

# Demographic, Social Infrastructure and Community Needs Assessment

South Creek West North  
West Land Release Area  
Rezoning (Bringelly)



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## Demographic, Social Infrastructure and Community Needs Assessment South Creek West North West Land Release Area Rezoning (Bringelly)

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We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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# Table of contents

Executive summary .....	iii
Introduction .....	6
<b>1 The site.....</b>	<b>7</b>
1.1 Summary of opportunities and constraints.....	7
1.2 Site overview.....	7
<b>2 Document and policy review .....</b>	<b>9</b>
<b>3 Existing facilities and capacity and needs considerations .....</b>	<b>11</b>
3.1 Community and cultural facilities .....	11
3.2 Open spaces and recreation .....	14
3.3 Education and childcare .....	17
3.4 Health and wellbeing .....	19
3.5 Emergency services .....	19
<b>4 Standards, benchmarks and trends.....</b>	<b>22</b>
4.1 Guiding principles and objectives.....	22
4.2 Standards and benchmarks .....	23
4.3 Qualitative considerations.....	25
4.4 Trends.....	26
<b>5 Site analysis and recommendations.....</b>	<b>33</b>
5.1 Indicative layout plan .....	33
5.2 Indicative yield .....	34
5.3 Projected demographics.....	35
5.4 Projected demand for social infrastructure .....	37
5.5 Provision assessment of site ILP .....	41
5.6 Social infrastructure implementation planning .....	45

## List of tables

Table 3.1	South Western Sydney Zone 1 – ambulance utilisation rates .....	20
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Table 4.1	Guiding principles and objectives for social infrastructure .....	22
Table 4.2	Standards and benchmarks applied to this report .....	23
Table 5.1	Age group composition of comparison areas .....	36
Table 5.2	Population and age breakdown for the site .....	37
Table 5.3	Summary of quantified demand.....	39
Table 5.4	Summary of relevant open space and recreation guidelines and criteria.....	41
Table 5.5	Recommendations for staged social infrastructure delivery in the site.....	46

## List of figures

Figure 1.1	Location of the site in the SWGA and SCW Precinct.....	8
Figure 3.1	Existing community and cultural facilities and health and wellbeing facilities.....	13
Figure 3.2	Existing open and recreation spaces.....	16
Figure 3.3	Existing education and childcare facilities .....	18
Figure 5.1	The site ILP .....	34

## List of appendices

Appendix A Document review

# Executive summary

This report investigates the potential demographic characteristics and social infrastructure demand generated by a preliminary indicative layout plan for a land holding known as the Belmore Road Precinct, in the South Creek West North West Land Release Area, in Bringelly.

The site is positioned in a strategic location, as a prominent southern entry point into the Western Sydney Aerotropolis sitting above Lowes Creek Maryland. It is a significant land area, accounting for almost 12% of the total South Creek West Precinct.

An indicative layout plan for the site has been prepared by Urbis (version: September 2023) and estimates 3,371 dwellings and 10,704 people. Utilising comparative figures for full or near completion new developments of a similar scale, the site is likely to develop the following future community profile and social infrastructure needs:

- babies, pre-schoolers and primary schoolers: Approximately a quarter of the future population will be aged 0-11 years. This has implications for childcare provision and primary schools, as well as open space (parks and active recreation), play spaces and health facilities for childhood and maternal services delivery.
- high schoolers and young people: Older children and young people have specific recreation and socialisation needs, including higher participation in organised recreation and informal play spaces.
- young workforce, parents and home builders: A majority of the population will be aged between 25 to 49 years (consistent with the high rates of children). Access to a range of diverse passive and active open spaces will be important to support a variety of needs and uses e.g. family and social events/gatherings, kick-about spaces, spaces for quiet.
- empty nesters and older: A relatively low proportion will be aged 60 years and older. However, accessibility and mobility for the elderly should be considered, as well as access to adequate health and community spaces, as well as general spaces which can promote social interaction to prevent isolation.

Key inputs into this report included:

- extensive policy and document review, investigating local to regional level planning directions regarding social infrastructure provision
- high level context analysis of access to social infrastructure in proximity to the site, supported by a combination of mapping of existing facilities, document review and interviews with the Department of Education (DoE) and the South Western Sydney Local Health District (conducted mid 2020)
- review of current Camden Council social infrastructure standards and benchmarks, as well as investigation of leading qualitative guidelines and trends in provision and utilisation.

These inputs were used to prepare a set of guiding principles for social infrastructure provision on the site. These principles include:

- accessible: walkable, local neighbourhoods (400m), various modes of transport/movement
- equitable and safe: accessible, equitably distributed, universal design and Crime Prevention Through Environmental Design
- staged delivery: the types and sizes of facilities and spaces responds to population growth and demand
- local identity: incorporating natural and cultural heritage into design, fostering vibrancy
- central: positioned in town centres or adjacent to transport hubs
- multipurpose, flexible and adaptable: enabling multiple simultaneous uses, meeting diverse needs, design enables structural or architectural change to respond to changing community demand
- partnerships: with local (Camden and Liverpool councils) and other agencies (e.g. WSLHD, DoE, DPE, emergency services), including government and non-government

- co-located and clustered: spaces can be shared and facilitate delivery of complementary services
- climate sensitive: fostering ecological value and embedding environmentally sustainable design (e.g. local urban heat reduction, water retention, etc) and embedding green infrastructure planning (e.g. covered walkways, increase tree canopy)
- responsive: responding to social infrastructure planning in surrounding centres and precincts, wider South Creek and South West Growth Area.

A summary of the potential demand generated by the indicative layout plan and preliminary estimate of 10,704 people is provided below. Key considerations and recommendations are also nominated, for further consideration as the planning process progresses.

**Note: this report was revised in June 2022 following receipt of a Request for Additional Information (RAI) received by Camden Council on 24 December 2021. Revisions to this report included:**

- changes to the future demographic profile to reflect updated yield and future population numbers
- consequent changes to associated demand for social infrastructure
- update to the open space and recreation assessment to reflect revised provision of open space in the latest version of the ILP (dated 14 June 2022)
- updated policy and document review to recognise the final status of Council's *Spaces and Places Strategy* and *Sportsground Strategy*.

A revised audit of existing and planned facilities was not conducted. Demographic data was not updated with 2021 Census data.

**This report was further revised in September 2023 to reflect changes made to the proposed yield and Indicative Layout Plan. Revisions to this report included:**

- changes to the future demographic profile to reflect updated yield and future population numbers
- revisions to the social infrastructure audit and mapping
- updates to policy context and participation data
- renewed engagement with emergency services (noting additional engagement was conducted by the project team with SINSW)
- consequent changes to associated demand for social infrastructure.

Key changes made to the proposal to address comments from Council and public submissions include:

- updates to the road network including:
  - introduction of additional green streets into the ILP
  - replacement of the landscape buffer along The Northern Road with a new street typology
  - additional north-south lots across the Precinct
  - removal of collector road between the two southern playing fields
  - introduction of laneways west of the northern playing fields
  - removal of sub-arterial road to reflect Lowes Creek Maryland gazetted proposal
- updates to the Wentworth Road Investigation Area including:
  - introduction of employment uses surrounding the local heritage item
  - introduction of Low Density Band 1 residential
  - introduction of an 8,000sqm local park.

- updates to open space including:
  - introduction of a new open space category – tree retention (where tree retention is prioritised)
  - introduction of a local park on the RMS landholdings north of Belmore Road
  - relocate and increase the size of Local Park 7 from 4,000sqm to 5,000sqm
  - increase the size of Local Park 8 from 6,000sqm to 7,000sqm
  - introduction of a linear park in the south-west portion of the site, connecting the ridgeline to the riparian corridor
- changes to residential areas including:
  - removal of any residential land from the PMF flood level
  - introduction of additional medium density on the RMS landholdings south of Belmore Road
  - replacement of Low Density Band 2 with Medium Density Band 1 north of the northern playing fields
  - introduction of Environmental Living lots on the south-west ridgeline
- relocation of the future educational establishment onto the proponent's landholdings
- introduction of a small retail centre within the south-west portion of the site.

# Introduction

**This report investigates the potential demographic characteristics and associated social infrastructure needs of the future population of the South Creek West North West Land Release Area.**

In 2020, Elton Consulting was engaged by Boyuan Holdings Ltd Group (BHL) to prepare a Demographic and Social Infrastructure Assessment for the South Creek West North West Land Release Area Rezoning in Bringelly. As part of this process, BHL was working closely with Camden Council (Council) and the Department of Planning and Environment (DPE) to rezone the larger South Creek West (SCW) Precinct, which contains the site.

The site covers 190 hectares (ha) of the larger 1,587ha SCW Precinct (close to 12% of the total SCW Precinct). It was the original intention of the project to prepare one technical study contributing to a larger SCW indicative layout plan (ILP) and SCW Precinct Planning Report, prepared in partnership between BHL and Council.

However, towards the end of 2020, the site was transferred from BHL to CKDI Bringelly Pty Ltd. In response, this report is now focussed on the site and intended to inform the site Planning Proposal (PP). While wider regional planning and development is considered in this report, later stages of the PP process planning may require report updates to respond to progression in SCW planning.

**This report was further revised in June 2022 following receipt of a Request for Additional Information (RAI) received by Camden Council on 24 December 2021. Revisions to the report have sought to reflect changes made to the ILP (dated 14 June 2022) and revised yield and population figures.**

**This report was further revised in September 2023 to reflect to the final ILP Revision H (dated September 2023) and revised yield and population figures.**

## Report structure

This report is divided into the following sections:

<b>Section 1</b>	The site	<ul style="list-style-type: none"><li>— Site location</li><li>— Site ownership</li></ul>
<b>Section 2</b>	Context investigation	<ul style="list-style-type: none"><li>— Document and policy review</li><li>— Existing social infrastructure</li></ul>
<b>Section 3</b>	Standards, benchmarks and trends	<ul style="list-style-type: none"><li>— Guiding principles and objectives</li><li>— Standards and benchmarks</li><li>— Qualitative considerations</li><li>— Trends</li></ul>
<b>Section 4</b>	Site analysis and recommendations	<ul style="list-style-type: none"><li>— Indicative layout plan</li><li>— Vision</li><li>— Indicative yield</li><li>— Projected demographics</li><li>— Projected demand for social infrastructure</li><li>— Provision assessment</li><li>— Social infrastructure implementation plan</li></ul>

# 1 The site

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## 1.1 Summary of opportunities and constraints

### Site overview:

- the site is positioned in a strategic location, as a prominent southern entry point into the Western Sydney Aerotropolis and within the SCW Precinct land release areas.
- it will be challenging to plan or and deliver social infrastructure which meets the needs of the future site community, while also planning collaboratively for social infrastructure delivery in Camden LGA, adjoining precincts (i.e. Lowes Creek Maryland, Austral and Leppington North, Western Sydney Aerotropolis) as well as the larger SCW Precinct.
- there is a unique opportunity to integrate natural features into designs for the site, particularly the riparian corridor and ridge running along the south western edge. The riparian corridor could:
  - become a central link for active connections and open spaces (including sport and recreation spaces)
  - connect the northern and southern sections of the future community
  - embed best practice in ecological design and functionality, through preserving and fostering biodiversity and integrating water sensitive urban design.
- however, there are challenges regarding public use of natural and landscape features, including:
  - flooding and associated development controls may impact on the useability of open spaces along the riparian corridor
  - passive surveillance within and/or along the ridgeline could be minimal, depending on the orientation and sightlines of the future development.
- master planning for social infrastructure is an opportunity to set a clear direction and precedent for ongoing provision in the SCW Precinct.
- fragmented ownership could create pressure on social infrastructure delivery and community as the planning process progresses (e.g. the location for social infrastructure may be positioned on land not yet sold or available for development, which could have implications for staging of delivery).

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## 1.2 Site overview

As indicated in Figure 1.1, the site is positioned in the north-western portion of the South West Growth Area (SWGA). It sits amongst land release areas identified for significant urban and industrial land use change:

- Lowes Creek Maryland (LCM) to the south
- Austral and Leppington North and to the east
- Western Sydney Aerotropolis (the Aerotropolis) due north.

The site is located in the north west corner of the SCW Precinct, in northern Bringelly. It is positioned in the most northerly part of Camden local government area (LGA), under Camden Council. Bringelly Road acts as the northern site border and delineates Camden and Liverpool LGAs.

The site has significant slopes and rises and a large riparian land area traveling into its centre. There is no existing social infrastructure for broader public use within the site boundaries (detail provided in **Section 1**). There are 59 lots contained within the borders of the site, under a mixture of land ownership.

A site visit was not conducted as part of this report.

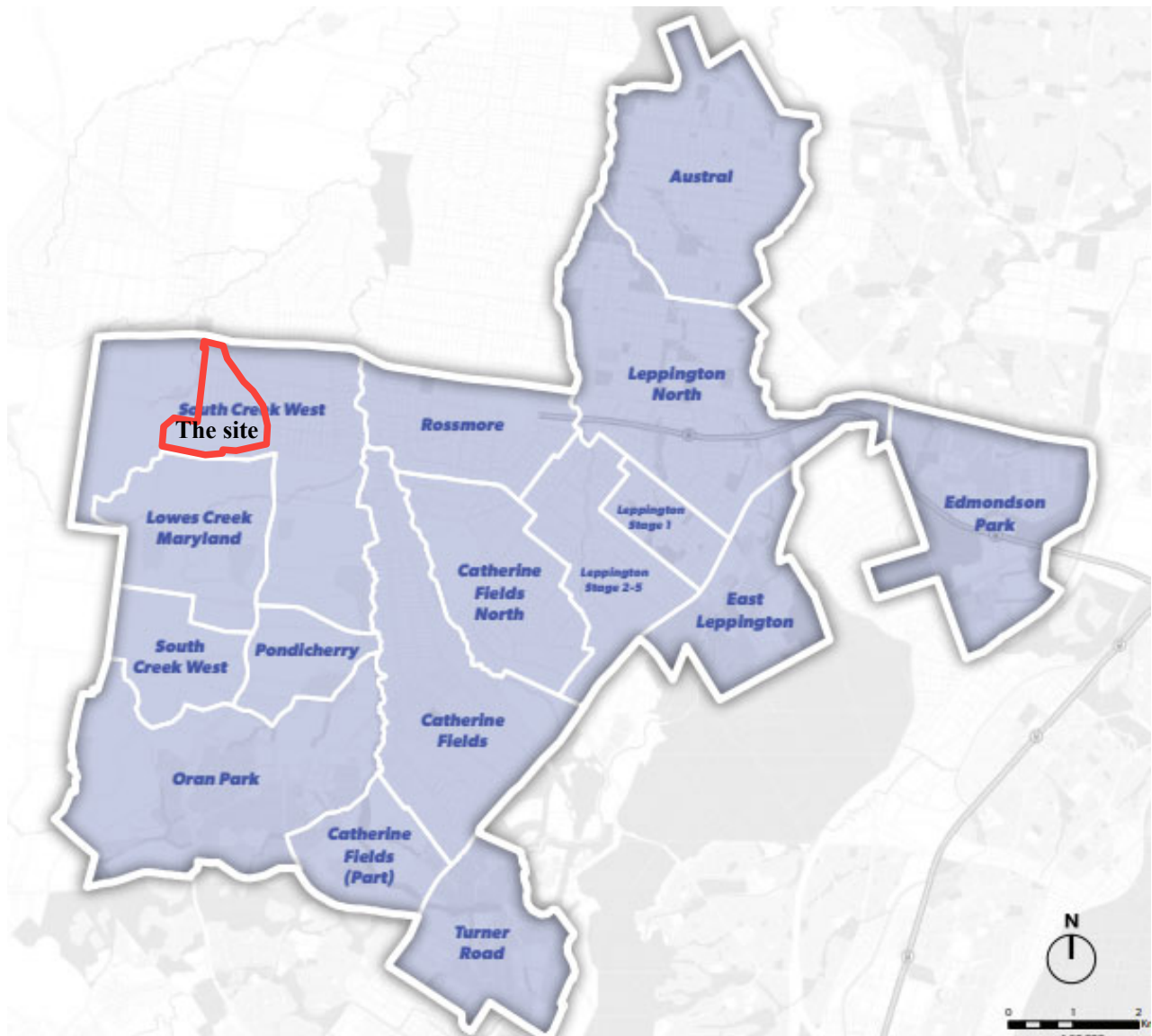


Figure 1.1 Location of the site in the SWGA and SCW Precinct

Source: NSW DPE 2018

## 2 Document and policy review

Planning for the site is informed by a hierarchy of strategic planning documents, including:

- regional strategies aligned to the Aerotropolis and its catalyst role for transport corridor investment, as well as open space planning for Greater Sydney
- Western City District and investment in supporting infrastructure for the Aerotropolis
- SWGA, including comparative planned precincts in Lowes Creek Maryland and Austral and Leppington
- local planning and strategies for social infrastructure provision in Camden and Liverpool councils.

Key opportunities and constraints are summarised below under the following themes:

- new approach to precinct planning
- planning for the Aerotropolis
- principles and contributions planning
- surrounding precincts planning, considering the network of green and open spaces and community infrastructure and space spaces.

### 2.1.1 Summary of opportunities and constraints

*New approach to precinct planning:*

- the strategic and collaborative approach between DPE, councils, private sector and agencies for the site has the potential to deliver the best outcomes (in a timely manner) for the future community in the site and broader SCW Precinct.
- as the new approach is applied, there may be delays as the approaches become normalised. Regardless, the opportunity to be involved in the strategic and collaborative approach is likely to outweigh these types of constraints.

*Planning for the Aerotropolis / Principles and contributions / Surrounding precinct planning:*

- there are multiple levels of governance operating in the SWGA and SWC Precinct, each with individual sets of guidance and requirements for social infrastructure delivery. However, there is generally strong consistency across these various strategies and policies, including elements such as sustainability, ecological value, high quality, enabling movement, etc, which give an indication on the collective intentions for social infrastructure outcomes.
- the Aerotropolis is a critical component of the SWGA, and (at the time of writing this report) is in its early planning stages. This has implications for the delivery of regional social infrastructure, including education, health, open space and cultural facilities.
- in the surrounding precincts of LCM and Austral and Leppington North, social infrastructure planning is focused on the direct demand generated by the potential future communities within these precincts. However, there is also a need to recognise how social infrastructure can operate as part of a complementary network of spaces and services across Camden LGA and/or the broader SCW precinct.
- as the site adjoins LCM, there is a need for alignment in decisions towards social infrastructure recommendations. In LCM, the riparian corridor is a focus of passive recreation and ecological values, and active connections are highly valued.
- there is the potential for the site to be well connected to public transport networks, if a station on the north south rail link is provided nearby.
- A detailed review of Aerotropolis and surrounding precincts planning documents is provided in Appendix A.

