



## LIVERPOOL CONTRIBUTIONS PLAN 2021 - AUSTRAL AND LEPPINGTON NORTH PRECINCTS



Adopted: TBC

Content Manager: 063557.2021



# Contents

	Page
<b>1 Summary of Plan</b>	<b>1</b>
1.1 Preamble	1
1.2 Summary of contribution rates and local infrastructure costs	1
1.2.1 Monetary Contribution Rates	2
1.2.2 Land contribution rates	3
1.2.3 Example contribution calculations	3
1.3 Overview and structure of Plan	4
<b>2 Administration and operation of the Plan</b>	<b>6</b>
2.1 Definitions used in this Plan	6
2.2 Name of Plan	7
2.3 Land to which Plan applies	7
2.4 Purposes of Plan	9
2.5 Adoption of Plan	9
2.6 Relationship to other plans	9
2.7 Types of development to be levied	9
2.8 Authority to require contributions	10
2.8.1 Monetary contributions	10
2.8.2 Land contributions	10
2.8.3 Cap on monetary contributions for residential development without an IPART review	11
2.8.4 Obligations of accredited certifiers	11
2.8.5 Variation to contributions authorised by this Plan and contributions for unanticipated development	11
2.9 Payment of contributions	12
2.9.1 Timing of payment	12
2.9.2 Obligations of accredited certifiers	12
2.9.3 Deferred payments	13
2.9.4 Formula for bank guarantee amounts	13
2.9.5 Methods of settling contribution requirements	13
2.9.6 Goods and Services Tax	14
2.10 Contributions demand credits for existing development	14
2.11 Adjustment to contribution rates and contribution amounts	15
2.11.1 Overview	15
2.11.2 Adjustment methods	15
2.11.3 Works Schedule items other than land	16
2.11.4 Land	17
2.11.5 Calculation of Land Value Index	17
2.12 Review of Plan and contribution rates	18
2.13 Pooling of funds	19
<b>3 Demand for public amenities and public services</b>	<b>20</b>
3.1 Summary of this Part	20
3.2 Development and infrastructure planning context	20
3.2.1 Growth Areas Structure Planning	20
3.2.2 Precinct Planning	22

3.2.3	Infrastructure Delivery Plan	23
3.3	Expected development outcomes	23
3.3.1	Existing development	23
3.3.2	Net Developable Area	24
3.3.3	Overview of expected development	24
3.3.4	Demographic characteristics	27
3.3.5	Dwelling occupancy rates	27
3.3.6	Anticipated resident population	28
3.3.7	Anticipated non-residential floor space	28
3.4	Infrastructure demand arising from the expected development	29
<b>4</b>	<b>Strategy plans</b>	<b>30</b>
4.1	Infrastructure costs and delivery generally	30
4.1.1	Apportionment of the infrastructure costs to expected development	30
4.1.2	Delivery of the infrastructure	30
4.1.3	Infrastructure staging and priority	31
4.2	Open space and recreation facilities	32
4.2.1	Relationship between the expected types of development and the demand for additional public facilities	32
4.2.2	How are the contributions calculated?	39
4.3	Community and cultural facilities	41
4.3.1	What is the relationship between the expected types of development and the demand for additional public facilities?	41
4.3.2	How are the contributions calculated?	44
4.4	Water cycle management facilities	46
4.4.1	What is the relationship between the expected types of development and the demand for additional public facilities?	46
4.4.2	How are the contributions calculated?	54
4.5	Transport management facilities	55
4.5.1	What is the relationship between the expected types of development and the demand for additional public facilities?	55
4.5.2	How are the contributions calculated?	61
4.6	Plan management and administration	63
4.6.1	What is the relationship between the expected types of development and the demand for additional public facilities?	63
4.6.2	Calculation of contributions	63
<b>5</b>	<b>Works Schedules and Map</b>	<b>64</b>
5.1	Open space and recreation facilities	65
5.2	Community and cultural facilities	68
5.3	Water cycle management facilities	69
5.4	Transport management facilities	74

## Tables

Table 2.1	Assumed land values for various classifications	18
Table 3.1	Estimated dwelling and populations	22
Table 3.2	Studies supporting infrastructure planning and costing	22
Table 3.3	Expected Net Developable Area	25
Table 3.4	Dwelling occupancy rates assumed in this Plan	28
Table 3.5	Calculation of anticipated resident population	28
Table 3.6	Anticipated non-residential development potential	28
Table 4.1	Proposed provision of district and local open space	35
Table 4.2	Proposed provision of district and local open space	35
Table 4.3	Recreation facilities requirements	37
Table 4.4	Assumed residential development occupancy rates	40
Table 4.5	Comparison of community facility provision standards	42
Table 4.6	Assumed residential development occupancy rates	45
Table 4.7	Assumed residential development occupancy rates	62

## Figures

Figure 2.1	Land to which this Plan applies	8
Figure 3.1	South West Growth Area early release precincts	21
Figure 3.2	South West Growth Area Structure Plan	21
Figure 3.3	Expected land use in the Precincts	26
Figure 4.1	Concept Stormwater Treatment Train	47
Figure 4.2	Drainage catchments with 1% AEP basins	49
Figure 4.3	Drainage catchments with 50% AEP basins	50
Figure 4.4	Drainage systems without basins	51
Figure 4.5	Creek culverts	53
Figure 4.6	Proposed road hierarchy and intersection treatments – Austral and Leppington North Precincts	56
Figure 4.7	Proposed walkways and cycleways	58
Figure 4.8	Planned major road infrastructure - Austral and Leppington North Precincts	60

## Appendices

Appendix A	Demand Credits Analysis for Precincts
Appendix B	Background Information

# 1 Summary of Plan

## 1.1 Preamble

The Austral and Leppington North Precincts are urban release areas in Sydney's South West Growth Area. Although the Austral Precinct is solely within the Liverpool LGA, the Leppington North Precinct straddles the Liverpool and Camden LGAs.

A range of new and augmented infrastructure needs to be planned, programmed, funded and delivered in order to support this planned development.

The infrastructure will be delivered or coordinated by a number of parties including State Government public authorities, State-owned corporations, councils, developers and private providers.

Councils typically fund the provision of local infrastructure through a combination of general revenue (from rates and other charges), development contributions under the *Environmental Planning and Assessment Act 1979*, and grants from the State or Commonwealth government. Much of the capital cost of local infrastructure in new urban areas is funded by development ('section 7.11') contributions as there is often a clear relationship between the need for new or upgraded infrastructure and population growth attributable to the new development.

This Plan addresses the provision in the Precincts of those public amenities and public services - or local infrastructure - to be delivered by or on behalf of Liverpool City Council. The provision of local infrastructure in the Plan is estimated to cost approximately \$1 billion and includes:

- open space and recreation facilities, such as sports fields, sports courts, playgrounds, walking trails and bike paths;
- community and cultural facilities, such as multi-purpose community centres;
- water cycle management facilities, such as detention basins stormwater channels and streetscape raingardens; and
- traffic and transport management facilities, such as upgrades to existing roads, new roads and intersections.

This Plan amends the original version of the contributions plan that was adopted by Council in November 2014. The most recent updates to the Plan account for changes to State Government policy and legislation and other necessary adjustments which ensure that the proposed infrastructure provision is efficient and appropriate for the needs of the development, the contributions are cost reflective and an appropriate COVID response was in place regarding payment timing.

## 1.2 Summary of contribution rates and local infrastructure costs

The tables on the following pages show the contribution rates for essential infrastructure applicable to development (which is the subject of this Plan) and the total value of works required to cater for the needs of the new development, including non-essential infrastructure. All costs in this Plan are expressed in December quarter 2020 dollars. Contributions for non-essential infrastructure do not apply under this Plan.

Contributions as land areas are only shown below to indicate the shares of land represented by the monetary contributions, and are not additional to monetary contributions.

Example contribution rate calculations are also shown for residential and non-residential development scenarios.

