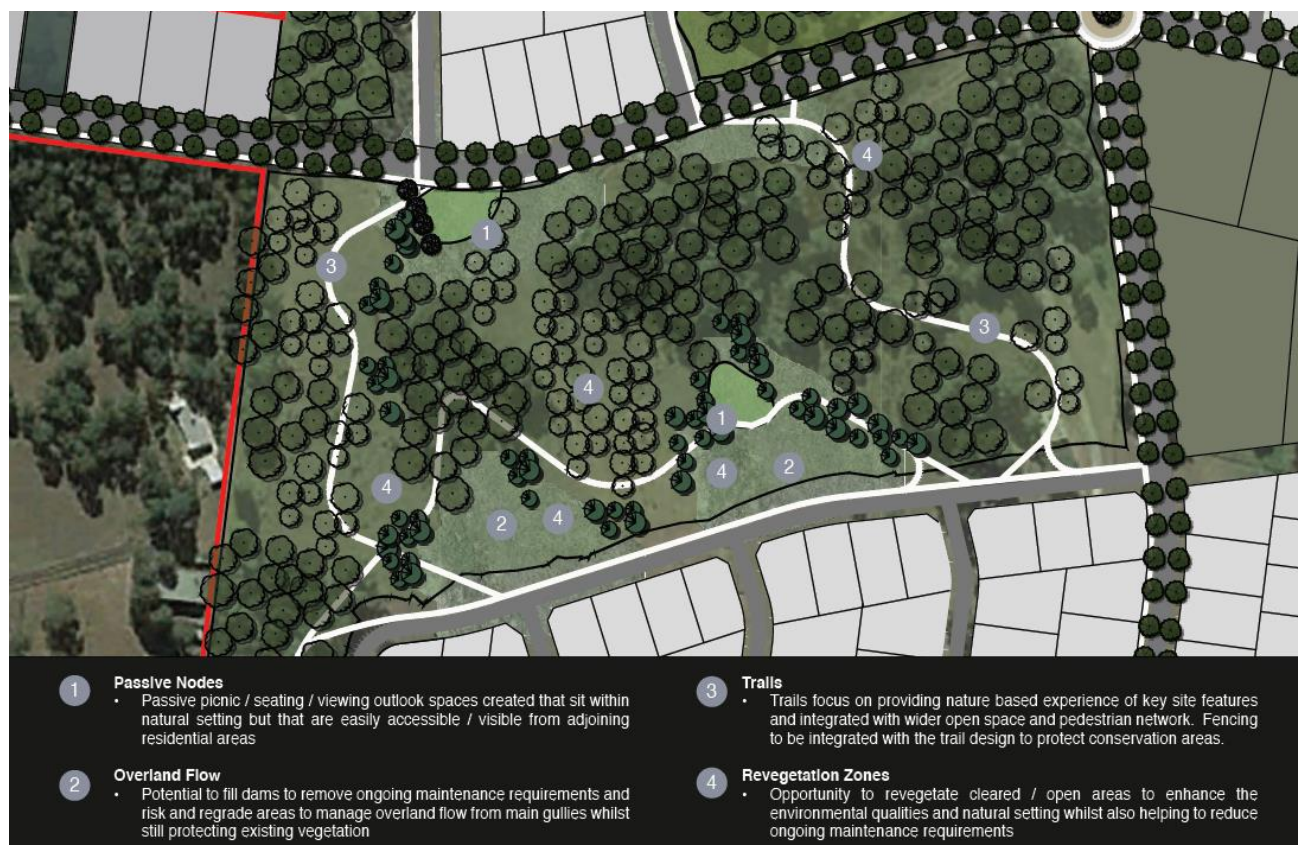


Figure 22 - Conservation and passive open space vision and character – Western Reserve

Source: Onecollective

#### 4.5.5 Outlook Vision and Character

Outlooks across the site, available to future residents has been a strong design driver in the proposed Concept Masterplan (refer to **Figure 23**). Outlooks are intended to utilise the existing topography of the site, in particular the central ridgeline which can provide elevated views over the residential community of Jacaranda Ponds to Currency Creek. There is potential to:

- Integrate feature outlooks along the open space and street networks, within parkland or featured streetscape widenings to create view corridors; and
- Integrate hard and soft landscaping, seating and artwork to support the passive use and enjoyment for residents.





Figure 23 - Outlooks vision and character

Source: Onecollective

#### 4.5.6 Biobanks and Maintenance

Council and Celestino are in the early stages of progressing a biobank agreement based on the areas shown in **Figure 24**. In this configuration, the Proposed Concept Masterplan introduces 28.52ha of biobank area to the site, including:

- Two northern biobank sites, one of which facilitates a northern pedestrian connection to Spinks Road via 213 Spinks Road (as presented to Council on March 2018);
- A large western biobank site encapsulating two open space nodes and a walking trail suitable for passive recreation;
- An eastern biobank site, providing a north to south vegetation corridor; and
- A southern biobank site running east to west along Currency Creek.

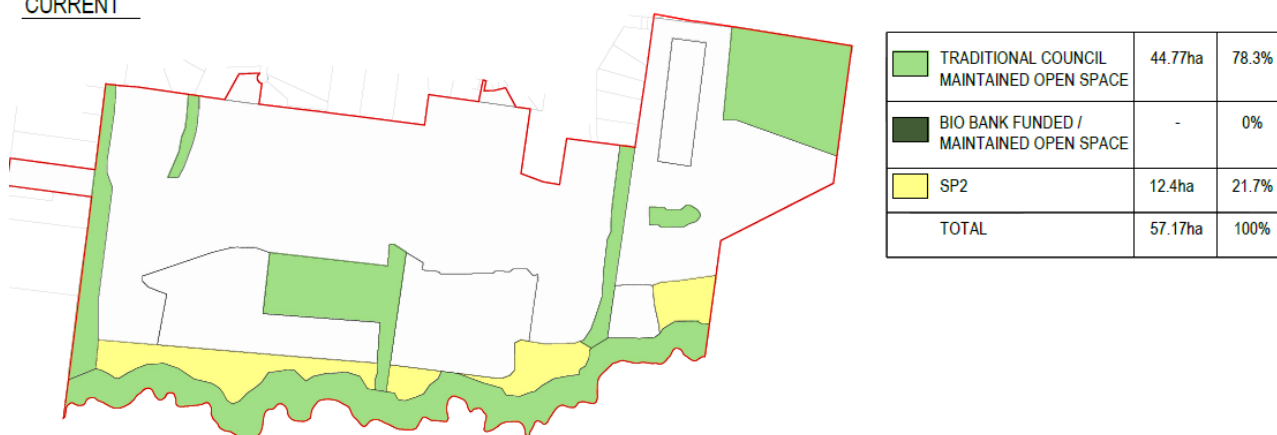
During the Biodiversity Certification Meeting held on 21 August 2018, Council requested additional open space to be biobanked. As a result, three additional biobank sites (the western, eastern and southern biobank sites) have been added in addition to the two original northern biobank sites as proposed in the March 2018 Masterplan.

Subject to a formal agreement, the biobank site owner will be responsible for the ongoing management of the biobank sites. Ongoing management activities will be clearly outlined in a Management Action Plan and will include activities intended to improve the biodiversity value of the site. Such work may include planting, weeding, pest control, and restriction of human access. These biodiversity works generate '*biodiversity credits*' and it is intended that any credits generated from the biobank sites will be retired to offset the development impacts.

Additionally, the agreement provides parties the opportunity to include suitable inclusions, such as the use of specific types of biobank fencing. A Biobanking Trust Fund will provide the biobank site owner with annual payments in perpetuity for the ongoing management of the site, providing the biobank site owner undertakes the required actions outlined in the Management Action Plan and is approved by OEH.

It is noted for reference (as mentioned above) that Celestino have already successfully executed a Bio certification Agreement and delivered biobanks within the Hills Shire Council.

#### CURRENT



#### PROPOSED

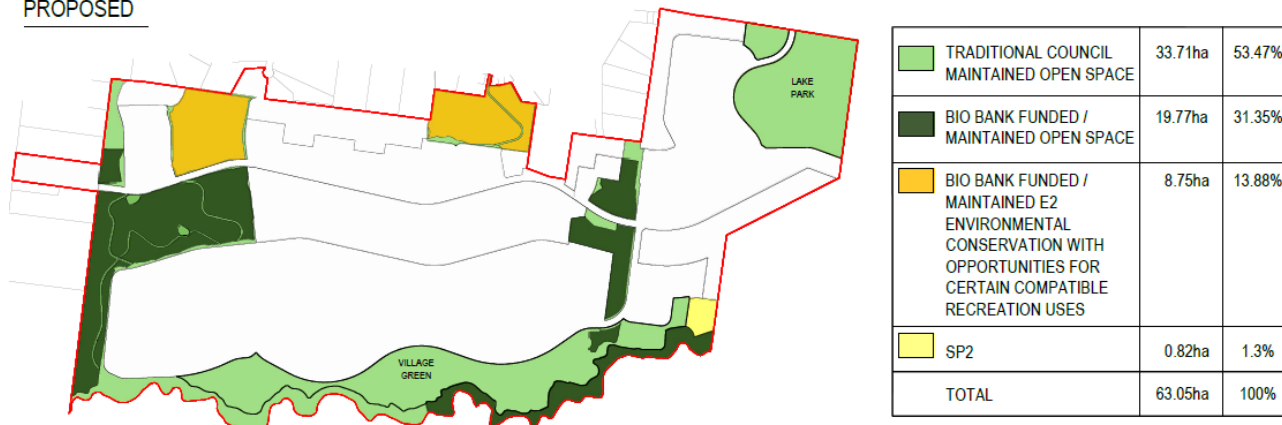


Figure 24 - Adopted (existing) and proposed biobanking areas on the site

Source: OneCollective

## 4.6 Walkability – Pedestrian and Cyclist Network and Connectivity

Walkability, in its most simple terms, is a measure of how friendly an area is for walking. Creating a walkable environment involves the consideration and balancing of a wide range of factors such as lot size and density, the location and connectivity of key destinations, assessing key movement flows, directions and desire lines and overlaying these factors on site specific features such as topography and potential barriers.

How walkable a place is, is also dependent on factors that make walking attractive and comfortable such as the quality of pathways, landscaping, amenity and integration with natural areas, activity and active frontages, shade, safety and the provision of features such as seating and wayfinding signage.

Creating a walkable environment has been a key driving principle in the Proposed Masterplan for Jacaranda Ponds. The following section describes how the principles of walkability have been incorporated into the Proposed Concept Masterplan, both in terms of walkability within Jacaranda Ponds and the site's connection to the wider Glossodia community.

### 4.6.1 Connectivity to Existing Glossodia Community

Whilst Jacaranda Ponds is situated in relatively close proximity to the existing Glossodia Village, much of the



northern boundary of the site is constrained by existing residential uses and the potential to provide pedestrian and cyclist connections is limited to five fixed locations where existing streets or land parcels provide an opportunity to provide pathway linkages.

These five fixed locations are identified in **Figure 25** and include:

1. Spinks Road East - connection from Lake Park;
2. James Street - potential connection along existing street;
3. Spinks Road Central - connection through E2 land to Spinks Road;
4. Derby Place - potential connection along existing street; and
5. Spinks Road West - connection from central collector road to Spinks Road.

Whilst the potential for pedestrian and cyclist connections to Glossodia Village is constrained to these five fixed locations, it is important to note that the Proposed Concept Masterplan provides connections in all of these locations with a view to maximise potential connectivity between Jacaranda Ponds and the existing Glossodia community, and to ensure that connections are provided wherever practical.

**Figure 25** also shows how the proposed connections to Glossodia Village have been integrated with the main 2.5m off-road pedestrian and cyclist pathways and open space areas within Jacaranda Ponds to deliver a movement network that will be highly connected, safe and attractive to use and will link all key community and recreational destinations.



**Figure 25 - Proposed key pedestrian and cyclist connectivity within Jacaranda Ponds and to existing Glossodia community**

Source: OneCollective

#### 4.6.2 Open Space Network

As has been identified above in the Guide, a key general standard for open space design and walkability is that residents should ideally be within five minutes / 400m walking distance to a local park.

The Guide supports this standard, but it is important to note that the document also points out that when assessing walkability, accessibility and connectivity there is a broader range of issues to consider in addition to 'than just being within a certain distance of a park', such as safety, physical and visual access and the advantages of having green linkages to connect open space and provide improved recreational opportunities.

It is also important to note that the Guide also suggests that the standard definition of what constitutes 'useable' open space needs to be broadened to an approach based on planning for recreation *to ensure a range of recreation opportunities are provided within any community, using a broad mix of public open space areas including formal park settings and other open spaces such as corridors, buffers, linkages, and multiple-use open spaces* (refer to Page 28 of the Guide).

By adopting a hybrid, multiple use approach to open space design, the Proposed Concept Masterplan reflects these principles in terms of open space design and will also improve walkability by delivering the following key outcomes:

- The adopted Concept Masterplan concentrates the distribution of open space and infrastructure into two main areas - the Village Green and the Lake Park. The balance of the open space is provided in the form of two north-south running green linkages through the site and along Currency Creek. In contrast, the Proposed Concept Masterplan provides a wider range of usable active and passive areas and a wider distribution of open space whilst still providing the major nodes and infrastructure as agreed in the VPA. When this broader mix of public open space is taken into account, the Proposed Concept Masterplan will provide a higher level of walkability and access to open space. On this basis, a total of 95% of all residents within Jacaranda Ponds will be within 400m or 5 minutes' walk of open space, with the remaining lots being approximately 500m walk from open space (refer to **Figure 11**).
- The adopted Concept Masterplan locates the Village Green more centrally within the proposed future residential area. Whilst 'on paper' this is a more centralised location and maximises the number of households / residents within 400m walking distance, this is only when assessed in terms of the direct walking distance from the park and is largely dependent upon street connections.
- In the Proposed Concept Masterplan, the Village Green is located directly adjoining Currency Creek which actually improves overall accessibility and connectivity by creating a more integrated open space, cyclist and pedestrian network (refer to **Figure 26**).
- **Figure 11** demonstrates that in the Proposed Concept Masterplan, over 165 households will be directly within 400m walking distance from the Major Activity Node of the Village Green. But when the secondary activity nodes and open space of Currency Creek are included, and the number of households within 400m walking distance increases to 345. Furthermore, if you give consideration to the broader open space network, the number of households that are within five minutes' walk of an open space link that directly connects to the Village Green and Currency Creek environs, the figure increases to 535 (92%).
- By providing more conservation and passive recreation areas, and better integrating the Village Green with Currency Creek, the Proposed Concept Masterplan will deliver a stronger overall open space network that will provide better pedestrian and cyclist linkages, improve safety, amenity and recreational opportunities, and increase overall accessibility, connectivity and walkability. This supports the aim of the Guide in creating *healthier, more liveable and sustainable urban environments by improving community access to recreation and exercise, supporting walking and cycling connections* (refer to Page 4 of the Guide).



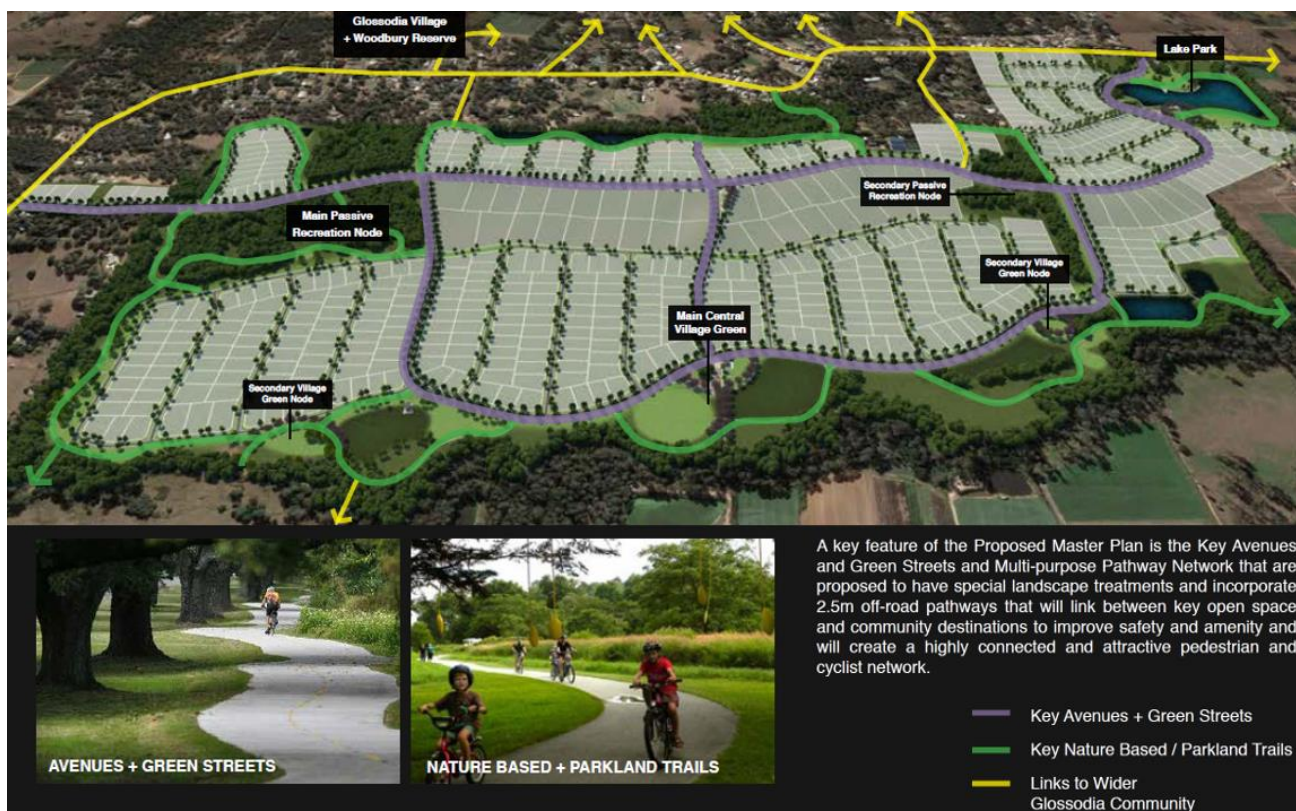


Figure 26 - Proposed open space, green streets and multi-purpose pathway network

Source: Onecollective

#### 4.6.3 Green Street and Multi-Purpose Pathway Network

A key feature of the Proposed Concept Masterplan is the green streets and a multi-purpose pathway network that has been introduced to integrate the overall cyclist and pedestrian network and improve walkability both within Jacaranda Ponds and the wider Glossodia community.