*Community and cultural facilities / Open spaces / Education and childcare:*

- the site will need to provide the social infrastructure to meet the demand generated by its future population. However, social infrastructure provision in the site will need to consider the plans or delivery of social infrastructure in surrounding precincts (to avoid duplication or an inconsistent approach) as well as the strategic directions and policies of Camden and

Liverpool councils, DPE and other significant stakeholders involved in planning in the SCW precinct (e.g. Transport for NSW).

- active connections, providing options for walking and cycling are also highly valued and are considered an integral part of the open space network.
- as the site is in Camden LGA, the plans and policies of Camden Council have the greatest influence. However, it is likely that future residents will be utilising social infrastructure in adjoining Liverpool LGA, which may place additional pressure on Liverpool City Council spaces and services.

*Health and wellbeing:*

- the site is well positioned between nodes of health infrastructure investments that are currently planned or being delivered in the Aerotropolis and Liverpool. However, for future residents, key considerations for health services delivery will be access to and staging of health services. This may be addressed through virtual platforms and ongoing collaboration with DPE and the Greater Sydney Commission, as well as adaptable services responding to changing community needs.

# 3 Existing facilities and capacity and needs considerations

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## 3.1 Community and cultural facilities

There are no existing community and/or cultural facilities within the site, as all land holdings are either owned by CKDI or privately owned.

The only community facility within 5km is the Bringelly Community Centre, situated in Bringelly Park and adjoining Bringelly Public School. It is a local facility, with a large hall, kitchen and storage area. The majority of existing community and cultural facilities are located in Oran Park, up to 5km south of the site. Existing facilities surrounding the site are shown in Figure 2.1 in the following pages.

As shown previously in Figure 1.1, the SCW precinct is positioned amongst several significant precincts, which have proposed community and cultural facilities for the need generated by their communities including:

- LCM: multipurpose community centre (up to 2,000sqm) with library services provision and two local community centres.
- Austral and Leppington North: a range of community facilities, including a library
- Catherine Field: a 430sqm multipurpose community centre.

DPE's *Western Sydney Aerotropolis Plan* (2023) also proposes a focus on arts and creativity, through the delivery of public art and cultural infrastructure, such as art galleries, museums and libraries, and community hubs which integrate other social infrastructure as well as open and green spaces for enhanced activation adaptable uses of public spaces.

Camden's *Local Strategic Planning Statement* (LSPS, 2020) further states that population growth may place pressure on the existing network of social infrastructure. The needs of current and future populations should be met by adequate and fit for purpose facilities, spaces and services. Open space is consistently identified by the community as a key priority for liveability. The LSPS suggests creating reinforcing the accessibility and connectivity of open space and riparian corridors (including South Creek) to support recreation opportunities.

Liverpool City Council's *Community Strategic Plan 2022-2032* (2022) continues to promote the emphasis on social considerations in the long-term planning for Liverpool. Improving liveability and quality of life for the community and supporting active and healthy lifestyles through infrastructure are key pillars outlined in the plan.

Liverpool City Council's *Recreation, Open Space and Sports Strategy 2018-2028* (2018) suggests that all necessary social infrastructure needs to be in place before new residents move in and testifies to the positive effects of social networks on community wellbeing and resilience.

A planning priority in Liverpool City Council's *Connected Liverpool 2040, Local Strategic Planning Statement* (2020) is the provision of high quality, plentiful and accessible community facilities, which align to population growth and demand.

The Statement also encourages integrated planning for the delivery of community facilities in all major new and redeveloped recreation precincts. This aligns with a key recommendation of Council's *Recreation, Open Space and Sports Strategy 2018-2028* (2018) to investigate opportunities for the co-location or incorporation of community facilities in new large sporting facilities, with community use administered either by Council, or the associated sporting club/association or community groups.

### 3.1.1 Community centres

Camden Council's *Spaces and Places Strategy* (2020) recognises the role of free and/or affordable community spaces play in building connections in new communities. It nominates community centres, scout halls and clubrooms as community centres.

According to the *Spaces and Places Strategy* (2020), current best practice is to deliver a network of larger but fewer community facilities, that can provide higher level services and service a larger catchment of people. This has informed Camden Council's decision to move to the benchmark of 1 community centre per 20,000 people, enabling the provision of fewer and larger multipurpose centres which would be classified as regional centres. Based on a review of lease and hire schedules conducted for the *Spaces and Places Strategy* (2020), there is capacity in existing community centres to accommodate greater use and future planning should focus on upgrading these facilities to multipurpose centres, rather than the provision of more neighbourhood/local community centres.

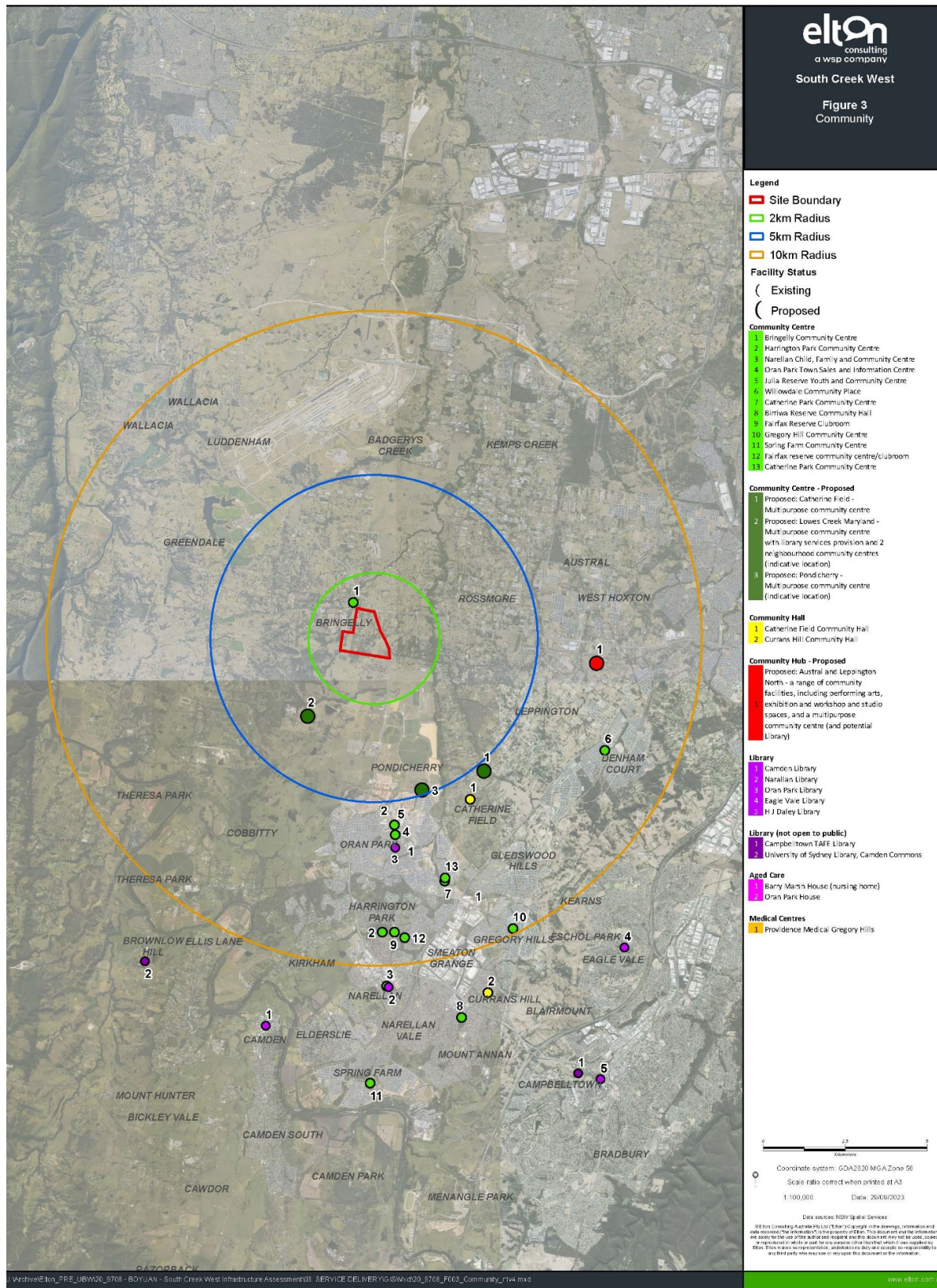
Existing community centres in Camden LGA are generally unstaffed buildings that provide spaces for community use and hire, and can adapt to meet the needs of incremental population growth.

### 3.1.2 Libraries

Camden Council's *Libraries Strategy 2021-2025* (2021) identifies three library sites in the LGA, with no central library. The *Spaces and Places Strategy* (2020) continues to support this direction, but also recognises that this requires fewer but higher-level/greater functionality libraries.

At the time of writing this report, Camden Council now manage Camden Library ('neighbourhood' level) and regional Narellan and Oran Park (co-located with Oran Community Resource Centre, delivered through a voluntary planning agreement as part of the Oran Park precinct) libraries. *Spaces and Places Strategy* (2020) supports previous plans for a new regional library in Leppington, to support the existing network of Camden, Narellan and Oran Park libraries. The *Spaces and Places Strategy* (2020) found that both Camden and Narellan libraries are nearing capacity and demand for additional library provision will predominantly be in the Growth District, which contains the site. However, it also recognises that while additional need should be monitored, the provision of regional level services in Leppington and Oran Park Library may meet this demand.

Figure 3.1 Existing community and cultural facilities and health and wellbeing facilities



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## 3.2 Open spaces and recreation

There are no existing public open and green spaces within the site. Open and recreation spaces surrounding the site are shown in Figure 3.2 on the following page.

The closest open and recreation spaces and facilities are:

- Rossmore Reserve (active, local) within 2km to the east
- Bringelly Park and Reserve (passive, local), directly north adjoining Bringelly Park Public School
- Carwyn Park Agistment and Equestrian Centre (specialised recreation), directly south.

The majority of existing open and recreation spaces are located in Oran Park, up to 5km south of the site.

As shown in Figure A.6, proposed open spaces in surrounding precincts include:

- LCM: up to 59ha of open space, incorporating 19 local parks, 6 double playing fields and 22 courts
- Austral and Leppington North: approximately 135ha of open space, 60% of which is passive (81ha)
- Catherine Field: up to 30ha of open space, including 2 double playing fields and 4 outdoor courts.

As indicated in DPE's *Western Sydney Aerotropolis Plan* (2023), the Aerotropolis is also projected to provide:

- district-scale open space (such as playing fields) and regional parks provided towards the edge of centres to maximise catchment areas
- sporting fields shared with educational institutions, wherever possible.

The Greater Sydney Commission's (GSC) *Western City District Plan* (2018) contains a series of actions aligned to recreation and open space planning, including:

- develop a South West District sport and recreation facility plan
- planning for shared spaces, including an increase in community facilities and open space
- use funding priorities to deliver the South West Green Grid priorities
- develop support tools and methodologies for local open space planning
- review criteria for monitoring of water quality and waterway health.
- In newly developed areas, the types of recreation spaces most likely to be used by new communities are identified as:
  - Active connections, including walking trails/paths
  - natural areas, including lakes or water bodies
  - local passive open spaces, including picnic and BBQ facilities, children's playgrounds and dog exercise area
  - local active open spaces, with hard courts
  - fee-based spaces and services, such as gym/health and fitness facility
  - regional spaces and facilities, including botanic gardens, swimming pools, gymnastics hall, mountain bike tracks, facilities for motorsports as well as aviation activities.

DPE's *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts* (2018) identifies the South Creek precinct located to the north east of the SCW Precinct. The South Creek precinct is intended to become the parkland spine to the Aerotropolis and the broader Western Parkland City and will be envisioned to provide open spaces and water-oriented recreation activities for communities.

Camden Council's *Spaces and Places Strategy* (2020) locates the site in the Growth Areas district, which it identified as currently and projected (2036) undersupplied in open space. The open space types listed in the *Spaces and Places Strategy* (2020) have been aligned to the NSW GA *Draft Greener Places Guide* (2020), incorporating:

- Natural areas: nature and low-impact recreational activities (e.g. walking, cycling, picnics)

- Passive open spaces: parks, gardens and linear corridors for passive recreation activities and supported by suitable infrastructure (e.g. walking paths, picnic tables, areas for gathering in the outdoors)
- Active open spaces: outdoor spaces for formal community sports, typically with sporting facilities (e.g. playing fields, amenities and changing blocks, spectator stands/seating, car parks)
- Riparian corridors: open spaces or connections aligning or traversing waterbodies.

Camden Council's *Spaces and Places Strategy* (2020) identifies the types of recreation spaces that are likely to be most in demand in the Growth District:

- accessible spaces with cycling facilities and close to public transport
- passive and active recreation opportunities, including play spaces for young and older children, as well as whole-of-life sports and low impact recreation options (e.g. walking, tennis, etc)
- family friendly spaces, with facilities for picnics and BBQs, and spaces for social interaction and gatherings
- sporting facilities for team and competition sport, including non-traditional Australian sports
- extended access hours (outside of school and business hours).

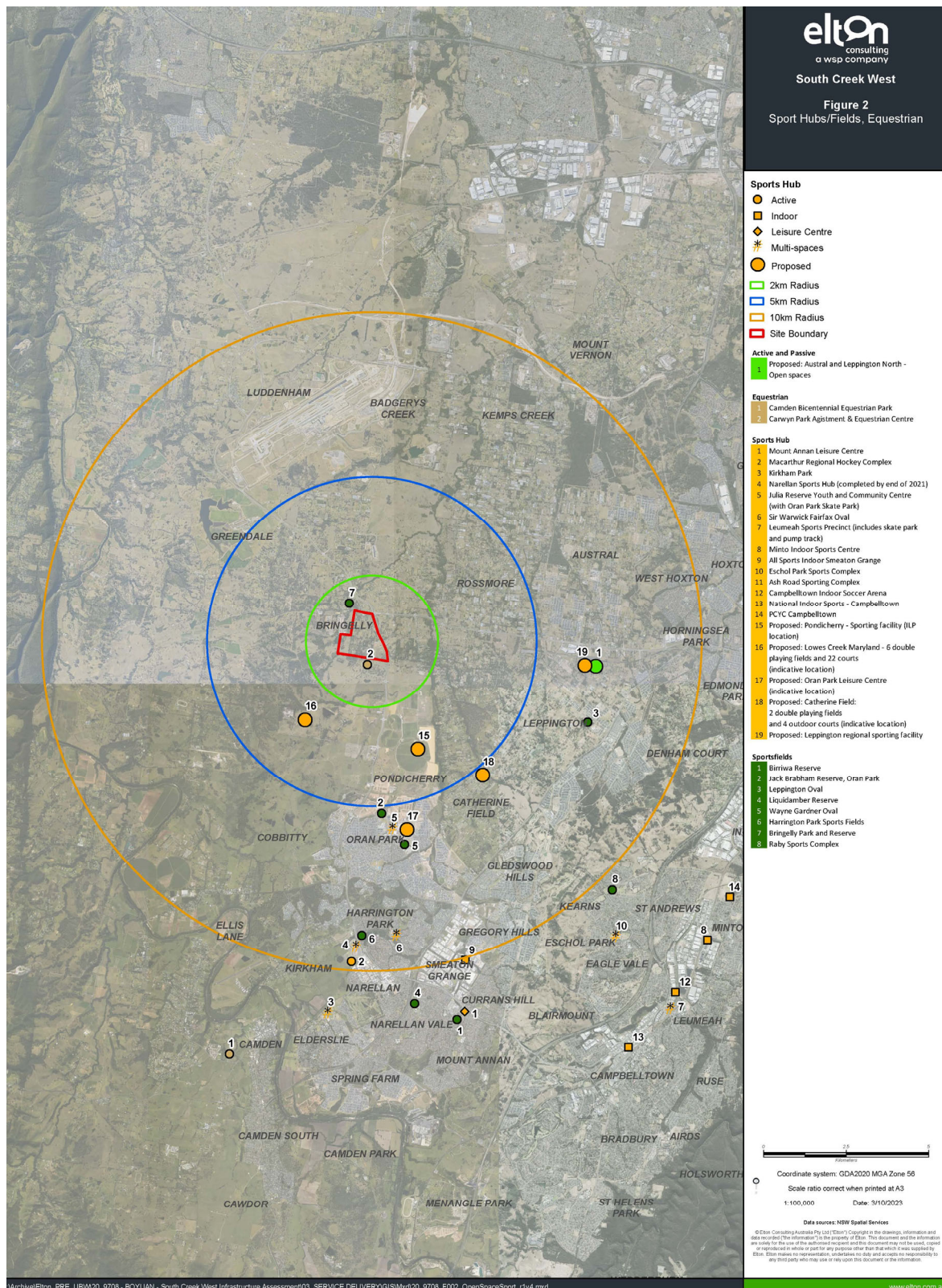
Council's *Sportsground Strategy* (2020) identifies that:

- existing sportsfields across the Camden LGA are generally at capacity (most equal to or over 30hrs of utilisation/week).
- an additional 23 sports fields, 3 baseball diamonds and 26 courts will be delivered through new developments between 2020 to 2040. Courts will be delivered in Leppington (tennis courts), Oran Park, Cobbitty and Narellan (netball courts – Stage 2 of the Hub).
- all new facilities are to have a minimum 2 field layout (with a preference for larger facilities)
- there is an urgent need to address demand for soccer, and there are also strong and expected growing demands for baseball, hockey, league (longer term), cricket, AFL

Liverpool City Council's *Recreation, Open Space and Sports Strategy 2018-2028* (2018) locates Liverpool LGA as the strategic centre of the South West Sydney region, and identifies a deficit in regional sporting facilities across this region. As the centre of the region, Liverpool needs to deliver new and improved recreation and sporting facilities to meet increasing community demand and expectations towards quality and access. Relevant objectives of the strategy are:

- strengthening recreation options: delivering new or upgraded infrastructure to meet community needs
- strengthening the local sports sector: delivering new and upgraded local infrastructure and improving the understanding of the needs of local sporting clubs and the wider community
- the design of sporting and recreation facilities: should be inclusive and accessible to integrate the community with the facilities and to avoid single use planning
- current and proposed statutory frameworks: delivery of local infrastructure is incorporated into the Action Plan with differentiation between local and district open space and sport opportunities.

