

Delivering Leppington Town Centre

Open Space and Infrastructure Strategy

Camden Council and Liverpool City Council
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* This document is for discussion purposes only unless signed and dated by the persons identified. This document has been reviewed by the Project Director.

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Acronyms and abbreviations

CP	Contributions Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Reg.	Environmental Planning and Assessment Regulation 2000
ILP	Indicative Layout Plan
LGA	Local government area
RIC	Regional infrastructure contribution
SEPP	State Environmental Planning Policy
SIC	Special infrastructure contributions
The Strategy	Leppington Town Centre Open Space, Social Infrastructure, and Public Domain Strategy (this document)

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COVER NOTE

Please note that where the draft Indicative Layout Plan (ILP) is illustrated and referenced in this study that the ILP has since been updated. The latest version of the draft ILP can be found in the Draft Schedule 2 Leppington Town Centre Development Control Plan (Figure 3, p.22).

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Glossary of terms

Item / Term	Description
Social Infrastructure	<p><i>“Social infrastructure is comprised of the facilities, spaces, services and networks that support the quality of life and wellbeing of our communities. It helps us to be happy, safe and healthy, to learn, and to enjoy life... (and) contributes to social identity, inclusion and cohesion...”</i></p> <p>Australian Infrastructure Audit 2019</p> <p>At a local level, social infrastructure includes:</p> <ul style="list-style-type: none"> • community centres and halls • libraries and education facilities • cultural facilities and art spaces • recreational facilities and open spaces • police and justice facilities • health-related facilities • social housing and support services <p>Social infrastructure is often co-located or provided in the form of Multipurpose Community Facilities which provide for a combination of several or all of the above.</p>
Transport infrastructure	<p>Transport infrastructure is the spaces and structures that support the movement or transportation of people and goods. Transport is vital to economic activities and a key to ensuring social well-being and cohesion.</p> <p>At a local level, transport infrastructure includes:</p> <ul style="list-style-type: none"> • Vehicular networks within streets, roads and intersections • Pedestrian networks within streets, pathways and intersections • Cycle networks within streets, open spaces and intersections • Bus facilities and lanes within streets, roads and intersections
Drainage infrastructure	<p>Drainage infrastructure includes the land and assets used to provide storm water capabilities and capacity to manage and control storm water runoff for the drainage utility system, to draw off surface water from land, carry the water away, collect, store, or treat the water, or divert the water into natural or artificial watercourses.</p>

1 Introduction

A significant evolution is planned for Leppington Town Centre. A largely rural environment today, the next 20 years will see it evolve into a vibrant, compact and walkable mixed-use urban centre which will provide an important employment and housing role for South West Sydney, and the Western Parkland City.

Planned development and investment will see the centre grow from less than 1,000 people in 2016 to potentially 26,000 people by 2041, cementing its role as a major strategic centre and growth precinct in South-Western Sydney. It will encourage investment in, and improved access to services for, both the Camden and Liverpool Local Government Areas (LGAs).

The growth will bring with it significant demand for new supporting infrastructure. Residents and workers in a highly urbanised environment will need to be supported by high quality urban open spaces, such as new town centre plazas that can host markets and events, as well as open spaces for passive and active recreation, pedestrian and cycle-friendly streets, new schools, community facilities and health facilities.

1.1 Purpose

Leppington Town Centre will be a people-focused destination; a centre with a highly urban character, with a focus on walking and cycling, vibrant town squares and plazas, and a large public domain and open space network. Achieving this will require collaboration between local and State Government, the development industry, the community, and landowners.

Leveraging analysis undertaken by Council planners, social planning consultants (Elton Consulting), economic planning consultants (Hill PDA), traffic planning consultants (Arup) urban designers (LFA) and landscape planners (Turf), this Strategy provides an overview of the infrastructure planned to achieve this vision, and outlines the need, quantum, location and planned embellishment of each item. It will act as an important advocacy document to guide the Councils' response to infrastructure provision in Leppington Town Centre, inform local infrastructure contributions planning, and communicate the intended outcomes to the broader community.

This Strategy is not in itself an assessment of the need for social or transport infrastructure provision within Leppington Town Centre, which has been undertaken by Elton Consulting and Arup under separate cover. It is the strategy for local infrastructure delivery to meet the needs of the new Leppington Town Centre community in a meaningful way that is practical and achievable, innovative in its approach to delivery and ongoing maintenance and appropriate to lifestyle expectations in an urban centre.

1.2 The NSW infrastructure funding framework

The *Environmental Planning and Assessment Act 1979* (the EP&A Act) and *Environmental Planning and Assessment Regulation 2000* (the EP&A Reg.) set out the legal requirements for infrastructure funding collection and use in NSW, to ensure that there is the appropriate delivery of infrastructure to support growth. An overview of the development funding mechanisms for infrastructure (in addition to alternative government fundings sources) is shown in Figure 1.

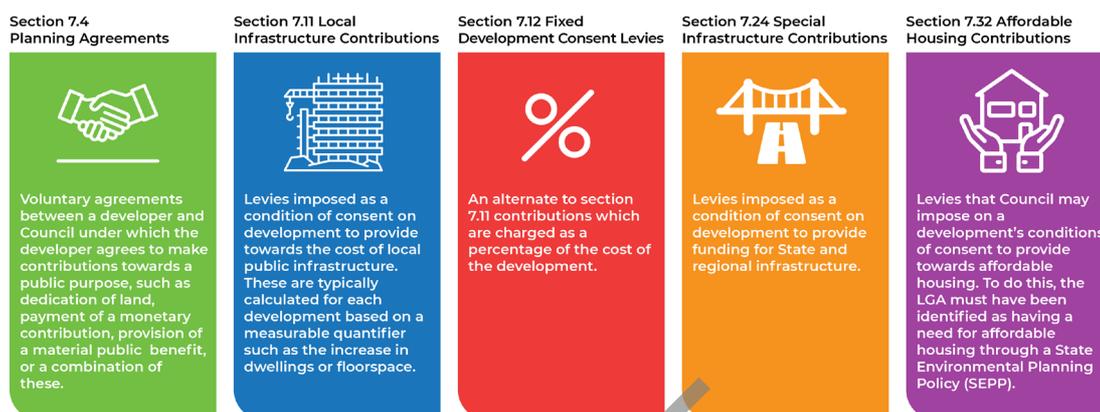


Figure 1. Types of infrastructure contributions in NSW

Source: Mecone

1.2.1 Anticipated funding sources

It is expected that much of the local infrastructure required under this strategy would be funded through local infrastructure contributions, with state infrastructure such as schools and health facilities funded by Special Infrastructure Contributions. This strategy sets the direction for future Local Infrastructure Contributions Plans that will determine the future funding of infrastructure for the Leppington Town Centre. Those Local Infrastructure Contributions Plans will be the subject of separate community consultation.

The draft Planning Proposal for Leppington proposes incentive bonus floor space for dedicated public access to additional private-public spaces, which may be provided by planning agreement.

1.2.2 Infrastructure funding in Leppington Town Centre

Infrastructure funding in the Leppington Town Centre is provided for by three main mechanisms:

- Camden Council's Local Infrastructure Contributions Plan (currently the Camden Growth Areas CP)
- Liverpool City Council's Local Infrastructure Contributions Plan (currently the Austral and Leppington North Precincts CP)

- Special Infrastructure Contribution (currently the NSW State government's Western Sydney Growth Area SIC)

This Strategy provides an overview of the local level infrastructure required to build a successful Leppington Town Centre; however State-led infrastructure funded by the SIC has an important role to play also. Land for education, emergency services and justice services, major roads such as Bringelly Road (between Fourth Avenue and Camden Valley Way) and Ingleburn Road (between Camden Valley Way and Eastwood Road), bus depots, an Integrated health Care Centre for Leppington, and space for regional open space, will all contribute towards the realisation of the centre and its overarching vision.

This Infrastructure Strategy and the new Plans for Leppington Town Centre have been subject to initial costings to ensure that open space, roads and facilities identified can be reasonably funded by local contributions in addition to works that would be directly funded by the State Government and developers.

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2 New vision for Leppington Town Centre

2.1 Strategic context

The Greater Sydney Region Plan, the Western City District Plan and the Camden Local Strategic Planning Statement (LSPS) all identify Leppington as a strategic centre due to its potential to provide growth and a range of employment opportunities. The growth of strategic centres more broadly is important to underpin the economy of the Western Parkland City and will provide access to housing, jobs, goods, and services.

Leppington Town Centre is identified as one of the principal future retail and commercial hubs in the Camden LGA, with potential to accommodate substantial economic growth. The District Plan provides a target of 7,000-12,500 jobs by 2036.

The Draft Local Housing Strategy 2020 states that current planning capacity for the town centre is assumed to be 2,112 dwellings, however despite a number of development applications being approved, no development has commenced. Feasibility for development and the dwelling capacity will increase as a result of the new plans for the Leppington Town Centre.