The green streets are key avenues and streets that are proposed to have special landscape treatments which incorporate 2.5m off-road multi-purpose pathways that link between key open space and community destinations and provide improved safety and amenity for pedestrians and cyclists. The multi-purpose pathway network will extend throughout the open space network and when integrated with the green street linkages, will provide a highly connected and attractive pedestrian and cyclist network.

#### 4.6.4 Lower Order Streets

At the lower order street level, the block pattern has been designed around a modified grid layout which has considered the site's topography, vegetation and features. It also aims to maximise visual and physical connectivity to key open space and community destinations. It is also worth noting that whilst the lot sizes within Jacaranda Ponds are very large in comparison to a typical suburban or urban community (a factor which has significant influence on the cost and efficiency of balancing street lengths, lot frontages and block ratios), strong emphasis has still been placed on delivering a pedestrian movement network that is highly connected and attractive to use.

In the east and north of the site, the street pattern maximises connectivity to key open space and community destinations and is highly integrated with the main pedestrian and cyclist linkages throughout Jacaranda Ponds. The street network in these areas is finely grained with street lengths generally ranging between 130m and 250m.

In the central zone of the site, the street pattern is heavily influenced by the steep slope that runs east-west through the centre of the site and the edge created by Currency Creek to the south. When assessing key movement flows and desire lines in this zone, the highest levels of movement will be in a north south direction from the residential areas towards the Village Green and key parkland spaces along Currency Creek. The main east west movements

will be along the linear open space along Currency Creek, and a key secondary east-west link has been provided to the north of the central zone, following the base of the steeply sloping area and providing a continuous link between the natural conservation areas to the east and west of the zone.

In generating the street and pedestrian movement pattern for the Proposed Concept Masterplan in the centre of the site, the main north south movement flows and desire lines were used as a key design driver, prioritising north south streets which would maximise visual and physical connectivity to the open space system. It was also determined that east west connections would be significantly less than those for north south connections, and largely limited to situations where residents were walking from one home to another rather than accessing the main open space and community destinations.

The Proposed Concept Masterplan is intended to provide a framework for key principles and set out the broad structural elements for the project. Elements such as the detailed street layout, particularly for lower order residential streets, are not fixed by the master plan, but rather are managed as part of the ongoing detailed stage by stage design.

Whilst it is acknowledged that the LPP recommended that the Proposed Concept Masterplan be reviewed to provide a finer grain street network, it is argued that the Proposed Concept Masterplan actually provides a relatively fine grain network for a low-density residential community and that it actually delivers a finer grain and more connected network than the Current Concept Masterplan.

The potential of introducing shorter block lengths and a finer grain network will be further investigated as part of ongoing detailed stage by stage design, however this needs to be assessed in terms of:

- Maintaining the principle of prioritising north south connections to maximise visual and physical connections to key open space and community destinations and the broader pedestrian and cyclist network; and
- Balancing street lengths, lot frontages and block ratios and acknowledging that the minimum lot size of 1,000 sqm of Jacaranda Ponds is significantly larger than that for a typical suburban or urban community.

## 4.7 Public Transport Network

Accessibility to future public transport has been a key consideration in the master planning of the site. Due to limited public transport, pedestrian and cyclist services in the local area, low densities and limited access to daily convenience shopping and services, Glossodia is a community where there is significant reliance on the private motor car for transport both locally and within the Hawkesbury area as a whole. It is acknowledged that these factors all have a significant influence on liveability, quality of life and sense of community.

Whilst the provision, timing and location of public transport services and infrastructure are the responsibility of government, the Proposed Concept Masterplan provides an improved and more integrated street and movement network that establishes a strong framework for providing an effective public transport network into the future.

Strong focus has also been placed upon creating a high-amenity and highly connected open space, pedestrian and cyclist network that provides safer and more usable connections to bus stops while encouraging walking and cycling as a recreational activity, and help reduce the dependence upon private vehicle usage within the local area.

An assessment of existing public transport services shows that the site is in close proximity to bus route 668 which provides services from Windsor to Richmond via Wilberforce, Glossodia and North Richmond. This bus route services both Richmond and Windsor Railway Stations, providing access to the T1 Western Line and subsequent rail access across greater Sydney.

When assessing current public transport in and around Glossodia and the Hawkesbury area, and identifying opportunities for integration with Jacaranda Ponds, it is important to note that existing services are currently limited, largely consisting of irregular and unreliable bus services, and that there are issues in regard to public transport infrastructure, services and the capacity of key road connections to destinations within the local area.

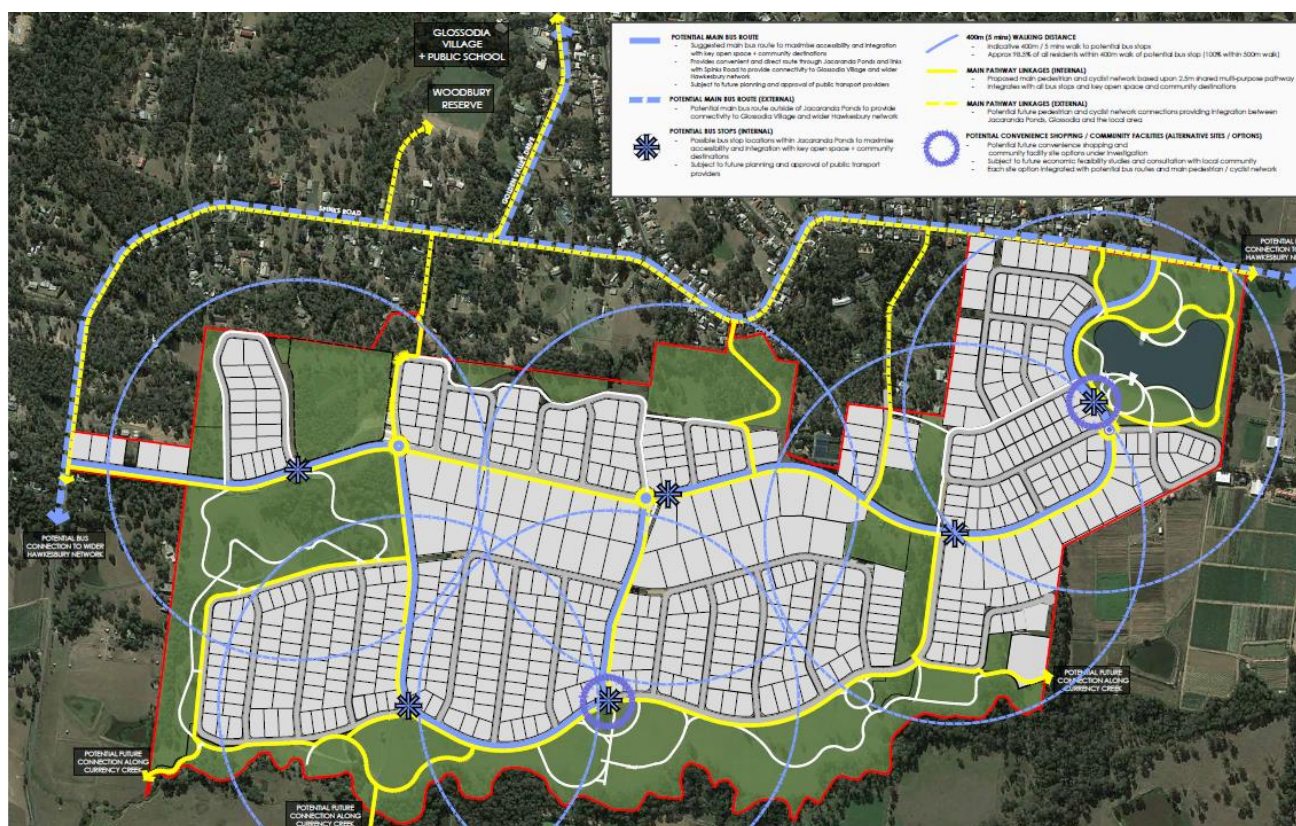
Whilst it is outside of the role and scope of the developer to directly improve the broader public transport services and infrastructure, work has been undertaken with Council to create a movement network within Jacaranda Ponds that is flexible and can accommodate alternative bus routes that would be highly accessible to residents and have



the potential to integrate well with any future bus route connections through to Glossodia Village and the wider Hawkesbury system. Strong focus has also been placed upon creating a high level of integration between the proposed bus routes, key open space and community destinations and the main pedestrian and cyclist linkages within Jacaranda Ponds and the broader Glossodia community.

**Figure 27** shows the proposed bus route network, its accessibility to local residents and how it is proposed to link to the broader bus, pedestrian and cyclist network. Whilst the final bus routes and stops will be subject to future planning and approval by public transport providers, based upon the potential routes and bus stops proposed, 98.5% of residents within Jacaranda Ponds will be within 400m (or 5 mins walk) of a bus stop (with 100% being within 500m walk).

The diagram also clearly demonstrates the thought and principles that have gone into creating a bus network that is highly integrated with key open space and community destinations, and the main pedestrian and cyclist linkages within Jacaranda Ponds and the broader Glossodia community.



**Figure 27 - Proposed bus route network and integration with existing Glossodia community**

Source: OneCollective

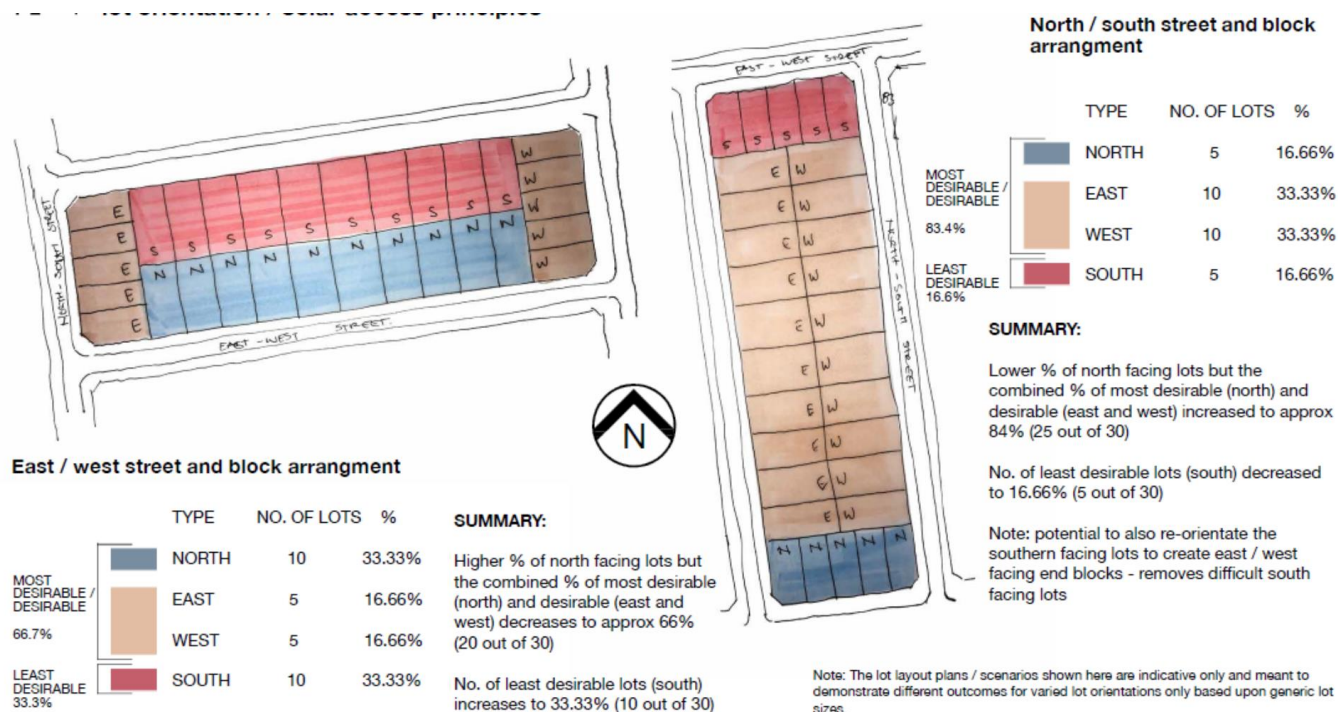
## 4.8 Design for Environment / Sustainability

### 4.8.1 Lot Orientation / Solar Principles

As part of the design evolution process for the Proposed Concept Masterplan, passive solar design was focused on as one of the primary sustainability principles. Extensive investigations were undertaken to determine the preferred orientation for streets and lots to provide the best solar access outcomes whilst also balancing site-responsive design and community design principles. A 'Lot Orientation and Solar Access Principles' document (refer to **Appendix H**) has been produced that provides a detailed explanation of the key principles for solar access and then describes how these principles apply in the context of Jacaranda Ponds.

with north facing back yards, the 'Lot Orientation and Solar Access Principles' document clearly shows that this view is based upon generalised principles for solar design and does not take into account factors such as lot width and the height of adjoining dwellings, and will not deliver the best outcomes for Jacaranda Ponds.

A key point to consider for Jacaranda Ponds is that the minimum average lot size is 1,000 sqm, with an approximate minimum width of 25m and depth of 40m. The 'Lot Orientation and Solar Access Principles' document clearly demonstrates that for Jacaranda Ponds, given the lot sizes, the optimum solar access outcomes will actually be achieved by predominantly running streets in a north south arrangement as per the Proposed Concept Masterplan (refer to **Figure 28**).



**Figure 28 - Indicative comparison of lot orientation yield for east-west versus north-south streets and blocks**

Source: Onecollective

It also shows how, given the wide lot widths, the eastern and western orientated lots have many positives in terms of maximising solar access to the long axis of the home and the potential benefits this has for solar access into internal living spaces. Running the streets north south also minimises the number of south-facing blocks, which are the least desirable and adaptable in terms of solar access.

It is important to note that the Lot Orientation and Solar Access Principles document was explained in detail at a meeting with Council on the 17th April 2019. It was agreed that the Proposed Masterplan will actually deliver the best outcomes in terms of solar access principles and that the Panel's recommendations were not correct in the context of Jacaranda Ponds.

#### 4.8.2 Multiple-Use Approach to Open

As detailed above, one of the key guiding principles behind the design of the open space network as part of the Proposed Concept Masterplan was to adopt a multiple-use approach and philosophy that would help to deliver improved sustainability and environmental outcomes. By adopting a multiple use approach, the Proposed Concept Masterplan will support the conservation of the existing vegetation on the site and deliver improved environmental outcomes by:

- Retaining and protecting a greater proportion of natural site features that increases habitat and movement corridors for fauna;
- Better integrating parkland with natural site features which increases the retention of existing vegetation whilst also providing improved outcomes in terms of shade, heat retention and amenity of open space areas;
- Creating a more connected open space and recreational network that encourages residents to walk, cycle and be more physically active, and help connect the community with the natural environment; and



- Providing more efficient, multiple-use open spaces provides an opportunity for more continuous and efficient maintenance and thereby improving resource and land use usage and energy efficiency.

#### **4.8.3 Water Sensitive Urban Design**

The Proposed Concept Masterplan will utilise recreational land for water sensitive urban design / stormwater management functions. Specifically, recreational land (being the land zoned RE1) to be used for stormwater management purposes includes:

- 49,575 sqm for permanent stormwater use; and
- 1,618 sqm will have a stormwater management function, however this area will usually be dry and usable as public recreation space.

The Development will benefit from the construction and operation of an on-site sewage treatment facility which will produce high quality recycled water for the site. The operation of this facility will reduce Jacaranda Pond's reliance on potable water for uses such as irrigation of open spaces and gardens.

### **4.9 Community Character, Identity and Resilience**

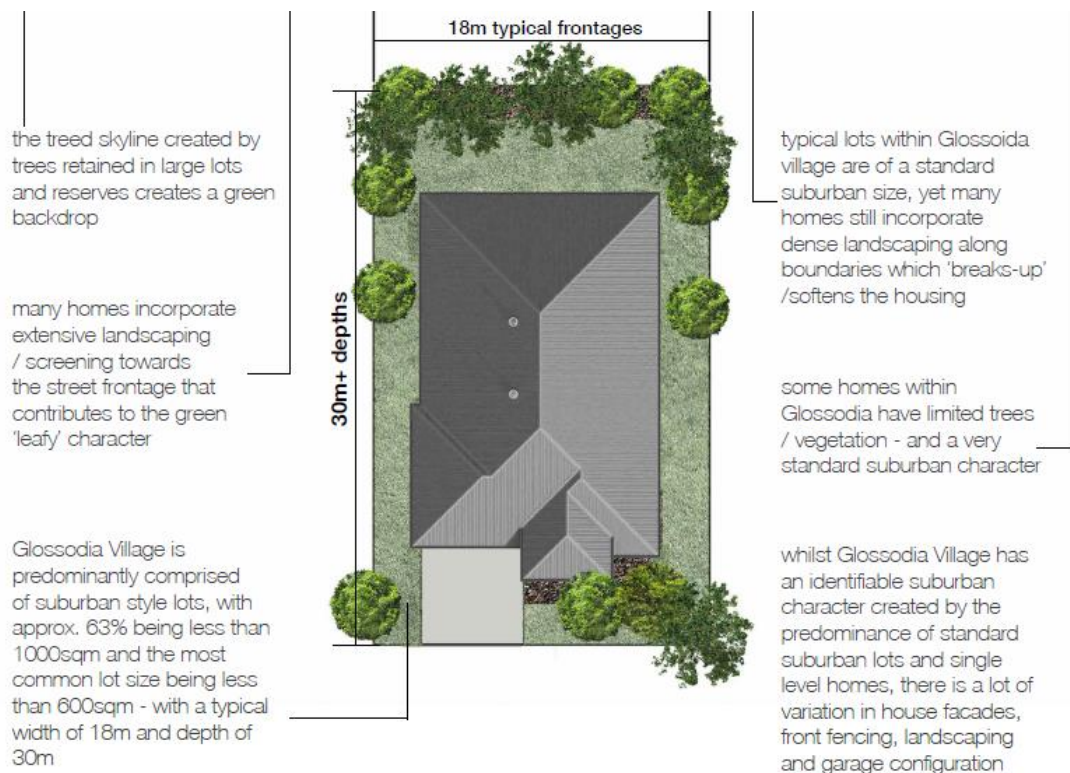
#### **4.9.1 Lot Types and Density**

Much of the residential pattern of Glossodia Village has been created through the incremental subdivision of the larger rural properties that traditionally formed the area, and this has resulted in quite varied mix of different lot sizes, ranging from large rural style lots of 1-2ha, through to smaller rural residential lots of 2,000 sqm to 4,000 sqm and suburban style lots of 550 sqm to 1,000 sqm.