### 1.2.1 Monetary Contribution Rates

ESSENTIAL INFRASTRUCTURE		RESIDENTIAL DEVELOPMENT*				NON RESIDENTIAL DEVELOPMENT**
Item	Item Cost apportioned to Austral and Leppington North Development	\$ per additional person	\$ per residential lot for a dwelling house	\$ per attached dwelling, semi-attached dwellings and multi-dwelling housing	\$ per dwelling in all other residential accommodation	\$ per hectare of equivalent NDA
Open Space						
Land	\$314,141,561	\$5,704	\$19,392	\$14,829	\$14,829	
Works	\$128,559,170	\$2,334	\$7,936	\$6,069	\$6,069	
Subtotal	\$442,700,731	\$8,038	\$27,328	\$20,898	\$20,898	
Community Facilities						
Land	\$7,359,828	\$134	\$454	\$347	\$347	
Subtotal	\$7,359,828	\$134	\$454	\$347	\$347	
Roads						
Land	\$26,394,265	\$446	\$1,516	\$1,160	\$1,160	\$21,697
Works	\$87,641,540	\$1,481	\$5,035	\$3,850	\$3,850	\$72,043
Subtotal	\$114,035,805	\$1,927	\$6,551	\$5,010	\$5,010	\$93,740
Drainage						
Land	\$144,195,081					\$118,532
Works	\$290,496,427					\$238,795
Subtotal	\$434,691,508					\$357,327
Plan Administration						
Allowance	\$7,600,457					\$6,248
Subtotal	\$7,600,457					\$6,248
<b>TOTAL</b>	<b>\$1,006,388,329</b>	<b>\$10,098</b>	<b>\$34,334</b>	<b>\$26,255</b>	<b>\$26,255</b>	<b>\$457,315</b>

\*Residential development also pays drainage and plan administration contributions (calculated on an NDA basis).

\*\* NDA rates for roads apply to non-residential development only.

NON ESSENTIAL INFRASTRUCTURE		RESIDENTIAL DEVELOPMENT			
Item	Item Cost apportioned to Austral and Leppington North Development	\$ per additional person	\$ per residential lot for a dwelling house	\$ per attached dwelling, semi-attached dwellings and multi-dwelling housing	\$ per dwelling in all other residential accommodation
Community Facilities					
Local Facilities Works	\$20,104,171	\$365	\$1,241	\$949	\$949
Regional Facility Works	\$39,838,087	\$723	\$2,459	\$1,881	\$1,881
<b>TOTAL</b>	<b>\$59,942,258</b>	<b>\$1,088</b>	<b>\$3,700</b>	<b>\$2,830</b>	<b>\$2,830</b>

### 1.2.2 Land contribution rates

ESSENTIAL INFRASTRUCTURE		RESIDENTIAL DEVELOPMENT*				ALL DEVELOPMENT**
Item	Item Total Area apportioned to Austral and Leppington North Development (m2)	m <sup>2</sup> per additional person	m <sup>2</sup> per dwelling house	m <sup>2</sup> per attached dwelling, semi-attached dwellings and multi-dwelling housing	m <sup>2</sup> per dwelling in all other residential accommodation	m <sup>2</sup> per hectare of equivalent NDA
Open Space						
Land	1,066,399	19.36	65.83	50.34	50.34	
Community Facilities						
Land	14,341	0.26	0.89	0.68	0.68	
Roads						
Land	56,568	0.96	3.25	2.49	2.49	46.50
Drainage						
Land	726,049					596.83
<b>TOTAL</b>	<b>1,863,357</b>	<b>20.58</b>	<b>69.96</b>	<b>53.50</b>	<b>53.50</b>	<b>643.33</b>

\*Residential development also pays drainage (calculated on an NDA basis).

\*\* NDA rates for roads apply to non-residential development only.

### 1.2.3 Example contribution calculations

The **residential contribution** (for essential infrastructure) equals the sum of:

- The open space contribution per dwelling,
- The community facilities contribution per dwelling,
- The transport contribution per dwelling,
- The stormwater infrastructure contribution per hectare of NDA, and
- The plan preparation and administration contribution per hectare of NDA.

Contributions for open space, community facilities and transport infrastructure are levied based on the number of people expected to reside in the new dwelling, while contributions for stormwater infrastructure and plan administration are levied by the area (NDA) of the development.

This approach best aligns the contribution payable by a development to its estimated share of the demand for the different kinds of infrastructure in the Plan.

Below is an example of how to calculate the contribution payable by development.

Consider a scenario where a developer has 0.3 hectares (NDA) and applies to develop 5 low density dwelling houses on this land.

$$\begin{aligned}\text{The total contribution under this Plan} &= (27328 \times 5) + (454 \times 5) + (6551 \times 5) + (357327 \times 0.3) + (6248 \times 0.3) \\ &= \$280,737\end{aligned}$$

This equals a contribution of \$56,147 per dwelling, on average, for this development.

The non-residential contribution equals the sum of:

- The transport contribution per NDA,
- The stormwater infrastructure contribution per NDA, and
- The plan preparation and administration contribution per NDA.

Below is an example of how to calculate the contribution payable by development.

Consider a scenario where a developer applies to develop a 0.5 hectare (NDA) site for commercial offices.

The total contribution under this Plan =

$$(\$93,740 \times 0.5) + (\$357,327 \times 0.5) + (6,248 \times 0.5) = (\$457,315 \times 0.5) = \$228,658$$

## 1.3 Overview and structure of Plan

Section 7.11 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) allows a consent authority responsible for determining a development application to grant consent to the proposed development subject to a condition requiring the payment of a monetary contribution, or the dedication of land free of cost, or a combination of them, towards the provision of public amenities and public services to meet the development.

Where the consent authority is a council or an accredited certifier, such a contribution may be imposed on a development only if it is of a kind allowed by and determined in accordance with a contributions plan, such as this Plan.

This Plan has been prepared to authorise the imposition of development contributions on development expected to occur in the Austral Precinct and that part of the Leppington North Precinct that is situated in the Liverpool LGA.

This Plan has been prepared:

- in accordance with the EP&A Act and Environmental Planning and Assessment Regulation 2000 (EP&A Regulation); and
- having regard to the latest Practice Notes issued by the NSW Department of Planning, Industry and Environment (DPIE).

There are minimum requirements for development contributions plans set out in the EP&A Regulation. Each requirement, and reference to the clause or Part of this document that deals with that requirement, are listed below:

The purpose of the plan	Clause 2.4
The land to which the plan applies	Clause 2.3
The relationship or nexus between the expected development in the area and the community infrastructure that is required to meet the demands of that development	Part 3
The formulas to be used for determining the reasonable contributions required from expected development for different types of community infrastructure;	Clauses 4.2.2, 4.3.2, 4.4.2, 4.5.2, 4.6.2



The contribution rates for the anticipated types of development in the area;	Clause 1.2
The council's policy concerning the timing of the payment of monetary development contributions, and the imposition of development conditions that allow deferred or periodic payment,	Clause 2.9
Maps showing the specific public amenities and services proposed to be provided by the council, supported by a works schedule that contains an estimate of their cost and staging (whether by reference to dates or thresholds)	Part 5
If the plan authorizes monetary development contributions or section 7.12 levies paid for different purposes to be pooled and applied progressively for those purposes, the priorities for the expenditure of the contributions or levies, particularised by reference to the works schedule.	Part 5

## 2 Administration and operation of the Plan

### 2.1 Definitions used in this Plan

Except where indicated in this clause, the definitions of terms used in this Plan are the definitions included in the EP&A Act, EP&A Regulation and the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*, are adopted by this Plan.

In this clause, 'existing' means at the date on which this Plan came into effect.

In this Plan, the following words and phrases have the following meanings:

**Bank Guarantee** means an irrevocable and unconditional undertaking without any expiry or end date in favour of the Council to pay an amount or amounts of money to the Council on demand issued by an Australian bank, non-bank financial institution, or insurance company subject to prudential supervision by the Australian Prudential Regulatory Authority and has a credit rating of 'A' or above (as assessed by Standard and Poors) or 'A2' or above (as assessed by Moody's Investors Service) or 'A' or above (as assessed by FitchRatings).