Figure 3.2 Existing open and recreation spaces



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## 3.3 Education and childcare

There are no existing education or childcare facilities on the site. Existing education facilities in the surrounding area are shown in Figure 3.3 on the following page.

### 3.3.1 Education

The site is currently within multiple primary school catchments i.e. Bringelly Public School, Oran Park Public School and Cobbitty Public School. Bringelly and Cobbitty are two small scale schools and Oran Park Public School is currently operating with 1,452 enrolled students. The site is also within the Oran Park, Elderslie and John Edmondson High Schools catchments. Additional high school places capacity has been provided via an upgrade at Oran Park High School.

In a mid-2020 interview with a representative of the Department of Education (DoE), it was identified that all existing primary schools surrounding the site are, or will be, at capacity accommodating demand within their immediate catchments / localities. These include Oran Park Public School, Oran Park Anglican College, Cobbitty Public School, Bringelly Public School and Leppington Public School. A new school was opened near Oran Park (Barramurra Public School) with 2022 enrolments at 571.

A key challenge placing pressure on existing schools is the size of their sites, as many are located on smaller sites and hold a limited number of classrooms.

At the time of the interview, plans for a combined government primary and high school on a 6ha site in LCM continue to be in early stages, and no site had been secured. Planning for a potential high school in the Aerotropolis is also yet to be progressed. However, it was recognised by the DoE representative that any potential future school in the Aerotropolis would only address demand generated by the development in the Aerotropolis.

A key comment from the DoE representative was that new developments of scales similar to LCM, Austral and Leppington North and Catherine Fields will need to accommodate the demand for school places generated within their site.

In new release areas, such as the Bringelly site, DoE expect to see about 70% of primary aged students and 60% of high school students enrolled in a government school.

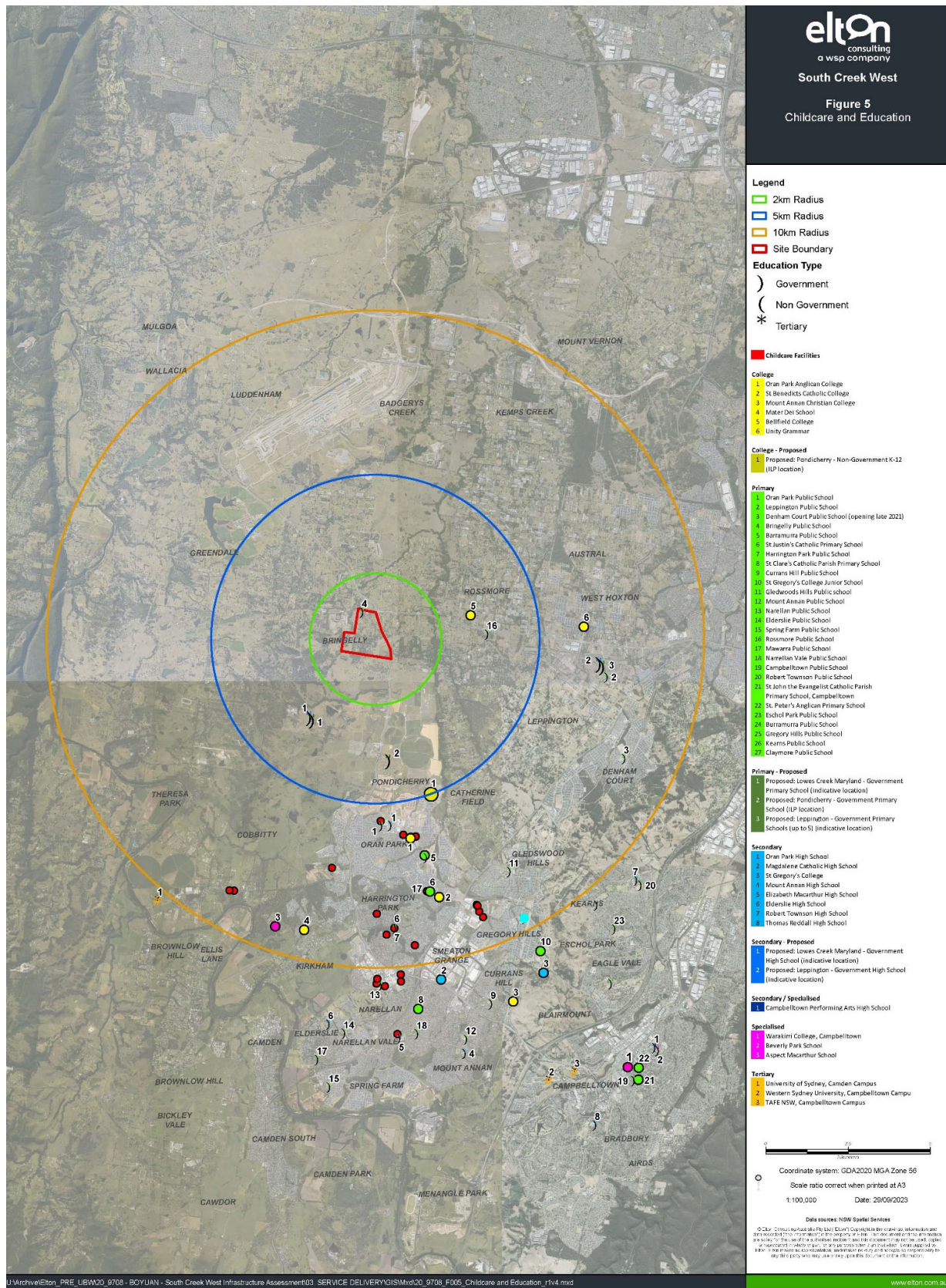
### 3.3.2 Childcare

Camden Council operate Camden Family Day Care, a support service which caters for families with children:

- during standard and non-standard hours (flexible hours)
- before/after school
- during school holidays
- in some circumstances overnight and weekends.

Other childcare options are provided by a mixture of private enterprises, not for profit and community groups.

Figure 3.3 Existing education and childcare facilities



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## 3.4 Health and wellbeing

There are no existing health and wellbeing facilities within 5km of the site (see previous Figure 3.1) and the nearest hospitals are 15-20km from the site, in Camden, Campbelltown and Liverpool.

DPE's *Western Sydney Aerotropolis Plan* (2023) identified the potential for world-class health facilities in the Aerotropolis including a major public hospital and a private hospital. The Liverpool Health, Education, Research and Innovation Precinct needs to plan for significant population growth. In early 2020, the precinct was in the planning phases, as part of the Liverpool Hospital Stage 2 redevelopment. Preliminary plans indicate shared and publicly accessible health-oriented facilities, establishing collaboration and cooperation between public and private health services, optimising efficiencies in service delivery through colocation and shared resources.

A representative from the South Western Sydney Local Health District (SWSLHD) described that a key consideration for community use of health spaces and services is accessibility. According to the representative:

- Health NSW are transitioning out of the old community health model (based on universal services) into targeted services (the right care at the right time, for the people who need it)
- the distance between home and transport nodes and/or commercial centres in South West Sydney is gaining stronger recognition as a challenge to access (travelling to Merrylands or to Campbelltown)
- within increasing development and population growth in South West Sydney, road networks are also becoming more congested, and therefore it is also taking longer to get to larger health services and spaces.

The representative also recognised that many lessons had been learnt regarding health services delivery, during the COVID-19 periods of 2020, particularly in virtual care and connectivity. The COVID-19 pandemic highlighted the need for more accessible and less contact options which would also make visitation less travel-intensive, such as virtual pop-in clinics in local and village centres (possibly operating from community facilities).

According to the representative, the large land area of the SWSLHD supports the delivery of larger community health hubs, located in strategic centres with good transport connections. Oran Park (existing), Leppington (planned) and the Aerotropolis (planned) community health hubs are positioned radially from the site. These hubs are offering/will offer multifaceted services for a broad spectrum of health needs.

When asked to consider the cumulative demand of new populations in LCM and the SCW Precinct on the health network, the representative indicated that these populations would not generate the need for a community health hub. Still, the representative recognised that new community members would need accessible health services in their locality, and that these services would need to adapt as the local community changes (i.e. as people move in, they will be younger and fitter and potentially have young children, but this will change as the population ages).

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## 3.5 Emergency services

### 3.5.1 Ambulance

The site is located within the NSW Ambulance (NSWA) South Western Sydney Zone 1. There is one existing ambulance station in the South Western Sydney Zone 1 in Camden.

According to a representative from NSWA, key drivers for community access of ambulance services are:

- population growth and ageing: older patients are the most frequent users of ambulance services
- disease patterns, including chronic disease
- social support and alternative transport options for primary care
- access to alternative services, particularly primary health care, and access to telephone advice and referrals as an alternative to an emergency response

- community expectations of the role of an ambulance service and response times, and community knowledge of alternative options in relation to non-emergency transport
- changes in other parts of the health system that impact on ambulance service demand (e.g. increased hospital throughputs and rates of treatment, increased rates of day and outpatient treatments, shorter lengths of stay in hospital, etc).

NSW Ambulance (NSWA) regularly updates modelling for ambulance responses needs in Sydney growth areas, including greenfield areas, by investigating demographic characteristics (e.g. age, population size and population density) and common utilisation rates of greenfield areas to project demand associated with new developments.

The current rates of utilisation in this zone are provided in Table 3.1 below. Persons aged 70 years and older are accountable for approximately 85% of utilisation in South Western Sydney Zone 1.

Table 3.1 South Western Sydney Zone 1 – ambulance utilisation rates

Age group (years)	Utilisation rate (per 1,000 pop)	Percentage of utilisation (to nearest 1)
0-14	42.9	4%
15-44	51.5	4%
45-69	67.0	6%
70-84	262.6	22%
85 or above	766.6	64%

Source: Ambulance NSW, 2020

According to the NSW representative, staging is a key consideration, as the potential demand created by new developments is assessed as cumulative demand on the existing network. In addition, ambulance stations cover a response area, rather than localised demand (i.e. suburb or town level) demands, which influences ambulance station placement including:

- ambulance station locations need not necessarily be placed within the centre of the population, instead location is determined by prioritisation of need, and this primarily reflects the distance and travelling time from existing stations to the level of the demand
- where a new station is required due to levels of demand, additional analysis determines where the station should be located, with consideration of the impact on the new community as well as the existing demand (i.e. station location should be in the centre of the overall demand that that new station will serve, which is more strategic than a geographically central position, such as a town centre).
- The representative indicated that NSW is regularly consulted on the need for new services in identified Sydney growth areas, primarily via DPE and the GSC, and submits planning information to GSC and DPE for identified growth regions for centralised coordination of planning. They recommended that developments connected with DPE and GSC, such as the site, should liaise with these groups as the best source for current information.

Updated findings via renewed engagement were sought in September 2023 however did not eventuate.

### 3.5.2 Police

The site is located in the Camden Local Area Command (LAC). Within this command, there are three police stations, located at Camden (Camden Police Area Command, or PAC), Picton and Narellan (head office).

According to minutes from the *Camden Police Area Command Community Safety Precinct Committee Meeting* (2018) and *Camden Police Area Command Community Safety Precinct Committee Meeting* (2019) the Camden PAC has a stable workload. Common investigation related to non-domestic violence assaults, commercial licensing, malicious damage, stealing vehicles and stealing from vehicles as well as fraud.

In October 2023, the NSW Police Force confirmed that a need for a new police station has not been identified in the Bringelly area.

### **3.5.3**      *Fire services*

Existing Rural Fire Services (RFS) facilities exist in Leppington and Narellan.

As advised during engagement conducted with a representative of Fire and Rescue NSW in September 2023, a new Fire and Rescue facility was opened early 2023 and is now operational.

It was also advised that other Fire and Rescue facilities are planned in the Catherine Field/south Leppington area, and north of Bringelly Road in the Badgerys Creek area.

It was confirmed that the new Oran Park station is likely to service the site, in potential combination with Leppington RFS when or if required.

## 4 Standards, benchmarks and trends

Standards, benchmarks and trends in social infrastructure planning, numerical standards are commonly used to provide an initial indication of the requirements for a given population. They are usually expressed as the number of facilities, places, floor space or land area required for a population of a given size.

However, planning for social infrastructure requires a combination of numerical and quantitative considerations for the delivery of quality spaces and facilities which respond to unique locational and social contexts.

It is common for qualitative considerations to have significant overlap with guiding principles for the provision of social infrastructure. Guiding principles for this report are provided on the following page.

The following section investigates quantitative and qualitative considerations for:

- community and cultural facilities, encompassing community centres and libraries
- open spaces, considering both passive and active open green spaces
- sport and recreation, identifying the types of active recreation spaces within active open spaces
- education and childcare, including early education and government and non-government primary and secondary schools
- health and wellbeing, the demand for GPs and health and emergency response catchments.

Standards and benchmarks have been considered from a range of sources, including Elton Consulting's *LCM Social Infrastructure Assessment* (2018) and Camden Council's *Spaces and Places Strategy* (2020), as well as leading open space and recreation guidelines prepared by the NSW Government Architect.

### 4.1 Guiding principles and objectives

The following guiding principles and objectives for the site have been informed from findings in the preceding sections.

At this stage in the planning process, the guiding principles and objectives are for all social infrastructure and intended to provide a degree of flexibility and adaptability for the planning of social infrastructure. As plans progress for the site, the guiding principles and objectives may need to be revised, to address the different types of social infrastructure required as well as the latest planning and directions for social infrastructure provision.

Guiding principles and objectives for social infrastructure are provided in Table 4.1 below.

Table 4.1 Guiding principles and objectives for social infrastructure

Guiding principles	Description	Objectives
<b>Accessible</b>	— walkable, local neighbourhoods (400m), various modes of transport/movement	Social infrastructure: <ul style="list-style-type: none"><li>— supports and fosters community interactions and connections</li><li>— promotes community health and wellbeing</li><li>— can be accessed by all community members, regardless of abilities, age, etc.</li></ul>
<b>Equitable and safe</b>	— accessible, equitably distributed, universal design and CPTED	
<b>Staged</b>	— delivery of social infrastructure (types and sizes) responds to population growth and demand	
<b>Local identity</b>	— incorporating natural and cultural heritage into design, fostering vibrancy	
<b>Central</b>	— positioned in town centres or adjacent to transport hubs	

Guiding principles	Description	Objectives
<b>Multipurpose, flexible and adaptable</b>	— multiple simultaneous uses, meets diverse needs, design enables structural or architectural change to respond to changing community demand	— delivery is staged to accommodate levels of community demand
<b>Partnerships</b>	— with local (Camden and Liverpool councils) and other agencies (WSLHD, DoE, DPE, emergency services, etc), including government and non-government	— is delivered collaboratively — reflects cultural and natural heritage, but also fosters new local identities
<b>Co-located and clustered</b>	— spaces can be shared and facilitate delivery of complementary services	— strategically located to take advantage of/contribute to the activation of (mixed use) centres
<b>Climate sensitive</b>	— fostering ecological value and embedding environmentally sustainable design (e.g. local urban heat reduction, water retention, etc) and embedding green infrastructure planning (e.g. covered walkways, increase tree canopy)	— can be adapted to response to changing community composition, size etc – long operational life
<b>Responsive</b>	— responding to social infrastructure planning in surrounding centres and precincts, wider South Creek, SWGA	— functions as part of the larger SWGA social infrastructure network.

## 4.2 Standards and benchmarks

A key consideration for the investigation of potential quantitative standards to be applied to the site were the latest standards and benchmarks in Camden Council's *Spaces and Places Strategy* (2020) and *Sportsground Strategy* (2020) as well as consideration of Council's contributions plans.

A summary of the adopted social infrastructure standards and benchmarks for this report are provided in Table 4.2 on the following page (with their source). **These are applied to the site indicative layout plan in Section 5.5.**

Table 4.2 Standards and benchmarks applied to this report

Social infrastructure type	Provision standard and/or benchmark	Source
Community and cultural centres		
Community centre	Regional: 1 community centre: 20,000 people (catchment of 40,000 people)  Neighbourhood: 1 community centre: 6,000 people (catchment of 10,000 people) however preference for fewer, larger (e.g. regional) centres or upgrade to existing facilities	Spaces and Places Strategy (2020)
Library	1 library: 40,000 people	
Civic/cultural centre	1 civic/cultural centre: 30,000 people	
Open and recreation spaces		
Open space	2.83 ha/1,000 people (active and passive)	Spaces and Places Strategy (2020)
Active recreation spaces:		

Social infrastructure type	Provision standard and/or benchmark	Source
Sportsfields	1 sports field: 1,850 people	Spaces and Places Strategy (2020)
Sports courts	1 court /multipurpose court: 2,000 people	
Off leash dog park	1 off-leash dog park: 16,000 people	Spaces and Places Strategy (2020)
Playspaces	1 playground: 2,000 people	
Childcare and Education		
Childcare	All market led as Camden Council don’t operate long day or pre-school childcare centres in the Growth Centre precinct  no. of places: 30% of children in the 0-4 age cohort  no. of facilities: 75-150 children per facility.	Previous Social Infrastructure Assessments (SWGA) and Camden Council’s Childcare Review
Primary schools	no. of potential students (aged 5-11): 70% for government school and 30% for non-government school  demand for a new school: approx. 1,000 enrolment places  size of school: 1.5ha site	Informed by DoE’s Site Selection and Development 2023
High school	no. of possible students (aged 12-18): 60% for government school and 40% for non-government school  demand for a new school: up to 2,000 enrolment places  size of school: 2.5ha site	
Health and wellbeing		
GPs	1 GP per 950 people	Informed by South West Sydney Local Health District (SWSLHD), South West Sydney ratio)
Primary Heath Care Clinics	Privately operated, needed for each precinct:  15,000-18,000 people per clinic	
Team General Practices	Secure own premises:  4,000-5,000 people per practice	

Camden Council's *Spaces and Places Strategy* (2020) is consistent with historical open space benchmarks and standards adopted by Council, including the open space standard of 2.83ha per 1,000 people. Other notable features are:

- No proportional allocation to active or passive spaces
- An increased benchmark in playspace provision, but general expectation of larger, multipurpose spaces
- A consistent benchmark for sportsfields
- Adaptation regarding previous hardcourt provision to consider sports courts and multipurpose courts.