Whilst Glossodia is often thought of and described in terms of being a 'rural style' village, it is interesting to note that the majority of lots in and around the village of Glossodia are actually the smaller, more suburban style lots and range between 550 sqm through to 1,000 sqm.

A total of 63% of lots within the existing Glossodia Village are less than 1,000 sqm, with approximately two thirds of those lots being less than 600 sqm (refer to **Appendix I**). The most common average lot dimensions for these suburban style lots that make up the predominant lot type is a width of 18m and lot depth of approximately 30m.

A comparison between a typical lot size from the existing Glossodia Village and that of Jacaranda Ponds is shown in **Figure 29** and **Figure 30** (refer to **Appendix J**). The figures demonstrate that the lots proposed for Jacaranda Ponds are actually much bigger than what is being perceived by Council and the LPP, and are in fact larger than the predominant size of lots within Glossodia Village.



**Figure 29 - Existing Glossodia Village typical lot type**

Source: Onecollective



**Figure 30 - Proposed Jacaranda Ponds typical lot type**

Source: Onecollective

Whilst there is a transition to larger lot sizes as Glossodia spreads out towards the Jacaranda Ponds site, it is important to recognise that the character of Glossodia Village is predominantly formed by the smaller suburban lots which are the most visually prominent lots fronting the main roads and streets.

In creating the vision for Jacaranda Ponds, a key principle has always been to respect and integrate with the existing Glossodia Village. When assessing the Proposed Concept Masterplan for Jacaranda Ponds, it is important to recognise that the minimum lot type and size being proposed is Low Density Residential with an average lot size of 1,250 sqm plus, which is significantly larger than the more suburban style lots of 550 sqm to 1,000 sqm that are predominantly found within the existing Glossodia Village.

Whilst much of Glossodia Village is characterised by smaller suburban style blocks, there are areas of larger lots between Glossodia Village and Jacaranda Ponds that have not been subdivided and remain between 2,000 sqm and 4,000sqm, and 1-2ha. Acknowledging the different character and close proximity of these lots to Jacaranda Ponds has always been seen as an important principle of the vision for Jacaranda Ponds to create a transition to these larger rural style homes by providing larger lots along the northern boundary of the site - and this has been maintained under the Proposed Concept Masterplan. Whilst the proportion of R5 and R2 land has varied, a minimum lot size of 2,000 sqm plus has been maintained along all boundaries that interface with existing residential uses.

When these points are considered in regard to the larger lot sizes within Jacaranda Ponds as compared to Glossodia Village, and the transition of larger lots that will be provided to existing rural style homes, it is clear that thought and effort has been put into ensuring that the Proposed Concept Masterplan respects the predominant lot types, density and character of the existing Glossodia Village.

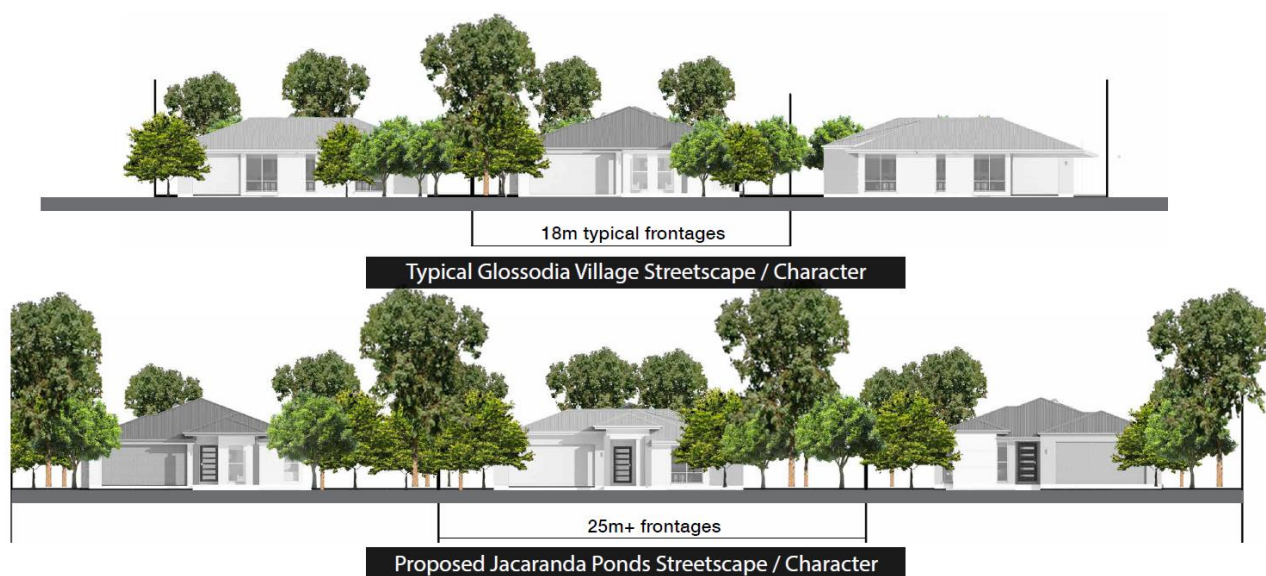
#### **4.9.2 Housing Typology and Landscape Character**

Whilst Glossodia is often thought of in terms of having a rural character due to the farming and rural uses that traditionally characterised the area, much of Glossodia Village actually has a suburban character and is predominantly made up of suburban style homes on traditional suburban style lots. Much of the housing stock and elements such as streetscapes, setbacks, fencing and driveways are also very suburban in character.

The village area maintains a green 'leafy' feel through established vegetation, and some of the larger and vacant lots within the village with the treed skyline and rural lots that surround the village, help to 'break-up' the residential areas and add rural elements to the predominantly suburban character. This combination of predominantly suburban style homes and streetscapes with some rural elements combine to create a character that could be described as a 'rural-style suburban village'.

The Proposed Concept Masterplan for Jacaranda Ponds provides lot sizes and frontages that are larger than those that are predominantly found within Glossodia Village and this will provide a strong basis for ensuring that housing, streetscapes and the overall character of Jacaranda Ponds ties in with that of the existing Glossodia Village. The lot frontages widths proposed (refer to **Figure 31**) will allow space for trees and support the establishment of a green leafy character over time.





**Figure 31 - Existing and proposed lot typology comparison**

Source: Onecollective

Strong emphasis has also been placed upon maintaining extensive areas of existing vegetation and positioning open space to help create a green setting which breaks up residential areas and allows a green 'leafy' character to be established that reflects what is found in the existing Glossodia Village.

The vision for the future character of Jacaranda Ponds is focused on creating a 'rural village'. To help establish this 'rural village' character, and to ensure that Jacaranda Ponds integrates with and reflects the character of the existing Glossodia Village, it is proposed that a Housing Typology and Character Study will be produced as part of the ongoing planning and DCP process that will:

- Identify and describe the key lot typologies and elements that combine to create the character of the existing Glossodia Village;
- Create a vision for the future character of Jacaranda Ponds and set clear standards and principles for elements such as lot types and mix, housing siting and design, landscaping and streetscapes; and
- Demonstrate how the proposed vision for the character of Jacaranda Ponds will integrate with and reflect the character of the existing Glossodia Village.

**Figure 32** demonstrates some of the ideas and inspiration examples that are currently being investigated as part of the 'rural village' vision for Jacaranda Ponds and that will be further evolved as part of the Housing Typology and Character Study.



**Figure 32 - Housing typology and landscape character vision**

Source: Onecollective

### 4.9.3 Community Spaces and Social Interaction

Integrating a new, large-scaled development within an existing community is a challenging process and is one that can only occur through an ongoing process of change and integration over time. As part of the initial visioning and design process, strong emphasis has been placed on applying best-practice community design principles into identifying ways to help integrate Jacaranda Ponds with the existing community both in terms of character and physical linkages, and to ensure that the project helps to deliver improved liveability and provides a sense of identity and resilience for the wider community into the future.

One of the key guiding elements in this process has been the design of the community and open spaces within Jacaranda Ponds. Rather than following the traditional model based on spatial standards, the open space design process has focused on delivering open spaces that better reflect changing recreational trends and community preferences and that will become destinations for not only Jacaranda Ponds residents but for the wider Glossodia community as a whole.

By adopting a multiple use approach to open space design, and by increasing the integration of parkland and community spaces with key existing site features, the Proposed Concept Masterplan will help to deliver more attractive community spaces and encourage social interaction by:

- Integrating the two main parkland areas (the Lake Park and the Village Green) with the key features of the Main Lake and Currency Creek, to help create more attractive and unique destinations for recreation that will have a higher level of amenity and are more likely to attract residents from the wider Glossodia community;
- Creating open spaces that offer better safety, amenity and recreational opportunities and improve overall accessibility and connectivity;
- Creating a more connected open space network that offers an improved setting for recreation and exercise, encourages walking and cycling and promotes a healthy, outdoor lifestyle - all of which help with creating social interaction and a sense of community; and

- Providing multi-use spaces that offer the opportunity for a more diverse range active and passive uses to occur in the one location - such as having picnic or barbecue followed by a play at the playground and walk along the creek.

As identified in the Guide, *a connection with nature and green environments is a fundamental goal for all open space planning*. The Proposed Concept Masterplan provides an improved landscape setting and increases the connection with nature to create more attractive community spaces and promote social interaction.

#### 4.9.4 Neighbourhood Store and Village Area

Access to daily convenience shopping and services is an important element in any place as it has a significant influence on the liveability, quality of life and sense of community. Rather than just being another typical residential subdivision, the visioning, planning and design process for Jacaranda Ponds has always placed strong emphasis on maximising liveability, creating a strong identity and sense of place and providing spaces that encourage social interaction and a healthy outdoor lifestyle.

One of the elements that has been investigated as part of this process is the potential to introduce a neighbourhood centre incorporating some form of convenience shopping, general store, cafe or suite of community facilities that would create a community meeting place and focus and help to meet the daily convenience shopping needs of locals. This can be provided under the residential zoning proposed.

It is important to note that in initial consultation undertaken by the developer with the local Glossodia community, concerns were raised by existing residents over potentially introducing new convenience shopping or community facilities within Jacaranda Ponds due to the current underutilisation and lack of financial viability of the existing shops and facilities, and the potential negative impact that this may have on the existing traders in Glossodia Village.

Whilst it is acknowledged that the liveability and sense of community for Jacaranda Ponds would significantly benefit from the introduction of some form of neighbourhood centre or general store that is within closer walking distance of residents, this needs to be balanced with the concerns of existing residents within Glossodia and the potential financial viability of the current, and any potential future, facilities.

Jacaranda Ponds will ultimately introduce 580 new homes to the area, and this will help support the viability of the existing convenience shopping within Glossodia Village, however it is critical that any potential additional future shopping, services and community uses within Jacaranda Ponds be subject to economic feasibility studies and consultation with local community.

Potential locations that may be suitable for future convenience shopping and community facilities have been identified within Jacaranda Ponds and have been integrated with the proposed bus network (refer to **Figure 33**). Strong focus has also been placed upon selecting potential locations that have high amenity and are highly connected open space, pedestrian and cyclist networks to encourage walking and cycling as a recreational activity and help to reduce the dependence upon private vehicle usage within the local area.

These potential options will be investigated as part of future planning with the view to potentially introducing convenience shopping, services and community uses to improve the overall liveability and access to daily convenience needs of residents within Jacaranda Ponds and Glossodia but, as mentioned above, will be subject to future economic feasibility studies and consultation with local community.





Figure 33 - Potential locations for future convenience shopping and community facilities

Source: Onecollective

## 5.0 Planning Proposal

This Planning Proposal has been prepared in accordance with Section 3.33 of the EP&A Act, and ‘A Guide to Preparing Planning Proposals’ prepared by the NSW Department of Planning and Environment, which requires the following matters to be addressed:

- Objectives and intended outcomes of the amendment to the LEP;
- Explanation of provisions;
- Justification;
- Relationship to strategic planning frameworks;
- Environmental, social and economic impact;
- State and Commonwealth interests; and
- Community consultation.

The following Section outlines the objectives and intended outcomes and provides an explanation of provisions in order to achieve those outcomes, including relevant mapping. The justification and evaluation of impacts is set out in **Section 6** of this report.

### 5.1 Objectives and Intended Outcomes

The objective of this Planning Proposal is to facilitate the ordered and efficient delivery of the proposed Masterplan for Jacaranda Ponds. The existing Masterplan and distribution of land uses does not protect the site’s key areas of significant vegetation and endangered habitat.

Specifically, the Planning Proposal seeks to:

- Recognise the significant vegetation and endangered habitat on the site while retaining the residential yield originally envisaged for the site;
- Manage and conserve the significant vegetation and endangered habitat through the appropriate distribution of residential development across the site;
- Rationalise the land required for infrastructure and servicing; and
- Integrate conservation and recreational land to provide continuous green links across the site.

### 5.2 Explanation of Provisions

The objectives and intended outcomes detailed above will be achieved through amendments to the HLEP 2012. The proposed LEP controls are detailed below. Broadly, the proposed arrangement of zoning, height and lot size facilitates future development on the less sensitive areas of the site. These areas:

- Are not located directly adjacent to the Currency Creek riparian corridor;
- Do not coincide with the largest pockets of vegetation communities of ecological significance in the best condition; and
- Respect the existing dam (in the north-east corner of the site) which contains fringing vegetation and good water quality.

#### 5.2.1 Zoning

This Planning Proposal seeks to introduce the E2 Environmental Conservation zone and redistribute the RE1 Public Recreation zone to parts of the site identified as containing significant vegetation and endangered habitat. The zone seeks to protect the Cumberland Plain Woodland which is listed as critically endangered under the BC Act and EPBC Act, and Alluvial Woodlands which is listed as endangered under the BC Act. Both provide critical habitat for several threatened species which warrants their protection.

The zoning amendments proposed also include:

- Revise and redistribute the existing R2 Low Density Residential and R5 Large Lot Residential zoned land to better align with the significant vegetation and topography across the site;
- Increase and redistribute the existing RE1 Public Recreation zoned land to better align with the significant vegetation; and
- Rezone land zoned SP2 Infrastructure (Sewerage System) along Currency Creek to RE1 Public Recreation and R2 Low Density Residential. A small portion of land zoned SP2 Infrastructure is proposed to be retained in the south-east corner of the site. This amendment reflects technological advancements and improvements in Flow Systems' technology, which has reduced the amount of land needed for recycled water irrigation.

Areas of land to be zoned R2 largely reflect the central, less sensitive portions of the site. These areas contain the least vegetation in terms of quantity and significance. Land proposed to be zoned R5 is collocated on land identified as containing vegetation communities of more moderate ecological significance.

Due to the larger lots provided by the R5 zone and the increased focus this zone places on the preservation of, and minimisation of impacts on, environmentally sensitive land, a more sympathetic development response will be provided. The R5 zone (compared to the E4 Environmental Living zone) is considered the most appropriate zone for portions of the site containing vegetation communities of more moderate ecological significance (refer to **Section 6.1**).

At the finer-grain level, future DCP provisions will ensure development is appropriately positioned in respect to the particular environmental sensitivities of each lot.

The E2 Environmental Conservation zone is the only new zone that is proposed to be introduced on the site. The remaining zone changes seek to increase and redistribute the existing zones to align with the objectives of the Planning Proposal. The Planning Proposal does not seek to alter the permissible or prohibited uses within each zone. Notably, 'recreation areas' are permissible in the E2 Environmental Conservation zone. The proposed zoning is shown in **Figure 34**.

Large parts of the additional RE1 land will also be retained as Biobanking sites. The management of this land will still be undertaken by Council however the management of the land will be funded in perpetuity by the developer through a management trust fund.

Parts of land zoned RE1, given its location across the site, will support stormwater management. A total of 49,575 sqm is required for permanent stormwater use, 1,618 sqm will have a stormwater management function, however this area will usually be dry and usable as public recreation space.

### Minimum Subdivision Lot Size

The minimum subdivision lot sizes (1,000m<sup>2</sup>, 2,000m<sup>2</sup> and 4,000m<sup>2</sup>) are proposed to be redistributed across the site to align to the revised land use zoning. The revised distribution of minimum lot sizes across the site is detailed in **Figure 35**.

The Minimum Subdivision Lot Size Map appropriately identifies the minimum lot sizes, in accordance with the residential zoning proposed (refer to **Section 4.0**). The Minimum Subdivision Lot Size Map appropriately regulates the density of development across the site to a level required under the LEP. Future DCP provisions will regulate the density of development on each lot and how the density responds to specific site conditions and the retention of vegetation.