**Council** means Liverpool City Council.

**CPI** means the *Consumer Price Index (All Groups - Sydney)* published by the Australian Bureau of Statistics.

**EP&A Act** means the Environmental Planning and Assessment Act 1979.

**EP&A Regulation** means the Environmental Planning and Assessment Regulation 2000.

**ILP** means the Austral and Leppington North Precincts Indicative Layout Plan.

**LGA** means local government area.

**Precincts** means the area of land shown in Figure 2.1 of this Plan.

**Net Developable Area** means the area of land to which a development application relates and includes the area of any land that the development consent authorises, or requires, to be used as a road, or reserved or dedicated as a public road but excludes:

- (a) existing roads to be used as part of the proposed road network;
- (b) existing educational establishments (as defined in the Standard Instrument);
- (c) any part of the land that is below the level of a 1:100 ARI flood event, if that part of the land is unsuitable for development by virtue of it being at or below that level;
- (d) any land that the development consent authorizes, or requires, to be reserved, dedicated or otherwise set aside as, or for the purpose of, any of the following:
  - (i) a government school (within the meaning of the *Education Act 1990*);
  - (ii) a tertiary institution, including a university or TAFE establishment, that provides formal education and is constituted by or under an Act.
  - (iii) an emergency services facility;
  - (iv) a health services facility owned and operated by a public authority;
  - (v) a golf course;
  - (vi) a passenger transport facility;

- (vii) a public reserve or a drainage reserve (within the meaning of the *Local Government Act 1993*);
- (viii) a public transport corridor (other than a road corridor);
- (ix) a public utility undertaking;
- (x) roads or other public amenities or public services, in connection with which development contributions have been imposed under section 7.11 or section 7.12 of the Act or may be imposed in accordance with a contributions plan approved under section 7.18 of the EP&A Act;
- (xi) roads or other infrastructure in connection with which Special Infrastructure Contributions have been, or may be, imposed in accordance with section 7.24 of the EP&A Act.

**Planning Agreement** means a Voluntary Planning Agreement referred to in section 7.4 of the EP&A Act.

**Residential Accommodation** has the same meaning as in the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*.

**Social Infrastructure Assessment** means the report titled, *Austral and Leppington North Precincts - Demographic and Social Infrastructure Assessment*, prepared by Elton Consulting, July 2011.

**Special Infrastructure Contribution** means a contribution referred to in section 7.24 of the EP&A Act.

**State Environmental Planning Policy (Sydney Region Growth Centres) 2006** means the State Environmental Planning Policy amended from time to time.

**Transport Assessment** means the Austral and Leppington North (ALN) Precincts Transport Assessment prepared by AECOM, July 2011.

**Works In Kind** means the undertaking of a work or provision of a facility by an applicant which is already nominated in the works schedule of a contributions plan as a means of either fully or partly satisfying a condition of consent requiring development contributions to be made.

**Works Schedule** means the schedule of the specific public amenities and public services for which contributions may be required as set out in Part 5 of this Plan.

## **2.2 Name of Plan**

This Plan is called Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts (the Plan).

## **2.3 Land to which Plan applies**

This Plan applies to the Austral and Leppington North Precincts within the Liverpool LGA (i.e., the Precincts), as illustrated in Figure 2.1 over page.



Figure 2.1 Land to which this Plan applies

## 2.4 Purposes of Plan

The purposes of the Plan are to:

- Provide an administrative framework under which specific public amenities and services strategies to serve the Precincts may be implemented and coordinated.
- Ensure that adequate public amenities and services are provided for as part of any new development in the Precincts.
- To authorise the Council or accredited certifiers to impose conditions under section 7.11 of the EP&A Act when granting consent to development on land to which this Plan applies.
- Provide a comprehensive strategy for the assessment, collection, expenditure accounting and review of development contributions relating to the Precincts on an equitable basis.
- Ensure that the existing community is not burdened by the provision of public amenities and services required as a result of future development in the Precincts.
- Enable the Council to be both publicly and financially accountable in its assessment and administration of the Plan.

## 2.5 Adoption of Plan

This Plan was adopted by Council on x and came into effect on x.

The previous version of the Plan was first adopted by Council on 26 November 2014. Amended versions were adopted on 26 May 2015 and 10 June 2020 (the latter amendments to implement the COVID-19 response for the Plan).

This Plan applies to development applications determined after the date on which the Plan came into effect.

## 2.6 Relationship to other plans

This Plan repeals *Liverpool Contributions Plan 2014 - Austral and Leppington North Precincts*.

The land to which this Plan applies is not otherwise subject to any contributions plans made under Subdivision 3 of Division 7.1 of Part 7 of the EP&A Act.

This Plan does not limit or otherwise affect any requirements for the payment of Special Infrastructure Contributions pursuant to Subdivision 4 of Division 7.1 of Part 7 of the EP&A Act.

The original version of the Plan was prepared in conjunction with the *Camden Growth Areas Contributions Plan* as it applies to the Leppington North Precinct (Camden). The Precincts, which comprise land situated in both the Camden and Liverpool LGAs, were released concurrently and their combined infrastructure needs were established through the initial precinct planning process. This Plan addresses development contributions in respect to development expected to take place in the Liverpool LGA component of the Precincts.

## 2.7 Types of development to be levied

Except as provided for by this clause, this Plan applies to:

- Residential Accommodation development, insofar as the Plan authorises the imposition of a requirement for a development contribution for the types of public amenities and public services described in clauses 4.2 to 4.6 of this Plan; and

- All other development, insofar as the Plan authorises the imposition of a requirement for a development contribution for the types of public amenities and public services described in clauses 4.4 to 4.6 of this Plan.

This Plan does not apply to development:

- for the sole purpose of affordable housing;
- for the sole purpose of the adaptive reuse of an item of environmental heritage;
- for the purposes of public infrastructure provided by or on behalf of State Government or the Council;
- for the purposes of public amenities or public services under this Plan or another contributions plan prepared under section 7.13 of the EP&A Act;
- for works to be carried out by Sydney Water, Endeavour Energy or equivalent water, sewer or energy provider; or
- that in the opinion of Council does not increase the demand for the categories of public amenities or public services addressed by this Plan.

## **2.8 Authority to require contributions**

### **2.8.1 Monetary contributions**

This Plan authorises the Council, when granting consent to an application to carry out development to which this Plan applies, to impose a condition under section 7.11 of the EP&A Act requiring the payment of a monetary contribution to the Council towards:

- the provision of public amenities and public services as specified in the Works Schedule to meet the demands of the development; and / or
- the recoupment of the cost of public amenities and public services previously provided in advance of development within the area.

This Plan requires the Council or an accredited certifier, when determining an application for a complying development certificate relating to development to which this Plan applies, to impose a condition under section 7.11 of the EP&A Act requiring the payment of a monetary contribution towards:

- the provision of public amenities and public services as specified in the Works Schedule to meet the demands of the development; and / or
- the recoupment of the cost of public amenities and public services previously provided in advance of development within the area.

### **2.8.2 Land contributions**

This Plan authorises the Council, by imposition of a condition of development consent, to require in connection with any development on land to which this Plan applies (and in addition to any monetary contribution that may be sought) the dedication free of cost to the Council of any part of the development site that is land that is to be acquired under this Plan.

The extent of land that may be required in the consent shall not exceed the amount of land the value of which does not exceed the monetary contribution otherwise authorised by this Plan.

The monetary development contribution otherwise authorised by this Plan shall be reduced by an amount corresponding to the value of the land required to be dedicated.

Where the value of the land exceeds the monetary development contribution otherwise authorised, the developer may offer to enter into a Planning Agreement dealing with an appropriate settle-up in exchange for the dedication of the remainder.

Further information on land contributions is included in clauses 2.9.5 and 2.11 of this Plan.

### **2.8.3 Cap on monetary contributions for residential development without an IPART review**

In 2012, the Minister for Planning issued a Direction (the *Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012*) that requires councils to submit contributions plans to IPART for assessment if they wish to levy residential contributions above the prevailing maximum amount.

Consistent with this Direction (and the latest amended version), consent authorities (including accredited certifiers) shall not issue a DA consent or a CDC in Austral Leppington North Precincts that requires the applicant to pay a total monetary contribution amount that exceeds \$30,000 for each dwelling or lot, unless the contribution plan is IPART-assessed and contains the associated amendments requested by the Minister or nominee.