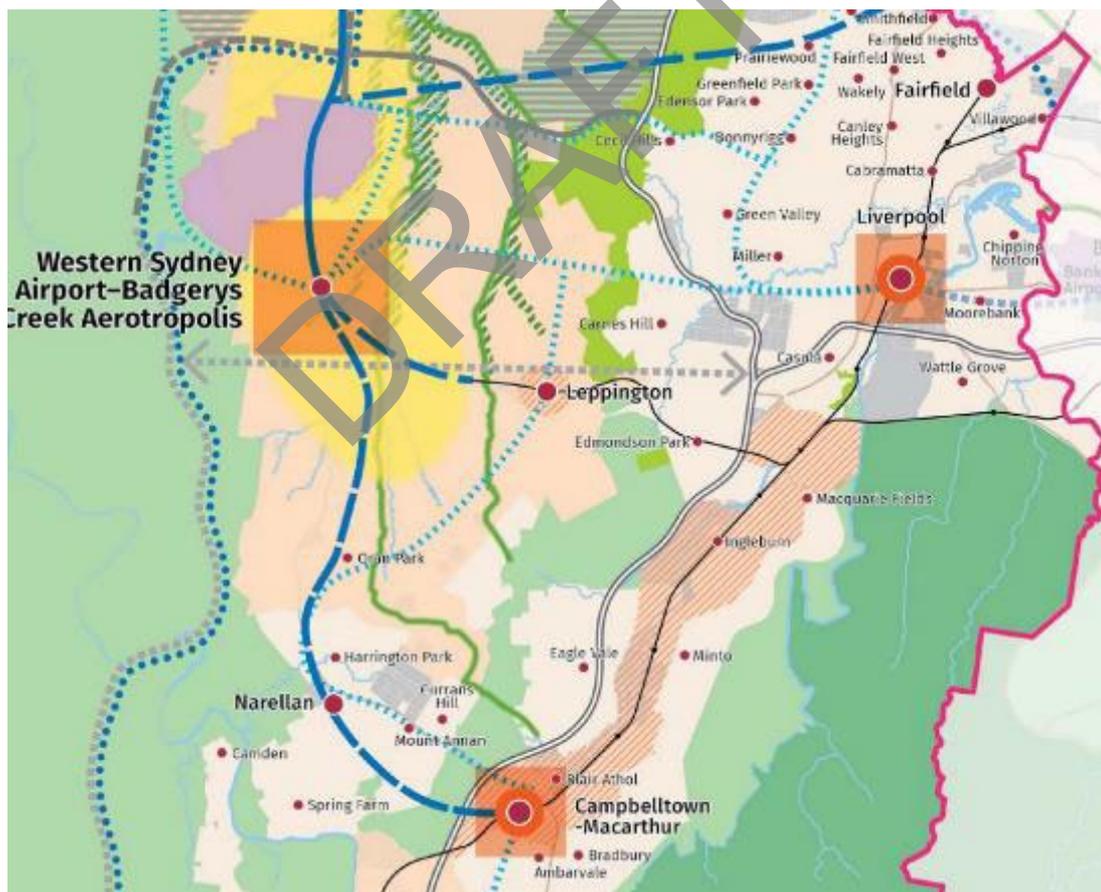


Figure 2. Structure Plan for the Western City District

Source: Greater Sydney Commission 2018

2.2 The Vision

Active, connected and people focused

Leppington Town Centre will be a people and lifestyle focused place, transit oriented and highly convenient with major shopping, cultural and recreation facilities.

As a strategic centre in the Western Parkland City, Leppington Town Centre will provide much needed homes, jobs, services and a civic hub with high frequency trains and rapid bus to Bradfield and to Liverpool CBD, complementing the concept of a 30-minute city.

Convenience is never far away with fine grain retail, eat streets, entertainment and transport connections to the rail station at the heart of the centre, and the surrounding area. The range of active transport options through permeable streets and spaces will be a key feature of Leppington, providing access from the outer areas to the centre core.

Services, schools, community education and cultural activities will be within walking distance and people of all ages will feel safe riding bikes through leafy streets on a network of separated cycleways within a 10-minute neighbourhood. The centre will provide industrial and urban services space on its fringe to meet the needs of the local community.

A green urban centre

A public domain green network will be focused on the existing natural creek-lines and be connected to the main town centre Core and railway station. The built form will be high quality with a range of densities and building heights increasing with proximity to the centre and rail station. Streets, public and private open spaces will be lined with green tree canopy and have cool outdoor spaces. Leppington will be resilient to urban heat and known for its highly sustainable buildings, spaces and lifestyle.

2.3 The Indicative Layout Plan

The ILP responds to the local social infrastructure needs of the future population at the Leppington Town Centre and within the broader catchment as follows.

1. **Open space and recreation areas** – it provides for 72ha of combined passive and active open space, including plazas, parks, reserves and playing fields.
2. **Cultural and community facilities** – it incorporates a new regional cultural and community centre with library at its heart, north of the railway station.
3. **Regional and sporting facilities** – it includes an indoor recreation and aquatic facility north of Bringelly Road.

The ILP identifies the site for a new Health Hub immediately to the north of the railway station. It secures the location of the existing school site at Rickard Road for future expansion, and provides options for new schools within reach of playing fields. School infrastructure have expressed interest in two potential sites nearby the existing school for a future education facility.

The new plans also provide significant floor space opportunities for private tertiary educational facilities within the mixed use centre.

Active space was one of the key discussion points considered in community engagement, with participants discussing access to water in different forms, interactive open spaces, utilising community halls for pop-up events, and seeing more trees to provide amenity and mitigate urban heat. Streetscape design was also a key item that participants were surveyed on, with popular responses showing that most people wanted green and shaded streets, and high quality public domain such as cobblestone streets and European style seating.



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Leppington Town Centre Indicative Layout Plan

Legend

- Commercial
- Mixed Use
- Business Development
- Light Industrial
- Medium Density Residential
- High Density Residential
- Railway Corridor
- Public Recreation
- Private Recreation
- School
- Utilities Infrastructure
- Drainage and Riparian
- Landscaped Road Reserve
- Linear Plaza
- Road
- Pedestrian Priority Street
- Recreation Facility
- Education
- Playing Field
- Health Hub
- Nature Reserve
- Commuter Car Park
- Community Centre
- Train Station
- Bus Interchange
- Primary Active Link
- Proposed Active Link