### Height of Buildings

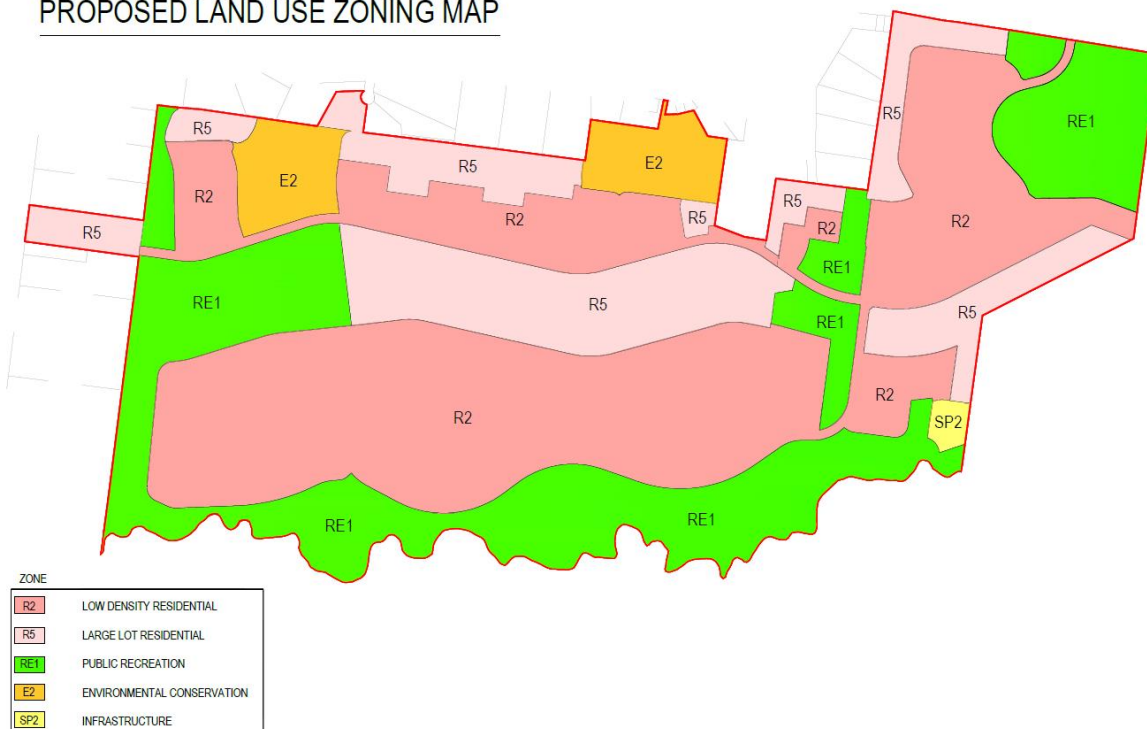
This Planning Proposal seeks to revise and redistribute the 10m height limit across the site to align with the proposed redistribution of the residential land uses. The numeric height limit (10m) is not proposed to be changed. The revised height distribution across the site is identified in **Figure 36**.

## 5.3 Mapping



As demonstrated above, this Planning Proposal seeks to amend the Land Use Zone Map, Height of Buildings Map and Minimum Subdivision Lot Size Map. The amended maps are provided at **Figure 34** to **Figure 36** and are submitted at **Appendix K**.

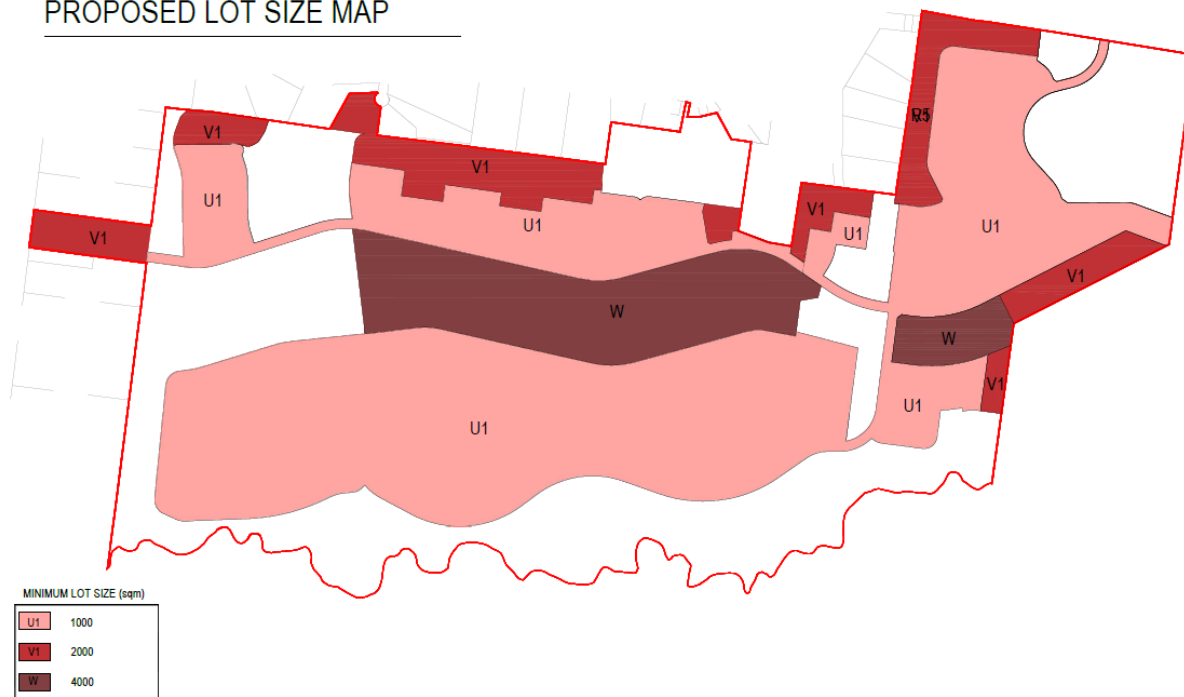
### PROPOSED LAND USE ZONING MAP



**Figure 34 - Proposed land use zoning map**

Source: Cardno

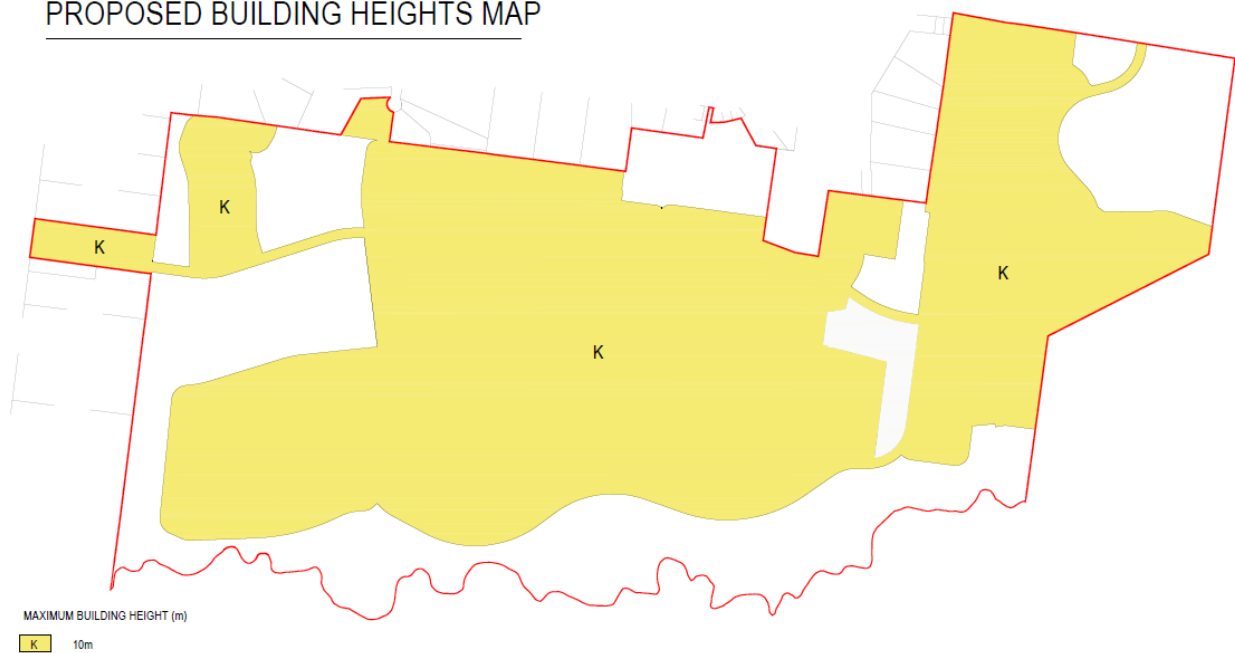
### PROPOSED LOT SIZE MAP



**Figure 35 - Proposed minimum lot size map**

Source: Cardno

## PROPOSED BUILDING HEIGHTS MAP



**Figure 36 - Proposed height of buildings map**

Source: Cardno

## 6.0 Strategic Justification

### 6.1 The Need for a Planning Proposal

#### Q1 – Is the Planning Proposal a result of any strategic study or report?

Yes.

Jacaranda Ponds provides residential development in accordance with the *Hawkesbury Residential Development Strategy 2011*. The site is located within the Glossodia Investigation Area and is consistent with the criteria which supports increased residential density (refer to **Section 6.2**).

Further, the site has been the subject of ongoing flora and fauna investigations since the existing planning controls and Masterplan were adopted for the site. Significant vegetation and endangered habitat has been subsequently identified. This Planning Proposal is a direct response to these investigations and seeks to ensure the significant vegetation and endangered habitat identified is protected.

The type and extent of significant vegetation and endangered habitat identified is explained in the Fauna and Flora Assessment prepared by Eco Logical Australia (refer to **Appendix L** and **Section 7.1**). The study identifies conservation recommendations to be implemented to ensure development envisioned under the Planning Proposal does not adversely impact the significant vegetation and endangered habitat identified.

#### Q2 – Is the Planning Proposal the best means of achieving the intended outcome?

Yes.

In preparing this Planning Proposal, three options were considered to facilitate the intended outcomes as set out in **Section 5.1**. These are listed and discussed below:

- Option 1: Do nothing.
- Option 2: Use of alternate zones.
- Option 3: Introduce the E2 Environmental Conservation zone and redistribute existing zones, height and minimum lot sizes (this Planning Proposal).

#### Option 1 – Do Nothing

Under a 'do nothing' scenario, Celestino would continue to pursue the future subdivision and development of Jacaranda Ponds in accordance with the existing planning controls and Masterplan adopted for the site. Doing nothing does not recognise and conserve the significant vegetation and threatened species habitat identified on the site.

The site has been subject to ongoing flora and fauna assessments since the adoption of the current Masterplan. The assessments have identified that the current Masterplan does not respond to the site's existing ecological values and does not provide a built form and layout which is reflective of these values. The significance of the vegetation and threatened species identified necessitates revised planning and conservation outcomes in line with the expectations of Council and the community in valuing and protecting the Hawkesbury's natural environment.

This option does not reflect the proposed Masterplan. This option is not reflective of Celestino's commitment in providing a positive ecological outcome for the site.

In addition, the existing quantity of SP2 Infrastructure zoned land does not reflect the amount of land that is now actually required to support the on-site sewerage system, made available through technological advances and the creation of more compact and efficient systems.

The large portion of land zoned SP2 Infrastructure is therefore considered underutilised and the rezoning of this portion of the site from SP2 Infrastructure to RE1 Public Recreation and R2 Low Density Residential is suitable. The RE1 Public Recreation land use is compatible with the Currency Creek riparian corridor and will facilitate the provision of a large, continuous green link for passive and active recreational use.



## Option 2 – Use of Alternate Zones

An RE1 Public Recreation zone may have been used as an alternative to the E2 Environmental Conservation zone (where parts of the biobank areas are proposed). Although the RE1 Public Recreation zone seeks to protect and enhance the environment, its primary purpose is for recreational use.

Unlike this recreation zone, the E2 Environmental Conservation zone permits a very limited suite of uses. This is more closely aligned with Celestino's intentions and the environmental outcomes being sought. Similarly, the biobank areas will be protected by virtue of a conservation agreement over this land, which will ensure that the land is secured and managed in perpetuity.

Notwithstanding the above, the E2 Environmental Conservation zone still provides opportunities for public recreation uses, although on a more limited scale than the RE1 Public Recreation zone.

It is also noted that portions of land zoned R5 Large Lot Residential have value for conservation purposes because they contain Grey Box – Forest Red Gum grassy woodland. Irrespective of this, the R5 zone (compared to an E4 Environmental Living zone) is considered suitable for this land because:

- The first objective of the R5 zone is to ensure that residential housing preserves and minimises impacts on environmentally sensitive land. Unlike other residential zones, a merit assessment for development on land zoned R5 must ensure that the abovementioned objective is satisfied, and that a predominately rural setting is maintained.
- The removal of significant amounts of vegetation on land in the R5 zone (being Grey Box – Forest Red Gum grassy woodland in this case) would be considered contrary to the first objective of the R5 zone. Whilst it is not possible to provide precise details around tree removal and retention at the Planning Proposal stage, Celestino is committed to retaining as much significant vegetation as possible. Further, the removal of significant vegetation would be inconsistent with the objectives of the R5 zone, and would be unlikely to be supported under a merit assessment.
- Compared to an E4 Environmental Living zone, as recommended by the LPP, the R5 zone is considered appropriate because:
  - It is still a zone which primarily seeks to minimise impacts on environmentally sensitive land;
  - The R5 zone supports the retention of vegetation;
  - It is not considered any less effective (compared to the E4 zone) in supporting vegetation links across the site; and
  - It provides fewer permissible land uses (compared to the E4 zone) supporting its objective of managing built form to minimise impacts to environmentally sensitive lands.
- The R5 zone was chosen specifically for portions of the site containing Grey Box – Forest Red Gum grassy woodland because it supports a lot typology large enough to enable the co-existence of residential housing, while still enabling vegetation retention.

The proposed rezoning is being driven by a desire to retain more of the site's significant vegetation. The fact that all of the significant vegetation on the site has not been zoned E2 or RE1 does not imply that it is intended to be removed. Deliberate zoning choices, as detailed above, will be supported by future DCP provisions which will support the conservation of vegetation during the redevelopment of the site.

## Option 3 – This Planning Proposal

This Planning Proposal protects areas of significant vegetation and threatened species throughout the site. The introduction of the E2 Environmental Conservation zone to the northern portion of the site provides dedicated areas for wildlife and vegetation conservation which will ensure the critically endangered Cumberland Plain and Alluvial Woodlands are protected from development. Habitat for the endangered Cumberland Plain Land Snail and threatened microbat species is therefore also protected.

The introduction of an environmental protection zone provides the highest level of protection and management of areas of ecological significance, with the primary intention to conserve and or manage environmental values.

Celestino shares this objective and proposes to use the E2 Environmental Conservation zone on land to be designated primarily for environmental protection. The use of the E2 Environmental Conservation zone is therefore considered appropriate. No other zone is considered more effective in achieving the intended outcome.

Further, a detailed Flora and Fauna Assessment has been prepared by Eco Logical Australia (**Appendix L**). The assessment provides an expert opinion in demonstrating the site's significant ecological value and, encouraging residential development in areas of the site identified to be of low or moderate ecological value. Highly valuable land containing the critically endangered and endangered Cumberland Plain Woodland and Alluvial Woodland was not considered the most suitable for development.

These recommendations align with the E2 Environmental Conservation zone objectives under the Standard Instrument in encouraging the protection and management of areas of high ecological value and preventing development which would otherwise adversely impact this value. Consistency with the zone objectives again reiterates the appropriateness of the E2 Environmental Conservation zone.

The RE1 Public Recreation zoned land across the north eastern, southern and western portion of the site will assist in protecting Cumberland Plain and Alluvial Woodlands, listed as endangered vegetation under the BC Act, and the riparian corridor along Currency Creek. This zone was considered appropriate for the riparian corridor as it protects the natural environment yet will provide Jacaranda Ponds with land for open space and recreation. Such a land use is compatible with the ecological community it adjoins and is a significant contributor in providing a liveable and connected residential community.

The existing zoning arrangement for the site provides 44.77 hectares of land zoned RE1 Public Recreation, all of which is required to be maintained by Council. Whilst the area of RE1 zoned land has increased under this Planning Proposal, large parts of the additional RE1 land will be retained as Biobanking sites, thereby reducing the financial burden of maintenance to Council as these sites will be managed in-perpetuity through funds held in Trust. Funds for managing this land (being 28.52ha) will be provided to Council in perpetuity under a management trust fund as paid by the developer.

Overall, redistribution of the existing land uses, height and minimum lot sizes across the site complement the introduction of the E2 Environmental Conservation zone for the site whilst maintaining a development yield consistent with that previously considered appropriate to the site under former rezoning. Best-practice design principles of the Proposed Concept Masterplan will deliver a community that is more liveable and resilient and is better connected to the existing Glossodia community whilst maintaining a development yet, traffic impacts and demand for services remains unchanged to that under the Existing Concept Masterplan.

## **6.2 Relationship with the Strategic Planning Framework**

### **6.2.1 Q3 – Is the Planning Proposal consistent with the objectives and actions of the applicable regional, sub-regional or district plan or strategy (including any exhibited draft plans or strategies)?**

#### **Strategic Merit Test**

*A Guide to Preparing Planning Proposals* sets out that in order to answer this question, a Planning Proposal needs to justify that it meets the Strategic Merit Test. The consistency of this Planning Proposal with the mandated assessment criteria is set out below.

#### **a) Does the proposal have Strategic Merit?**

The consistency of the Planning Proposal with State and Regional strategic frameworks is set out below.

#### **A Plan for Growing Sydney**

In December 2014, the Department of Planning and Environment released *A Plan for Growing Sydney* (the Plan). The Plan presents a strategy for accommodating Sydney's future population growth for the next 20 years.

The Plan sets the following goals for Sydney. Each goal is guided by particular policy directions as detailed below. Those of greatest relevance to the site and its broader strategic context within Greater Western Sydney is provided below:

- Goal 1: A competitive economy with world-class services and transport.
  - *Direction 1.4: Transform the productivity of Western Sydney through growth and investment.*
  - *Direction 1.11: Deliver infrastructure.*
- Goal 2: A city of housing choice with homes that meet our needs and lifestyles.
  - *Direction 2.1: Accelerate housing supply across Sydney.*
  - *Direction 2.3: Improve housing choice to suit different needs and lifestyles.*
  - *Direction 2.4: Deliver timely and well planned greenfield precincts and housing.*
- Goal 3: A great place to live with communities that are strong, healthy and well connected.
  - *Direction 3.2: Create a network of interlinked, multipurpose open and green spaces across Sydney.*
  - *Direction 3.3: Create healthy built environments.*
- Goal 4: A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources.
  - *Direction 4.1: Protect our natural environment and biodiversity.*
  - *Direction 4.3: Manage the impacts of development on the environment.*

This Planning Proposal provides a balanced approach to residential development and environmental management. The proposal identifies portions of the site of high ecological value and seeks the introduction and redistribution of new and existing land uses to prevent development that could adversely impact these values.