### Camden Council's open space benchmarks

Camden Council's benchmark of 2.83ha/1,000 people has been adopted from the NSW *Growth Centres Code* (2006), which was derived from the historical 1900's British quantification of 7 acres/1,000 people. The standard of 1 playing field/1,850 people originated in a study undertaken by GHD in 1993.

This report acknowledges and applies the open space benchmarks adopted by Camden Council. However, it also recognises that contemporary open space planning fosters greater recognition of the unique site constraints and opportunities (e.g. topography, floodplains, riparian corridors, connections, etc) which can impact on the quantity of open space delivered, as well as supporting high quality design and amenities which can enhance and increase the usability of open space (see the following **Section 3.3** and **Section 3.4**).

## 4.3 Qualitative considerations

Qualitative considerations consider how the features of social infrastructure (and in some cases their surrounds) can maximise community benefit and use.

Qualitative considerations for the planning and delivery of social infrastructure most relevant at this stage in the planning process (i.e. development of an ILP) include:

- **contributing to the network:** an understanding of the existing and/or planned social infrastructure, and providing infrastructure which contributes to the broader network, avoiding duplication or ongoing gaps in types of spaces and/or services
- **location:** centrally located and clustered facilities and spaces in commercial or town centres, creating hubs of activity where the community can equitably access a combination of services, spaces and social experiences.
- **clustering:** integrating social infrastructure within centres, with other facilities and services, so that community access and use to spaces and services can be maximised
- **accessibility:** integrating universal design elements into built structures, crime prevention through environmental design (CTPED) principles as well as considering ease of travel and diverse travel options, in particular, walkability
- **connections:** creating connections and/or linkages between social infrastructure, which can enhance both physical and social connections, create spaces for informal interactions and maximise the capacity of social infrastructure
- **sustainability:** efficiencies in management and operation of social infrastructure can be supported through co-location (e.g. facilities sharing amenities, such as bathrooms or open spaces), design (e.g. water sensitive urban design elements) and the delivery of large, clustered, multifunctional and high quality infrastructure (in comparison to several smaller, standalone and single or limited use)
- **incremental delivery:** particularly important in the planning and delivery of new communities, providing infrastructure of suitable size, scale and in suitable locations with the capacity to be increased and enhanced as the community increases
- **management and operation:** recognising who will be the responsible for the maintenance, management and/or operation of social infrastructure, and considering resource parameters (e.g. staff, budgeting, etc.) as well as broader planning strategies of policies (e.g. open space strategy, community facility strategy, school planning guidelines, etc).

**The preceding considerations are applied to the site indicative layout plan in Section 5.5.**

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## 4.4 Trends

### 4.4.1 *Community and cultural facilities*

#### 4.4.1.1 Size and scale

There is a move away from small, single purpose community buildings that serve local neighbourhoods due to management and maintenance costs, limited use, lack of flexibility, security issues and limited capacity for staffing. Instead, there has been a move towards the provision of larger, but fewer, community centres that are designed for bigger population catchments.

Larger facilities can provide a wider range of activities, programs and services to a wider range of community members and are more likely to be activated across the week and to attract higher rates of utilisation. Fewer, but larger, facilities also provide scope for having higher quality facilities that can accommodate some special uses (e.g. cultural activities, training rooms), rather than just comprising a single hall for hire.

#### 4.4.1.2 Clustering

Leading practice favours the clustering of community buildings in centres to enhance accessibility and connectivity with related uses. Well-used community facilities tend to be located in places that are readily accessible by public transport and where people already tend to congregate, such as shopping centres and schools. These locations increase convenience and decrease car trips by reducing the need for multiple trips. They also enhance visibility, safety and convenient access.

#### 4.4.1.3 Co-location

Co-location of community facilities and services, involving shared use of buildings among a number of facility types as well as service providers, is a commonly identified objective of most recent planning efforts. It can involve accommodating community centre space, libraries and community service providers (in some cases, multiple organisations and services) in a single location or building. Co-location has potential advantages in pooling resources to provide better facilities than may be available if provided separately.

#### 4.4.1.4 Community hub

An increasing popular model of community facility provision that incorporates the trend for size, scale and co-location is the 'community hub'. A community hub is a multipurpose public gathering and activity place where a variety of activities occur and where a wide range of community needs can be met in both formal and informal ways.

#### 4.4.1.5 Multipurpose and multifunctional

To make the best use of limited resources and ensure that facilities are utilised as much as possible, community facilities need to provide for multiple uses and serve a range of population groups, as well as being capable of adapting as needs change over time. Successful community facilities tend to be those that offer a diversity of well organised and well attended services, programs and activities.

This diversity requires a variety of flexible spaces and amenities, capable of being multifunctional and accessible. At multipurpose community centres there has been a focus in more recent years on flexible spaces that can accommodate a range of activities, including creative and performing arts, rather than specific-use spaces. Such flexible spaces have proven to be better able to adapt as community needs and interests change and to ensure these spaces are better utilised as they are also suitable for other uses.

#### 4.4.1.6 Sustainable

Community facilities are increasingly being used to showcase sustainable building methods and design. Sustainable initiatives can include rainwater harvesting, solar panels, energy efficient lighting and stormwater treatment. Another example of environmental sustainability is adaptive reuse.

In addition to environmental sustainability, financial sustainability has become a core focus area in the provision of community facilities. In an environment of limited resources, local governments are becoming increasingly interested in exploring ways to decrease costs in relation to developing, operating and maintaining community facilities, including through, for example:

- incorporating environmentally sustainable design features that will reduce a facility's operating costs
- undertaking partnerships with private developers or community organisations in the delivery and/or management of community facilities and services
- securing a range of funding grants to assist the delivery of new facilities and programs.

Incorporating income generating space and activities in new facility developments (e.g. commercial space for hire, spaces to hire suitable for larger private and business functions, cafes and retail space, fitness centres and monthly markets).

#### 4.4.1.7 Third spaces

Informal community meeting spaces such as a foyer area or a 'community lounge' or 'community living room', are reported to be some of the most popular spaces in contemporary community facilities. These spaces which typically include couches, chairs, tables and reading material (and typically an adjoining café) encourage people to linger and gather, to meet and socialise. They can become important community focal points that bring people together and promote social connection and integration.

Responding to the importance of the 'third place', the 'community living room' model of library is becoming increasingly prevalent. This model involves a focus on levels of comfort, space and amenity that encourage people to 'linger' and spend some time. This includes comfortable seating, Wi-Fi, reading material, games, art installations, displays, lounge areas with newspapers and magazines, as well as cafes. These same features are increasingly being provided in community centres, and in community hubs that include both community centre and library components.

#### 4.4.1.8 Partnerships

Partnerships may also be utilised for the capital development of facilities. Increasingly, Section 7.11 contributions are not substantial enough to fund the delivery of facilities and there are increasing numbers of facilities being delivered across NSW through delivery partnerships, including through:

- Voluntary Planning Agreements (VPAs) – an agreement between a council and a developer to deliver a facility as part of a residential or mixed-use development, in place of payment of Section 94 contributions. Facility specifications, requirements and the level of completion are outlined in the agreement. VPAs can be a successful method for delivery for all parties (the council, developer and the community). However, not all VPA proposals received by a council will necessarily be suitable. Success relies on the council ensuring that the proposed facility represents the best possible solution for the council and the wider community in the long run.
- Public Private Partnerships (PPPs) – where a council and a private developer partner to deliver a facility as part of a mixed-use development. With a desire to maintain a higher level of involvement in the delivery of a facility, a number of local governments are choosing PPPs as a preferred delivery model. In these arrangements the council is a **partner** developer. These arrangements can involve the council running an Expression of Interest (EOI) process for the redevelopment of a council site. Partners can include commercial or retail developers and operators and residential developers.

#### 4.4.1.9 Shared use

In NSW, the DoE has a policy that recognises schools as valuable community assets which can be made available for community use when not required for school purposes. There are also examples of projects where councils have contributed funds towards the joint provision of facilities which can be accessed by both school and community. While most of these examples relate to open space, and sporting fields in particular, there is increasing interest within the DoE to consider joint provision of built facilities, including community halls, performing arts facilities and indoor recreation facilities. This could be investigated in the future when planning for a school site progresses.

#### 4.4.2 Open spaces and recreation

Camden Council's *Camden Sportsground Strategy* (2020) provides a series of key trends to consider when planning for sporting grounds, being:

- increasing cultural diversity with different needs
- increasing women participation and implications for amenities
- continued rise of families with younger population needs
- high utilisation of fields particularly in winter (predominant sport is soccer which accounts for 64% of all usage, then rugby league)
- rise of health issues which the provision of quality accessible open spaces can help address
- need for more informal sporting and recreational activities as people are time poor
- need for adapted opportunities for seniors to stay active
- rise in less popular sports such as baseball, requiring upgrades of existing facilities.

Principles guiding the delivery of facilities include:

- expanding capacity and viability of existing facilities to maximise existing investments
- maintaining diversity of sports including competitive opportunities and new sports formats
- addressing changing demographics (refer above)
- supporting infrastructure, including lighting, basic amenities.

The *Camden Sportsground Strategy* (2020) and *Spaces and Places Strategy* (2020) also list preferences for sport grounds hierarchies and features and sportsfield layout, including:

- local recreation spaces and sportsgrounds with a catchment of one LGA to service the needs of local communities and sporting clubs, and a minimum of four fields in a two field configuration with spaces for storage and amenities facilities, as well as quality landscaping elements, larger playgrounds and BBQ facilities, adequate car parking
- single field configurations or junior sizes cannot be accepted as they have limited use and are burdensome.

Other future priorities for open spaces listed in the *Spaces and Places Strategy* (2020) are:

- improved understanding of community needs to meet increasing open and recreation spaces demand, including providing spaces for all ages and abilities
- co-located, multipurpose, multi-use and flexible facilities and partnership with other agencies to deliver improved spaces which enable high utilisation
- prioritisation of access to natural areas and the delivery of green linkages.

Liverpool City Council's *Recreation, Open Space and Sports Strategy 2018-2028* (2018) identifies that open spaces need to enable greater multifunctional community utilisation, such as improving play opportunities through play spaces which integrate with nature and adventure play.

The strategy also recommends that open spaces are designed to provide a broad range of environmental and ecological benefits, to mitigate the impacts of climate change and contribute to reduce urban storm water runoff.

Liverpool City Council's *Connected Liverpool 2040, Local Strategic Planning Statement* (2020) identifies a set of recommendations for green and open space planning in Liverpool LGA, including:

- increasing green space, tree canopy cover
- increasing connectivity and recreation opportunities along South Creek
- supporting the implementation of the NSWGA South Creek Green Grid Corridor.

The Statement also includes a planning priority to provide high quality, plentiful and accessible open space and infrastructure, aligned with population growth.

Active corridors require supporting infrastructure and amenity to foster equitable, accessible and suitable use by the community. Dimensions (i.e. width and length) and the incorporated spaces are key elements when considering the suitable functions and types of uses for corridors spaces, such as:

- sufficient width and indicators/signage for safe shared use by pedestrians and cyclists
- lighting to enable use or travel at all times
- break out spaces for rest (with seating) or exercise (e.g. fitness stations)
- the aesthetic, providing a visually appealing place that encourages people to spend time
- visibility, enabling passive surveillance and safety for users.

#### 4.4.3 *Network of green and open spaces*

The NSW Government Architect's (NSWGA) *Green Grid* (2014) recognises that South Creek, adjoining the north eastern corner of the site, will play an important role in open space provision and distribution for the SWGA. The South Creek Green Grid project, which incorporates South Creek and its tributaries, aims to create a continuous open space corridor along the entirety of South Creek. The corridor has the potential to be a regionally significant recreation and active transport corridor for Western Sydney.

The *Green Grid* (2014) envisions a cohesive green infrastructure network across Greater Sydney. The NSW GA nominates that new developments provide an opportunity to plan for and deliver greater (a combination of size and quality) open spaces and integrated networks in Greater Sydney. High quality and an interconnected network of open space will provide the opportunity to promote greater liveability.

The NSW GA recommends:

- new developments provide new open space and integrated networks of pedestrian and cycle connections to accommodate the needs of existing and new residents
- completing the regional trail connecting South Creek with the Great River Walk on the Hawkesbury-Nepean River
- prioritising the importance of rivers as recreational destinations
- establishing Kemps Creek and South Creek as major open space destinations and connectors to support development in the SWGC
- strengthening or establishing connections from the SWGA to key regional open spaces and parklands.

#### 4.4.4 *Participation*

A community survey conducted for Camden Council's *Space and Places Strategy* (2020) found:

- walking was the most population recreation activity and walking paths were highly valued
- the provision of play spaces, outdoor fields and walking paths were the community's highest priorities
- active open space is at or over capacity across Camden LGA, and there is demand for additional sports fields

- increasing sports club memberships have implications for outdoor playfield fields, sportsgrounds and sports facilities in Camden LGA (many of which do not meet sporting club standards for senior games or finals, meaning large game events are hosted outside of Camden LGA)
- distance and inconvenient access where the greatest impediments to current use of open and recreation spaces, highlighting the importance of an equally distributed network.

DPE's *Greater Sydney Outdoor Study* June 2019 investigated how people of Sydney use and value open spaces for recreation, and the current and future demand for types of activities to identify gaps.

Common open space aspirations included:

- more high quality, open spaces supported by good facilities
- more opportunities for swimming and water-based activities in the local area
- larger open spaces, to provide greater opportunity for diverse, outdoor recreation activities
- open spaces that assist in building a greater sense of community
- improvements to walking and cycling networks, to help get to outdoor recreation areas without a car
- improvements to existing parks, to ensure they're being well utilised
- protection of existing open spaces and recreational areas for future communities
- open spaces that feel safe and provide for multiple uses.

#### 4.4.4.1 Adult recreation

The NSW Office of Sport's *Participation in sport and active recreation AusPlay* results (2022 data) for NSW reflect that 89.2% of adults (aged 15 or over) in total participated in sport and/or non-sport related activities in the last 12 months, and 81.0% at least once a week. Camden had slightly lower adult participation rates (86.7%). LGA and NSW findings indicate similar top 10 sport and recreation activities. These include a combination of organised and unorganised activities. Higher levels of football/soccer participation are noted in Camden compared to NSW, with lower levels of running/athletics and swimming.

	NSW	Camden
Walking (recreational)	44.2%	40.5%
Fitness/gym	35.9%	38.9%
Running/athletics	16.7%	12.1%
Swimming	17.8%	11.8%
Football/soccer	7.3%	8.4%
Cycling	10.6%	7.0%
Yoga	6.1%	5.7%
Golf	5.5%	4.9%
Bush walking	7.7%	4.5%
Tennis	5.6%	3.8%

#### 4.4.4.2 Children's recreation

The NSW Office of Sport's *Participation in sport and active recreation AusPlay* results (2022 data) for NSW reflect that 74.6% of children (aged 0-14) adults (aged 15 or over) in total participated in sport and/or non-sport related activities in the last 12 months, compared to 80.9% in Camden. These include a combination of organised and unorganised activities. Higher levels of dancing and gymnastics are noted in Camden compared to NSW, with lower levels of football/soccer and swimming.

	NSW	Camden
Swimming	37.5%	31.4%
Football/soccer	21%	18.5%
Dancing (recreational)	10%	16.1%
Gymnastics	10%	19.2%
Netball	6%	no data
Tennis	5.2%	no data
Running/athletics	5.2%	no data
Basketball	5%	no data
Cricket	4.4%	no data
Rugby league	4.3%	no data

#### 4.4.4.3 Local sporting clubs and codes

The NSW Office of Sport's *Strategic Plan 2020-2024* (2021) identifies that population growth and federal and State-based goals for increased sporting participation have driven community demand and expectation for more and higher quality facilities.

According to the plan, there is currently a deficiency in sporting and recreation spaces and infrastructure. This is generating community demand for access to and use of quality places and spaces for sport and recreation, particularly in urban areas. This results in constrained or capped community involvement in sport and active recreation determined by the capacity of current infrastructure.

The critical challenge, identified by the NSW Office of Sport, is to adopt a flexible approach to the provision and use of sport and recreation places and spaces, so that community utilisation is increased and facilities are fit for purpose.

The plan sets a goal to improve access of places and spaces for sport and active recreation. This objective is aimed to focus on:

- facilitating greater integration with councils, state government and other facility providers on facility planning and delivery.
- providing access to natural environments for active recreation and outdoor recreation opportunities
- adopting affordable and sustainable models to manage the long-term impacts of investment in infrastructure.

#### 4.4.4.4 Elite level infrastructure

The NSW Office of Communities' *Stadia Strategy* (2012) includes a clear direction that future capital investment is prioritised towards the delivery of NSW Government-owned or leased stadia. The strategy suggests that this will ensure improved facilities for spectators and participants and enable venues to cater for multipurpose sports and community use.

The strategy is focused on supporting community-level facility networks (i.e. local sporting club facilities), maintaining the link between elite sport and community engagement, and generally increasing community access to sporting events (as spectators and sporting participants).

Key directions for stadiums are:

- Improving community access
- Achieving an optimal mix of venues to meet diverse community needs
- Increased utilisation to improve financial and community investment.
- The Office of Communities has also recommended that more detailed work regarding community sport and recreation facilities is completed, contributing to a revision of the current strategy.

# 5 Site analysis and recommendations

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## 5.1 Indicative layout plan

The indicative layout plan (ILP) for the site (prepared by Urbis, version: September 2023), is shown in Figure 5.1 on the following page.

Key features of the ILP relevant to this report are:

**A village centre**, clustered with playing fields (see below) and a school site

**A projected estimate of 3,371 dwellings** – based on preliminary composition estimates of a mixture of dwelling types:

- Low density: detached dwellings on large lots or smaller urban lots (48%)
- Medium density: semi-detached and terrace or row houses (44%)
- High density (up to 2-3 storeys): located in the village centre (8%).

**A school site**, located adjacent to active open space, medium density and village centre

**An estimated total open space provision of 45.36ha (of which 37.82ha is useable)**, including:

- Passive open spaces, including ecological open spaces, dispersed across the site in a range of sizes totalling 14.24ha (all useable), including a sloping open space in the south western corner
- Playing fields on 16.04ha (all useable), close to the village centre and school site
- A central riparian corridor running diagonally through the site and acting as a green spine and connecting to active and passive open spaces across the site (total of 14ha, of which 7ha is useable open space based on a minimum 50% useability)
- Retention basins on 1.08ha (0.54ha is useable based on a minimum 50% useability)
- Aligning the site road network into the LCM masterplan network, to facilitate connections

At this stage, it is the intention that the riparian corridor and retention basins will form part of the landscape and public domain experience of the site. Overall, a minimum 50% of riparian and retention basin areas are identified as useable open space.