IPART has now reviewed this Plan and it is consistent with the Ministerial nominee's associated advice. Therefore, the contribution rates in Section 1.2 apply to residential development (for essential infrastructure only). Note this paragraph will be active once IPART have finished review of the Plan and is provided for completeness.

### **2.8.4 Obligations of accredited certifiers**

In relation to an application made to an accredited certifier for a complying development certificate:

- the accredited certifier must, if a complying development certificate is issued, impose a condition requiring a development contribution, if such a contribution is authorised by this Plan; and
- any such contribution may only be a monetary contribution required under this Plan; and
- the amount of the monetary contribution that the accredited certifier must so impose is the amount determined in accordance with this Plan in respect of the development.

It is the responsibility of the principal certifying authority to accurately calculate and apply the local infrastructure contribution conditions to complying development certificates. Deferred payments of contributions required by a condition of a complying development certificate will not be accepted.

### **2.8.5 Variation to contributions authorised by this Plan and contributions for unanticipated development**

Council retains the right to reduce the development contribution otherwise calculated in accordance with the provisions of this Plan.

A developer's request for variation to a contribution calculated in accordance with this Plan must be supported by written justification included with the development application. Such request will be considered as part of the assessment of the application.

There may be circumstances when development is proposed that was not anticipated when this Plan was made and that is not specifically identified to be levied under this Plan, but which would if carried out, result in the provision of, or increase the demand for, the public amenities and services included in this Plan. In these circumstances, Council will calculate a reasonable contribution proportionate to the demand for amenities and services generated by the unanticipated development, and impose that contribution on the consent for that development.

This clause does not apply to accredited certifiers other than the Council. Accredited certifiers other than the Council must not:

- vary, waive or modify a development contribution calculated in accordance with this Plan, or
- impose any contribution other than a monetary contribution specifically authorised by this Plan.

## 2.9 Payment of contributions

### 2.9.1 Timing of payment

Council requires contributions to be satisfied in full, as follows:

#### **Development applications involving subdivision only**

Monetary contributions are required to be paid prior to the release of the subdivision certificate whether by Council or an accredited certifier (in the case of strata subdivision). Any dedication of land to Council, in lieu of a monetary contribution, shall be shown on the plan of subdivision.

#### **Development applications involving building work only**

Monetary contributions are required to be paid to Council prior to the issuing of the construction certificate, whether by Council or an accredited certifier. Dedication of land to Council, in lieu of monetary contribution, shall be shown on a plan of subdivision, to be registered prior to the issue of an occupation certificate.

#### **Development applications involving subdivision and building work (for example, dual occupancy and integrated housing)**

Monetary contributions are required to be paid to Council prior to the release of the construction certificate or subdivision certificate, whichever occurs first, whether by Council or an accredited certifier. Any dedication of land to Council, in lieu of monetary contribution, shall be shown on a plan of subdivision, to be registered prior to issue of an occupation certificate.

#### **Development applications where no building works are proposed**

Monetary contributions are required to be paid to Council prior to occupation / commencement of the development. Any dedication of land to Council, in lieu of monetary contribution, shall be shown on a plan of subdivision to be registered prior to issue of an occupation certificate.

#### **COVID-19 response**

For Development Applications lodged or approved between 16 April 2020 and 31 December 2020 and for Section 4.55 modifications lodged in the same period which sought to modify the relevant contributions condition of a development consent for which any contributions have not yet been paid, 50% of the contribution can be paid prior to the issue of a construction certificate with the remaining 50% payable prior to the issue of the first occupation certificate. Any applications during this period that included subdivision must have all contributions paid prior to the issue of the Subdivision Certificate.

For such applications, Council will waive the requirement to have an unconditional bank guarantee in place for the duration of the deferral.

### 2.9.2 Obligations of accredited certifiers

It is the responsibility of an accredited certifier issuing a construction certificate to certify that the contributions have been paid to Council prior to the issue of the certificate. The accredited certifier must ensure that the applicant provides a receipt (or receipts) confirming that contributions have been fully paid and copies of such receipts must be included with copies of the certified plans provided to the Council in accordance with clause 142(2) of the EP&A Regulation. Failure to follow this procedure may render such a certificate invalid and expose the certifier to legal action.

Prior to the commencement of works for a complying development, the certifier must ensure that any contributions required in accordance with clause 136L of the EP&A Regulation have been fully paid and copies of such receipts must be included with copies of the certified plans provided to the Council.



The only exceptions to the requirement are where Works In Kind, material public benefit, dedication of land and/or deferred payment arrangement has been agreed by the Council. In such cases the Council will issue a letter confirming that an alternative payment method has been agreed with the applicant.

### **2.9.3 Deferred payments**

Council will allow payment of contributions to be deferred in the following cases only:

- where the applicant has the intention and ability to dedicate land or provide a material public benefit in part or to full satisfaction of a condition imposed by development consent, and that offer of land or material public benefit is acceptable to the Council; or
- in other circumstances, to be outlined in writing by the applicant and determined formally by Council on the merits of the case.

In the circumstances where deferred payments are accepted, the debtor must lodge with Council an unconditional bank guarantee for the amount to be deferred. Bank guarantees will be accepted on the following conditions:

- The guarantee must carry specific wording outlining the purpose for which those contributions were due, for example, "drainage contributions for Stage 3".
- The guarantee will be for the contribution amount plus the estimated amount of compound interest foregone by Council for the anticipated period of deferral (Refer to formula in clause 2.9.4 below).

Council may call up the guarantee at any time without reference to the applicant, however, the guarantee will generally be called up only when cash payment has not been received, and land is not dedicated or material public benefit not provided by the end of the period of deferral.

The period of deferral must be for a limited time only as agreed where land is to be dedicated or a material public benefit is to be provided. The period of deferral may be extended subject to providing a further bank guarantee for the extended period in accordance with the above terms.

Council will discharge the bank guarantee when payment is made in full by cash payment, land transfer or by completion of Works In Kind.

For Development Applications lodged or approved between 16 April 2020 and 31 December 2020 and for Section 4.55 modifications lodged in the same period which seek to modify the relevant contributions condition of a development consent for which any contributions have not yet been paid, a bank guarantee for the deferred amount is not required.

### **2.9.4 Formula for bank guarantee amounts**

The following formula to be applied to all bank guarantees for contributions is:

$$\text{Guarantee Amount} = P + P (CI \times Y)$$

Where

P = Contribution due;

CI = Compound interest rate comprised of Council's estimate over the period plus 3 percent allowance for fluctuations); and

Y = Period of deferral (years).

### **2.9.5 Methods of settling contribution requirements**

Contributions may be made by one or a combination of the methods described below.

### Monetary contribution

A monetary contribution is the most common method of settling contribution requirements. However, Council may consider the transfer of land to Council or providing Works In Kind, but only where the offered land and or works are included in this Plan's Works Schedule (Part 5 of this Plan).

### Transfer of land

An applicant may transfer land to Council in part or in full satisfaction of a contribution requirement. The land may be for open space, community facilities, drainage or roads and must be land, which is included in this Plan's Works Schedule (Part 5 of this Plan). The value of the land will be determined by an independent valuer appointed by Council.

Where land which is the subject of a development application contains land identified for acquisition under this Plan, Council may as a condition of consent require that land to be dedicated free of charge to Council. Monetary contributions will be adjusted accordingly to reflect the value of the land to be dedicated in lieu of payment of cash.

### Works In Kind

Applicants are encouraged to provide Works In Kind in part or full satisfaction of a contribution. The works must be included in this Plan's Works Schedule (Part 5 of this Plan). The value of contingency for individual works will be paid where it can be proven to Council's satisfaction that unforeseen circumstances have given rise to additional costs.

Prior to proceeding with the works, applicants will be required to provide details of the works to be undertaken (including a development application), financial guarantees, bank guarantees and administration.

Applicants may provide land or works included in Part 5 of this Plan in excess of that required for the development. The value of the works will be determined in accordance with Council's Works in Kind Procedure, available from Council's administration office.