Protecting the natural environment does not impact the Planning Proposal's ability to facilitate the residential yield considered suitable for the site, ensuring it can continue to contribute to the future provision and diversity of housing in the Hawkesbury LGA.

In addition, this Planning Proposal:

- Protects high conservation value land, ensuring existing biodiversity is not adversely impacted;
- Provides housing choice and supply for Western Sydney, supporting the significant population growth expected over the next 20 years;
- Facilitates the provision of significant recreational open space and conservation lands, providing Jacaranda Ponds with unique appeal and character; and
- Facilitates the provision of recreational open space and conservation lands which supports interlinked, multipurpose open space across the site, encouraging active use by residents and creating a healthier community.

### **Greater Sydney Region Plan – A Metropolis of Three Cities**

In March 2018 the Greater Sydney Commission (GSC) released the Greater Sydney Region Plan (The Plan) which is a revision to A Plan for Growing Sydney. The Plan sets a 40-year vision (up to 2056) and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of economic, social and environmental matters.

The GSC's vision seeks to meet the needs of a growing and changing population by transforming Greater Sydney into a metropolis of three 30-minute cities including the Western Parkland City, the Central River City and the Eastern Harbour City.

The Plan has four key layers that work together to drive the three cities vision including: infrastructure and collaboration, liveability, productivity and sustainability, all of which are supported by 10 directions, including:



1. A City supported by infrastructure.
2. A collaborative City.
3. A City for people.
4. Housing the City.
5. A City of great places.
6. A well-connected City.
7. Jobs and skills for the City.
8. A City in its landscape.
9. An efficient City.
10. A resilient City.

The site is located within the Hawkesbury LGA, within the Western Parkland City. It will provide land for residential development within a unique landscape setting while recognising the site's ecological values. As such, this Planning Proposal is consistent with the following directions and objectives:

- Direction 3 – A City for People.
  - *Objective 7 - Communities are healthy, resilient and socially connected.*
- Direction 4: Housing the City – giving people housing choices.
  - *Objectives 10: greater housing supply.*
  - *Objective 11: housing is more diverse and affordable.*
- Direction 8: A City in its landscape - valuing green spaces and landscape.
  - *Objective 27: biodiversity is protected, urban bushland and remnant vegetation is enhanced.*
  - *Objective 29: Environmental, social and economic values in rural areas are protected and enhanced.*
  - *Objective 31: public open space is accessible, protected and enhanced.*

It is acknowledged that the site is located on land identified as part of the Metropolitan Rural Area (MRA) under the Plan. Land identified as MRA prioritises the retention of rural areas (and its environmental, social and economic value) over urban development.

The Plan identifies that Sydney has sufficient land to accommodate its housing need, without requiring the intensification of MRA land for urban purposes.

Although the planning proposal is associated with urban development in the MRA, it is considered suitable and appropriate because:

- The planning proposal does not seek to rezone existing rural land for urban (residential) purposes. It merely redistributes land already zoned for residential purposes;
- The planning proposal revises the existing zoning across the site and introduces a new environmental zone to better recognise and protect the significant ecological value of the site to deliver a targeted environmental outcome for the MRA, consistent with Strategy 29.1 of the Plan;
- The residential yield (being 580 lots) already assessed and considered suitable for the site, is proposed to be unchanged under the planning proposal, therefore ensuring additional urban development within the MRA is unchanged, consistent with Strategy 29.2 of the Plan; and
- The original planning proposal for the site (which rezoned the site from rural to residential) was gazetted on 19 December 2014, prior to the identification of MRA land under the Greater Sydney Region Plan, which came into effect in March 2018.

## Western City District Plan

In March 2018, the GSC released the Western City District Plan, part of a suite of District Plans for the Greater Sydney Metropolitan Region. The District Plans will fill the gap between the Metropolitan Plan and Council Local Environmental Plans giving effect to the metropolitan goals and planning priorities from the Greater Sydney Region Plan by setting out priorities and actions for each of the five Sydney Districts. The Hawkesbury falls within the Western City District, within the Parkland City.

The Western City District Plan identifies a 5-year (2016-2021) housing target of 1,150 dwellings for Hawkesbury and a minimum 20-year housing target of 184,500 dwellings for the whole of the Western City District, to support the predicted district population of approximately 464,000 by 2036.

This Planning Proposal will facilitate the residential subdivision and development of 580 lots, providing a significant contribution to the housing targets for the Hawkesbury and assisting housing targets for the district overall.

The Western City District Plan demonstrates that the directions and objectives of the Greater Sydney Region Plan above, can be achieved by pursuing a number of planning priorities. The consistency of this Planning Proposal with the applicable planning priorities is addressed in **Table 9**.

**Table 9 - Demonstration on how the key planning priorities have been addressed**

Direction	Planning Priority	Planning Proposal
<i>Direction 3:</i> A City for People	<i>Planning Priority W4:</i> Fostering healthy, creative, culturally rich and socially connected communities	This Planning Proposal achieves planning priority W4 in the following ways: <ul style="list-style-type: none"> <li>The Jacaranda community will be provided with significant and high-quality open space which will encourage physical activity and social connections.</li> <li>Integrated vegetation corridors and recreational open spaces throughout the site will encourage walking and improve connectivity and access to open spaces, improving the overall health of residents.</li> <li>The provision of community facilities will encourage creative and cultural interaction between community members.</li> </ul>
<i>Direction 4:</i> Housing the City – giving people housing choices	<i>Planning Priority W5:</i> Providing housing supply, choice and affordability, with access to jobs and services.	The proposal will provide 580 residential and large lots, contributing to housing supply within the Hawkesbury LGA in close proximity to Richmond and Windsor, both of which are local employment centres. The proposed Masterplan proposes a diversity of lot sizes and arrangements strategically integrated with wildlife corridors and communal open spaces, providing a more unique choice of housing within the area.
<i>Direction 8:</i> A City in its Landscape - valuing green spaces and landscape.	<i>Planning Priority W14:</i> Protecting and enhancing bushland and biodiversity.	The proposal is a direct response to the significant vegetation and endangered habitat identified on the site. Introducing the E2 Environmental Conservation zone and increasing the quantity of land zoned RE1 Public Recreation zone is a clear mechanism proposed to ensure the existing habitat and biodiversity is recognised, managed and protected from development.
	<i>Planning Priority W17</i> Better managing rural lands	The proposal is on land identified as part of the Metropolitan Rural Area within Greater Sydney. The proposal has regard to this rural land and its management in the following ways: <ul style="list-style-type: none"> <li>It does not propose to increase the quantum of urban development on the site additional to that already approved and considered suitable for the site; and</li> <li>Protects the rural portions of the site which contribute to local natural habitat and biodiversity.</li> </ul>
	<i>Planning Priority W18:</i> Delivering high quality open space	The proposed Concept Masterplan provides high quality open spaces across the site. Specifically: <ul style="list-style-type: none"> <li>It provides a combination of primary and secondary open spaces, appropriately distributed across the site. A total of 95% of future residents will be within a 5-minute walk (400m) of a public open space or public open space link (refer to <b>Section 4.3.2</b>);</li> <li>The open spaces provide a variety of recreation nodes and can accommodate a variety of flexible, recreational and sporting needs;</li> </ul>

Direction	Planning Priority	Planning Proposal
		<ul style="list-style-type: none"> <li>The proposed Village Green and Currency Creek will have 100% esplanade frontage along the residential interface, providing significant passive surveillance, safety and connectivity;</li> <li>The open spaces proposed integrate with the site's significant vegetation, providing an innovative way to maximise open space across the site for passive, recreational and or social uses while providing a positive ecological outcome.</li> <li>The open spaces proposed integrate with proposed conservations lands across the site. This will assist in achieving physical links to support social networks, improve the aesthetic nature of Jacaranda Ponds and reduce the perceived density of residential development across the site. Integrating existing vegetation lands also reduces the need for new planting.</li> </ul>

### b) Does the Proposal have Site-Specific Merit?

The Planning Proposal is considered to have site-specific merit for the following reasons:

- The site has been found to contain significant vegetation and endangered habitat, which is of significant environmental value, that requires conservation. The introduction of the E2 Environmental Conservation zone and redistribution of the RE1 Public Recreation zone directly coincides with areas of the site containing significant vegetation and endangered habitat, and will directly support their conservation. As shown in the proposed Concept Masterplan, 28.52ha of the proposed E2 and RE1 land area is identified as biobanking sites.
- A total of 62.23ha of open space is proposed, representing an increase of 15.53ha compared to the existing Concept Masterplan. The quantity and distribution of open space better utilises land least suitable for residential development (being land along Currency Creek and land containing significant vegetation and endangered habitat), demonstrating an appropriate level of regard to the site's natural environmental values and hazards.
- The distribution of residential land uses have been designed to directly respond to Currency Creek and the flooding and stormwater constraints of the site (refer to **Section 7.4**).
- This Planning Proposal has considered the services and infrastructure required to meet the demand arising from Jacaranda Ponds, and demonstrates that the site is capable of being serviced, and provide the necessary infrastructure to meet this demand (refer to **Section 7.6**).
- The proposed land uses and Proposed Concept Masterplan has been developed to respond to and integrate with the existing residential land uses and neighbourhood character of the existing Glossodia Village (refer to **Section 4.9**).
- The former Planning Proposal for the site introduced low density and large lot residential, recreational and special purpose land uses which was determined to be suitable for the site. This Planning Proposal seek the introduction of the E2 Environmental Conservation zone and increases the quantum of RE1 zoned land. The strategic merit and suitability of these uses for the site remains unchanged.
- The yield approved under the former Planning Proposal will continue to be achieved without adversely impacting existing significant vegetation and endangered habitat, ensuring the residential density envisioned for the site continues to be achieved.
- Development envisioned under this Planning Proposal will not facilitate development inconsistent with that originally envisioned for the site and will not give rise to any new adverse environmental impacts.
- This Planning Proposal has considered existing adjoining development, and continues to provide larger lots at the interfaces with existing rural residential areas, thereby retaining the existing character of the area.
- This Planning Proposal has considered the services and infrastructure required to support the future needs of residents of Jacaranda Ponds, and demonstrates that the site is capable of being serviced (refer to **Section 7.6**).

### Summary

This Planning Proposal achieves the assessment criteria as it demonstrates both strategic merit and site-specific merit. Therefore, it is considered that this Planning Proposal meets the Strategic Merit Test.

**Q4 – Is the Planning Proposal Consistent with a Council’s Local Strategy or Other Local Strategic Plan?**

Yes.

***Hawkesbury Residential Land Strategy 2011***

The *Hawkesbury Residential Land Strategy 2011* (the Strategy) provides a strategic framework to determine the future residential needs of the Hawkesbury LGA and identifies localities which may be suitable for further residential development.

The Strategy aims to achieve between 5,000 and 6,000 additional residential dwellings within existing urban areas within the LGA by 2031. The Strategy also seeks to:

- Guide the preservation of the high quality and natural environment within the LGA;
- Accommodate a changing population with demands for housing, access and servicing;
- Recognise pressures which seek to expand development into natural and rural areas, and identify development within and around existing centres; and
- Identify physical constraints which may influence native vegetation, flood and or bushfire risk.

The site is located within the Glossodia future investigation area which, following an opportunities and constraints analysis, was considered suitable for future residential development. This Planning Proposal is consistent with the Strategy’s recommendation in providing large residential lots to recognise and protect the environmental and servicing constraints of the area.

Glossodia is identified as a Small Village under the Strategy. In accordance with the Sustainability Matrix within the Strategy, a Small Village should aim to achieve particular built form, character and service criteria, which is to be considered when determining the appropriateness of increases residential densities.

This Planning Proposal is consistent with this criterion in that it:

- Will facilitate the provision of 580 residential lots, contributing to the dwelling target of between 800 and 2,700 for Small Villages;
- Will facilitate low density housing, a housing typology envisioned for Small Villages;
- Provides significant open space, providing high quality gathering spaces, and a safe public domain for passive and recreational use;
- Is responsive to the site’s natural and environmental constraints and does not seek to facilitate development in areas identified as being environmentally sensitive; and
- Makes provision for the delivery of services infrastructure and augmentation of services in relation to potable water, sewage, energy and communications.

***Hawkesbury Community Strategic Plan 2017-2036***

The Hawkesbury Strategic Plan (the Plan) provides a high-level strategic document which provides key aspirations for the LGA, setting the future direction for Council activity and decision making. Key actions are distributed into five focus areas including:

- Our leadership;
- Our environment;
- Our community;
- Our assets; and
- Our future.

The key actions and subset directions and strategies most pertinent to this Planning Proposal are identified in **Table 10** below.



**Table 10 - Consistency with the Hawkesbury Community Strategic Plan 2017-2036**

Aspiration	Direction	Strategy	Response
Our Community	2.1 Enable a shared responsibility for community safety and disaster management.	2.1.1 Meet the needs of our community through effective flood, fire and other natural disaster management plans that promote the protection of life, property and infrastructure.	This Planning Proposal recognises the potential for natural disasters for the future residents of Jacaranda Ponds. A Stormwater and Flooding Strategy and Flood Evacuation Evaluation is provided at <b>Appendix N</b> and <b>Appendix O</b> respectively, providing appropriate design guidance and evacuation management to ensure flood related damage is reduced. A Bushfire Constraints Assessment is provided at <b>Appendix P</b> and demonstrates bushfire related management procedures in the form of asset protection zones for the site.
	2.2 Participation in recreational and lifestyle activities is increased	2.2.2 Encourage active participation in a range of sporting and recreational pursuits.	This Planning Proposal seeks to facilitate a residential community with integrated recreational open space and green through site links, encouraging passive and active recreational opportunities.
Our Environment	3.1 Value, protect and enhance our unique natural environment	<p>3.1.1 Encourage effective management and protection of our rivers, waterways, riparian land, surface and ground waters, and natural eco-systems through local action and regional partnerships.</p> <p>3.1.3 Minimise our community's impacts on habitat and biodiversity and protect areas of conservation value.</p> <p>3.1.4 Use a range of compliance measures to protect the natural environment.</p>	This Planning Proposal is a deliberate response to value and protect the significant vegetation and critical habitat identified on the site. The amendments proposed, particularly the introduction of the E2 Environmental Conservation zone, is a direct measure which will ensure that development does not adversely impact the site's biodiversity values and habitat.
Our Assets	4.2 Facilitate the delivery of infrastructure through relevant agencies and Council's own works	4.2.2 New development and infrastructure provision is aligned and meets community needs.	Development envisioned under this Planning Proposal has been planned concurrently with the infrastructure to support the future residential community of Jacaranda Ponds. An Infrastructure Servicing Report ( <b>Appendix Q</b> ) demonstrates that the site is capable of being serviced by critical infrastructure to support the proposed residential community.

**Q5 – Is the Planning Proposal consistent with applicable State Environmental Planning Policies?**

Yes.

An assessment of the Planning Proposal against the relevant State Environmental Planning Policies (SEPPs) is set out in **Table 11** below.

**Table 11 - Consistency with State Environmental Planning Policies**

SEPP	Consistency		N/A	Comment
	Yes	No		
SEPP No. 1 Development Standards			✓	SEPP 1 does not apply to the Hawkesbury LGA, since they have adopted the Standard Instrument LEP.
SEPP (Coastal Management) 2018			✓	Not relevant to the proposed LEP amendment. The site is not identified within a coastal wetland, coastal environment area or coastal use area. No Coastal Vulnerability Area Map exists at this time.
SEPP No 44 - Koala Habitat Protection	✓			A Koala habitat assessment was undertaken by Eco Logical in accordance with SEPP 44 (refer to <b>Appendix L</b> ). No Koalas were visually and aurally identified during field surveys. The site is not therefore considered to be core Koala habitat (in accordance with the definition under SEPP 44 and consistent with Clause 8, Part 2). The site is considered an area of potential Koala habitat as it contains one feed tree species listed under SEPP 44.

SEPP	Consistency		N/A	Comment
SEPP No 19—Bushland in Urban Areas	✓			The proposed LEP amendment protects rare and endangered flora and fauna.
SEPP No 52—Farm Dams and Other Works in Land and Water Management Plan Areas			✓	Not relevant to proposed LEP amendment. The site is not located within an irrigation area or district.
SEPP (Building Sustainability Index: BASIX) 2004	✓			All future residential dwellings types which result from the LEP amendment of Jacaranda Ponds will be subject to BASIX.
SEPP (Rural Lands) 2008			✓	Not relevant to proposed LEP amendment. The SEPP does not apply to the Hawkesbury local government area (refer to Clause 4, Part 1).
SEPP (Sydney Drinking Water Catchment) 2011	✓			The proposed LEP amendment will have a neutral effect on water quality.
SEPP (Vegetation in Non-Rural Areas) 2017	✓			The proposed LEP amendment protects the values of trees and vegetation within the site.
SEPP (Infrastructure) 2007			✓	The Planning Proposal will not contain provisions that will contradict or would hinder application of this SEPP.
SEPP (State and Regional Development) 2011			✓	Not relevant to proposed LEP amendment.
SEPP (Affordable Rental Housing)			✓	Not relevant to proposed LEP amendment.
SEPP (Exempt and Complying Development Codes)			✓	Not relevant to proposed LEP amendment.
SEPP No. 55 Remediation of Land	✓			SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing risk and harm to human health or any other aspects of the environment. In particular, it requires the consent authority to consider if remediation work is required for rezoning or building works, and ensure that the subsequent remediation works are satisfactory with respect to standards and notification requirements. A Preliminary Site Investigation Assessment has been prepared by JBS&G and considers the site suitable for the proposed development intended for the site under this Planning Proposal.
SEPP No. 64 Advertising and Signage			✓	No signage is proposed under this Planning Proposal.
SEPP No. 19 – Bushland In Urban Areas	✓			The site is located on land subject to SEPP No. 19. This Planning Proposal remains consistent with the aims and objectives of the SEPP.
SEPP No. 65 Design Quality of Residential Apartment Development			✓	SEPP 65 does not apply to the proposed scheme envisioned under the Masterplan as it does not propose residential flat buildings of at least 3 or more storeys or containing 4 or more dwellings.
SPREP No 20 – Hawkesbury Nepean River	✓			The site is within the area covered by SREP 20. The aim of SREP No. 20 is to protect the environmental quality of the Hawkesbury Nepean River system by ensuring that the impacts of future land uses are considered in a regional context. The applicable considerations under SREP 20 relate to maintaining environmental quality, controlling water quantity and quality, as well as enhancing the scenic quality of the riverine corridor. The Stormwater Management Strategy prepared by Cardno and provided at <b>Appendix N</b> details the proposed strategies to ensure the quality and quantity of stormwater runoff from the site's discharge points to the tributaries of the Hawkesbury is suitable.