### 5.1.1 *Vision for the site*

A visioning workshop for the site was facilitated by Camden Council and attended by members of the ILP project team. Recurring descriptions for a possible vision for the site were:

- Connected – connected communities and neighbourhoods, connected to transport and connected to surrounding centres
- Green – parklands, open spaces, cool places and low carbon emissions.
- Community – liveable, vibrant, diverse and healthy
- Identity – strong and clear, recognition of heritage and culture
- Housing diversity – low rise high density
- Sustainable – best practice and ageing in place
- Well designed – adaptable, quality, balanced, innovate and great spaces.

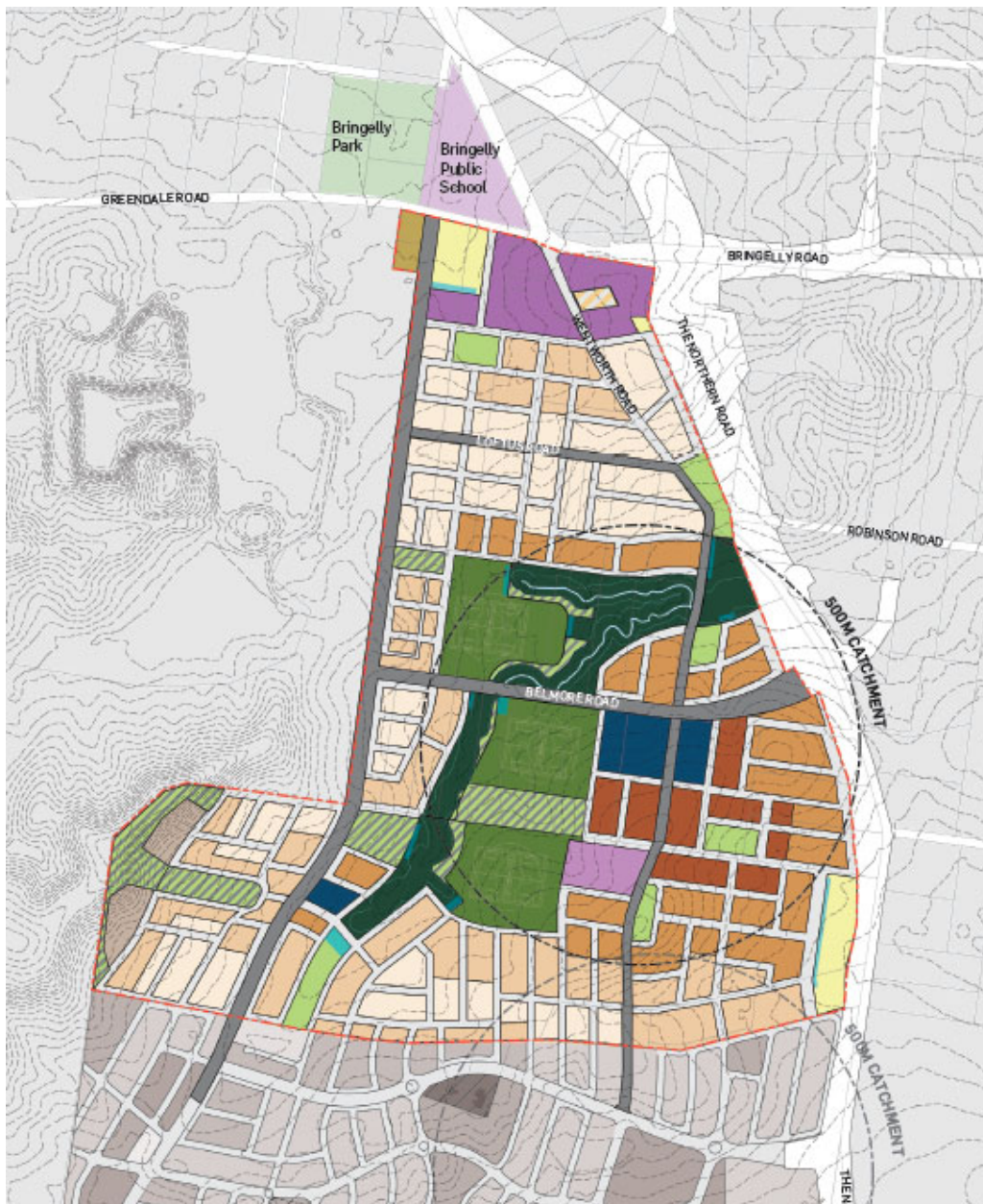


Figure 5.1 The site ILP

Source: Urbis South Creek NW Bringelly Final ILP (version: September 2023)

## 5.2 Indicative yield

At the time of writing this report, indicative yield and population estimates were **3,371 dwellings and 10,704 people** (version: September 2023).

Yields may change as the process progresses.



## Market and economic analysis

According to Atlas Urban Economics *Bringelly: Housing Needs and Economic Impact Assessment* (March 2021), the SWGA is poised to deliver much of Greater Sydney's new housing in the future.

The report identified:

- housing affordability is a primary demand driver in the SWGA
- detached housing on smaller lots remains popular, compared to medium and high density
- proximity to transport and retail is essential.

The report found that the site could support a range of economic and social benefits:

- supporting access to affordable and rental housing, through provided housing at a range of price points
- providing social infrastructure for local communities, including open spaces and a school intended to be provided at no-cost to government.
- supporting economic diversification, through enabling a range of employment uses which could help to improve the diversity and resilience of the Camden economy
- creating a buffer of housing supply, as the site is held in majority ownership and issues of land fragmentation observed elsewhere across the SWGA may be more easily mitigated.

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## 5.3 Projected demographics

The population of the SWGA has grown significantly in the last few years largely driven by development in Oran Park and Turner Road Precincts.

### 5.3.1 Comparison areas

The suburb which contains the site and the broader SCW Precinct currently have relatively low population levels, with the closest population centres located in nearby suburbs (e.g. Leppington and more recently Oran Park). As such, the current demographic character of the site does not offer a comparative indication of the future site population (either through stages of completion of the development, or at 100% complete).

To understand the potential future population profile for the site, this report examined forecast population characteristics for areas in the SWGA that are undergoing or planning similar forms of residential development (e.g. Oran Park, LCM and Catherine Field).

Forecast.id provides a forecast for service age groups for each of these areas, as detailed in Table 5.1 below. These figures show the gradual increase of population and similar changes in age group composition as the development reaches completion, then entering a natural lifestyle cycle (shown in **bold**).

Table 5.1 Age group composition of comparison areas

Service age groups	Oran Park (%)			Catherine Field Precinct (%)			Lowes Creek Precinct (%)		
	2021	2031	2041	2021	2031	2041	2021	2031	2041
Babies and pre-schoolers (0 to 4)	12.6	<b>7.6</b>	6.5	13.3	<b>8.6</b>	7.0	4.2	10.9	<b>9.0</b>
Primary schoolers (5 to 11)	13.4	<b>12.8</b>	10.4	10.9	<b>13.5</b>	10.2	7.3	11.7	<b>12.3</b>
Secondary schoolers (12 - 17)	7.2	<b>10.2</b>	9.2	6.5	<b>9.1</b>	9.1	8.1	6.4	<b>8.4</b>
Tertiary education and independence (18 to 24)	7.9	<b>8.1</b>	9.2	8.1	<b>7.0</b>	8.9	6.9	9.0	<b>8.0</b>
Young workforce (25 to 34)	20.7	<b>13.8</b>	12.5	25.5	<b>14.1</b>	12.6	12.8	22.1	<b>16.8</b>
Parents and homebuilders (35 to 49)	23.3	<b>25.9</b>	22.9	24.1	<b>29.6</b>	24.4	17.8	19.8	<b>23.0</b>
Older workers and pre-retirees (50 to 59)	6.5	<b>9.6</b>	12.8	6.9	<b>9.2</b>	13.8	13.1	7.0	<b>8.1</b>
Empty nesters and retirees (60 to 69)	4.9	<b>5.6</b>	7.9	3.3	<b>5.6</b>	7.4	14.9	6.0	<b>6.5</b>
Seniors (70 to 84)	3.2	<b>4.9</b>	6.5	1.4	<b>3.1</b>	5.8	13.8	5.5	<b>6.4</b>
Elderly aged (85 and over)	0.4	<b>1.6</b>	2.1	0.0	<b>0.3</b>	0.8	0.3	1.7	<b>1.5</b>
<b>Total population</b>	<b>16,169</b>	<b>22,923</b>	<b>21,767</b>	<b>5,038</b>	<b>8,531</b>	<b>8,197</b>	<b>534</b>	<b>7,854</b>	<b>17,401</b>

Source: Forecast id, 2023

### 5.3.2 Assumptions for the site

Based on the comparative figures of full or nearly completed developments, we have assumed a future population and age group composition for the site as it becomes fully operational (see Table 5.2 below).

Based on the ILP dwelling yields, only a small proportion of the population will be living in high density (<5%). However, the provision of social infrastructure, particularly open space, should be adapted to suit high density environments, given the small provision of private open space in this type of residential development. Another consideration for social infrastructure, is its ability to adapt and continue to meet community needs, as a community changes over time. Key implications for social infrastructure provision in the site are likely to include:

- **Babies, pre-schoolers and primary schoolers:** Just under a quarter of the future population will be aged 0-11 years. This has implications for childcare provision and primary schools, as well as open space (parks and active recreation), play spaces and health facilities for childhood and maternal services delivery.
- **High schoolers and young people:** Older children and young people have specific recreation and socialisation needs, including higher participation in organised recreation and informal play spaces
- **Young workforce, parents and home builders:** A large portion (over 40%) of the population will be aged between 25 to 49 years (consistent with the high rates of children). Access to a range of diverse passive and active open spaces will be important to support a variety of needs and uses, including family and social events/gatherings, kick-about spaces, spaces for quiet, etc.

- **Empty nesters and older:** A relatively low proportion will be aged 60 years and older. However, accessibility and mobility for the elderly should be considered, as well as access to adequate health and community spaces, as well as general spaces which can promote social interaction to prevent isolation.

However, age characteristics in the site community will naturally evolve from a newly delivered full development to an established community. Children will age, move from childcare to primary school, primary to high school, and parents will move onto pre-retirement/retirement, becoming empty nesters or older lone households, thereby reducing the average household size. Providing adaptable and flexible facilities that can be easily modified to adapt to evolving community needs is essential to ensure that the infrastructure provided remains well suited. Given the proximity to the Aerotropolis and future employment hubs, it can be assumed that there will be constant demand from working households (and therefore relatively high proportions of children long term).

Table 5.2 Population and age breakdown for the site

Service age groups	Percentage (%)	Number (average no.)
Babies and pre-schoolers (0 to 4)	8.4	899
Primary schoolers (5 to 11)	12.9	1,377
Secondary schoolers (12 to 17)	9.2	988
Tertiary education and independence (18 to 24)	7.7	824
Young workforce (25 to 34)	14.9	1,595
Parents and homebuilders (35 to 49)	26.2	2,801
Older workers and pre-retirees (50 to 59)	9.0	960
Empty nesters and retirees (60 to 69)	5.9	632
Seniors (70 to 84)	4.8	514
Elderly aged (85 and over)	1.1	121
<b>Total population</b>		<b>10,704*</b>

Based on ILP version: September 2023 \*numbers may not add up to total as they have been rounded to nearest 1

## 5.4 Projected demand for social infrastructure

The following assumptions of the site ILP (version: September 2023) have informed this section:

- Total site size: **190.66ha**
- Total open space: **45.36ha, with 37.82ha useable** including:
  - > A central riparian corridor: 14.0ha, of which 7.0ha is useable based on a minimum 50% useability
  - > Passive open spaces: 14.24ha (all useable)
  - > Playing fields: 16.04ha (all useable)
  - > Retention basins: 1.08ha, of which 0.54ha is useable based on a minimum 50% useability.
- Projected average dwelling yield: **3,371 dwellings**
- Projected total population: **10,704 residents**
- **Projected non-resident population:** unknown.

Based on projected demographic composition of the site (see previous **Section 5.3**), it is also assumed that approximately:

- 8.4% of the population will be aged 0-4 years: **899 babies and young children**
- 12.9% will be aged between 5-11 years: **1,377 primary school aged children**
- 9.2% will be aged 12-17 years: **988 high school aged children.**

#### **5.4.1      *Quantitative calculations***

This section focusses on the pure application of quantitative or mathematical standards. While a starting point to consider provision of social infrastructure, the formulaic approach to provision is generally considered to be one input of many into a more complex and context-specific assessment.

It is also noted that some of the standards applied here, particularly for open space, are remnant of the historic Growth Centres Development Code (2006) which is not commonly applied in leading open space planning. **Section 5.5 considers this quantitative assessment with more contemporary qualitative guidance.**

Table 5.3 Summary of quantified demand

Social infrastructure type	Provision standard and/or benchmark	Demand
<b>Community and cultural centres</b>		
<b>Community centre</b>	Regional: 1 community centre: 20,000 people 13 square metres per 1,000 residents for the provision of District Regional community facilities	1 neighbourhood centre: at least 450sqm
	Neighbourhood: 1 community centre: 6,000 people but fewer, larger or upgraded facilities preferred 42 square metres per 1,000 residents for the provision of Neighbourhood community facilities	
<b>Library</b>	1 library: 40,000 people	Not met
<b>Civic/cultural centre</b>	1 civic/cultural centre: 30,000 people	Not met
<b>Open and recreation spaces</b>		
<b>Open space</b>	2.83 ha/1,000 people (active and passive)	30.29ha (active and passive)
<b>Sportsfields</b>	1 sports field: 1,850 people	Up to 6 (5.8)
<b>Sports/multipurpose courts</b>	1 court: 2,000 people	5
<b>Off leash dog park</b>	1 off-leash dog park: 16,000 people	Not met
<b>Playspaces</b>	1 playground: 2,000 people	5  A range of age groups should be represented including older age groups to provide youth-focused opportunities
<b>Childcare and Education</b>		
<b>Childcare</b>	All market led (Council don't operate long day or pre-school centres in the Growth Centre precinct): — no. of places: 30% of children in 0-4 age cohort — no. of facilities: 75-150 children per facility.	Non-Government: — Up to 270 places — Up to 3-4 facilities
<b>Primary schools</b>	— no. of potential students (aged 5-11): up to 70% for government school; 30% for non-government school — demand for a new school: approx. 1,000 enrolment places	Government: Up to 964 places Demand for 1 school Non-Government: — Up to 413 places

Social infrastructure type	Provision standard and/or benchmark	Demand
High schools	<ul style="list-style-type: none"> <li>no. of possible students (aged 12-18): 50% for government school and 50% for non-government school</li> <li>demand for a new school: up to 2,000 enrolment places (based on new Oran Park High School)</li> </ul>	Government: <ul style="list-style-type: none"> <li>Up to 494 places</li> <li>Demand for school not met</li> </ul> Non-Government: <ul style="list-style-type: none"> <li>Up to 494 places</li> </ul>
<b>Health and wellbeing</b>		
GPs	<ul style="list-style-type: none"> <li>1 GP per 950 people. Market led.</li> </ul>	Up to 11
Primary Health Care Clinics	Privately operated, needed for each precinct: <ul style="list-style-type: none"> <li>15,000-18,000 people per clinic</li> </ul>	Not met
Team General Practices	Secure own premises: <ul style="list-style-type: none"> <li>4,000-5,000 people per practice</li> </ul>	Up to 2

#### 5.4.2 Qualitative considerations

Key qualitative considerations for social infrastructure which have relevance to the site ILP are:

- **Contributing to the network:** facilities in the site should complement the existing and planned network in the LCM precinct and in the broader SCW Precinct and Camden LGA (where known), by addressing gaps or a lack of provision while also being able to accommodate the needs of future Bringelly community.
- **Location:** locating infrastructure close to retail and transport options, and equitable distribution of open spaces across the site, supporting equitable access to and use of social infrastructure for all future Bringelly residents.
- **Clustering:** Clustered social infrastructure in the site to enable greater interaction and connection with the broader public sphere to contribute to activation, as well as supporting efficient infrastructure use and management, such as clustered sporting codes with multi-code sporting fields and shared amenities
- **Accessibility:** social infrastructure should be physically accessible (e.g. transport options, central location, etc) and safe (e.g. visibility for passive surveillance) for all users
- **Connections:** embedding strong connections (e.g. walking, cycling, etc), between social infrastructure, potentially utilising natural features, such as the riparian corridor traversing the site as well as built networks, such as proposed road networks.
- **Sustainability:** Co-locating community and cultural facilities to pool resources and lead to higher quality and higher functioning spaces and ensuring that infrastructure can be adapted (e.g. embellished or increased) over time as the needs of the community change.
- **Incremental delivery:** providing community and cultural facilities with adequate facilities (size and services offered) as future residents being to occupy the site, and the expansion and/or enhancement of these facilities as it reaches full occupancy.
- **Management and operation:** Camden Council may prefer fewer, larger, higher quality infrastructure rather than more, smaller, simple amenity infrastructure for operational and maintenance reasons, and social infrastructure should address Council's strategic directions for social infrastructure provision across Camden LGA (where available).

The NSW GA *Draft Greener Places Guide* (2020) (the Guidelines) nominates a series of performance criteria for open space, which guides open and recreation spaces accessibility and distribution as well as suggestions regarding supporting infrastructure to contribute to the quality of these spaces and support maximum community use and enjoyment (e.g.

active play, fitness and exercise spaces). These Guidelines address different types of open spaces, which has a strong correlation to types of open spaces in Camden Council's *Spaces and Places Strategy* (2020), summarised in **Table 12** below.

In addition to the Guidelines, the provision of open space should also consider the preceding qualitative considerations.