## 2.9.6 Goods and Services Tax

No Goods and Services Tax (GST) is applicable to the payment of contributions made under section 7.11 of the EP&A Act. This exemption applies to both cash contributions and land or works in lieu of contributions.

## 2.10 Contributions demand credits for existing development

Monetary contributions determined under this Plan will be calculated according to the estimated net increase in demand for the particular public amenities and public services that are included in this Plan and that a particular development is projected to generate.

The Plan addresses the provision of:

- roads, transport, and drainage facilities (being 'economic infrastructure'); and
- open space, recreation, community and cultural facilities (being 'social infrastructure'),

that have been designed to meet the needs of the urban development of the Precincts.

The planned economic infrastructure is to facilitate the conversion of the area from semi-rural development context to an urban development context. It is the wholesale re-development of the land for urban purposes (particularly through land subdivisions) that necessitates the provision of the economic infrastructure. The economic infrastructure currently available does not meet the needs of the planned urban development and whole new road and drainage networks have to be designed and built to meet those needs. No credit will therefore be given in the calculation of contributions for the demand for economic infrastructure attributable to development that existed at the time this Plan was prepared.

The planned social infrastructure is also to facilitate that same conversion, however there are people already living in the area that demand and use social infrastructure. It is also likely that current populations will, to some extent, demand the recreation and community facilities that will be provided under this Plan.

Consistent with the above, in calculating contributions under this Plan a credit will be given in the calculation of contributions only for the demand for social infrastructure attributable to development that existed at the time this Plan was prepared. That is, a contribution for social infrastructure will only be due to any net increase in population relating to the proposed development.

To determine the net increase in demand for social infrastructure requires that an assessment be made of:

- in the case of the first urban development of the land - the existing residential population on the site when the first version of the Plan came in to effect in 2014, or
- in the case of any subsequent urban development on the land - the assumed residential population on the site at the date of lodgement of the application,

whichever is relevant.

The information included in Appendix A of this Plan will be used to calculate the estimated net increase in residential population in the case of the first urban development of the land.

A precise population attributable to each existing residential development is not available. Instead, this Plan assesses existing population on the basis of average dwelling occupancy figures for the Austral and Leppington North Precincts.

The assumed household occupancy rate for the purpose of determining net increase in demand for social infrastructure and the calculation of open space and recreation, and community and cultural facilities contributions under this Plan is 3.4 persons per dwelling.

## **2.11 Adjustment to contribution rates and contribution amounts**

### **2.11.1 Overview**

The purpose of this clause is to ensure that the monetary contribution rates imposed at the time of development consent reflect the current costs of provision of the facilities included in this Plan.

To convert the cost of facilities included in the Plan to a current cost, the monetary contribution rates shown in Part 1 of this Plan are to be adjusted in accordance with the provisions set out below:

- at the time of imposing a condition on a development consent requiring payment of the monetary contribution; and again
- at the time that the monetary contribution is to be paid pursuant to the condition imposed on that same development consent.

The adjusted contribution rates will also be published quarterly on the Council's website [www.liverpool.nsw.gov.au](http://www.liverpool.nsw.gov.au).

This process is distinct and separate from clause 2.12, which deals with future reviews of this Plan. Future reviews will not affect any consent granted in accordance with this Plan and such reviews are required to be publicly exhibited.

### **2.11.2 Adjustment methods**

The Consumer Price Index (CPI) is the most commonly used index for adjusting contribution rates, and for simplicity, is applied to contribution rates levied on development under this Plan. However, it is not the most suitable index for escalating capital works costs nor contributions relating to land that is yet to be acquired.

Capital works costs in the schedule of works are escalated to the base date of this Plan by ABS producer price indexes (PPIs):

- PPI - Building Construction NSW (cat no. 30) for community facilities
- PPI – Non-Residential Building Construction NSW (cat no. 3020) for open space facilities; and
- PPI - Road and Bridge Construction NSW (cat no. 3101) for roads and stormwater facilities.

Land prices do not correlate with movements in the prices of goods and services, especially in urban release areas. As a result, Council prepares and regularly publishes a customised Land Value Index (LVI), generally consistent with in the contributions management arrangements it applies to other land release areas within the Liverpool LGA.

In accordance with the provisions of clause 32(3) of the EP&A Regulation, Council, without the necessity of preparing a new or amending contributions plan, will adjust the monetary development contribution rates set out in this Plan to reflect quarterly changes to both:

- the CPI (for all Works Schedule items identified in this Plan apart from the items comprising land yet to be acquired); and
- the customised LVI (for Works Schedule items identified in this Plan involving land yet to be acquired).

### **2.11.3 Works Schedule items other than land**

The monetary contributions rates for Works Schedule items as set out in Part 5 of this Plan will be adjusted to reflect quarterly variations in the Consumer Price Index (All Groups - Sydney) from the date that the Plan came into effect.

The adjustments shall be made at the time of granting development consent so as to determine the appropriate contribution to be included on any relevant consent. A further adjustment will be made at the time of payment to reflect any further changes between the date of consent and payment of contribution.

#### **Contribution at time of development consent**

$$C_2 = \frac{C_1 \times CPI_2}{CPI_1}$$

#### **Contribution at time of payment**

$$C_3 = \frac{C_2 \times CPI_3}{CPI_2}$$

Where:

- $C_1$  = Contribution of rate for works as shown in this Plan
- $C_2$  = Contribution rate for works as included or to be included in the conditions imposed on the development consent
- $C_3$  = Contribution rate for works at the time that the contribution is to be paid
- $CPI_1$  = *Consumer Price Index (All Groups - Sydney)* result at the time that the Plan was prepared - i.e. December quarter 2020
- $CPI_2$  = *Consumer Price Index (All Groups - Sydney)* result for the quarter immediately prior to the date of granting the relevant development consent

$CPI_3$  = Consumer Price Index (All Groups - Sydney) result for the quarter immediately prior to the date that the contribution is to be paid

#### **2.11.4 Land**

The monetary contributions rates for Works Schedule items that relate to land as set out in Part 5 of this Plan will be adjusted in accordance to reflect quarterly variations in the Land Value Index (published on the Liverpool City Council website) from the date that the Plan came into effect.

The adjustments shall be made at the time of granting development consent so as to determine the appropriate contribution to be included on any relevant consent. A further adjustment will be made at the time of payment to reflect any further changes between the date of consent and payment of contribution.

##### **Contribution at time of development consent**

$$C_2 = \frac{C_1 \times LVI_2}{LVI_1}$$

##### **Contribution at time of payment**

$$C_3 = \frac{C_2 \times LVI_3}{LVI_2}$$

Where:

$C_1$	=	Land component of contributions as shown in this Plan
$C_2$	=	Land component of contributions subject of the conditions imposed on the development consent
$C_3$	=	Land component of contributions at the time that the contribution is to be paid
$LVI_1$	=	Land Value Index at the time that the Plan was prepared - i.e. December quarter 2020 = 100
$LVI_2$	=	Land Value Index at the time of granting the relevant development consent
$LVI_3$	=	The latest Land Value Index at time that the contribution is to be paid

#### **2.11.5 Calculation of Land Value Index**

The Land Value Index is a measure to reflect the changes in land values during the life of the Plan from the date of the adoption of the Plan.

The land costs included in the Works Schedule in Part 5 of this Plan are based on estimates provided in the report prepared by CivicMJD (1 July 2019), and then indexed by the prevailing LVI. The valuation report provided an update to the valuations by CivicMJD in its report dated 2018.

The values are shown in Table 2.1.

**Table 2.1 Assumed land values for various classifications**

Land classification	Base assumed land cost (per sqm)	Land cost (per sqm)
Riparian corridors (constrained land and land below the 20-year Annual Recurrence Interval (ARI) event)	\$35	\$40
Residential land between the 20-year and 100-year ARI events	\$135	\$155
Low density residential prime land (R2) above the 100-year ARI event	\$340	\$389
Medium density residential prime land (R3) above the 100-year ARI event	\$430	\$493
Commercial/ Neighbourhood Business (B1) prime land within the town centre and above the 100 -year ARI event	\$400	\$458
Commercial/ Business Development prime land (B5) within the town centre and above the 100-year ARI event	\$450	\$515
Employment lands/ Industrial	\$370	\$424

Notes:

Refer to section 5.0 of the original MJ Davis Valuations report (undated) for Leppington and Leppington North but may include Special Land Value at date of acquisition, Severance, Solatium and Disturbance as required to be paid pursuant to the Land Acquisition (Just Terms Compensation) Act 1991.