### 6.2.2 Q6 – Is the Planning Proposal consistent with applicable Ministerial Directions (s. 9.1 Directions)?

Yes.

An assessment of the Planning Proposal against applicable Section 9.1 (previously Section 117) Directions is set out in **Table 12** below.

**Table 12 - Consistency with Section 9.1 Directions**

Direction	Consistency		N/A	Comment
	Yes	No		
1. Employment and Resources				
1.1 Business and Industrial Zones			✓	Not applicable. This Planning Proposal does not affect land within an existing or proposed business or industrial land use zone.
1.2 Rural Zones			✓	Not applicable. This Planning Proposal does not affect land within an existing or proposed rural land use zone.
1.3 Mining, Petroleum Production and Extractive Industries			✓	Not applicable. This Planning Proposal does not involve the development of resources or extractive activities.
1.4 Oyster Aquaculture			✓	Not applicable. This Planning Proposal will not impact a Priority Oyster Aquaculture Area and or lease.
1.5 Rural Lands			✓	Not applicable. The Hawkesbury LGA does not apply to this direction.
2 Environment and Heritage				
2.1 Environmental Protection Zones	✓			Applicable. This Planning Proposal includes a zoning provision which seeks to protect and conserve the environmentally sensitive areas of the site.
2.2 Coastal Protection			✓	Not applicable. The site is not located within a coastal zone.
2.3 Heritage Conservation			✓	Not applicable. Refer to <b>Section 7.8</b> .
2.4 Recreational Vehicle Area			✓	Not applicable. This Planning Proposal does will not enable land to be developed for the purpose of a recreation vehicle area.
	Yes	No		
3. Housing, Infrastructure and Urban Development				
3.1 Residential Zones	✓			Applicable. This Planning Proposal affects land within an existing residential zone. The proposal is consistent with the direction objectives as it: <ul style="list-style-type: none"><li>Will provide low density and large lot residential development, improving the diversity and variety of housing within the Hawkesbury LGA;</li><li>Is capable of being serviced by infrastructure and services (refer to Infrastructure Servicing Report at <b>Appendix Q</b>); and</li><li>Does not seek to reclaim and or develop land identified to be of high ecological significance, ensuring residential development does not adversely impact the environment.</li></ul>
3.2 Caravan Parks and Manufactured Home Estates			✓	Not applicable. This Planning Proposal does not propose provisions to facilitate the development of caravan parks and or manufactured home estates.
3.3 Home Occupations	✓			Applicable.
3.4 Integrating Land Use and Transport	✓			Applicable. This Direction applies due to this Planning Proposal relating to a residential zone. The Direction states that a Planning Proposal must be consistent with the aims, objectives and principles of: <ul style="list-style-type: none"><li>Improving Transport Choice – Guidelines for planning and development (DUAP 2001), and</li><li>The Right Place for Business and Services – Planning Policy (DUAP 2001).</li></ul> The Planning Proposal is broadly consistent with the aims, objectives and principles of the above documents in that it will

Direction	Consistency		N/A	Comment
				provide residential accommodation which is appropriate to the level of public transport within the vicinity.
3.5 Development Near Licensed Aerodromes			✓	Not applicable. This Planning Proposal does not affect land in the vicinity of a licenced aerodrome.
3.6 Shooting Ranges			✓	Not applicable. This Planning Proposal does not affect land relating to or adjacent an existing shooting range.
<b>4. Hazard and Risk</b>				
4.1 Acid Sulphate Soil	✓			Applicable. HLEP 2012 contains acid sulphate soil provisions which this Planning Proposal does not seek to amend. Acid sulphate soils investigations and analysis will accordingly be undertaken as part of any future development of the land in accordance with the requirements of the HLEP 2012.
4.2 Mine Subsidence and Unstable Land			✓	Not applicable. The site is not identified as mine subsidence or unstable land.
4.3 Flood Prone Land	✓			Applicable. Parts of the site are located within the Currency Creek 100-year ARI flood extents, the flood planning level under the HLEP 2012. A local hydrology and hydraulic flooding model has been established for the Currency Creek Floodplain by Cardno (refer to <b>Appendix N</b> ) for the former Planning Proposal applicable to the site (refer to <b>Section 7.4.3</b> ).
4.4 Planning for Bushfire Protection	✓			Applicable. This Planning Proposal is consistent with this direction as it provides appropriate asset protection zones to ensure future residential development is not located within a hazardous area (refer to <b>Section 7.2</b> ).
	<b>Yes</b>	<b>No</b>		
<b>5. Regional Planning</b>			✓	<b>Not applicable.</b>
<b>6. Local Plan Making</b>				
6.1 Approval and Referral Requirements	✓			This Planning Proposal is consistent with this Direction in that it does not introduce any provisions that require any additional concurrence, consultation or referral.
6.2 Reserving Land for Public Purposes		✓		<p>The Planning Proposal is inconsistent with this direction as it proposes to alter the existing distribution of RE1 zoned land, which is land zoned for public purposes. The existing zoning provides a portion of RE1 zoned land within the central portion of the site (i.e. the Village Green). This Planning Proposal seeks to redistribute this land along the southern boundary of the site, along Currency Creek. The proposed change is considered justified for the following reasons:</p> <ul style="list-style-type: none"> <li>• The Planning Proposal substantially increases the quantum of RE1 zoned land (from 44.77ha to 52.64ha), increasing the provision of open space for future residents of Jacaranda Ponds;</li> <li>• The redistribution of RE1 zoned land along Currency Creek provides more accessible and interconnected open space across Jacaranda Ponds, which is less reliant on street connections. It provides an improved setting for combining a more diverse range of active and passive uses into one location, and will provide a better setting to create pathway trails for activities such as jogging, cycling and walking; and</li> <li>• The redistribution of RE1 zoned land along Currency Creek assists in the protection of the Currency Creek riparian corridor, supporting an improved ecological outcome for the site.</li> </ul>
6.3 Site Specific Provision			✓	Not applicable. This Planning Proposal does not propose a site-specific amendment to the LEP.



Direction	Consistency	N/A	Comment
<b>7. Metropolitan Planning</b>			
7.1 Implementation of A Plan for Growing Sydney	✓		The Planning Proposal is consistent with the Metropolitan Plan, as discussed in <b>Section 6.2.1</b> above.

### 6.3 Environmental, Social and Economic Impacts

#### **Q7 – Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?**

No.

This Planning Proposal is a direct response to conserve and manage the significant vegetation and critical habitat identified on the site, including the:

- Critically endangered Cumberland Woodland, which provides:
  - Potential habitat for Cumberland Plain Land Snail, listed as an endangered species under the BC Act;
  - Foraging and roosting habitat for threatened microbat species; and
- Endangered Cumberland Plain Woodland, which provides:
  - Potential habitat for Cumberland Plain Land Snail, listed as an endangered species under the BC Act; and
  - Foraging and roosting habitat for threatened microbat species.
- Endangered Alluvial Woodland (River-flat Eucalypt Forest), which provides:
  - Potential habitat for Cumberland Plain Land Snail, listed as an endangered species under the BC Act; and
  - Foraging and roosting habitat for threatened microbat species.

The conservation and management recommendations proposed to ensure future development envisioned under this Planning Proposal protects the abovementioned significant vegetation and critical habitat is provided in **Section 7.1**.

#### **Q8 – Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?**

The environmental effects of this Planning Proposal are addressed in **Section 7**.

#### **Q9 – Has the Planning Proposal adequately addressed any social and economic impacts?**

This Planning Proposal will generate positive social and economic impacts through:

- The provision of housing choice and diversity;
- The continued viability of existing goods and services within Glossodia through expenditure generated by future local residents of Jacaranda Ponds; and
- The generation of local employment during civil and construction works associated with Jacaranda Ponds.

### 6.4 State and Commonwealth Interests

#### **Q10 – Is there adequate public infrastructure for the Planning Proposal?**

Yes.

The site is well serviced by the existing road network with connections to arterial roads and the M7 Motorway. The Transport Impact Statement prepared by Arup (**Appendix R**) determines that the existing road network is capable of servicing the development envisioned under this Planning Proposal.

The site is also in the immediate vicinity of an existing bus route which provides direct connections to Windsor and Richmond via Wilberforce, Glossodia and North Richmond. This bus route services both Richmond and Windsor Railway Stations, providing access to the T1 Western Line and subsequent rail access across greater Sydney.

**Q11 – What are the views of State or Commonwealth public authorities consulted in accordance with the Gateway determination?**

Celestino and its consultant team have been engaging with the Office of Environment and Heritage (OEH) regarding ecological matters for some time. Celestino and Eco Logical Australia met with OEH in March 2016 to discuss the project. At that meeting OEH offered to attend a site visit if required and set out the specific requirements to meet a Biodiversity Certification project under the *Threatened Species Conservation Act 1995*.

More recently, in September 2017, Eco Logical Australia wrote to OEH to request that the site be made subject to the transitional arrangements for Biodiversity Certification. OEH accepted this request, as discussed at **Section 1.2.2**.

The views of State and Commonwealth public authorities will be known once consultation has occurred in accordance with the Gateway determination of the Planning Proposal.

## **6.5 Community Consultation**

Celestino has been engaging with the community on a regular basis to provide updates on the planning process and timing of the development. A meeting was held in April to inform the community about the details of the Planning Proposal.

In addition to this ongoing consultation, formal community consultation will be conducted in accordance with Schedule 1, Part 1, Division 1(4) of EP&A Act and A Guide to Preparing Planning Proposals.

## 7.0 Assessment of Environmental Planning Issues

### 7.1 Biodiversity

A Flora and Fauna Assessment has been prepared by Eco Logical Australia and is provided at **Appendix L**. The Assessment details the existing ecological values and constraints of the site and details a series of conservation and management recommendations to ensure the ecological values identified are protected from the future development envisioned under this Planning Proposal.

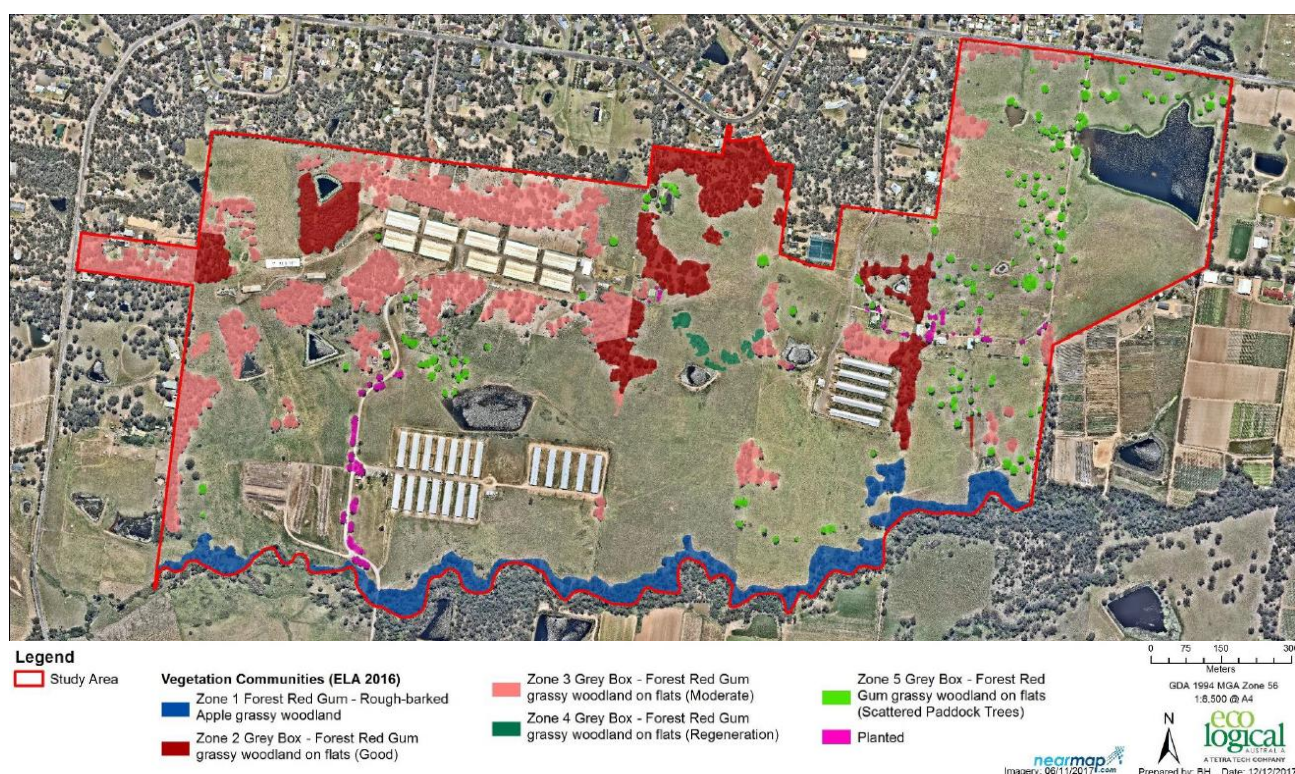
#### 7.1.1 Existing Site Conditions

As detailed in **Section 2.6** above, the site contains five threatened fauna species and two vegetation communities of ecological significance.

#### Flora

Also referred to as Shale Plain Woodlands, Cumberland Plain Woodland is located across the site in three condition states including good, moderate and scattered paddock trees (refer to **Figure 37**). The woodland occupies approximately 29ha of the site and is classified as a Critically Endangered Ecological Community under the EPBC Act and the BC Act.

Alluvial Woodland, which corresponds to River-flat Eucalypt Forest in the Sydney basin, is found in good condition within the site along Currency Creek. The woodland occupies approximately 7.29ha of land within the site and is categorised as an Endangered Ecological Community under the BC Act.



**Figure 37 - Validated vegetation zones and condition classes**

Source: Ecological

#### Fauna

Following detailed surveys, and the identification of the Cumberland Plain and Alluvial Woodlands, the following threatened fauna species were identified, or predicted to be present on the site (refer to **Table 13**).

Each was considered likely to use a variety of habitat features within the site including hollowed trees, debris, leaf litter and the riparian corridor along Currency Creek.

**Table 13 - Identified and predicted threatened fauna species**

Species	Listing
<i>Me idolum corneovirens</i> (Cumberland Plain Land Snail)	Listed as vulnerable under the BC Act.
<i>Miniopterids australis</i> (Little Bent-wing Bat)	Listed as vulnerable under the BC Act.
<i>Miniopterids schreibersii oceanensis</i> (Eastern Bent wing-bat)	Listed as vulnerable under the BC Act.
<i>Micropterus norfolkensis</i> (Eastern Freetail-bat)	Listed as vulnerable under the BC Act.
<i>Myotis Macropus</i> (Southern Myotis)	Listed as vulnerable under the BC Act.
<i>Pteropods poliocephalus</i> (Grey-headed Flying-fox) (predicted to be present)	Listed as vulnerable under the BC Act and the EPBC Act.

## Koala Habitat

A targeted koala survey did not identify any koalas on the site. The site does contain one feed tree species, *Eucalyptus teratornis* (Forest Red Gum), listed under *State Environmental Planning Policy 44 – Koala Habitat Protection* (SEPP 44) within areas of Cumberland Plain Woodland and River-flat Eucalypt Forest. Although these areas within the site were considered potential koala habitat, in the absence of koalas or signs of koalas identified during targeted surveys, the site is not considered to be core koala habitat.

### 7.1.2 Riparian Assessment

The Department of Primary Industries requires a vegetated riparian zone (VRZ), in accordance with the *Water Management Act 2000* adjacent to creek channels to provide a protective buffer between existing aquatic habitat and land use development.

The riparian corridor constitutes the VRZ plus the width of the channel. The VRZ width has become standardised in relation to the type of water course as per **Table 14**.

**Table 14 - Riparian corridor requirements under the *Water Management Act 2000***

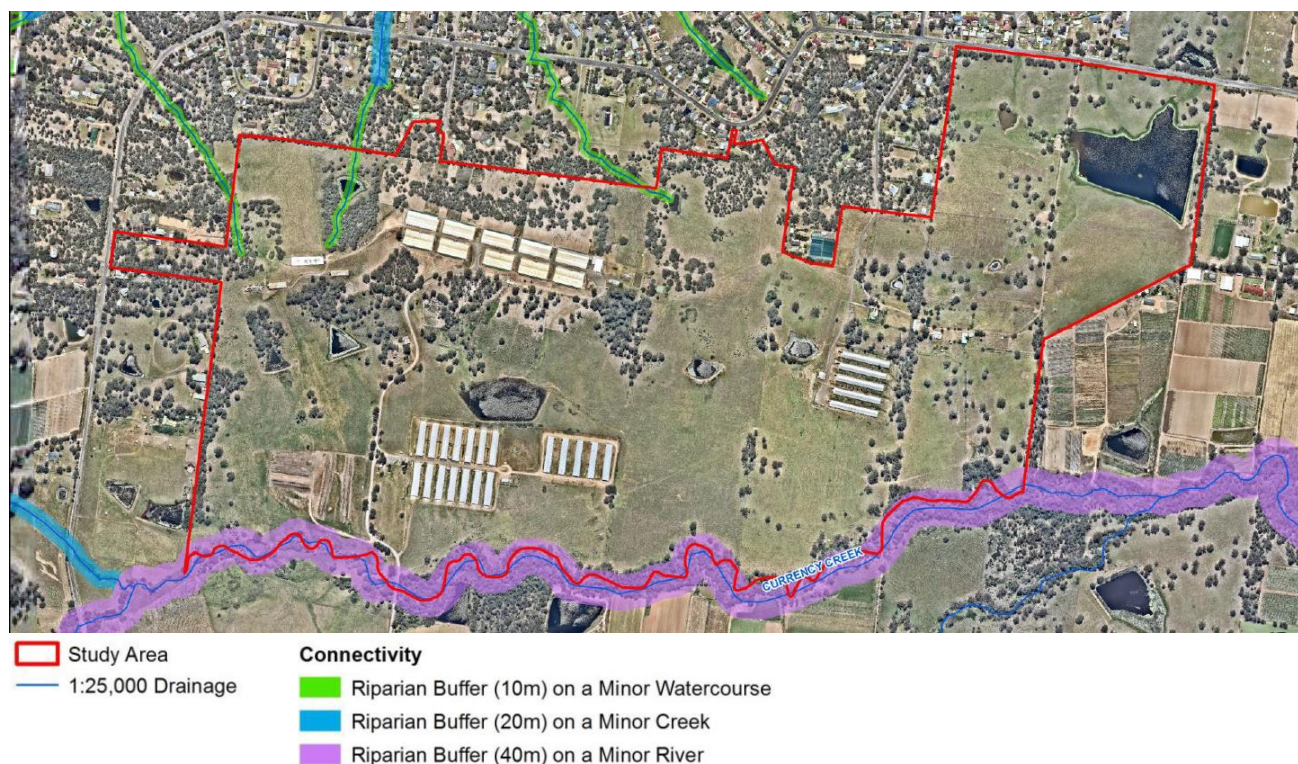
Watercourse	VRZ Width (m)	Total Riparian Corridor Width
1 <sup>st</sup> order watercourse	10	20m + channel width
2 <sup>nd</sup> order watercourse	20	40m + channel width
3 <sup>rd</sup> order watercourse	30	60m + channel width
4 <sup>th</sup> order watercourse or greater	40	80m + channel width

The site has the following watercourses:

- Currency Creek, which runs along the site's southern boundary. Currency Creek is a fourth order water stream and therefore requires a minimum 80m riparian corridor (40m VRZ); and
- Three unnamed streams which run north to south at the northern boundary. Each stream is a tributary of Howes Creek and is classified a first order stream requiring a minimum 20m riparian corridor (10m VZR).