Table 5.4 Summary of relevant open space and recreation guidelines and criteria

Open space type	Criteria
Open space	<p>All residents, in:</p> <ul style="list-style-type: none"> <li>— High density: 2-3 minutes walk or 200m walking distance to local open spaces (including trails/paths)</li> <li>— Medium to low density: 5 minutes walk or 400m walking distance to local open spaces (including trails/paths)</li> </ul> <p>All residents, within:</p> <ul style="list-style-type: none"> <li>— up to 25 minutes' walk or 2km to district open space (district parks also provide local access)</li> <li>— up to 30 minutes travel time, by public or private transport, to regional open space.</li> </ul> <p>Schools and workers within 400m of open space</p>
Active recreation	<p>All residents should be within 2km from sporting facilities (considered as district)</p> <p>One area of sporting land for 1,000 people/ha</p>

Source: NSW Government Architect Office Draft Greener Places Guide (2020)

## 5.5 Provision assessment of site ILP

The following pages compare the quantitative demand and qualitative considerations, against the provision of social infrastructure in the site ILP (version: September 2023).

Key findings and recommendations based on the population estimate for the site are:

### 5.5.1 Community and cultural facilities

The preliminary population estimate for the site:

- does not generate demand for a library or regional community centre
- generates demand for at least 450sqm neighbourhood level community floorspace to be provided in one single facility. This should be provided in a multipurpose and flexible manner to ensure the diversity of uses and user groups, including youth. In order to facilitate the operation of indoor and outdoor youth-focused activities, it is recommended that this be provided near or adjacent to open space.

At this stage of the planning process, the site ILP does not indicate the location of a community centre but the required floorspace will be able to be accommodated within open spaces or adjacent village centre.

#### Key considerations:

- Community spaces (free/affordable) are recognised as supporting community connections in new communities
- The only existing community space in proximity to the site is Bringelly Community Centre, which falls in Liverpool LGA – other facilities are found in Oran Park
- Camden Council are committed to the delivery of a network of larger but fewer community facilities, that can provide higher level services and service a larger catchment of people (a new benchmark of 1 community centre per 20,000 people, regional level).

### Recommendations:

- Provide one single facility acknowledging Council's direction to provide regional level facilities and embellish or enhance existing local and neighbourhood facilities
- The location and use of proposed floorspace should be further discussed in detail with Council. It could include a combination of hireable and/or programmed floorspace. While the intent of the facility should be to be multipurpose, some rooms could be used for certain specific purposes if a need is identified e.g. youth focused floorspace.
- It may be an option to provide a **community space** co-located with open space near the village centre. This could provide a space for community connection in a new development to be fostered. This will require further discussion with Camden Council.
- The *Urban Design Report* (Urbis, 2023) and *Landscape Masterplan* (Urbis, 2023) describe the provision of a Town Green combining double playing fields in co-location with the village centre, which should support the above recommendation.

### 5.5.2 Open space and recreation

The population estimate for the site generates demand for:

- 30.2ha of open space (active and passive)
- up to 6 sportsfields in a double configuration (e.g. 3 double sportsfields) – envisaged as local facilities
- 5 multipurpose courts
- 5 playgrounds.

The site ILP demonstrates 45.36ha of total open space, of which 37.82ha (approx. 83%) is usable, comprised of:

- 14.24ha passive open space with parcel sizes ranging between 0.5ha to 4.8ha
- 16.04ha active open space ranging between 3.5ha and 5.0ha, connected by a riparian corridor. Two parcels are connected by passive open space
- 14.0ha riparian open space (7.0ha useable), running diagonally through the site and connecting active spaces
- 1.08ha basin open space (0.54ha useable).

### Key considerations:

- Camden Council's *Spaces and Places Strategy* (2020) continues to adopt the historical Growth Centres Development Code standard of 2.83ha of open space per 1,000 people, which is not reflective of leading open space guidelines, and no longer distinguishes between active and passive spaces.
- Council's *Sportsground Strategy* (2020) supports the delivery of clustered sports grounds, through minimum requirement of 2 sportsfields in new developments and demonstrated delivery of sports hubs and multiple sports code sporting grounds which foster activation.
- The site is located in proximity to existing sportsfields, but Camden Council and the Camden LGA community have identified that existing sportsfields are operating at capacity
- The Camden community value walking and walking paths, play spaces and outdoor fields and find distance and inconvenient access the greatest impediments to current use of open and recreation spaces, highlighting the importance of an equally distributed network.

### Recommendations:

- The ILP delivers an **adequate supply of open space** (total and useable) for the preliminary population estimates, in accordance with relevant benchmarks. As shown in the *Landscape Report* (Urbis, 2023), all dwellings will be within 400m of a form of open space.
- The land area calculated for **active open space** will be sufficient to accommodate up to 6 sportsfields. While future detailed design of these sportsfields will occur at a later stage, this report has noted demands for new facilities to

support soccer in the first instance, and there are also strong and expected growing demands for baseball, hockey, league (longer term), cricket, AFL. A detailed analysis of needs, considering the development of other facilities in the area, and ongoing residential developments, should be conducted.

- It is recommended that active open space be designed to accommodate some passive uses and amenities to support mixed use destinations (refer previous recommendation regarding the recommended location of community facility floorspace adjacent open space). The sportsfields are envisaged to be of a local level, as described in Camden's *Spaces and Places Strategy* (e.g. able to encourage longer visits, providing amenities, adequate parking, co-located with other facilities and services, potentially with low-intensity commercial uses such as a kiosk).

- **Passive open spaces** are dispersed across the site ILP, ranging in size and a sloping space in the south-western corner, which indicates that they would facilitate accessibility to open spaces from all future residences on the site.

The range of proposed sizes is appropriate and consistent with Council and Government Architect guidance. They will support a range of different recreation opportunities, ranging from **neighbourhood to local levels**. These open spaces will require amenity and supporting infrastructure (e.g. covered seating, playgrounds, amenities, etc) to provide a range of recreation experiences. The largest centrally located passive open space should have the largest and greatest functioning amenities and infrastructure (e.g. the largest playground, BBQ and picnic facilities, kickaround spaces), able to accommodate greater numbers of people and multiple uses.

Two local parks will be provided near the employment precinct. There is no specific benchmark for the planning of open space near employment lands in low-density areas<sup>1</sup>. However the proposed open spaces, particularly the 0.7ha parcel just south of the employment precincts, will be suitable to accommodate recreation uses for workers. Future detailed design of the employment precinct could also ensure suitable open spaces in a more urban form e.g. plazas, to service workers' needs during the day or after hours.

Other open spaces across the precinct may support a **range of recreation opportunities** which could be further explored in detailed design. This could include adventure/nature play opportunities, mountain biking, as well as quality walking trails, noting the high participation of residents in this activity, as previously noted. The *Landscape Masterplan* (Urbis, 2023) identifies potential locations for such recreational opportunities eg walking trails in the south-west corner.

**Inclusive play opportunities** should be provided in detailed design and throughout the site with due consideration given to Everyone Can Play Guidelines.

- The *Landscape Masterplan* (Urbis, 2023) identifies **playspaces** throughout the site which will support accessibility from most homes. Larger play equipment is proposed centrally, and co-located with other social infrastructure for maximum activation and utilisation eg sportsfields and courts, school, village centre. Detailed design will further define play uses and target groups but they should provide diversity of play for a range of age groups.

As previously noted, it is recommended that a space be provided for **older youth age groups** which could be a combination of indoor and outdoor uses in co-location with open space/community facility floorspace. This should be explored in detailed design and could incorporate uses such as skate, bmx, multipurpose space able to support group activities. It is noted that Council has identified the need to prepare a Playspace Strategy. The outcomes of this Strategy should be reviewed as part of detailed design.

Careful consideration should be given to **existing natural and cultural constraints** when planning for open space, including recommendations from the Aboriginal Cultural Heritage Assessment, Historical Heritage Study, Biodiversity Assessment and Riparian Assessment. Priority should be given to conservation or preservation wherever needed/identified. The *Urban Design Report* (Urbis, 2023) recognises the steep terrain in the south-west corner and the central riparian corridor as dominant landscape features that have forged the ILP.

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<sup>1</sup> Some guidance from the Government Architect (Draft Greener Places Design Guide) notes that demand from non-resident population can be estimated as 10% of the anticipated resident population, however this typically applies to high density areas which is not the nature of the proposal.

If recreation is possible in conservation areas, such opportunities can be explored, **in addition** to the above open space.

- **Active connections** throughout the site, linking homes to open spaces, school and the centre, are encouraged to be carefully designed to maximise useability by a range of age groups and abilities. The *Urban Design Report* (Urbis, 2023) and *Landscape Masterplan* (Urbis, 2023) identify several green connections and active networks that should support this, which should be further considered in future detailed design. Future detailed design should further consider adequate Crime Prevention Through Environmental Design (CPTED) principles and inclusive design.
- The **riparian corridor** which runs through the site connects with the centrally located and larger active spaces (with sportsgrounds and courts) as well as the village centre and school (through the active open space). Useable open space in the riparian corridor can accommodate suitable types of passive recreation, such as walking, jogging, cycling and other forms of individual-based fitness.

### 5.5.3 Education and childcare

The preliminary average population estimate for the site generates demand for one new government primary school and up to 3 childcare facilities.

The most recent guidance issued by DoE (Design Framework: *Site Selection and Development*, 2023) indicates the following minimum sizes for school sites in suburban/low-medium density areas:

- 1.5ha for a Primary School (capacity up to 1,000 students)
- 2.5ha for a Secondary School (capacity up to 2,000 students).

This should be a site with the following features:

- A single lot, or consolidated group of lots on relatively flat land, free of easements/buffer zones that may impact development
- A site of regular shape with at least two road frontages, ideally three
- Appropriate access and transport networks, also to encourage out of hours use. This should consider a location that encourage safe active transport to/from the school
- A site that is not adjacent land where uses may be associated with lessened air quality or pollution, including noise pollution
- A site free of environmental and cultural constraints e.g. bushfire, flood, contamination, significant vegetation, native title claim and heritage items.

The site ILP indicates a school site location adjoining the village centre and active open space, linking to the riparian corridor. Childcare facilities are not indicated, due to the early stage in the planning process.

#### Key considerations:

- The DoE guidelines require 1.5ha for new primary school sites.
- Currently, the delivery of childcare and early childhood education is delivered by a range of providers, including Camden Council (Camden Family Day Care), private enterprises, not for profit and community groups.

#### Recommendations:

- The ILP identifies a school site of approximately 2ha co-located with playing fields and the village centre, which is suitable.
- Ongoing consultation with the DoE is required as the planning process for the **government primary school** site progresses, to consider location, timing of delivery and possible shared use of spaces and facilities. Shared community use of open spaces and suitable facilities (e.g. halls) is recommended to be explored as planning for the school progresses. It is noted that the investigation of shared-use arrangement with schools is an action of Council's

*Spaces and Places Strategy*. It is also noted that the project team is conducting ongoing consultation with SINSW. It is recommended that the applicant commences a collaborative process with SINSW's urban design team.

- The provision of **diverse childcare options** (e.g. long day care, occasional care) in accessible locations will require further detailed market analysis. If a childcare facility is provided in the village centre, further discussions are required with Camden Council to determine if this facility will be allocated to commercial or community floorspace.

#### 5.5.4 *Health and wellbeing*

The preliminary average population estimate for the site generates demand for up to 12 GPs and up to 2 General Team practices.

##### **Key considerations:**

- The provision of health and wellbeing infrastructure will need to be accessible, delivered in stages (in response to the stages as the site is delivered) and adaptable as community needs change over time.
- The site ILP does not indicate health and wellbeing facilities, due to the early stage in the planning process. However there will be sufficient space in the village centre to accommodate this.

##### **Recommendations:**

- Ongoing consultation with relevant public agencies (e.g. Health NSW) is required as the planning process for the site progresses, and the potential for commercial provision requires detailed market analysis.

#### 5.5.5 *Emergency services*

This report has not identified a need for land or space for emergency services on-site. The site will be suitably serviced by other existing facilities.

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## 5.6 Social infrastructure implementation planning

The timing and scale of social infrastructure delivery in conjunction with stages of development delivery can influence community connections and resilience in new communities.

The staged delivery of the future site will need to consider which open spaces can be delivered in conjunction with the occupation of new residences by the new community. In particular, the riparian corridor and active open space are significant connected open spaces, accounting for approximately 23ha of the total 37.82ha of useable open space. Their embellishment and supporting infrastructure will strongly influence the experience of open space across the site.

**Table 13** below shows an example of incremental delivery of social infrastructure as the site is developed, applying standard estimates of 25%, 50%, 75% and full completion (100%) based on the ILP yield of 10,704 people (version: September 2023). It indicates that at 75% capacity, approximately:

- 34ha of total open space should be provided
- 6 sportsfields and 4 courts may be needed in the active open space (ideally in a clustered position)
- 4 playgrounds should be delivered.

This demonstrates the importance of the delivery of quality, embellished open spaces along the riparian corridor and in the active open space, as a significant component of open space on the site in conjunction with the delivery of the development. If a community space is co-located with the village centre, school and active space, it should be provided with activation elements in the active open space (e.g. with the delivery of a large, multi-age playspace). This should be refined as the project delivery progresses and discussed with Camden Council.

Table 5.5 Recommendations for staged social infrastructure delivery in the site

	<b>25% capacity</b>	<b>50% capacity</b>	<b>75% capacity</b>	<b>100% capacity</b>
<b>Population</b>	<b>2,676 people</b>	<b>5,352 people</b>	<b>8,028 people</b>	<b>10,704 people</b>
<b>Open space</b> (active and passive)	11.34ha	22.68ha	34.02ha	45.36ha
<b>Sportsfields</b>	2	4	4	6
<b>Courts</b>	1	2-3	4	5-6
<b>Playspaces</b>	1	2-3	4	5-6

*Only considers social infrastructure types with generated demand, based on the site ILP (version: September 2023).*

# Appendix A

Document review



# A1 New approach to precinct planning

In early 2020, DPE adopted a New Approach to Precinct Planning, providing a way forward for the planning and delivery of precincts. The new approach centres the planning system around people, places, public spaces and the environment, and provides councils and locals communities with greater responsibility in planning decisions.

The new approach has allocated all existing precincts in Greater Sydney under four planning pathways. Of relevance to this report, are:

- Strategic Planning Precincts - SWGA: precincts which require the resolution of significant issues or challenges before any works towards rezoning can begin. Resolution will need to include early work by DPE, councils, state agencies and communities to develop planning frameworks which support the planning for these precincts.
- Collaborative Planning Precincts - SCW Precincts 2 and 5: precincts which rely upon the integration of the various outputs from numerous public and private agencies for successful infrastructure timing and delivery. It is DPE's intention that these will facilitate collaborative planning amongst these agencies, enabling precinct submissions that demonstrate holistic planning and delivery schedules.

DPE's new approach to precinct planning is shown in Figure A.1 below.

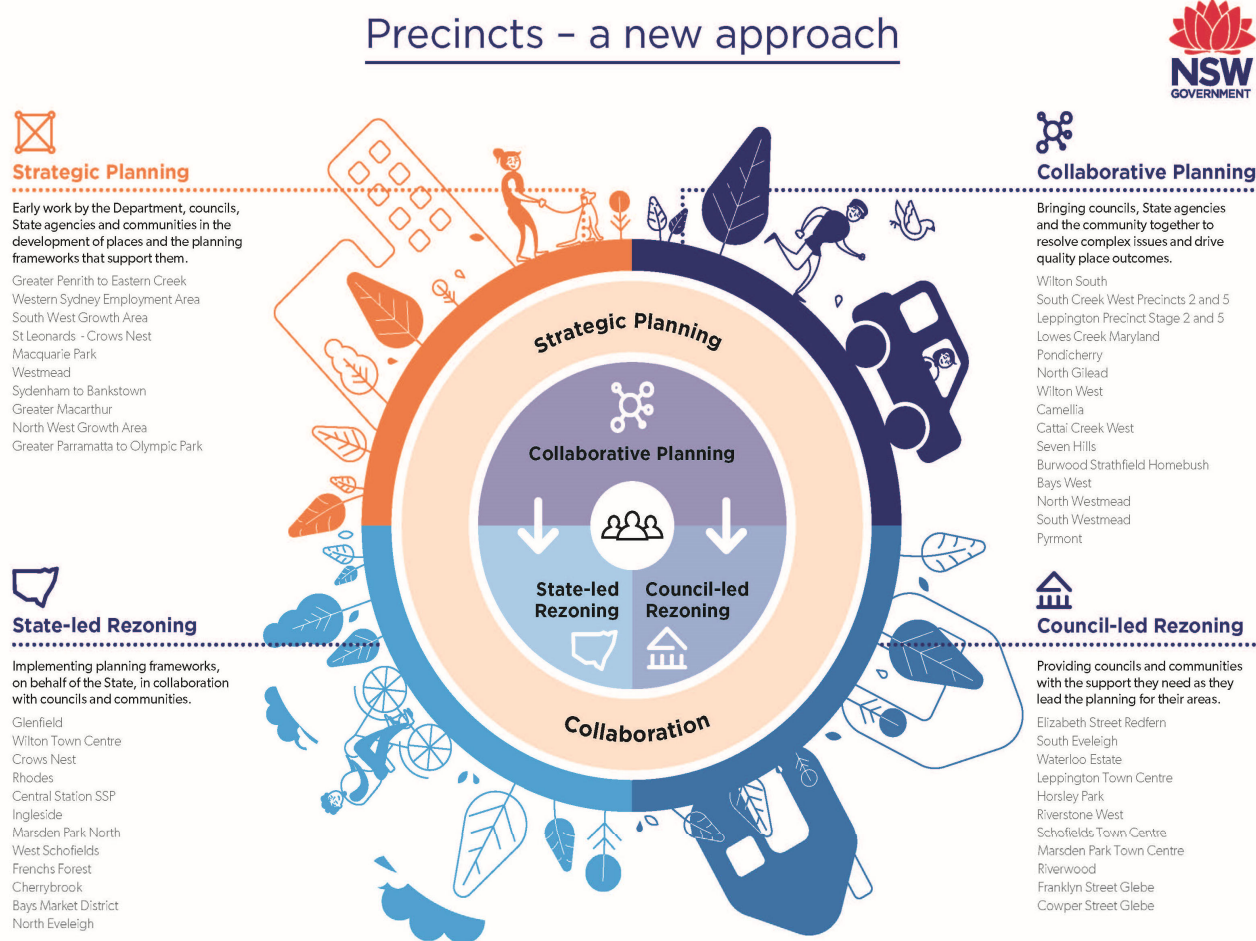


Figure A.1 DPE's new approach to precinct planning

Source: NSW DPE A new approach to precincts 21 January 2020 (retrieved <https://www.planning.nsw.gov.au/Plans-for-your-area/A-new-approach-to-precincts> on 23 March 2020)

In conjunction with new planning pathways, the process and outcome of the SCW precinct must adhere to the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Growth Centres SEPP)*. Aims of the Growth Centres SEPP relevant to this report are:

- co-ordinate the release of land for residential, employment and other urban development in the North West Growth Centre, South West Growth Centre, Wilton Growth Area and the Greater Macarthur Growth Area
- provide for comprehensive planning for growth centres
- enable the establishment of vibrant, sustainable and liveable neighbourhoods that provide for community wellbeing and high quality local amenity
- provide controls for the sustainability of land in growth centres that has conservation value
- provide development controls in order to protect the health of the waterways in growth centres
- protect and enhance land with natural and cultural heritage value.