MAP DATE:
13-09-2022

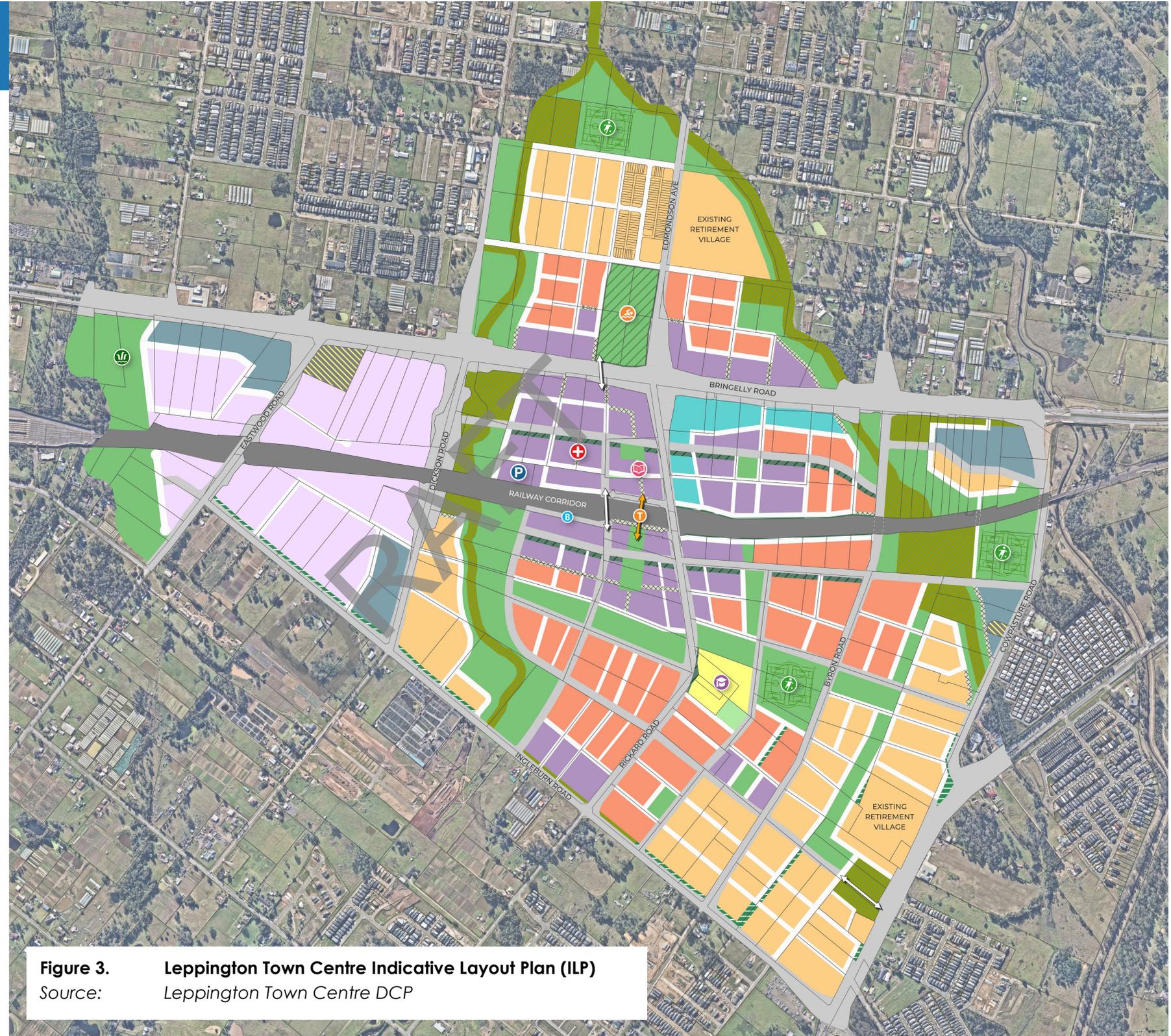


Figure 3. Leppington Town Centre Indicative Layout Plan (ILP)
Source: Leppington Town Centre DCP

3 Current and future population

3.1 Current population

The population of the Leppington Town Centre is approximately 1,040 based on 2021 Census mesh block counts. The 2021 estimated resident population of the surrounding area, including the wider suburb of Leppington, Rossmore, Catherine Field and Austral, is 21,120.

Leppington Town Centre sits within two ABS statistical suburb areas: the wider suburb of Leppington and Austral. A snapshot of the demographic characteristics of these areas is shown in Table 1 below.

	Wider Leppington	Austral
Population	9,423	6,847
Median age	32	31
Families	2,564	1,799
Dwellings	3,128	2,261
Average household size	3.2	3.1
Median weekly household income	\$2,275	\$2,168

3.2 Future population

Hill PDA estimated in its Leppington Town Centre Market Demand Analysis (2021) that the precinct could provide for around 10,500 – 11,000 dwellings by 2041, with a resident population of 23,000 – 25,000 people. Elton's Social Infrastructure and Open Space Assessment suggests this could increase as high as 26,000 people, with characteristics outlined below.

- A relatively young population with more babies and preschoolers, and many more young adults. Elton estimates that around 30% of the population will be 25-34 years old, 15% will be school age, and a further 10% will be 0-4 years old.
- Most households are expected to rent their homes with only around a third being homeowners / buyers.
- The incoming population is expected to be more ethnically diverse than the existing population of Leppington.
- Additionally, up to 9,000 workers are projected for the center by 2041 across a range of employment types. Workers generate their own demand for social infrastructure including the need for spaces to meet socially, undertake exercise, meditative areas, facilitates providing childcare, and spaces for meetings.

It will be important to ensure the social infrastructure and open space delivered in Leppington Town Centre caters for resident and working populations. It will also have

to serve a wide range of demographics, from young children and families, through to young workers and older people. This will mean access to education (primary, secondary and tertiary), health, emergency and community facilities is particularly important. Further, the provision and design of open space, sports facilities and childcare will need to account for demand from both the working and resident populations."

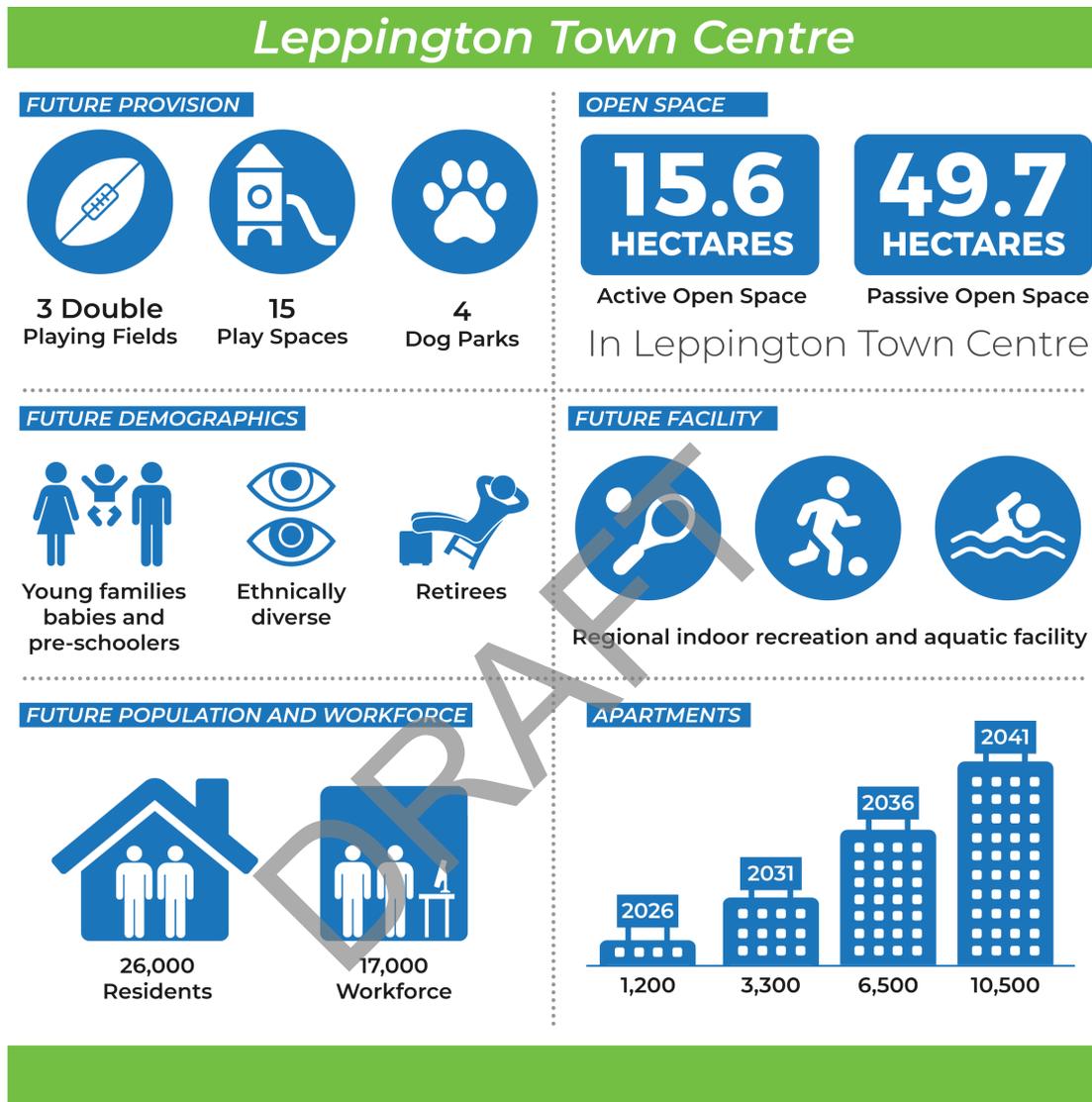


Figure 4. Future growth expectations at Leppington Town Centre
Source: Mecone

4 Infrastructure need

The requirements for local, district and regional scale open space, recreation and community facilities resulting from the Leppington Town Centre are documented in the Leppington Town Centre Precinct Social Infrastructure and Open Space Assessment prepared by Elton Consulting (October 2021).

The required road and traffic infrastructure is identified in the Leppington Town Centre and Precinct Traffic Modelling Report prepared by ARUP (May 2021).

The following sections provide a summary of these requirements as well as the strategy for provision of infrastructure in the Leppington Town Centre.

4.1 Summary schedule of works

- **1 Regional Open Space**
nature reserve, pump track
- **4 District Recreational Facilities**
indoor aquatic and recreation facility, sports fields, active play spaces
- **11 Local Open Spaces**
4 civic plazas/squares, 7 neighbourhood parks
- **Multipurpose Community facility**
library, community centre, cultural facility
- **Roads, Streets and Public Domain Infrastructure**
pedestrian, cycle, vehicle movement
- **Drainage Infrastructure**
water cycle management

4.2 Community facilities

4.2.1 Demand and provision

Community facilities include libraries, community centres, civic centres, cultural and performance spaces, and other spaces. They play an important role in our communities, providing places where people from a range of backgrounds and interests can interact, learn, recreate, be supported and grow. In many areas, they are the focus of socially sustainable communities.

Elton have identified that the new population in the Leppington Town Centre will create demand for a community centre as well as a library and civic centre or cultural facility. This has been determined based on the benchmarks shown in the table below.