A 12% Land Contingency has also been applied to these rates in the Plan, based on MJ David Valuations original advice.

The derivation of the Land Value Index, its quarterly updates and accompanying contributions rates for Austral Leppington North, are published on Council's website.

## 2.12 Review of Plan and contribution rates

Council will review this Plan on a regular basis.

The review process will canvass, as a minimum, the following issues (where data is available):

- development activity in terms of latest information on net additional dwellings and populations;
- likely total development activity to be experienced during the remainder of the Precincts development;
- progress in the delivery of public amenities and services identified in Part 5 of this Plan;
- modification of facility concepts, changes in anticipated facility costs, facility timing and land values;
- annual contributions received and expenditure information; and
- any other factors likely to affect the delivery of works identified in this Plan.

Pursuant to clause 32(3) of the EP&A Regulation, Council may make only minor adjustments or amendments to the Plan without prior public exhibition and adoption by Council. Minor adjustments could include minor typographical corrections and amendments to rates resulting from changes in the indexes adopted by this Plan.

Amendments beyond those authorised under clause 32 of the EP&A Regulation require the preparation of a new draft plan which in turn must meet the requirements of the EP&A Act and EP&A Regulation (including public exhibition of the draft plan for a period of at least 28 days). The nature of the proposed amendments and reasons for same would be clearly outlined as part of the exhibition.

Amendments requiring public exhibition would include adjustments to contribution rates taking account of more recent information and, where relevant, the following:

- actual costs of completed works;
- reviewed costs of yet to be completed works and land acquisition;
- adjustment in projected project management and contingency costs associated with works; and
- plan management and administration costs.

Plan reviews of the type described above will not affect any development contributions obligation required under any consent that is granted under this Plan.

## **2.13 Pooling of funds**

Council's ability to forward fund services and amenities identified in this Plan is very limited. Consequently their provision is largely contingent upon the availability of contributions funds.

To provide a strategy for the orderly delivery of the public services and amenities, this Plan authorises monetary contributions paid for different purposes in accordance with the conditions of various development consents authorised by this Plan and any other contributions plan approved by the Council to be pooled and applied progressively for those purposes.

The priorities for the expenditure of pooled monetary contributions under this Plan are the priorities for works as set out in the Works Schedule in Part 5.

In any case of the Council deciding whether to pool and progressively apply contributions funds, the Council will have to first be satisfied that such action will not unreasonably prejudice the carrying into effect, within a reasonable time, of the purposes for which the money was originally paid.

## 3 Demand for public amenities and public services

### 3.1 Summary of this Part

The Austral and Leppington North Precincts are part of the South West Growth Area, as planned by the State Government.

The Austral Precinct and a portion of the Leppington North Precinct are in the Liverpool LGA and so Liverpool City Council will serve as a consent authority for much of the development. Council will also be the manager of most of the new public infrastructure that will be required to be delivered in its jurisdiction.

Planning for housing and other development requires the parallel planning for public infrastructure to support the development and the incoming population.

The incoming population is directly related to the expected number and type of residential dwellings and extent of non-residential development floor space in an area.

The extent of public amenities and services required for the future development of an area is usually based on standards or benchmarks rates (e.g. per capita provision).

The application of the provision standards to the estimate of expected development enables a list of infrastructure requirements to meet that development to be compiled.

This connection between expected development, infrastructure standards, and the resultant infrastructure list directly informs the contribution requirements in this Plan.

A range of infrastructure studies have been prepared to inform the infrastructure list (or Works Schedule). Part 4 of this Plan provides more detail on the servicing requirements expressed in these studies.

### 3.2 Development and infrastructure planning context

#### 3.2.1 Growth Areas Structure Planning

The land affected by this Plan is within the Austral and Leppington North Precincts in Sydney's South West Growth Area.

To facilitate planning and orderly development of the South West Growth Area, this area has been divided into seventeen precincts. The locations of the early release precincts, including Austral and Leppington North Precincts, are shown in Figure 3.1 over page.

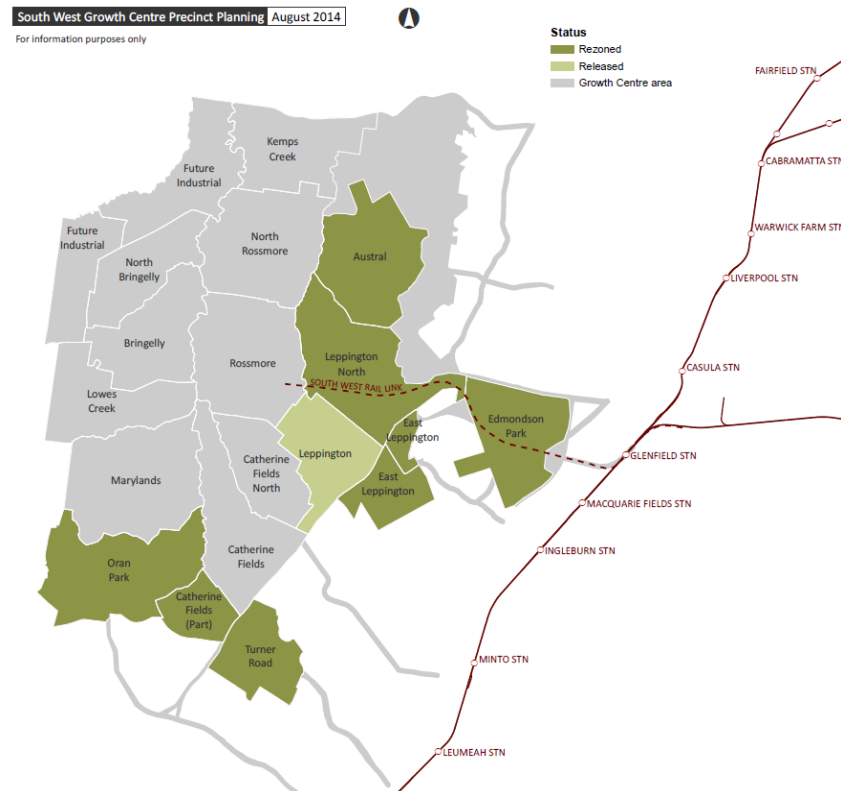
The Austral and Leppington North Precincts were released for precinct planning purposes by the Minister for Planning in October 2009. The Austral Precinct is wholly located in the Liverpool LGA, while the Leppington North Precinct is located partly in the Liverpool LGA and partly in the Camden LGA. This contributions plan relates to the Austral Precinct and that part of the Leppington North Precincts that is within the Liverpool LGA.

A structure plan has been prepared for the Growth Area (formerly referred to as the Growth Centre), a copy of which is included as Figure 3.2 over page. Apart from local neighbourhood centres, the structure plan proposes ten (10) new town or village centres. The largest of these is the planned Major Town Centre at Leppington that will be located in the Leppington North Precinct in the adjoining Camden LGA, immediately adjacent to the southern boundary of the land affected by this Plan. The Western Sydney Parkland forms the northern and eastern boundaries of the Precincts.

The Leppington Major Centre will be a major service provider for properties in the Precincts and some of the regional facilities of the centre will be located within the land affected by this Plan. Other infrastructure investment is underway to support the future Leppington Major Centre, including a new rail line from Glenfield via Edmondson Park.