The Growth Centres SEPP also includes objectives from DPE's *Camden Growth Centres Precinct Plan 2013*. Relevant objectives to this report are:

- ensure the creation of quality environments and good design outcomes
- protect and enhance environmentally sensitive natural areas and cultural heritage
- provide for recreational opportunities
- provide for multifunctional and innovative development (to encourage employment and economic growth)
- promote housing choice and affordability
- provide for sustainable development
- promote pedestrian and vehicle connectivity.

The *North West and South West Growth Centres Precinct Acceleration Protocol* (undated), *Precinct Acceleration Protocol Guidelines* (October 2006) and *Probity Plan for Precinct Acceleration Protocol Stage 1* (November 2006) describe the process by which precinct releases within the North West and South West growth centres may be accelerated.

All proponents are required to work closely with the Growth Centres Commission and appropriate infrastructure providers (e.g. Sydney Water, Roads and Maritime Services, Transport for NSW, Department of Education, and emergency services) to ensure that all projects plan for and integrate essential infrastructure in a whole-of-precinct approach. Infrastructure referred to in these protocols and guidelines, of relevance to this project, includes education facilities, emergency services and health facilities. These facilities are to be provided at no cost to government.

### Future planning for the SCW precinct

In accordance with the new approach to precinct planning, Camden Council is now leading the planning for the SCW precinct (with support from DPIE). As of 12 October 2020, Camden Council and DPIE are working closely on plans for the SCW Precinct, in line with Camden Council's work program. When Camden Council's review is complete, and recommendations have been endorsed by councillors, further information regarding plans for the SCW precinct will be made available for community consultation.

Until this information is available, informing recommendations in this report are limited to key findings from plans for distinct land release areas (e.g. LCM, Austral and Leppington North) which may be subject to change. In the interim, this report has reviewed individual plans for land release areas which constitute the large SCW Precinct (see **Section 1.4**), in an attempt to foster a 'whole of SCW precinct' social infrastructure network and not be limited to the site's boundaries.

## A1.1 Planning for the Aerotropolis

The site is located directly south of the Aerotropolis Core and the Agriculture and Business Precinct of the Aerotropolis, with Bringelly Road acting as the border, shown in Figure A.2 in the following pages.

Planning for the Aerotropolis and its inclusive precincts is being guided by DPE's *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts* (2018). The plan incorporates a series of principles:

- productive: accessible, innovative, 24-hour city, connected globally, nationally, locally and digitally, and a prime location for investment. It will make a significant contribution to 200,000 jobs for Western Sydney, creating an innovation precinct and a home for technology, science and the creative industries.
- compact and connected: compact urban form, minimising urban footprint, preserving environmentally valuable lands, allowing for a diversity of housing (within 10-minutes of centres and five minutes of parks and open space).
- liveable: diversity of jobs and homes including affordable housing, high-quality public transport, vibrant urban centres and unique amenity, creativity and recreation attracting new and highly skilled and diverse communities.
- sustainable: planning in each of the Aerotropolis' precincts will create opportunities to introduce aspirational energy and water solutions, and sustainable approaches to the creation of public areas, new built form and social infrastructure.
- aligned with infrastructure and funding: sequenced precinct planning will align population and economic growth, with the planning and construction of new transport, services and activated facilities and spaces for residents and workers.
- compatible with a landscape led approach to urban development: South Creek and its tributaries will shape an open space network that combines recreation, stormwater management and biodiversity, and combat the influence of heat on the health and lifestyle of residents and workers.

Of relevance to this report, planning for Aerotropolis is seeking to ensure that:

- residences and/or employment are in close proximity to local open space (at least 0.3ha in size) and district open space (between 2-5 ha)
- high density areas (including mixed use residential areas with more than 60 dwellings per hectare or mixed-use employment areas with greater than 60 jobs per hectare) are within 200m of open space.
- district-scale open space, such as playing fields, is provided towards the edge of centres to maximise catchment areas and should be shared
- with educational institutions wherever possible
- public spaces enable people to connect, create and engage with arts and culture (including the delivery of public art), new cultural infrastructure will be provided, and a night-time economy will be supported by designs and spaces (i.e. the co-location of artistic and creative organisations in science, health and education precincts to encourage collaboration, innovation and creative industries)
- community hubs will be walkable and incorporate schools and other social infrastructure and integrate open spaces and green infrastructure to allow for activation and encourage adaptable uses of public spaces.
- childcare facilities provided in local and employment-based centres for the convenient of workers, and co-located or integrated with complementary facilities and services, where appropriate.

Regarding demand for social infrastructure, the plan recognises that:

- the demand and designation of a school will need to be determined
- NSW Health has a range of infrastructure projects underway to meet the short to medium demands of growth in the broader Western Parkland City and is continuing to plan for future health services (including investigating a site for

an integrated health facility within the Aerotropolis in a metropolitan or strategic centre location supported by public transport that could serve up to 250,000 people from around the Western Parkland City).

- the open space network will include Ropes Creek, Kemps Creek, Badgerys Creek, Western Sydney Parklands and South Creek and serve recreation, stormwater management and biodiversity conservation functions.

DPE's *Draft Western Sydney Aerotropolis Plan* (2019) continues to identify between 50,000 to 60,000 jobs and 20,000 and 24,000 residents for the Aerotropolis Core precinct. Social infrastructure recommendations from the draft plan relevant to this report are:

- Education and health:
  - > a research/innovation hub including tertiary education and high school in the Aerotropolis Core
  - > strategic centres should include health facilities and places of learning and wellbeing
  - > local centres should include schools and community facilities, integrated with parks and open spaces
  - > private sector healthcare should be encouraged
- Arts and creativity: the delivery of public art and cultural infrastructure (such as art galleries, museums and libraries) in co-location with science and education facilities, to support the ambition for the Aerotropolis to deliver innovation in science and education.

The draft plan also continues to ensure that:

- employment and residential developments are near public open spaces (up to 10-mins walk)
- people working or living in mixed-use residential areas or higher intensity employment areas have access to a range of open spaces
- district-scale open space (such as playing fields) and regional parks are provided towards the edge of centres to maximise catchment areas
- sporting fields are shared with educational institutions, wherever possible
- facilities and services are high quality and flexible to address the needs of the general community, and will include community centres, multi-purpose hubs, libraries and aquatic centres.
- However, the scale and location of these facilities and infrastructure in the Aerotropolis is not indicated.

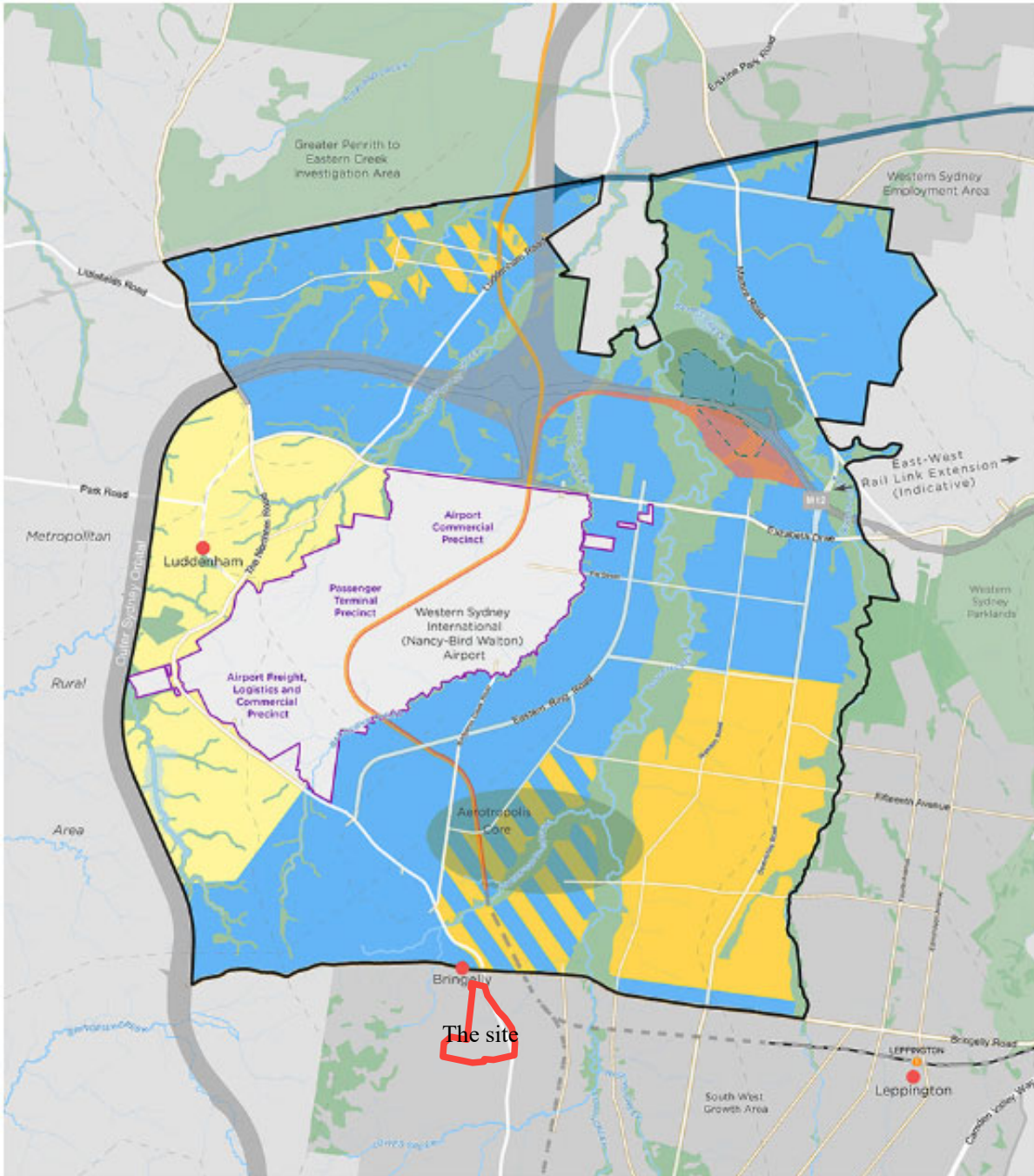
The draft plan nominates a landscape-led approach. It allocates equal prioritisation to blue and green infrastructure (i.e. major waterways, parks or green spaces) as elements for shaping the future precincts, in conjunction with the traditional determinants of major roads, rail lines, universities or hospitals.

At the time of writing this report (early 2020) a social infrastructure assessment was being commenced (procurement stage) for the Aerotropolis.

DPE's plan identifies that residential development will be higher density, with built form up to 12-storeys in the Aerotropolis Core precinct. The Aerotropolis Core is expected to include:

- a commercial mixed-use centre, approximately 80% of land used for employment uses in specialised and technology industries (e.g. aerospace and defence) as well as general business uses
- up to 8,000 dwellings, majority higher density residential (when completed), comprised of 45 to 55 dwellings per hectare along the South Creek corridor, and up to 65 to 80 dwellings per hectare in locations serviced by high frequency public transport
- possibility of a train station (to be confirmed) allowing connections to the WSA and greater Sydney
- up to 60,000 jobs (at full capacity)
- world-class health and education facilities, potentially including a major public hospital, a private hospital, at least one university campus and a high school within a co-located hub

- landscaped connections between South Creek, Badgerys Creek, Kemps Creek and east to Western Sydney Parklands which integrate shared pedestrian and cycleways.



### Structure Plan Western Sydney Aerotropolis

- Western Sydney Aerotropolis
- Western Sydney International (Nancy-Bird Walton) Airport
- Topographic Ridgeline
- Key Network Upgrades
- Regional Parkland (Investigation)
- Critical Utility / Infrastructure (Investigation)

- Proposed Sydney Metro Greater West
- Potential East-West Rail Link, Stabling and Critical Infrastructure
- Proposed Future Rail Links (Investigation)
- Proposed Transport Corridor
- Potential Western Sydney Freight Line Corridor

- Centre
- Agribusiness
- Environment and Recreation
- Flexible Employment
- Urban Land
- Mixed Flexible Employment & Urban Land



Figure A.2 The site, in relation to draft Aerotropolis Stage 1 Structure Plan

Source: NSW DPE *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts* (2018)

## A1.2 Principles and contributions

DPE's *Sydney Growth Centres Strategic Assessment – Program Report* (2010) seeks to provide residential, employment and conservation areas, as well as supporting infrastructure within the North West and South West Growth Centres of Sydney. Principles around urban development relevant to this report are:

- better public transport opportunities
- a range of housing types and densities
- walkable neighbourhoods
- provision of major town centres with retail, recreation and services, with smaller village centres and neighbourhood shops
- employment opportunities
- right mix of housing, employment, service, open and recreational spaces
- protection of natural and cultural heritage and waterways.

The program identifies the following elements in relation to social infrastructure:

- health: improvements to existing hospitals and the construction of new community and health centres
- education: development of primary schools, high schools and TAFE facilities to service the new communities
- emergency services: provision of police, ambulance and fire stations as communities grow
- local facilities: provision of local parks, community centres, libraries and sports fields.

A Special Infrastructure Contribution (SIC) applies to development within the North West and South West Growth Centres to contribute to the funding of infrastructure in the Growth Centres.

Sections 94ED to 94EM of the *Environmental Protection & Assessment Act 1979* (EP&A Act) enable the collection of a SIC for contribution towards funding regional infrastructure. The SIC applies to development within Growth Centres, for contribution towards:

- education facilities
- road networks
- emergency services and justice facilities
- health services
- the preservation, protection or establishment of conservation lands.

## A1.3 Surrounding precincts planning

DPE's *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts* (2018), identifies the SCW Precinct as a 'Surrounding Precinct', which will support the development of the Aerotropolis.

DPE's *Sydney Growth Centres Strategic Assessment – Program Report* (2010) identifies that Leppington North precinct will be the major commercial centre of the SWGC, in Leppington. This is shown in Figure A.3 below.

In accordance with DPE's *South West Growth Centre Structure Plan Edition 3* (provided in the *Program Report*) local town and village centres are required in each of the precincts. Each precinct should also enable walkable neighbourhoods:

- within a 400-metre radius from a local shop (or group of shops) or from another community focus (e.g. a community centre with a bus stop)

- clustered around mixed-use centres, which include housing, community facilities, shops for daily convenience and other services.

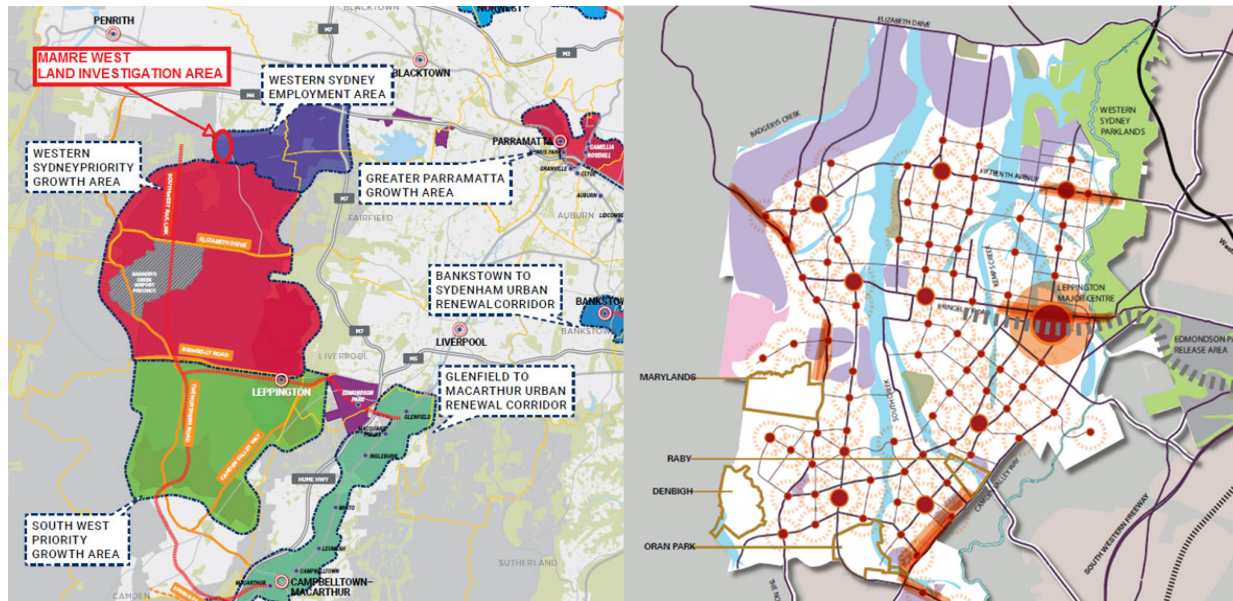


Figure A.3 Position of site in relation to surrounding precincts

Source: NSW DPE Media release: Rezoning of land paves the way for 500 jobs in Western Sydney' 8 August 2016 (retrieved: <https://www.planning.nsw.gov.au/News/2016/Rezoning-of-land-paves-the-way-for-500-jobs-in-Western-Sydney-on-23-March-2020>)

Source: NSW DPE Sydney Growth Centres Strategic Assessment – Program Report (2010)

Future residential growth and planned social infrastructure delivery in surrounding precincts is shown in

Figure A.4 and Figure A.5 on the following pages. The population and dwelling figures for the site have been informed by 4 of this report (early estimations provided by CKDI and likely to change as the planning process progresses).

- The precincts most relevant to this report are LCM and Austral and Leppington North. Both are discussed in more detail in the following pages.