Table 2. Community facility provision			
Facility type	Demand benchmark	Elton recommendation	Provision in Leppington Town Centre
Library	0.7 libraries 1,100sqm	On-site provision of a regional level facility (or facilities) incorporating a library, community centre, and cultural and performance space. Allowance should be made for 4,000 square metres of floor space for library and community centre functions and a further 1,500 square metres for a cultural facility. If all uses were co-located the facility could be 4,500-5,000 square metres.	Land reservation for multipurpose community and cultural facility to include: <ul style="list-style-type: none"> - regional level library with study space, - community centre meeting spaces, and - performance / exhibition space.
Community Centre	1.3 centres 1,441sqm		
Civic and Cultural centre	0.9 centre		

Camden Council's Spaces and Places Strategy notes "a new regional level library and community centre is proposed for the Leppington Town Centre Precinct (LTCP)."

The ultimate location of the regional level library and community centre is still to be confirmed pending exploration of co-location opportunities with other future facilities. Generally, the facility is proposed to be located north of Leppington train station in close proximity to public transport and services as indicated below.



Figure 5. Location of planned community facility
 Source: Council and Mecone

4.3 Open space and recreation

4.3.1 Demand and provision

Elton have identified the need for a range of open space and recreation facilities within the Leppington Town Centre based on high-level land-based benchmarks. These are summarised in the table following.

Table 3. Demand and Provision: Open Space and Recreation			
Facility type	Demand	Elton recommendation	Provision in Leppington Town Centre
Play spaces	13.1 playgrounds	13 playgrounds	13 playgrounds 6 active playgrounds
Off-leash dog parks	1.6 dog parks	2 dog parks	4 dog parks
Sports courts	14 courts	14 courts	16 sports courts 1 Amenities building
Sports fields	15.6 fields	4 double fields	3 double fields 3 Amenities buildings
Active Open Space	26-40 hectares	20 hectares	16 hectares
Passive Open Space	40 hectares	40 hectares	56 hectares
Facility type	Demand	Elton recommendation	Provision in Leppington Town Centre
Indoor sport and recreation facility	0.6 facilities	On-site provision of a regional indoor recreation and aquatic facility located on a 5 hectare site. It would incorporate an aquatic centre, indoors sports courts and other facilities.	On-site provision of a regional indoor recreation and aquatic facility located on a 5 hectare site. It would incorporate an aquatic centre, indoors sports courts and other facilities.
Local aquatic facility	0.4 facilities		
Regional aquatic facility	0.2 facilities		

Elton reference benchmarks of 2.83ha/1,000 persons, or 15% of total site area, as the total open space provision need. Benchmarks such as these are effective as they are easy to calculate and are commonly applied by many planning authorities across NSW. However, these rates in and of themselves are not cognisant of the quality of open spaces provided or their usefulness for the community and are simply an approach to determine mathematical need. They must be balanced against

more complex factors. One of those factors is the quality and level of open space, a key contributor to its usability and attractiveness.

In an urban centre such as Leppington Town Centre it would be impractical and unviable to provide active open space such as playing fields at the benchmark 'per person' rate that is normally achieved in lower density suburbs. The approach adopted for the concentrated population of Leppington Town Centre involves providing a higher level of embellishment of public domain and passive open space areas, for more intensive use of those public spaces. This strategy ensures there is a clear open space hierarchy that is of a high quality, and will provide for the differing recreation needs of the future community.

At this stage, only conceptual designs for the eventual network of open spaces and recreation areas has been undertaken. Table 5 below shows the mixture of functions envisioned for the different types of planned open space, based on their size and natural characteristics, as well as the expected functional needs in different locations across Leppington Town Centre.

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Table 4. Hierarchy and Functions: Open Space

Function	Type of Open Space (Hierarchy Classification)			
	Regional Open Space (Parkland City Destination)	District Open Space (Town Centre and Surrounds)	Civic Plazas & Squares (Town Centre Residents/Visitors)	Neighbourhood Parks (Town Centre Community)
Nature (Experience)	1	3		3
Sport (Active Play)	1	3		1
Recreation (Informal Play)	1	3	4	8
Social (Meeting)		1	4	
Indoor Sports (Exercise)		1		

Open space provision

According to the Open Space Assessment by Elton, the estimated demand for passive and active open space in Leppington Town Centre is approximately 67 hectares. Leppington Town Centre Indicative Layout Plan provides for 72 hectares of RE1 Public Recreation zoned land and three double playing fields.

The Assessment by Elton estimates that the Leppington Town Centre will generate demand for approximately 40 hectares of passive open space for informal recreation, exercise and play. This includes two district parks, up to 13 play spaces and two off-leash dog parks.

Furthermore, the Assessment estimates that the Centre will generate demand for around 26.4 hectares of active open space based on the proportion of land-based benchmark and the Government Architect NSW's sporting space performance indicator. This would involve delivering:

- 12 sports fields which is the midpoint of the two Council benchmarks when additional demand from workers is included
- 14 sport courts which is in accordance with the benchmark including additional demand from workers

Fragmented land ownership and the high cost of developable land significantly constrains provision of active open space within much of the Centre. Although the designation of active open space is lower than the provision recommended by Elton, the provision of passive open space is higher and the overall open space provision meets the benchmark.

To balance the deficit in active open space, passive open spaces are proposed to be of high amenity and above average level of embellishment for greater use and enjoyment.

The new ILP and plans provide for a spatial distribution of open space consistent with the recommendation that Leppington Town Centre provide the great majority of residents with access to open space within 200m of their homes, and workers and students within 400m.

Indoor Recreation

Elton notes the requirement for one indoor recreation and aquatic facility within the Leppington Town Centre. Consistent with previous social infrastructure studies, Elton proposes the centre is located on a 5 hectare site, including a 3 hectare facility and outdoor elements and 2 hectares for parking and landscaping. It would incorporate:

- Aquatic facilities including an indoor 50 metre x 10 lane Olympic pool, a training pool, 25 metre leisure pool, heated teaching pool, and a children's play pool/wave pool/whirl pool/water slides, diving pool
- Indoor sporting facilities with 4 indoor sports courts each large enough for netball; a fitness centre with weights, aerobics/dance/Yoga/Pilates activity room with wooden floor, spin cycle room
- Wellness/health services like physiotherapy, nutrition etc. and a spa, sauna and steam room
- Retractable seating for 1,500 this would increase to 3,500 in stage 2
- General amenities including a kiosk and café, equipment sales, change rooms, lockers, toilets, crèche facilities for users
- Outdoor elements which may include a water play park, BMX track, skate park, sports oval and netball, tennis, basketball courts.

A 5 Ha site is identified for the regional indoor recreation and aquatic facility within the Liverpool LGA portion of the Leppington Town Centre, at the corner of Bringelly and Edmondson Road.

Outdoor Recreation

The provision of facilities in Leppington has been tailored to its denser, centre nature and the availability of land. The strategy for the provision of outdoor recreation facilities is to:

- Provide more of the types of facilities which require less space and can be used by more people (e.g. less fields, but more courts)
- Provide a different offering of active play facilities which are compatible with the creek corridor open spaces (such as active playgrounds for older kids and BMX pump track)
- Provide for a wide variety of facilities and more informal play in passive spaces (such as interactive public art or water features in civic plazas)

Below are the outdoor sports and recreation facilities proposed under this strategy.

3 Creek corridors with walking tracks and fitness stations



Skate Park Jardines de Aureà Cuadrado, Spain, Gardiners Creek Trail, Melbourne

3 Double sports fields and amenities buildings



Lionell Watts Synthetic Playing Fields, Amenities Building, Marsden Park

16 Sports courts



Box Hill Gardens Multi Purpose Area, Sydney, Vanke Olympic Ice, Baotou, A'beckett Urban Square, Melbourne

13 Playgrounds



Chelsea Street Park, Redfern, Victoria Park, Sydney, James Ruse Reserve, Parramatta

6 Active playgrounds



The Lizard Log Park, Sydney, Drapers Field, London, Oatley Park, Inclusive Adventure Playground

6 Public art play



South Park, San Francisco, Sound Art Sculptures, High Museum of Art, Atlanta

4 Dog parks

1 BMX pump track



Dog Agility Park, Lake Claremont Wylde MTB Trail, Sydney

Open Space Design Principles



LFA & Turf

Overview of the provision

The ultimate provision of open space and recreation is shown in Figure 6 and described in Table 5.