Each water stream and riparian corridor is mapped in **Figure 38**.





**Figure 38 - Existing watercourses and required riparian buffers on the site**

Source: Eco Logical Australia

The three unnamed streams are non-functioning and have been the subject of significant modification. Currency Creek has been retained, is functioning and contains good vegetation along its banks. Localised portions of the Creek however show signs of disturbance from previous land clearing for the site's existing agricultural purposes.

The potential impacts from the proposed residential development of Jacaranda Ponds for the site's existing streams include:

- Altered flows;
- The removal of riparian vegetation which can result in river bank erosion and habitat loss;
- The removal of instream vegetation and debris, contributing to habitat loss;
- Altered water courses through the use of civil infrastructure including flood mitigation structures, road crossing and culverts. These can present barriers to fish movement; and
- Residential run-off which can alter existing nutrient levels and increase levels of debris.

The majority of the potential impacts identified above are noted as key threatening processes under the *Fisheries Management Act 1994*. Further impact assessment, undertaken in accordance with the *Fisheries Management Act* will therefore be required during future stages of approval.

Notwithstanding, the Masterplan proposed for the site (**Appendix G**) retains the majority of Currency Creek with a riparian corridor in accordance with the requirements of the *Water Management Act 2000* (refer to **Table 14**). The three unnamed watercourses are likely to be replaced with civil drainage infrastructure. These are not of significant ecological value, and any riparian corridors that are proposed to be declassified would be done so in consultation with the NSW Office of Water (unless they are not currently mapped watercourses).

### 7.1.3 Constraints Assessment

The ecological constraints of the site (**Table 15**) have been determined following detailed site surveys as well as determining the present condition and extent of native vegetation identified on-site and whether it provides habitat for threatened species either identified or considered likely to be located within the site.

**Table 15 - Ecological constraints within the site**

Level of ecological constraint	Vegetation	Key justification
Very high	Cumberland Plain Woodland (good condition) and Cumberland Plain Land Snail habitat.	<ul style="list-style-type: none"> <li>Listed as critically endangered vegetation under the BC Act and EPBC Act.</li> <li>Potential habitat for Cumberland Plain Land Snail, listed as an endangered species under the BC Act. This species has particular habitat requirements and little tolerance to habitat disturbance.</li> <li>Foraging and roosting habitat for threatened microbat species.</li> <li>Potential koala habitat under SEPP 44.</li> </ul>
Very high	Cumberland Plain Woodland (moderate condition) and Cumberland Plain Land Snail habitat.	<ul style="list-style-type: none"> <li>Listed as critically endangered vegetation under the BC Act.</li> <li>Foraging and roosting habitat for threatened microbat species.</li> <li>Potential habitat for Cumberland Plain Land Snail, listed as an endangered species under the BC Act. This species has particular habitat requirements and little tolerance to habitat disturbance.</li> <li>Potential koala habitat under SEPP 44.</li> </ul>
High	River-flat Eucalypt Forest.	<ul style="list-style-type: none"> <li>Listed as endangered vegetation under the BC Act.</li> <li>Forms the riparian corridor along Currency Creek and forms a vegetation corridor east across the site.</li> <li>Mapped as a fourth order water stream, requiring an 80m riparian corridor.</li> <li>May provide habitat for Cumberland Plain Land Snail.</li> <li>Foraging and roosting habitat for threatened microbat species.</li> <li>Identified as Key Fish Habitat under the <i>Fisheries Management Act 1994</i>.</li> <li>Foraging and roosting habitat for threatened microbat species.</li> </ul>
Moderate	Cumberland Plain Woodland – Scattered paddock trees.	<ul style="list-style-type: none"> <li>Listed as critically endangered vegetation under the BC Act.</li> <li>Considered marginal foraging habitat for threatened microbat species.</li> <li>Not considered likely to provide habitat for the Cumberland Plain Land Snail.</li> <li>Does not contain species diversity and structural complexity.</li> </ul>
Moderate	Cumberland Plain Woodland – Regeneration.	<ul style="list-style-type: none"> <li>Listed as critically endangered vegetation under the BC Act.</li> <li>Not considered vegetation for an threatened flor or fauna.</li> </ul>
Moderate	Dam (located within north-eastern portion of the site).	<ul style="list-style-type: none"> <li>Potential habitat for myotis.</li> <li>Contains fringing vegetation and good water quality.</li> </ul>
Low	Exotic pasture.	<ul style="list-style-type: none"> <li>Not identified to contain any threatened flora and fauna species.</li> <li>History of disturbance from existing land uses on site.</li> </ul>
Low	Dams.	<ul style="list-style-type: none"> <li>Not considered to contain foraging habitat for threatened microbat species.</li> <li>Agricultural and nutrient inputs from existing land uses and considered to contain poor water quality.</li> </ul>

Based on vegetation identified on the site (**Table 15** above), an impact quantification was conducted in relation to the proposed Masterplan. The amount of each vegetation community which would be retained or removed under the proposed Masterplan is detailed in **Table 16**.

**Table 16 - Impact quantification under the proposed Masterplan**

Vegetation community	Impacted (ha)	Biobank area (ha)*	Retained (ha)	Total (ha)
<b>Cumberland Plain Woodland (Shale Plain Woodland)</b>				
Good	4.02	8.51	0.00	12.53
Moderate	10.59	3.81	0.00	14.40
Regeneration	0.53	0.00	0.00	0.53
Scattered paddock trees	2.20	0.14	0.41	2.75
<b>Total</b>	<b>17.33</b>	<b>12.46</b>	<b>0.41</b>	<b>30.20</b>
<b>Alluvial Woodland (River-flat Eucalypt Forest)</b>				
Good	0.02	0.00	6.80	6.82
<b>Combined total</b>	<b>17.35</b>	<b>12.46</b>	<b>7.21</b>	<b>37.02</b>

\* excludes cleared land within the biobank areas.

#### 7.1.4 Conservation Recommendations

The following are the key conservation recommendations proposed by Eco Logical Australia. The full schedule of recommendations is provided within Section 6 of the Fauna and Flora Assessment (**Appendix L**):

- Potential future development should avoid leaving large patches of native vegetation, especially vegetation which is contiguous with other patches of native vegetation to ensure native vegetation communities are not fragmented or isolated;
- Biodiversity Certification should be obtained for the entire site;
- Hollow bearing trees should be retained where possible, especially those located within good quality vegetation as they have ecological value and provide good habitat for threatened microbat species and other fauna;
- Vegetated buffers should be placed around patches of native vegetation to stop the spread of exotic flora species;
- Where habitat features are cleared, moved or modified, compensatory habitat should be implemented to compensate for these changes;
- Infrastructure and servicing should not be located within conservation areas;
- Higher order riparian corridors should be protected to ensure the patches of native vegetation in which they are surrounded is also protected;
- Riparian corridors should be retained and or rehabilitated; and
- Detention basins, cycleways and footpaths are considered appropriate for vegetated riparian zones provided they are offset.

#### 7.1.5 Conclusion

Eco Logical Australia has provided the following conclusion for the site's future development in relation to existing flora and fauna on site:

- Vegetation areas identified as very high and or high ecological constraints should be avoided with development more suitable in areas of moderate or low ecological value. Vegetation of very high or high ecological constraint includes:
  - Cumberland Plain Woodland and Alluvial Woodland, listed as Critically Endangered and Endangered under the BC Act and EPBC Act; and
  - Vegetation which provides critical habitat for the Cumberland Plain Land Snail, listed as endangered under the BC Act as well as microbats.
- Development is considered more suitable to vegetation areas identified to be of moderate to low ecological constraint.



- Areas of the site identified to contain exotic pasture and scattered paddock trees were considered more suitable for development.

The proposed Concept Masterplan has been designed to adhere to these recommendations. An application for Biodiversity Certification and biobanking will be made in due course, for which Council must be the proponent.

## 7.2 Bushfire

A Bushfire Constraints Assessment has been prepared by Eco Logical Australia and is provided at **Appendix P**. The Assessment details the required Asset Protection Zones (APZs) for the site (refer to **Figure 39**) and provides the following conclusions:

- An APZ between 15 and 20m is required for the southern portion of the site containing Forest Red Gum-Rough-barked Apple grassy woodland;
- An APZ between 10 and 15m is required for parts of the site relating to the Grey Box- Forest Red Gum grassy woodland;
- A 20m APZ is required from the Currency Creek riparian corridor; and
- Development applications for construction on future lots will be subject to assessment against *Planning for Bushfire Protection 2006* with construction standard requirements determined by *Australian Standard 3959 Construction of buildings in bushfire-prone areas 2009*.

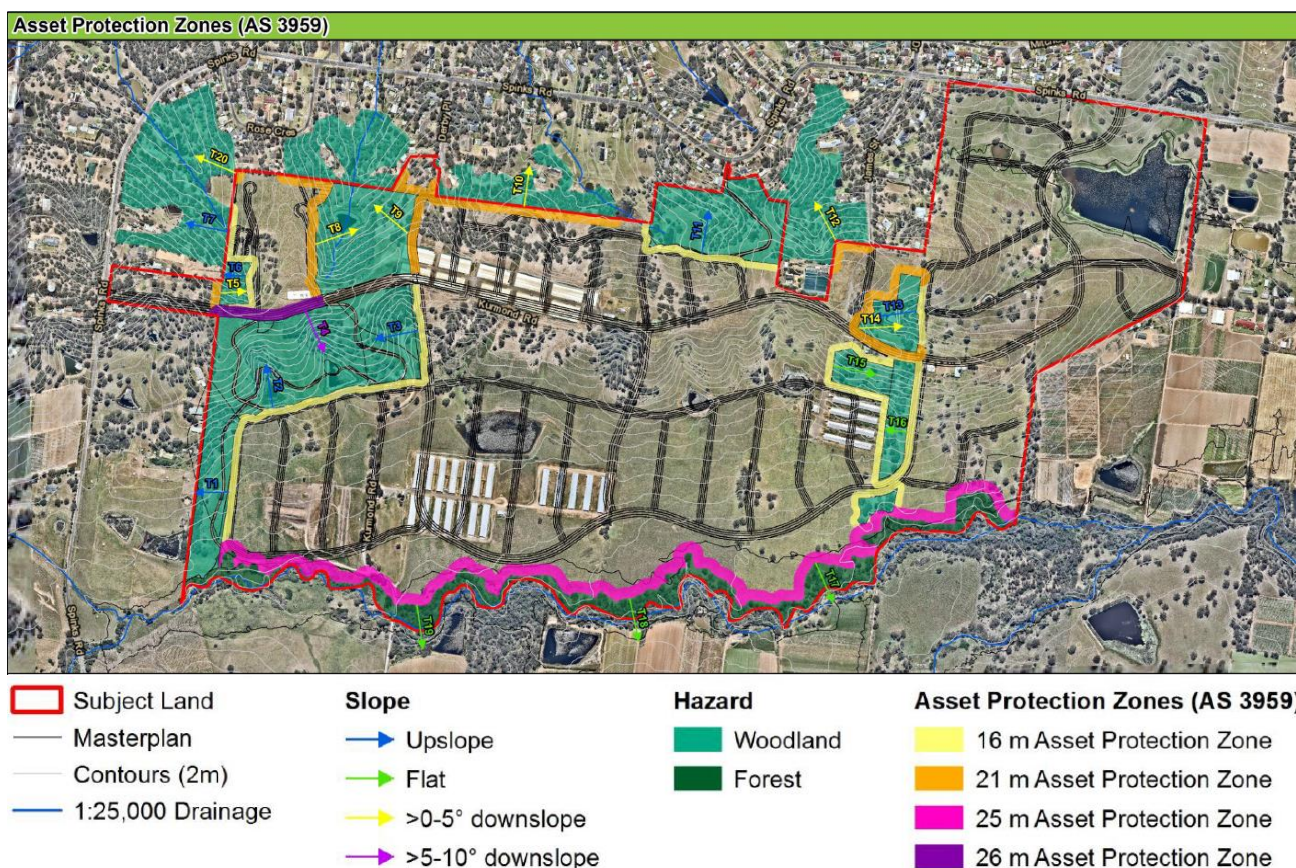


Figure 39 - Asset protection zone map

Source: Eco Logical Australia

## 7.3 Contamination

Whilst no change in residential land use is proposed, a Preliminary Site Investigation Review has been prepared by JBS&G and is provided at **Appendix S**. The Review details potential contamination constraints identified on the site and determines if the site is suitable or can be made suitable for the residential development of Jacaranda Ponds.



The review provides a revised assessment against work previously undertaken by JBS&G in 2009 to support the former Planning Proposal for the site (PP\_2012\_HAWKE\_003\_00). The previous assessment is identified below and is also provided at **Appendix S**.

*Preliminary Environmental Site Assessment, Jacaranda Ponds, Lot 75 DP214752, Lot 44 DP214755, Lot 1 DP784300, Lot 2 DP784300, Lot 3 DP784300, Lot 20 DP214753, Lot 50 DP751637, Lot 3 DP230943, Lot 52 DP1104504 and Lot 2 DP533402, Sinks Road, Glossodia NSW, prepared for Diverse Property Solutions c/- EG Property Group by JBS Environmental Pty Ltd (now JBS&G), October 2009 (JBS 2009).*

### 7.3.1 Areas of Environmental Concern

The areas of environmental concern identified on the site following the site investigation are detailed in **Table 17**.

**Table 17 - Areas of potential environmental concern and associated contaminants**

Areas of Environmental Concern	Potential Contaminants of Environmental Concern
Areas previously used as orchards.	Pesticides and heavy metals.
Areas containing former and current buildings and sheds.	Asbestos and heavy metals.
Former site infrastructure, inclusive of crushers and screens, within the central, eastern and northern portions of the site.	Heavy metals, total recoverable hydrocarbons, benzene, toluene, ethylbenzene, xylenes and polycyclic aromatic hydrocarbons.
Storage of petroleum products, inclusive of above ground storage tanks, across the site.	Heavy metals, total recoverable hydrocarbons, benzene, toluene, ethylbenzene, xylenes and polycyclic aromatic hydrocarbons.
Stockpiled material across the site.	Heavy metals, total recoverable hydrocarbons, benzene, toluene, ethylbenzene, xylenes and polycyclic aromatic hydrocarbons.
Use of site for agricultural and rural land uses.	Heavy metals and pesticides.
Septic tanks areas.	Faecal coliforms.

### 7.3.2 Conclusion and Recommendations

The Assessment concludes that there is potential for contamination to be present on the site as a result of its agricultural uses. Contamination was not considered widespread to a point where it would make the site unsuitable for development. Low-lying areas of the site in particular, have a low to moderate salinity potential which may require management in relation to future development.

JBS&G provide the following recommendations:

- Undertake intrusive sampling of areas of environmental concern to assess their potential for soil contamination.
- Undertake intrusive sampling to provide a preliminary assessment of salinity;
- The removal of asbestos containing material fragments within the western portion of the site;
- Undertake hazardous material surveys on buildings proposed for demolition; and
- The preparation of a Remedial Action Plan / Environmental Management Plan to make the site suitable for development following the completion of targeted contamination assessments.

## 7.4 Stormwater

A Stormwater Management Strategy has been prepared by Cardno and is provided at **Appendix N**. The Strategy identifies the relevant stormwater management requirements for the site in accordance with all relevant statutory controls, and provides detail on:

- Stormwater quality management;
- Stormwater quantity management; and
- Flood risk assessment.

### 7.4.1 Stormwater Quality Management

Stormwater quality mechanisms are proposed to ensure the existing state of watercourses within and adjacent the site remain unchanged, as well as ensuring that post-development pollutant loads are consistent with the pollutant load targets specified in Council's Civil Works Specifications.

The strategy is proposed to incorporate catchment-wide (end-of-line) stormwater treatment devices including gross-pollutant traps (GPTs), bio-retention systems and a constructed wetland within the extent of the dam within the north-east corner of the site.

### 7.4.2 Stormwater Quantity Management

The primary objective of the site's stormwater management system is to restrict post-development peak flows to less than or equal to pre-development peak flows for a range of storm events.

This will be achieved through on-site detention basins to be located adjacent each bio-retention system. These basins will be provided with multi-stage outlets, ensuring discharge is limited to a rate consistent with pre-development peak discharge rates.

The detailed location of each proposed detention basin is provided at **Appendix N**. Stormwater infrastructure is proposed to be dedicated to Council.