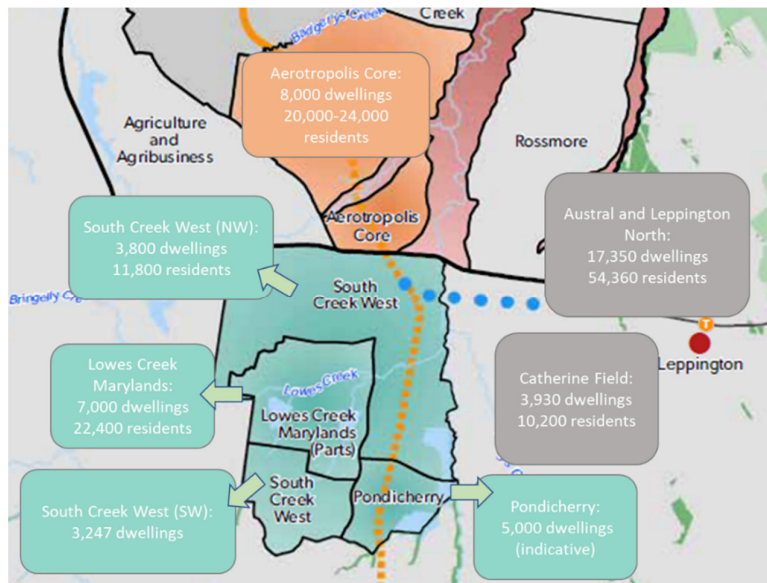


Figure A.4 Future residential growth in surrounding precincts

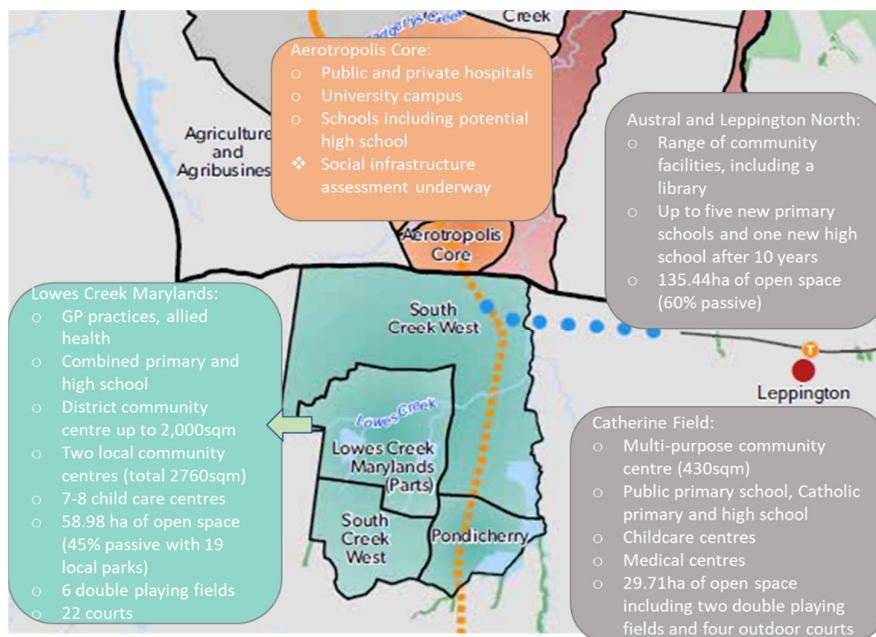


Figure A.5 Planned social infrastructure in surrounding precincts

Source: DPE Draft Lowes Creek Maryland Precinct Plan (2018); DPE Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts (2018); DPE Draft Western Sydney Aerotropolis Plan (December 2019); GHD Lowes Creek Maryland Precinct Traffic, Transport and Access Assessment (2018); DPE Austral and Leppington North Precincts Addendum to the Demographic and Social Infrastructure Assessment (2012); DPE Catherine Field Precinct Plan post exhibition planning report (2013)

## Lowes Creek Maryland

DPE's *Draft Schedule 6 Lowes Creek Maryland Precinct* (2018) incorporates a Development Control Plan (DCP). The DCP was informed by a series of technical studies and contributed to DPE's *Draft Lowes Creek Maryland Precinct Plan* (2018) with inclusive draft indicative layout plan (ILP).

The guiding vision for LCM is:

*A range of housing types to meet the needs of a well-connected and diverse community, supported by local facilities and infrastructure, in a manner that responds to the unique characteristics (waterways and landforms) of the Precinct.*

The draft plan nominates that a local town centre is located in LCM, providing a mix of retail, commercial and community spaces and functions. The Lowes Creek waterway is envisioned as an important green corridor:

- enabling the protection and/or enhancement of biodiversity
- integrating sustainable water management
- fostering passive recreation values, retaining remnant vegetation in public parks where possible.

The draft plan focuses on enabling different modes of connections and the planning and delivery of open and recreation spaces. It sets a series of objectives for each of these focus areas, summarised in Table A.1 below.

Table A.1 DPE's Draft LCM Precinct Plan objectives

Focus area	Objectives
Connections	

Focus area	Objectives
Public transport	To encourage the use of public transport through the provision of integrated bus, pedestrian and cycle routes within the Precinct
Pedestrian and cycle networks	To encourage the use of active transport through the provision of pedestrian and cycle routes within the Precinct To provide opportunities to extend the pedestrian and cycle routes beyond the Precinct To provide a network for pedestrian and cyclists to traverse across the Precinct safely
<b>Open space and recreation network</b>	
Open spaces	To provide open space to local residents for social interaction and passive recreation activities To establish a sense of place and orientation within the neighbourhood by locating open space to take advantage of significant or prominent landscape features, such as views, high points, and areas of natural and cultural heritage significance To provide for the equitable distribution of public open space and recreation opportunities To ensure high quality design and embellishment of all public open space To encourage the use of the major creek corridors and drainage land for passive recreation purposes consistent with environmental objectives

Source: NSW DPE Draft Schedule 6 Lowes Creek Maryland Precinct: Development Control Plan (2018)

Elton Consulting's *Demographic and Social Infrastructure Assessment: Lowes Creek Maryland* (2018) investigated possible social infrastructure requirements for the new future population of LCM. It was informed by assumptions that:

- DPE's *Draft Lowes Creek Maryland Precinct ILP* indicated 6,982 dwellings and 22,441 people
- a lower density scenario of the larger Context Plan Area could generate 17,761 dwellings and 58,079 people
- a higher density scenario of the larger Context Plan Area could generate 20,256 dwellings, 65,731 people
- the future population of LCM is expected to have characteristics similar to the populations moving into other nearby release areas, such as Oran Park Turner Road and Catherine Fields (part) precincts.

Social infrastructure proposed in the assessment includes:

- a district community facility (up to 2,000sqm) and two local community centres (total 2,760sqm)
- no standalone library, but the provision of key library programs and services (such a book drop off and collection, homework club and story time) within the district community centre
- up to 59ha of open space (45% passive, 55% active), comprised of 19 local parks, 6 double playing fields and 22 courts
- a combined primary (on a 2ha site) and high school (on a 4ha site) and between 7-8 childcare centres
- a variety of health services, including GP practices and Allied Health.

Key issues in the assessment included:

- a lack of a regional or Camden-wide social infrastructure Plan
- uncertainty around future yield and population forecasts and the location of secondary centres across the SWGA in the context of the review being undertaken of the South West Land Use and Infrastructure Implementation Plan (SW LUIIP).
- a lack of agreed population catchments and benchmarks for key types of social infrastructure
- several issues requiring resolution by DPE and Camden Council before a schedule of required social infrastructure could be confirmed, including:

- identifying sensible catchments for an indoor sports centre and aquatic centre that will incorporate the LCM Precinct, and the broader Context Plan Area more generally
- agreeing preferred scale and locations for these facilities
- confirming size, distribution and site areas of recommended community centres / library
- confirming number and location of sporting facilities
- confirming quantum and distribution of sports fields in the balance of the Context Plan Area
- confirming the overall open space plan.

DPE's *Draft Lowes Creek Maryland Precinct Plan* (2018) with inclusive draft ILP, was on public exhibition from August to November in 2018. Several agencies submitted commentary and recommendations as part of this exhibition. Of specific relevance to this report is:

Staged and equitable access:

- Liverpool City Council:
  - Appropriate staging, enabling the progressive delivery of social infrastructure (such as open space and community facilities) as residents move in to the new development
  - Investigate the current capacity of regional facilities and, if a shortfall exists, plan for the provision of regional community facilities for future populations (in suitable locations, and appropriately staged)

Open and recreation spaces:

- Camden Council:
  - a Public Domain and Landscape Plan is to be submitted for each local sporting field, neighbourhood park, recreation activity node and other passive open space areas at the time of subdivision of the adjoining residential area
  - the design of open spaces is to be in accordance with Camden Council's open space design policies (current and draft)
- NSW Office of Sport: Ensure female friendly amenities are provided at sport grounds

Local centre and walkability:

- Camden Council: Maryland local centre allows a range of retail, commercial and community uses, is accessible, well connected and walkable. Ensure pedestrian access is designed to link the local centre to the community facility
- NSW Office of Sport: dedicated shared paths are provided in active corridors, particularly riparian corridors.

Retention basins:

- Camden Council: no objection to the use of the dry basins for passive recreation. However, these spaces shouldn't be considered in open space calculations, as not accessible in a 1 in 100 year storm event. If proposed density/yield is not decreased, additional open space should be provided for the community in both dry and wet weather. Regardless of resulting yield, long-term maintenance should be funded.

Education:

- Department of Education and Communities: potential sites for primary and high schools will need to meet relevant size, safety and accessibility requirements.

Contributions:

- Camden Council:
  - satisfactory arrangements clause be included into the Growth Centres SEPP (relating to the Camden Growth Area) to ensure that agreements for the delivery of infrastructure are in place between the developer and Council

prior to issue of the consent for a Subdivision Certificate, or that an IPART-approved contributions plan is in place

- regardless of resulting yield, long-term maintenance of design enhancements and functionality of retention basins should be funded.

Recommendations for social infrastructure provision in the LCM precinct and their integration into the draft LCM ILP, are provided in Table A.2 on the following page.

Table A.2 LCM draft indicative layout plan inclusions (relevant to this report)

<b>SOCIAL INFRASTRUCTURE TYPES AND RECOMMENDATIONS</b>
<b>Community facilities</b>
<ul style="list-style-type: none"> <li>— One district community centre around 2,000sqm</li> <li>— Two local community centres, with a combined floor area of up to 2760sqm</li> <li>— 835 sqm of library space, contributing to a district or regional library in the northern part of the SWGA</li> <li>— A variety of retail and commercial services, including entertainment and leisure facilities</li> </ul>
<b>Open spaces and recreation</b>
<p><b>Passive open space</b>, recommendations integrated into the draft ILP:</p> <ul style="list-style-type: none"> <li>— 58.98 ha of public open space, with 55% for active uses and 45% for passive uses</li> <li>— proposes significant investment in 4.5ha of drainage basins to enable dual use as passive open space, bringing the total provided to 63.48ha which is considered adequate</li> <li>— All residents are within easy walking distance of open space.</li> <li>— Local parks range in size from 0.28ha to 5.29ha.</li> </ul>
<p><b>Active open space</b>, recommendations integrated into the draft ILP:</p> <ul style="list-style-type: none"> <li>— 6 double playing fields, comprised of:</li> <li>— 2 double fields co-located in 2 district sports parks (9.86 and 11.45ha)</li> <li>— 1 double field each in 2 district parks (5.64 and 5.62ha).</li> <li>— 22 courts provided across the LCM precinct</li> </ul>
<p><b>Indoor and aquatic facilities</b>, recommendations integrated into draft ILP:</p> <ul style="list-style-type: none"> <li>— Indoor recreation and aquatic facility to be located outside study area, subject to further discussion with Council</li> </ul>
<p><b>Linear open space</b>, recommendations integrated into draft ILP:</p> <ul style="list-style-type: none"> <li>— Linear open space suitable for a network of walking and cycle paths, along key landform features and sub-arterial roads</li> </ul>
<b>Education and childcare</b>
<p><b>Schools:</b></p> <ul style="list-style-type: none"> <li>— 1 public high school on 4ha land area</li> <li>— 1 public primary school on adjoining 2ha site</li> </ul>
<p><b>Childcare:</b></p> <ul style="list-style-type: none"> <li>— Seven or eight childcare centres, to be provided by private / non-government providers</li> </ul>
<b>Health and wellbeing</b>

<b>SOCIAL INFRASTRUCTURE TYPES AND RECOMMENDATIONS</b>
— Several GP medical centres and associated allied health services
<b>Religious/Denominational</b>
— Some places of worship, depending on population demand

Source: NSW DPE's Draft Lowes Creek Maryland Precinct Plan (2018)

## Austral and Leppington North

Austral and Leppington North are part of the DPE's South West Priority Land Release Area.

DPE's Austral and Leppington North Infrastructure Delivery Plan (2012) estimates 17,350 dwellings and up to 13,000 jobs in a range of sectors including retail, commercial and administrative services.

The Delivery Plan has nominated Leppington as the SWGC's regional centre and estimates that it will need to incorporate regional open space for the recreation needs of the SWGC, including a regional stadium, indoor sports and aquatic centre, as well as a new TAFE.

The combined area of Austral and Leppington North is projected to need:

- local open space across the precinct, with 90% of all dwellings within walkable distance (up to 400m) and with a provision rate of 2.9 ha/1,000 people
- a range of community facilities, including a library, with co-location possible in a civic precinct adjacent to open space.
- upgrades to capacity of major existing hospital facilities, namely Liverpool, Campbelltown and Camden Hospitals will need to be increased to accommodate the needs of a larger population
- a hierarchy of integrated primary and community care centres (IPCC) provided across the SWGC, in Leppington, Oran Park and Bringelly, with the largest in the Leppington (the main centre)
- up to five new primary schools and one new high school after 10 years, as the Department of Education (DoE) has identified that the capacity of existing schools in the Precinct and in adjoining areas (e.g. John Edmondson High School and Hoxton Park High School) is sufficient to cope with initial demand (to be monitored by DoE and reassessed as development occurs)

In addition, the capacity and response areas of emergency services networks will need to be expanded. Suitable outpost and control centre sites will need to be determined once the road network is determined which allow the fastest possible travel times, and support response rates.

## Transport planning

Transport for NSW's *North South Rail Line and South West Rail Link Extension corridor identification* (2018) identifies corridors of land for future rail lines between the South West and surrounding North West, the Aerotropolis and Greater Macarthur Growth Areas. The transport links will support the growth of future town centres in these areas.

The proposed route (to be finalised post Aerotropolis finalised) is shown in Figure A.6 on the following page. At this time in the planning, the identified link could possibly be accessed by future residents in the site at the proposed Badgerys Creek Aerotropolis Station and/or Leppington station

The NSW Government's *Future Transport 2056* (2018) identifies planned initiatives for greater connectivity between Sydney CBD and growth areas over the next 20 years, including improved public transport connections and services and better east-west connections. Key planning suggestions relevant to this report are the potential for:

- a north-south train link through the Western Sydney Airport-Badgerys Creek Aerotropolis and east-west connections to Central River City (see above)

- rapid bus connections and improved bus connections between Western Sydney Airport – Badgerys Creek Aerotropolis and Penrith, Liverpool, Blacktown and Campbelltown – Macarthur
- the Leppington to Western Sydney Airport – Badgerys Creek Aerotropolis Rail Link
- a safe cycleway network within 10km of Greater Penrith, Liverpool, Campbelltown-Macarthur and the Aerotropolis
- the Sydney Metro City and Southwest Extension to Liverpool.

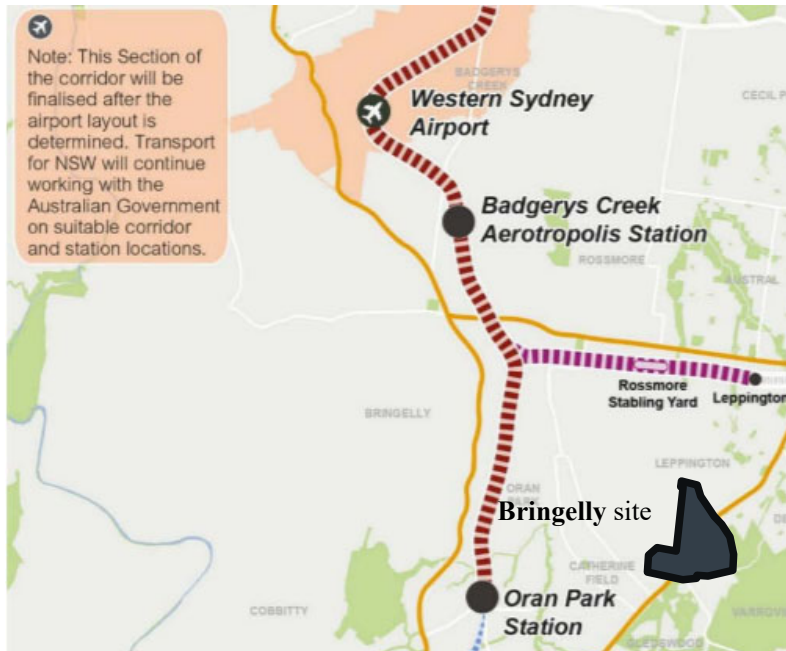


Figure A.6 Proposed route of future North South Rail Line

Source: Transport for NSW's North South Rail Line and South West Rail Link Extension corridor identification (2018)

If approved, it is likely these plans will be implemented in stages, with emphasis transitioning from high volume north-south corridors towards improving critical east-west movements.

GHD's *Camden and Campbelltown Council's Integrated Transport Strategy* (2006) recommends that higher density residential areas and commercial areas are located around the existing and proposed public transport networks.

The strategy suggests that a working group or committee is established to align the delivery of residential with transport infrastructure delivery and/or enhancement for the SWGC. This infrastructure includes rail networks as well as roadways.

Liverpool City Council's *Rapid Transit Corridor* (2018) projects a possible 20-minute trip from Liverpool CBD to the Aerotropolis, following investment in public and road transport. In support of this target, Liverpool City Council has begun to advocate for the strategic investment in and delivery of public transport and road infrastructure. Liverpool City Council's *The Airport City* (2018) recommends:

- a short extension of the existing rail line from Leppington, to provide a cost-effective connection to the Aerotropolis (see above), and link the wider Sydney train network to the WSA
- future corridor protection of up to six-lanes from Liverpool's CBD and Leppington station, future-proofing diverse future transport options, such as light rail and driverless cars.

Beyond links to the Aerotropolis, *The Airport City* (2018) also maintains Liverpool City Council's support for the extension of the Sydney Metro network from Bankstown to Liverpool. This extension could strengthen connections and enabling affordable transport options for Liverpool's residents to broader Greater Sydney.

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