Table 5. Provision: Open space and recreation		
Item	Size (ha)	Description
Regional Open Space		
South Kemps Creek Nature Reserve	12	Functions: Recreation, Sport, Nature <ul style="list-style-type: none"> • Recreational shared paths • Educational nature walks • Fitness stations • Picnic areas • BMX track • Active play (e.g. skate park, learning to ride park, water park) • Dog agility park
District Open Space		
Scalabrini Creek Corridor South Reserve	13	Functions: Recreation, Sport, Nature <ul style="list-style-type: none"> • Recreational shared paths • Educational nature walks • Fitness stations • Picnic and BBQ areas • Drainage zones • Local and district playground • Dog park • Open lawn flexible area – major town event • Local sport courts/field with amenities as required • Water retention basin
Bond Creek Corridor South	19	Functions: Recreation, Sport, Nature <ul style="list-style-type: none"> • Recreational shared paths • Educational nature walks • Fitness stations • Picnic areas • Local and district playground • Dog park • Multiple sport courts/fields with amenities as required • Active play (e.g. skate park, learning to ride park, water park) • Water retention basin
Tributary Park	8	Functions: Recreation, Sport, Nature <ul style="list-style-type: none"> • Recreational shared paths

Table 5. Provision: Open space and recreation

Item	Size (ha)	Description
		<ul style="list-style-type: none"> • Educational nature walks • Fitness stations • Picnic areas and BBQ areas • Local and district playground • Amenity building • Multiple sport courts/fields with amenities as required • Water retention basin
Aquatic Centre Reserve	5	<p>Functions: Indoor Sports & Recreation, Health & Wellbeing</p> <ul style="list-style-type: none"> • Aquatic facilities – 50 metre pool, 25 metre pool, children's play pool and diving pool • 4 indoor sports courts • Fitness centre • Retractable seating for 1,500 • General amenity, kiosk, changerooms, lockers, crèche etc. • Acoustic buffer along Edmondson Avenue and Bringelly Road
Item	Size (ha)	Description
Local Open Space		
Civic Plaza and Squares		
Town centre Plaza	0.4	<p>Functions: Recreation</p> <ul style="list-style-type: none"> • Direct connection with the Linear Park (clear links with active mobility) • Active retail frontage on the perimeter • Canopy tree planting with seating to open lawn edges • Central flexible lawn zone • Public art and water features
Railway Square and Civic Park	0.9	<p>Functions: Recreation</p> <ul style="list-style-type: none"> • Direct connection with the Linear Park (clear links with active mobility) • Active retail frontage on the perimeter • Canopy tree planting and seating to open lawn edges • Seating steps to lawn edges • Significant interactive water element • Central flexible lawn zone • Public art

Table 5. Provision: Open space and recreation

Item	Size (ha)	Description
		<ul style="list-style-type: none"> Entry statement to celebrate arrival point
Town centre Park North	0.4	<p>Functions: Recreation</p> <ul style="list-style-type: none"> Direct connection with the Linear Park (clear links with active mobility) Direct frontage with streetscape Central flexible lawn zone Canopy tree planting and seating to open lawn edges Interactive water element for play Public art
Town centre Park South	1.1	<p>Functions: Recreation</p> <ul style="list-style-type: none"> Direct connection with the Linear Park (clear links with active mobility) Direct frontage with streetscape Central flexible lawn zone Public art and water feature
Local Open Space		
Neighbourhood Parks		
Byron Road Sport Precinct	5.4	<p>Functions: Recreation, Sport</p> <ul style="list-style-type: none"> Direct frontage with streetscape Open flexible lawn area Local playground Multiple sport courts/fields with amenities as required Active play (e.g. skate park, learning to ride park, water park) Entry statement and gathering areas
Community Spine	3.4	<p>Functions: Recreation</p> <ul style="list-style-type: none"> Direct frontage with streetscape Open flexible lawn areas Gathering areas Fitness track Public art and water feature Green amphitheatre Active play (e.g. skate park, learning to ride park, water park)
Item	Size (ha)	Description
Local Park 1	0.5	<p>Functions: Recreation</p> <ul style="list-style-type: none"> Local playground

Table 5. Provision: Open space and recreation

Item	Size (ha)	Description
		<ul style="list-style-type: none"> • Open lawn • Circuit path • Shade and shelter • Community gardens • Through-park connections
Local Park 2	0.5	Functions: Recreation <ul style="list-style-type: none"> • Local playground • Open lawn • Circuit path • Shade and shelter • Community gardens • Through-park connections
Scalabrini Creek Corridor North Reserve	8.6	Functions: Recreation, Nature <ul style="list-style-type: none"> • Recreational shared paths • Educational nature walks • Fitness stations • Picnic and BBQ areas • Open flexible lawn area • Nature play spaces • Dog park
Scalabrini Creek Corridor Central Reserve	4.3	Functions: Recreation, Nature <ul style="list-style-type: none"> • Recreational shared paths • Educational nature walks • Fitness stations • Picnic areas and BBQ stations • Drainage zones
Bond Creek Corridor North	0.9	Functions: Recreation, Nature <ul style="list-style-type: none"> • Recreational shared paths • Educational nature walks • Local playground • Open lawn flexible area
Green Corridor	2.8	Functions: Recreation <ul style="list-style-type: none"> • Local playground • Fitness stations • Picnic areas • Open lawn areas • Community gardens • Water retention basin • Local sport courts/fields with amenities are required
Linear Plaza South	1.2	Functions: Passive open space

Table 5. Provision: Open space and recreation		
Item	Size (ha)	Description
		A wide footpath to allow for public seating nooks and opportunity for retail breakout, whilst maintaining clear movement paths.
Linear Plaza North	1.1	Functions: Passive open space A wide footpath to allow for public seating nooks and opportunity for retail breakout, whilst maintaining clear movement paths.
Total	88ha	Includes riparian land

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Leppington Town Centre Open Space

- Legend**
- Development Parcel
 - Railway Corridor / Utilities
 - Public Recreation
 - Private Recreation
 - Linear Plaza
 - Landscaped Road Reserve
 - Drainage and Riparian
 - Pedestrian Priority Street
 - Recreation Facility
 - M Education
 - 7 Playing Field
 - + Health Hub
 - M Nature Reserve
 - P Commuter Car Park
 - M Community Centre
 - T Train Station
 - B Bus Interchange
 - Primary Active Link
 - Proposed Active Link
 - LGA Boundary



Figure 6. Open space and recreation areas
Source: Mecone

MAP DATE:
21-09-2022

0 200 400 600 m

Leppington Town Centre Open Space

- Legend**
- Development Parcel
 - Railway Corridor / Utilities
 - Public Recreation
 - Private Recreation
 - Linear Plaza
 - Landscaped Road Reserve
 - Drainage and Riparian
 - Pedestrian Priority Street
 - LGA Boundary
- REI Open Space Buffer**
- 400m Buffer
 - 200m Buffer
 - 100m Buffer



MAP DATE:
23-09-2022

0 200 400 600 m

Figure 7. Walking distance buffers to open space
Source: Mecone

4.4 Streets and public domain

Substantial planning has led to the development of an Indicative Layout Plan, street hierarchy, and proposed public domain outcome which will help establish Leppington Town Centre as Sydney's newest strategic centre and a prominent player in the Western Parkland City. This new network of streets has been informed by the Traffic Modelling Report prepared by ARUP.

Whilst the delivery of local streets will be left mostly to the private sector, following the vision and guidelines established in the Development Control Plan, local government has an important role to play in delivering the 'bones' of the centre – key connectors that will establish its layout and enable more widespread development to occur. It is reasonable that all development in the Leppington Town Centre share the cost of providing for these streets given all development will benefit from their provision.

The look and feel of these streets, influenced by the quality of design, plays an important role. Street design, incorporating paving and tree planting, is one element which helps to articulate the sense of public domain. Consistent paving can ensure continuity and unity in design, whilst intentional differences give signals to the differing functions and hierarchy of different areas – such as how a small laneway should be 'used' compared to a boulevard. The design of these spaces can also encourage their use as passive recreation areas, influenced by large footpaths with generous landscaping, seated areas for spill over café seating, and areas encouraging people to sit and relax.

Streets will serve an important function in mitigating the urban heat created by hard urban surfaces, accommodating medium-large street trees to shade and cool the town centre. This shading will be important to the comfort of people moving along streets and paths during the hotter months of summer, as well as people using key streets as cool passive outdoor recreation areas to meet, socialise, rest and play. Wider town centre Streets and Boulevards will play a particularly important role in achieving tree canopy targets and ultimately a place which is liveable and resilient to the urban heat effects that western Sydney's urbanising areas are highly vulnerable to.

Wide streets and separate pedestrian paths have been planned for efficient movement, cost effective dual use as passive recreational public domain and as large shade tree canopy spaces. In addition, strategic green corridors have been identified, to be maintained by building lines (larger setbacks) within private land for landscaping and canopy tree planting.

4.4.1 Provision

Public domain elements have been quantified in the tables and maps following. Different parties will be responsible for delivering different aspects of the town centre including Camden and Liverpool Council, State Government, and the private sector. Areas that are to be delivered by Council and the State will be zoned SP2 – Infrastructure in the ILP.