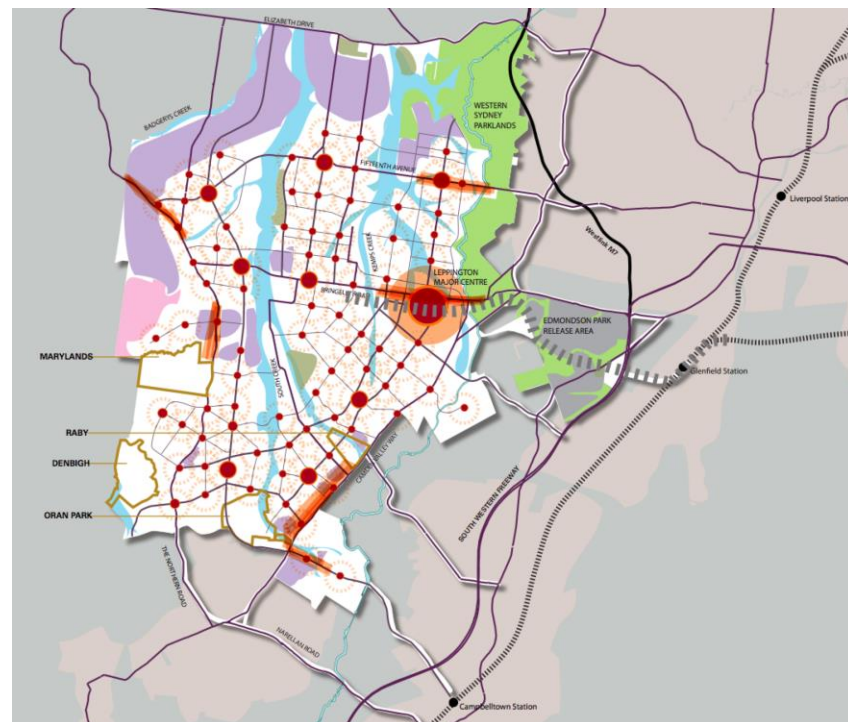


## Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts



Source: Department of Planning and Environment, 2014 (now DPIE).

**Figure 3.1 South West Growth Area early release precincts**



Source: South West Growth Centres Structure Plan Edition 3, prepared by Department of Planning and Environment (now DPIE).

**Figure 3.2 South West Growth Area Structure Plan**

Table 3.1 provides a context for the area the subject of this Plan in terms of the planned dwellings and population illustrating that the majority of housing and population in the Austral and Leppington North Precincts will be located in the Liverpool LGA.

**Table 3.1 Estimated dwelling and populations**

District	Area (ha)	Projected dwellings	Projected population
South West Growth Area (17 Precincts)	17,000	110,000	300,000
Austral and Leppington North Precincts		16,981*	57,737*

Sources: Growth Centres Commission (Structure Plan Explanatory Note); DPIE and Liverpool City Council

\*Gross estimated dwellings and population (existing development (782 dwellings) results in 16,199 net additional dwellings and 55,078 net additional people included in this Plan)

### 3.2.2 Precinct Planning

A package of information on anticipated development and required infrastructure has been prepared for the Austral and Leppington North Precincts, including:

- Indicative Layout Plan (ILP) to guide planning and assessment of the precincts.
- An amendment to *State Environmental Planning Policy (Sydney Growth Centres) 2006* to facilitate the formal rezoning of the land to enable urban development.
- Development Control Plan.
- Contributions plans prepared by Camden Council and Liverpool City Council (this Plan).
- Infrastructure Delivery Plan (IDP).

Key information sources that have underpinned infrastructure planning and costing in this Plan are listed included in Table 3.2.

**Table 3.2 Studies supporting infrastructure planning and costing**

Public amenity or service	Studies informing infrastructure need and cost
Land acquisition for public amenities or services	MJ Davis Valuations Pty Ltd, <i>Austral and Leppington North Precincts</i> , 2014  CivicMJD, <i>Valuation Report - Various Residential and Industrial Release Areas (in Liverpool LGA)</i> , June 2018  CivicMJD, <i>Land Valuations for the Austral Precinct</i> , July 2019
Stormwater drainage and stormwater quality management works	Cardno (NSW/ACT) Pty Ltd, <i>Austral &amp; Leppington North Precincts Water Cycle Management WSUD Report</i> , prepared for NSW Department of Planning and Infrastructure, April 2011, plus <i>Responses to Exhibition Submissions</i> , December 2012  SMEC, <i>Austral and Leppington North Design of Water Management Infrastructure Detailed Concept Design Report</i> and its associated input studies, prepared for Liverpool City Council, March 2019  SMEC, <i>Final Design Report – Development of Streetscape Raingarden Master Plan for Austral and Leppington North</i> , prepared for Liverpool City Council, February 2020
Roads and transport works	AECOM Australia Pty Ltd, <i>Austral and Leppington North (ALN) Precincts Transport Assessment</i> , prepared for NSW Department of Planning and Infrastructure, July 2012

Public amenity or service	Studies informing infrastructure need and cost
Open space and recreation, community and cultural facilities works	Elton Consulting, <i>Austral and Leppington North Precincts - Demographic and Social Infrastructure Assessment</i> , August 2011, plus Addendum, July 2012

More detail on the Precincts' infrastructure requirements is included in the Parts 4 and 5 of this Plan.

### 3.2.3 Infrastructure Delivery Plan

The Infrastructure Delivery Plan (IDP) provided an overview of the urban infrastructure requirements for the Austral and Leppington North Precincts, and how those requirements would be met.

The IDP has provided, amongst other things, a basis for ongoing discussion between planning and infrastructure agencies to guide, inform and improve the delivery of infrastructure. It has also served the purpose of acquainting owners and developers of land in the Precincts with how and when infrastructure is likely to be provided.

Coordination in infrastructure delivery will be critical to the timely roll-out of urban development of the Precincts. Coordination is even more critical in an environment where the land is comprised of relatively small parcels held by a large number of land owners. This is the case in the Precincts.

The IDP provided initial direction for the delivery of local infrastructure to the land to which this Plan applies:

- Identified the need to prepare contributions plans for local infrastructure. This Plan addresses this requirement.
- Required staging plans for local infrastructure to accord with the indicative priority development areas identified in the IDP. The staging outcomes in this Plan reflect the IDP, with refinement as necessary.
- Identified that total local infrastructure costs are likely to be higher than the likely contribution receipts, given the contributions caps that are in place. The funding of higher order recreation and community facilities is particularly uncertain. Council, in partnership with the State Government, will therefore need to explore other sources of funding or other delivery options.
- Provided that councils have prepared, or are required to prepare, Community Strategic Plans as the key documents guiding councils' activities in the coming decades. This is now the mandated way for councils in NSW to undertake and report their resource planning and the delivery of services and facilities to their communities. Supporting the implementation of the strategic plans will be the resourcing strategies (including long-term financial plans, workforce management plans and asset management plans), delivery plans and operational plans. Councils' Community Strategic Plans must be prepared with due consideration of the various strategies and policies that impact on the local area from both the State (including the Metropolitan Strategy and the State Plan) and Federal Government levels.
- Provided that the effective management of development growth will require a significant ongoing commitment from State Government, particularly in the delivery of infrastructure and services. State Government's role will span a range of agencies and joint commitment and action through the Metropolitan and Sub-regional Strategy will be required to ensure consistent, timely and quality delivery of infrastructure and services to this part of the South West Growth Area.
- Provided that funding constraints mean that there should be an even greater emphasis placed on partnering with developers to provide the necessary local infrastructure (through, for example, Planning Agreements and Works in Kind agreements).

## 3.3 Expected development outcomes

### 3.3.1 Existing development

Existing development in the area is characterised by recent urban development with significant remaining rural and rural residential land uses.

When the land was rezoned for urban development, the majority of land in the Precincts was used for either small scale agricultural purposes such as market gardens or rural residences. Rural residences are often used as a place of business. This may include ownership of trucks, horses or running construction businesses.

At the time of rezoning, some of the land in the Precincts was developed for purposes that might be characterised as urban uses – for example, private schools and retirement living establishments.

### **3.3.2 Net Developable Area**

The capacity for development of land is restricted by a number of factors, including:

- natural constraints such as riparian and flood prone lands;
- man-made constraints such as existing infrastructure, easements and other legal restrictions, and existing infrastructure such as gas and transmission lines.

In addition to the constraints, there are future constraints. For example, certain land is needed to be set aside or reserved for public purposes such as roads, government buildings, education and health facilities, and so on.