### 7.4.3 Flooding

A Flood Study was prepared in 2016 using TUFLOW modelling to determine the flood behaviour within and adjoining the site. The model assessed the existing site conditions against both the 1% AEP (**Figure 40**) and the Probable Maximum Flood Events (PMF) (**Figure 41**).

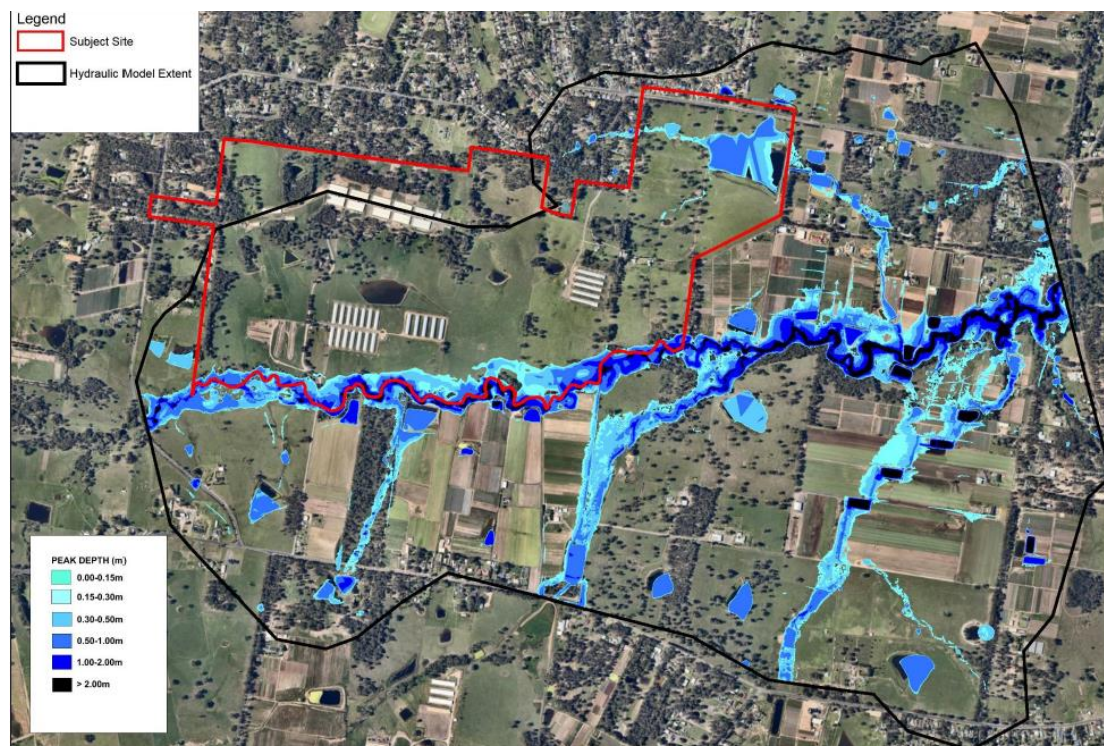
The modelling provided the following conclusions and informed the flooding design considerations detailed below:

- The extent of the 1% AEP flood is generally limited to the riparian corridors along Currency Creek. Residential development is not proposed within this portion of the site and therefore it is not considered to adversely impact the proposed development envisioned under this Planning Proposal.
- The PMF flood event generates minor flood affectation within the southern portion of the site. Adverse impacts to residential development is considered negligible due to their proximity to flood free land and evacuation routes.

### Future Site Conditions

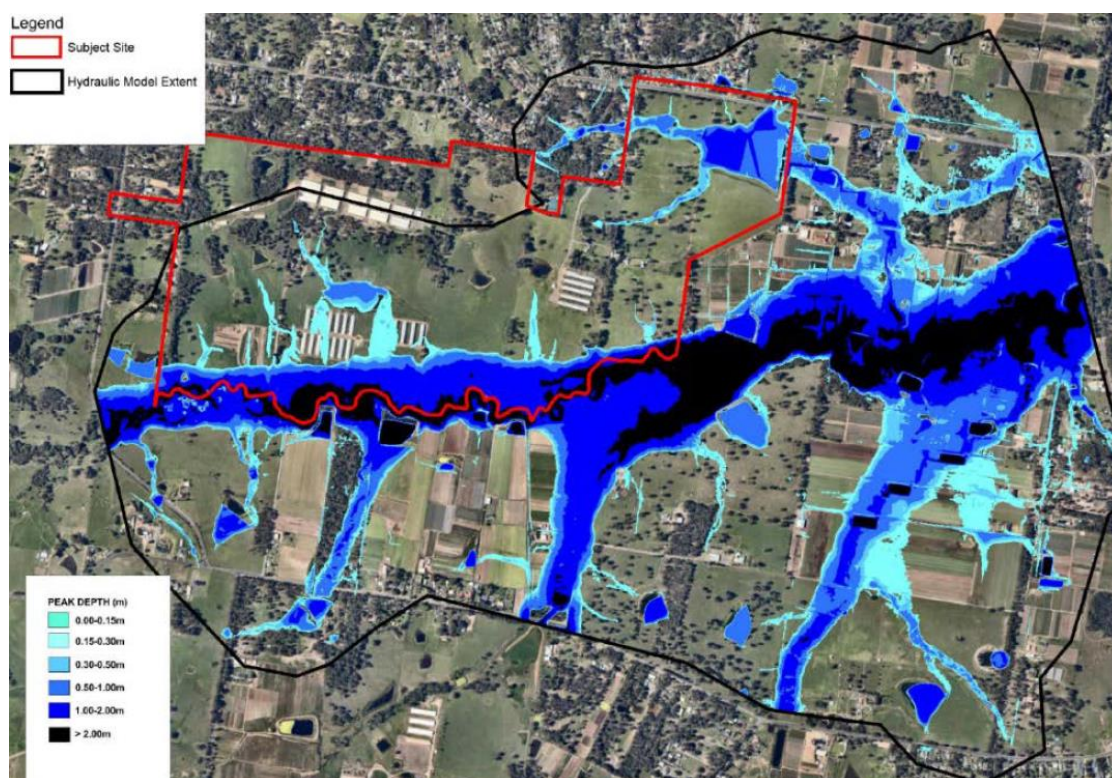
Council and the LPP have expressed concerns over two portions of the site that are potentially subject to flooding in a PMF event (being the area in the north eastern portion of the site, and the area along Currency Creek). It must be made clear that the flood study has been undertaken on current site conditions and does not consider the site's future levels.

Following the meeting with Council on 17th April, Cardno has undertaken engineering design work to investigate these areas further. When the sites future surface levels are taken into consideration, no houses in Jacaranda Ponds will experience above floor flooding in a PMF. The subject lots in the north east portion of the site will be elevated using batters and or raised floor slabs, and the road design level along Currency Creek will be elevated (refer to **Appendix O**).



**Figure 40 - 1% AEP flood extent and depth under existing conditions**

Source: Cardno



**Figure 41 - PMF flood extent and depth under existing conditions**

Source: Cardno



## Flooding Design Considerations

The following design considerations are proposed for the site to ensure adverse flooding impacts are reduced.

- A pit and pipe drainage network will be required to convey flows up to at least the 5-year ARI storm event, in accordance with the *Hawkesbury Development Control Plan 2012* (DCP 2012);
- It can be considered prudent in some instances, particularly at the bottom of individual catchments, to design the pit and pipe drainage network to convey flows which exceed the 5 year ARI;
- If and where residential development is located within a flood affected area, a minimum 500mm freeboard above the predicted 1% AEP peak flood level adjacent the property is to be implemented, in accordance with the DCP 2012; and
- Detailed flood evacuation plans should be prepared for flood affected properties to determine appropriate, flood free evacuation routes and assembly points not susceptible to the 1% AEP flood event.

## 7.5 Flood Evacuation

A revised Flood Evacuation Evaluation has been prepared by Molino Stewart and is provided at **Appendix O**. The evaluation addresses flood evacuation associated with the Planning Proposal. The evaluation concludes:

- No houses in Jacaranda Ponds will experience above floor flooding in a PMF;
- There would be no imperative for any house to have to be evacuated in any flood;
- Only about a dozen houses in the north of the site would ever be isolated by local flooding and this would only ever be for a few minutes in events much larger than the 1% AEP flood; and
- The proposed development does not pose a significant direct or indirect risk to life.

## 7.6 Infrastructure and Servicing

Cardno has prepared an Infrastructure Servicing Report (**Appendix Q**) to demonstrate the site is capable of being serviced by critical infrastructure to support the proposed development envisioned under this Planning Proposal.

### 7.6.1 Infrastructure Review

A services search undertaken by Cardno demonstrates that the large majority of utilities required to support the proposed development are in close proximity to the site. The existing and future requirements for each service is detailed below.

#### Electrical

Electrical augmentation will be required to provide sufficient electrical supply to the proposed residential lots, which are predicted to require a load of 3.5MVA. The existing high and low voltage networks surrounding and within the site are considered incapable of accommodating such a load.

To accommodate the expected load, the following recommendations are provided:

- Establishing a 11kV underground feeder from the Glossodia Zone substation. This will extend the network into the development site, ensuring suitable high and low voltage reticulation; and
- Three existing overhead feeders should be incorporated into the above system, improving reliability and sufficiency and ensuring sufficient supply during planned outages and maintenance.

#### Communications

The site is within an area which will receive fibre optic infrastructure as part of the National Broadband Network (NBN). It is assumed the NBN will service Jacaranda Ponds. Confirmation that the site can be serviced by the NBN is to be determined by NBN following assessment of the development and consideration of whether the development lies within the NBN's long-term fibre footprint.



## Water and Sewer

The site does not currently contain sewage infrastructure. The construction and operation of an on-site sewage treatment facility which produces high quality recycled water (water recycling facility) has been arranged as the sewer servicing system for the site. The system will be operated and maintained by Flow Systems.

It is noted that a Review of Environmental Factors has been prepared for the construction and operation of the water recycling facility (**Appendix M**). The construction and operation of the facility does not need development consent under Part 4 of the EP&A Act pursuant to *State Environmental Planning Policy (Infrastructure) 2007*, but rather, is subject to environmental assessment under Part 5 of the EP&A Act.

The existing water infrastructure is considered suitable in supplying the proposed development envisioned under this Planning Proposal. Minimal augmentation is considered necessary subject to confirmation by Sydney Water. A total of four (4) existing connections points are in proximity to the site and are considered suitable to connect the site to the water system. The internal reticulation network which would connect to an existing connection, would require expansion as each stage of the development is released.

## 7.7 Traffic and Transport

A Traffic Statement has been prepared by Arup and is provided at **Appendix R**. The Traffic Statement provides a revised assessment of the traffic and transport impacts identified for the site under the Traffic and Transport Impact Assessment prepared by Arup dated March 2013 in support of the former Planning Proposal for the site (PP\_2012\_HAWKE\_003\_00).

As this Planning Proposal does not alter the proposed yield and seeks only to redistribute and revise the zoning across the site, no additional or changed traffic movements are expected. The findings and mitigation measures proposed under the Traffic and Transport Impact Assessment dated March 2013 therefore remain unchanged.

### 7.7.1 Traffic Volumes

Revised traffic surveys were undertaken in December 2017 to ensure traffic volumes around the site were consistent with those identified under the previous Traffic and Transport Impact Assessment and its surveys undertaken in 2012, ensuring the traffic analysis, which was based on these volumes, remains valid. The results were identified to be generally consistent. Specifically:

- Traffic counts on Freemans Reach Road, Creek Ridge Road and Kurmond Road remain generally the same between 2012 and 2017;
- The traffic counts on Sinks Road has slightly reduced between 2012 and 2017; and
- Traffic volumes on local roads around the site remain generally unchanged.

## 7.8 Heritage

A Heritage Impact Assessment has been prepared by GML Heritage Consultants (GML) and is provided at **Appendix T**. The report provides a revised assessment of the Aboriginal and historical archaeological potential of the site based on site investigations and consultation with registered Aboriginal stakeholders.

### 7.8.1 Background

GML has undertaken two previous heritage assessments for the site to accompany the previous Planning Proposal prepared for the site, and to address changes in State and local legislation. The previous reports are as follows.

- *Jacaranda Ponds, Glossodia, Indigenous and Non-Indigenous Heritage Assessment Final Report, report prepared for EG Property Group, December 2009; and*
- *Jacaranda Ponds, Glossodia, Aboriginal and Non-Aboriginal Heritage Assessment Final Report, report prepared for EJC Corporate Services Pty Ltd, April 2015.*

### 7.8.2 Site Investigations

Site investigations from the 2009 study identified a total of four (4) Aboriginal sites within the site. These included:

- Two single isolated artefacts on existing road surfaces;
- A ridge located within the north eastern portion of the site considered to potentially contain Aboriginal objects; and
- A ridge running east to west along the site's northern boundary considered to potentially contain archaeological deposits by Aboriginal stakeholders.

The site's significant and ongoing use for farming and agriculture throughout the 19<sup>th</sup> and 20<sup>th</sup> Century determined it had little potential to contain items of non-Aboriginal archaeological significance.

A revised site investigation was undertaken in 2017 to reassess the previously identified Aboriginal archaeological sites and to review the current site conditions more broadly. The revised site investigation indicated no significant changes to the site since the original assessment in 2009 with the site continuing its ongoing use for farming and grazing purposes.

### 7.8.3 Conclusion and Recommendations

The proposal and Concept Masterplan is not considered to generate any additional adverse Aboriginal or non-Aboriginal heritage impacts to that identified for the site under the previous Heritage Assessments. The four registered Aboriginal sites would be disturbed by the proposal, which is considered unavoidable. As such, prior to development, these locations should be subject to further archaeological testing to determine their heritage significance.

The site was considered to have limited potential in containing any historical non-Aboriginal remains. This conclusion under the revised assessment remains unchanged. The proposal and indicative Masterplan is not considered to generate any adverse impacts.

The following management and mitigation measures are recommended to mitigate any potential adverse impacts to Aboriginal and non-Aboriginal heritage on the site.

- Aboriginal community consultation undertaken in accordance with the requirements of the Office of Environment and Heritage (OEH), should be undertaken to inform any future development application for the site;
- Targeted archaeological test excavation should be undertaken to confirm the presence of Aboriginal artefacts within the four Aboriginal sites identified, and any other areas where impacts are proposed;
- Any proposed works which may impact the topsoil of the creek flats along Currency Creek should be subject to archaeological monitoring and or avoidance strategies, in accordance with the requests of the Dehubbing Local Aboriginal Council;
- Should any Aboriginal objects be identified during development, an application, pursuant to Section 90 of the *National Parks and Wildlife Action 1974*, should be made to the OEH requesting an Aboriginal Heritage Impact Permit;
- Should any human remains be discovered during development, the New South Wales (NSW) Coroner's Office and or the NSW Police Force is to be notified. The OEH should be notified in the case remains are suspected to be Aboriginal; and
- A Management Strategy should be prepared to minimise the impacts of increased population and recreational use of the bushland within and around the site to ensure these areas and any potential Aboriginal or non-Aboriginal objects they contain are protected.

Finally, based on the findings identified by GML, development on the site would not require approval from the Heritage branch or OEH on non-indigenous heritage grounds. In the case unexpected archaeological evidence relating to historical, non-aboriginal occupation is discovered on the site, the OEH is to be notified in accordance with Section 146 of the *Heritage Act 1977*.

## 8.0 Conclusion

This Planning Proposal seeks to amend *Hawkesbury Local Environmental Plan 2012* for land known as Jacaranda Ponds, Glossodia.

Jacaranda Ponds was subject to a site specific LEP amendment which was gazetted in 2014. Following its gazettal, a number of detailed ecological studies were undertaken to inform the detailed design of the future development. However, the studies identified in more detail, the presence of significant vegetation and endangered habitat on the site, including the Cumberland and Alluvial Plain Woodlands which are listed as critically endangered and endangered ecological communities under the *Biodiversity Conservation Act 1995* (BC Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Each ecological community provides habitat for threatened fauna species including the Cumberland Plain Land Snail and several bat species listed as vulnerable under the BC Act.

The identification of these critically endangered species and ecological communities has necessitated further amendments to the LEP in order to ensure the future development has an acceptable ecological impact. This Planning Proposal seeks to provide an improved ecological outcome with more than double the amount of vegetation conservation area proposed, while also applying best-practice design principles and deliver a community that is more liveable and resilient and is better connected to the existing Glossodia community.

This Planning Proposal seeks to:

- Introduce the E2 Environmental Conservation zone and increase the quantity of land zoned RE1 Public Recreation in portions of the site identified as containing significant vegetation and endangered habitat. This zoning will contribute to the delivery of a total of 62.23ha of vegetation conservation and recreation land across the site;
- Revise and redistribute the existing R2 Low Density Residential, R5 Large Lot Residential, RE1 Public Recreation and SP2 Infrastructure (Sewerage Works) zones across the site to better align with the site's significant vegetation and topographical features, and better utilise land that is dedicated to infrastructure purposes;
- Increase the quantity of RE1 Public Recreation zoned land on the site from 44.77ha to 52.64ha;
- Revise and redistribute the existing 10 metre height limit across the site to align to the revised zoning proposed; and
- Redistribute the existing minimum subdivision lot sizes (1000m<sup>2</sup>, 2000m<sup>2</sup> and 4000m<sup>2</sup>) to align with the revised land use zoning and heights.

This Planning Proposal is considered justified for the following reasons:

- The proposal takes an active approach to habitat and vegetation conservation and provides a significantly improved ecological outcome for the site, with more than double the amount of existing vegetation conservation area available;
- The proposal is consistent with the objects of the EP&A Act, in that it promotes the orderly and economic use and development of land;
- The Concept Masterplan which this Planning Proposal aims to facilitate is suitable for the site as:
  - It proposes a residential yield (580 lots) that is consistent with that previously considered suitable for the site, and will not increase the demand for services or result in additional traffic generation;
  - It will make a significant contribution to the residential housing targets identified by Hawkesbury City Council; and
  - It will provide a development outcome sympathetic to existing areas of ecological significance within the site.
- The proposal is consistent with the strategic framework applicable to the site and broader locality; and
- The proposal is consistent with the applicable SEPPs and Ministerial Directions.

In light of the above, we would have no hesitation in recommending that the Planning Proposal proceed through the Gateway to public exhibition.