Table 6. Public domain delivery					
Item	Measurement	Council delivery	Private sector delivery	State Government delivery	Total
Raised crossings	Area (m2)	6,499	28,950	0	35,449
Special road treatments	Area (m2)	8,746	4,095	2,211	15,053
Special footpath treatments	Length (m)	7,681	4,772	2,482	14,934
Whole road special materials	Area (m2)	0	3,563	0	3,563

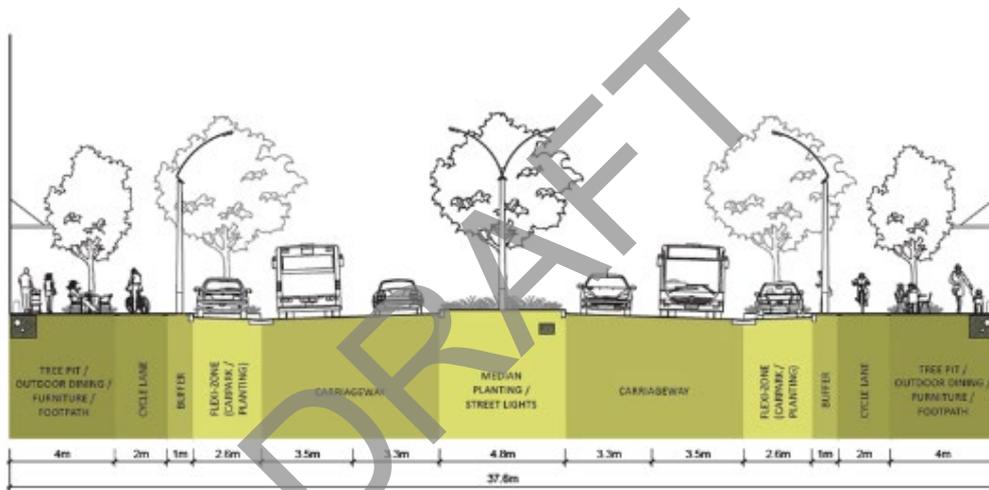


Figure 8. Boulevard (Rickard Road)

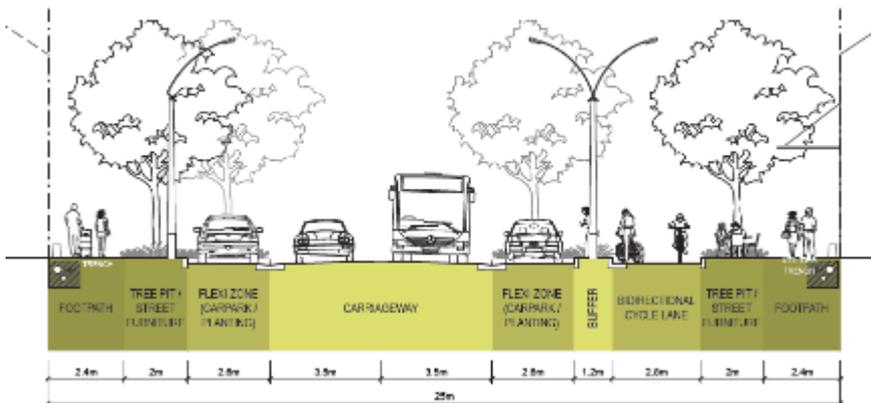


Figure 9. Town Centre Street

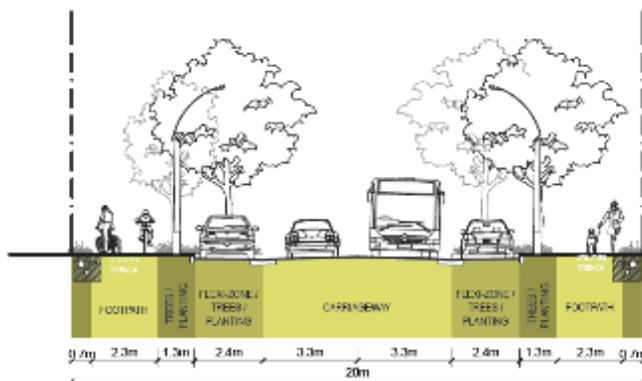


Figure 10. Local Collector Street

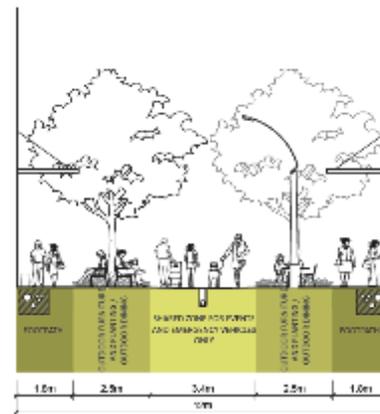


Figure 11. Pedestrian Priority Street

Table 7 provides a detailed breakdown of the roads to be delivered by Councils and should be read in conjunction with Figures 12 and 13, which show the differing street typologies proposed in the town centre, and those which will be provided by local government.

Table 7. Provision: Streets and public domain			
Road typology	Unit	Qty	Items
11.6m Through Park Link	Length (m)	210	-
15m One-way School Side (South)	Length (m)	195	-
- Raised Crossing	Area (m2)	196	2
16m Bus Street (to be confirmed)	Length (m)	306	-
16m One Way Parkside	Length (m)	889	-
- Raised Crossing	Area (m2)	95	2
18m One-way School Side (North)	Length (m)	202	-
- Raised Crossing	Area (m2)	143	1
- Special Material	Area (m2)	144	1
18.4m Perimeter Street	Length (m)	3,071	-
- Raised Crossing	Area	3,220	6
20m Local Collector - Camden	Length (m)	416	-
- Special Material	Area (m2)	476	3
20m Local Collector - Liverpool	Length (m)	342	-
- Raised Crossing	Area (m2)	322	2
25m Special Street	Length (m)	1,290	-
- Raised Crossing	Area (m2)	202	1

- Special Material	Area (m2)	605	3
25m Town Centre Street	Length (m)	3,112	-
- Raised Crossing	Area (m2)	3,264	6
- Special Material	Area (m2)	4,693	22
25m Town Centre Street with 90 Parking	Length (m)	1,574	-
- Raised Crossing	Area (m2)	546	1
- Special Material	Area (m2)	809	4
25m Town Centre Street with Linear Park	Length (m)	2,360	-
- Raised Crossing	Area (m2)	1,349	3
- Special Material	Area (m2)	2,019	10

An overview of the different street typologies is provided in Figure 12, whilst Figure 13 identifies intersection crossing types.

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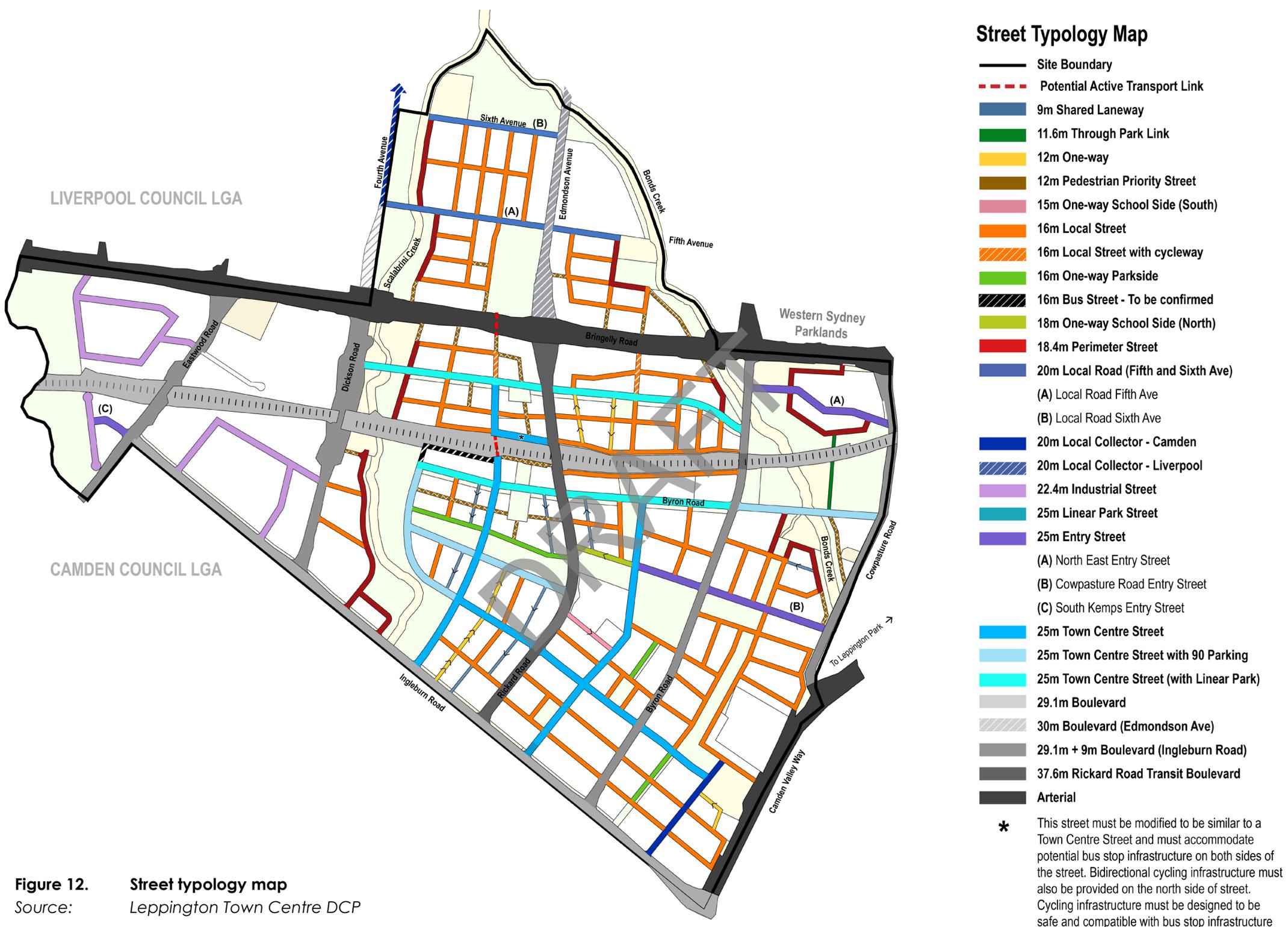


Figure 12. Street typology map
 Source: Leppington Town Centre DCP

Intersection Crossing Types

- Site Boundary
-  Potential signalised intersection
-  Potential roundabout
-  Scramble crossings
-  Crossing with different road material
-  Entire intersection raised to footpath level
-  Crossing raised to footpath level
-  Entire road raised to footpath level
-  Potential active transport link
-  Active transport underpass
-  Drainage and Riparian
-  Open Space
-  Leppington Train Station and Railway Corridor
-  Main Roads

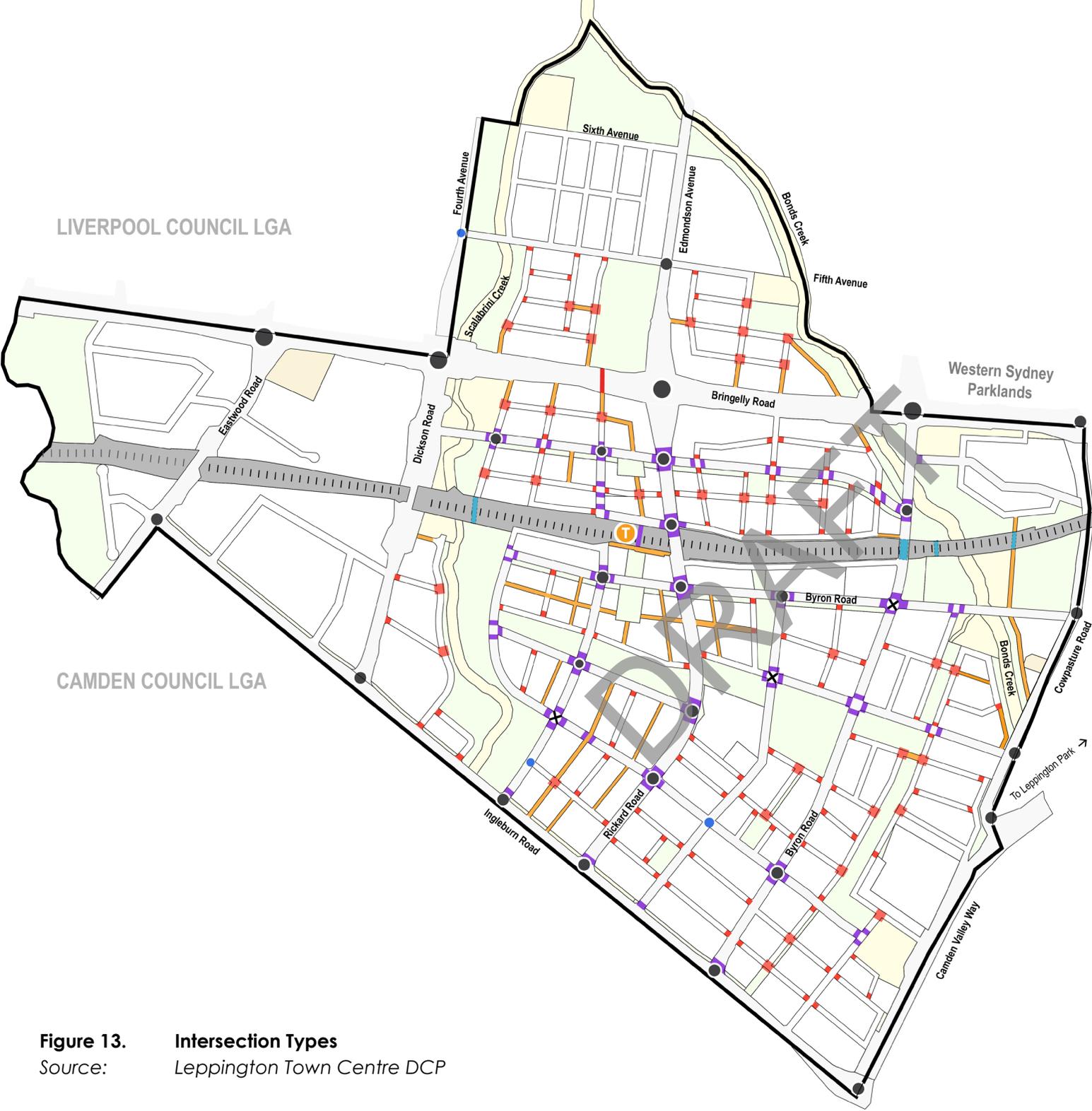


Figure 13. Intersection Types
 Source: Leppington Town Centre DCP

4.5 Water cycle management

The Leppington Town Centre is traversed by three watercourses, Kemps, Bond and Scalabrini Creeks which eventually drain into South Creek, a tributary of the Hawkesbury River.

At present, there is minimal piped stormwater drainage. Minor cross drainage pipes are likely to exist under roads at creek crossings and low points. However, the Camden and Liverpool Contributions Plans do include water cycle management items and there is a comprehensive plan for stormwater drainage in the future.

Stormwater runoff will be managed through a comprehensive Water Sensitive Urban Design (WSUD) approach. The approach recognises that development of an area will generate additional water demand, will require the management of wastewater and stormwater, and will increase impermeable surfaces which exacerbates potential flooding issues and stormwater quality / quantity.

Councils will be responsible for delivering trunk drainage infrastructure to support development, with individual landowners to provide reticulation works within any developments.

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4.5.1 Provision

The provision of water cycle management infrastructure is listed in Table 8 and illustrated in Figure 14.

Table 8. Provision: Water cycle management	
Item	Area (ha)
Camden LGA	
B4 Basin Type A	0.8896
B6 Basin Type B	0.9198
B7 Basin Type B	1.1577
B8 Basin Type A	0.7959
B9 On-line Basin	2.7825
BA1 Independent bioretention facility (land in Government owned E2 Land)	-
C1 Stabalisation of existing watercourse	2.4251
C2 Stabalisation of existing watercourse	1.2575
C4 Stabalisation of existing watercourse	0.5640
C5/C5A Stabalisation of existing watercourse	1.6004
C6 Stabalisation of existing watercourse	1.2174
C10 Overland Flow Path	0.1370
C12 Overland Flow Path	0.3798
C13 Channel Type 2	0.8245
C14 Overland Flow Path	0.1600
Liverpool LGA	
DC16A Channel Type 3	0.1904
DC18 Stabalisation of existing watercourse	1.1021
DC20 Stabalisation of existing watercourse	3.1912
DC20A Channel Type 1	0.2135
DC61 Stabalisation of existing watercourse	0.6753
DC63 Stabalisation of existing watercourse	3.0978
B13 - Local Drainage Facility	1.8546
B15 - Local Drainage Facility	0.8328

Legend

LGA Boundary

Current Contributions Plan

Drainage Infrastructure

Drainage Infrastructure Acquisition



MAP DATE:
21-09-2022

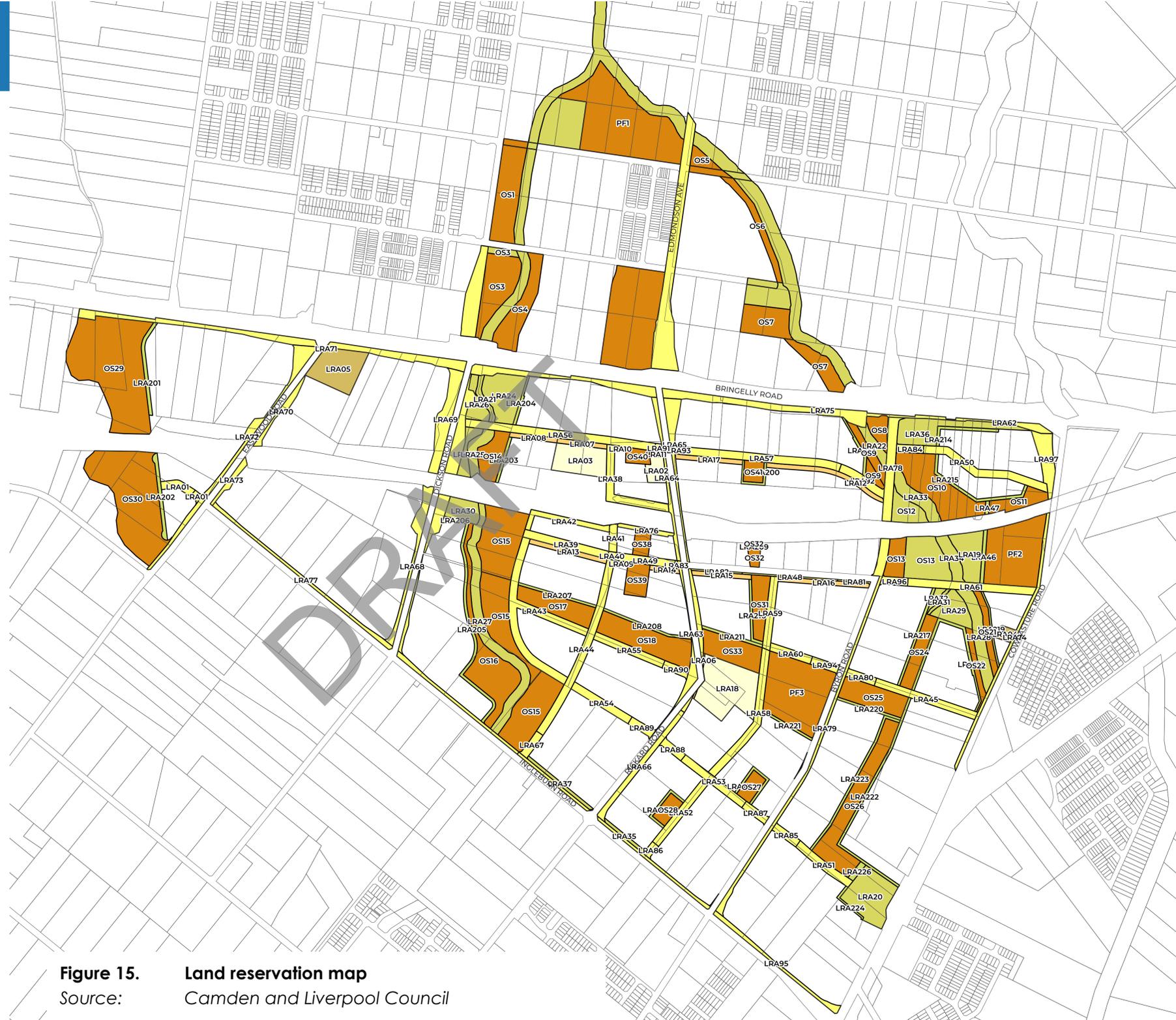


Figure 14. Drainage infrastructure map

Source: Mecone

Leppington Town Centre Land Reservation Acquisition

- Legend**
- SP2 Road
 - SP2 Drainage
 - SP2 Utilities Infrastructure
 - Community Facility
 - Health Reservation
 - School Reservation
 - RE1 Public Recreation
 - Linear Plaza
 - Railway Corridor
 - Half Local Road



MAP DATE:
11-10-2022

0 200 400 600 m

Figure 15. Land reservation map
Source: Camden and Liverpool Council

5 Implementation

Table 9 outlines delivery mechanisms available to Councils for the provision of the infrastructure outlined in this Strategy.

Table 9. Funding mechanism summary	
Option	Description
Section 7.11	The works outlined in this Strategy are primarily expected to be captured within updated section 7.11 contributions plans, for both Camden and Liverpool Councils. These will ensure that new development is levied an appropriate amount to provide for critical infrastructure.
Planning agreements	Planning agreements can be used as a way to deliver works above that allowed for in the Councils' contributions plans, particularly where additional demand for open space, social infrastructure, or other items are generated by a development or planning proposal that was not foreseen by a Contributions Plan.
Works in Kind	In some cases, developers may offer to enter into works-in-kind agreements with Council to carry out works listed in the contributions plan in lieu of paying development contributions. This should be encouraged as it brings forward the delivery of infrastructure. It is noted that both Camden and Liverpool Councils have existing works-in-kind policies.
Grants	<p>Federal and State programs often provide opportunities to fund capital works and land acquisition through grants that achieve goals and objectives consistent with government policy. Grants may be covered by legislation or regulation, or be subject to cabinet, ministerial or administrative discretion. They range in their accountability requirements from highly complex arrangements to the relatively informal.</p> <p>State Government grants and smaller-scale funding are provided on a project-by-project basis and are generally targeted at specific projects that have an impact on a region wide scale. Such grant funding arrangements vary from project to project and year to year, and are therefore not predictable. This means that the contribution over the next 20 year period would be ad-hoc and the estimated contribution to funding of infrastructure would be conservative.</p>
Special Infrastructure Contributions / Regional Infrastructure Contributions	<p>Land within the Leppington Town Centre is currently captured under the Western Sydney Growth Area Special Infrastructure Contribution (SIC). Areas captured under a SIC will not be applied a Regional Infrastructure Contribution (RIC) so as to avoid 'double dipping'.</p> <p>However, the Department of Planning, Industry, and Environment have stated that once the RIC Framework is in place, all current</p>

	<p>SICs will be transitioned into this new system. They state that as a result of complexities with landowners and developers, the Western Sydney Growth Area SIC will transition at a later date than some simpler SICs.</p> <p>At the time of the transition, a review of necessary State-led infrastructure may be appropriate. Council should consider making early applications to the DPIE for specific RIC funding for critical infrastructure which will help deliver the Leppington Town Centre.</p>
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This strategy assumes that the land and construction costs involved with providing the infrastructure required to meet the needs of the Leppington Town Centre would exceed the level required to be referred to IPART for approval. As such the works funded by development contributions under s7.11 of the EP&A Act would be expected to be generally limited to the essential works list in the Local Infrastructure Contributions Practice Note (January 2019):

- open space and recreation facilities (parks and sporting facilities) - land and base level embellishment
- site regrading, utilities servicing, drainage and irrigation
- basic landscaping (turfing, asphalt, synthetic playing surfaces, planting, paths)
- basic park structures and equipment (park furniture, toilet facilities and change rooms, shade structures and play equipment)
- security lighting and local sports field floodlighting
- outdoor sports fields, tennis courts, netball courts, basketball courts, etc.
- transport and movement infrastructure (road works, traffic management and pedestrian and cyclist facilities) - land and facilities
- stormwater management infrastructure - land and facilities
- community and cultural facilities (libraries, community centre/hall, public art gallery, performing arts space, childcare centres, etc.) - land only

In the interests of reducing contribution costs and improving viability of development, while at the same time delivering outcomes to meet the future community needs, the strategic approach adopted by this strategy is:

- Ensure sufficient access to quality open space, however provision may be below the ideal 'benchmark' rate
- Offset any deficit in open space provision by providing for streets with dual purpose spaces, having both a transport movement and passive recreation function
- Provide for a higher quality public domain on key streets in the centre
- Provide for community and cultural facilities in a central location and format which can potentially be delivered as part of a mixed use development, representing an economic use of land and contributing to the funding of the construction of the facility

- Identify opportunities to provide publicly accessible spaces within private land adjacent to streets or squares, particularly where it has potential to be occupied by a semi-private purpose (such as outdoor dining, pop-up kiosks, shopper rest stops or outdoor work spaces)

5.1 Future Opportunities

As detailed infrastructure planning for the Leppington Town Centre continues, there will be opportunities for supplementary facilities and cost-savings which will provide value for money for the community. Some of these are outlined below.

- Staged delivery of amenities within each open space. For example, the first stage of a sports court's development may only deliver half of the courts, but there would be efficiencies in delivering the earthworks and service provisions for the future stages. When the population requires more courts, the cost of delivering them would be reduced, as the earthworks and services are already complete.
- Innovative ways of delivering active recreation opportunities, such as the provisions of outdoor fitness stations which can convert what would otherwise be passive open spaces into places for exercise and activity.
- Combining facilities to reduce land acquisition and construction costs, such as through facilities that provide for services such as sporting, recreation, community hall hire, and childcare all in one place.
- Creatively exploring the use of rooftops, podiums, and areas under railway viaducts for recreation uses. Elsewhere in Sydney, there are examples of all of these spaces being used for services such as sports courts, passive recreation areas, and even community gardens.
- Exploring suitable opportunities and locations for the use of synthetic turf and hybrid courts / fields which can provide for a higher level of use.
- Providing publicly accessible spaces within private land adjacent to streets or squares, particularly where it has potential to be occupied by a semi-private purpose (such as outdoor dining, pop-up kiosks, shopper rest stops or outdoor work spaces).
- Identifying a public realm excellence area around the core of the Centre where sites could provide complimentary additions to the public realm, such as plaza or square expansion space or through site links, and providing an incentive bonus FSR in return for dedicated public access to those spaces.