Taking these matters into consideration allows a calculation of the amount of 'economic' land that is available for development. The planned development of this 'Net Developable Area' (or NDA) is the development that will generate the demand for the urban infrastructure such as roads and drains that are required to sustain it. Net Developable Area is therefore one of the bases used to determine contributions under this Plan.

The Precincts together have an estimated total Net Developable Area of approximately 1,175 hectares.<sup>1</sup>

### **3.3.3 Overview of expected development**

The Precinct Plan for both Austral and Leppington North Precincts has been prepared with reference to the Structure Plan and the indicative dwelling and town centre targets, and achieves the following outcomes:

- Leppington Major Centre and nearby employment land, with capacity for up to 13,000 jobs in retailing, light industrial, business park, human services and entertainment sectors.
- Approximately 16,199 new dwellings and a net increase in population of approximately 55,078.
- A Town Centre in Austral with retail floor space in the order of 42,000 square metres.
- Three neighbourhood centres each with retail floor space of at least 10,000 square metres.
- 4 primary schools and 2 high schools.
- 66 hectares of light industrial and bulky goods land for local jobs and local services.
- A new TAFE college and Regional Integrated Primary Health Care centre located in Leppington Major Centre.
- Regional level community and cultural facilities in Leppington Major Centre.

Expected development in the Precincts will be characterised by the following:

- A part of the Leppington Major Centre civic precinct and bulky goods retailing located immediately to the north of Bringelly Road.

---

<sup>1</sup> Total NDA is 1,175 hectares. 'Equivalent NDA' (that is, total NDA adjusted to reflect the lower residential development potential of Environment zoned lands and higher potential of some areas) is used to calculate contributions under this Plan. Equivalent NDA for the Precincts is approximately 1,217 hectares.

- Four (4) neighbourhood retail shopping centres and up to eight (6) schools.
- A range of lower density residential areas, including medium density around the various retail centres, infill low density urban residential and lower density Environmental Living zones just beyond the creek corridors and rural transition along the western boundary.
- A light Industrial area to the north of Fifteenth Avenue.
- Open space and drainage facilities along the Bonds Kemps and Scalabrini Creek corridors as well as adjacent to the Western Sydney Parklands and along other minor, unnamed creeks that pass through the Austral Precinct.
- Areas reserved for environmental conservation and environmental protection, principally along the Kemps Creek corridor and in the north of the Austral Precinct, as well as a corridor for the South West Rail Line.

The extent of development is reflected in the final Indicative Layout Plan adopted by the Department of Planning and Infrastructure (now DPIE), as amended, primarily for consolidated stormwater management infrastructure needs, in 2019/20.

Table 3.3 outlines the expected extent of development in the Liverpool LGA portion of the Austral and Leppington North Precinct based on the final Indicative Layout Plan. The Equivalent NDA makes allowance for higher and lesser densities.

The proposed arrangement of these component land uses is shown in Figure 3.3.

**Table 3.3 Expected Net Developable Area**

<b>Land Use</b>	<b>NDA (ha)</b>	<b>Equivalent NDA assuming 15dw/ha</b>
Environmental Living (4 dwellings/ha)	95.21	25.39
Environmental Living (10 dwellings/ha)	45.31	30.21
Very Low Density Residential (10 dw/ha)	9.97	6.65
Lower Density Residential (15 dw/ha)	702.36	702.36
Low Density Residential (20 dw/ha)	85.74	114.32
Medium Density Residential (25 dw/ha)	151.90	253.17
<b>Sub Total Residential</b>	<b>1,090</b>	<b>1,132</b>
Neighbourhood Centre	9.02	9.02
Local Centre	9.44	9.44
Bulky Goods	25.70	25.70
Light Industrial	40.26	40.26
<b>Sub Total Employment</b>	<b>84.42</b>	<b>84.42</b>
<b>TOTAL</b>	<b>1,175</b>	<b>1,217</b>

Source: DPIE, 2020.



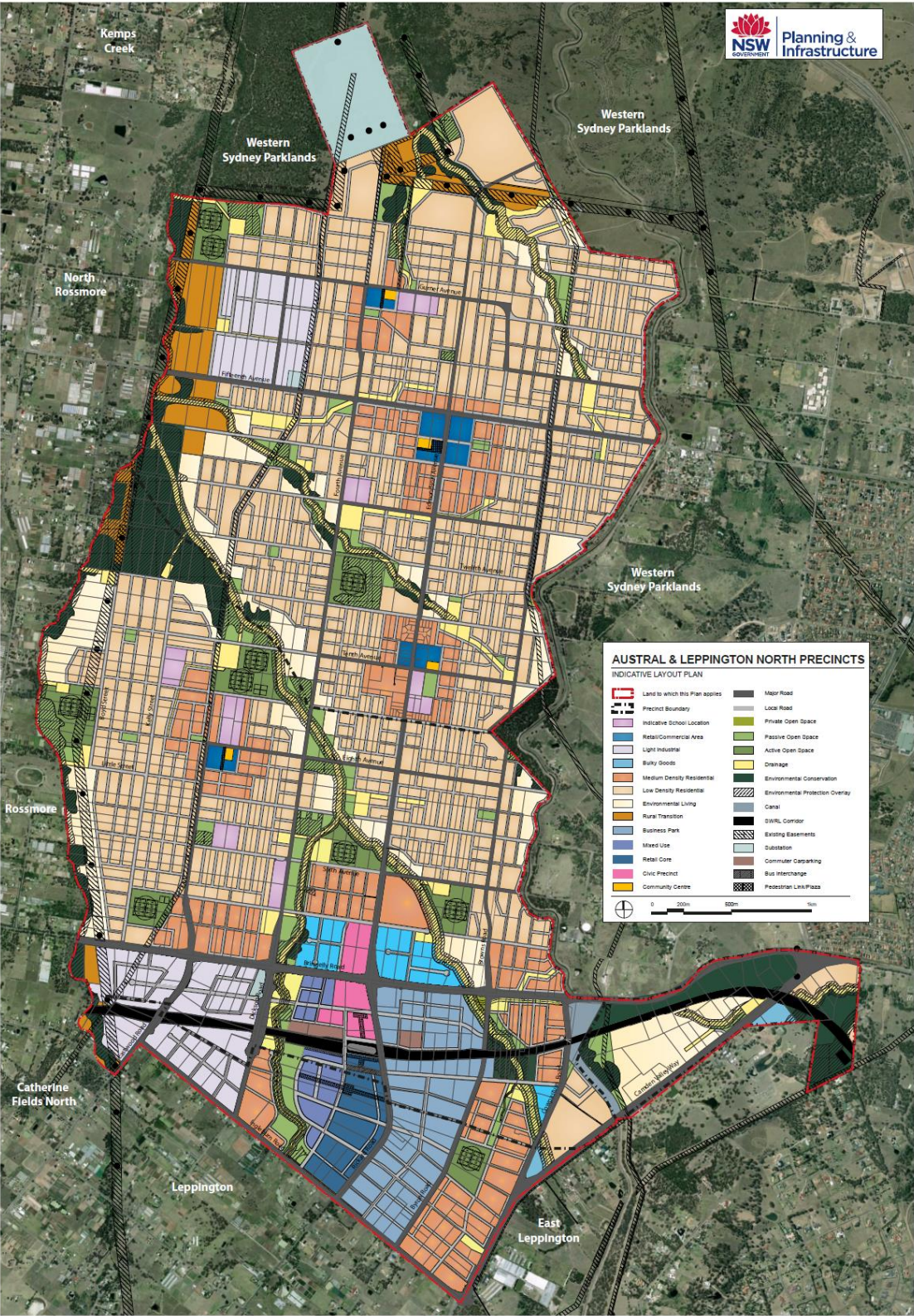


Figure 3.3 Expected land use in the Precincts

### 3.3.4 Demographic characteristics

The likely demographic characteristics of a development area are important for understanding and planning for the future social infrastructure needs of that area.

The demographic characteristics of the existing rural population do not provide a robust indicator of the future demography of the Precincts.

The report *Austral and Leppington North Precincts - Demographic and Social Infrastructure Assessment* (the 'Social Infrastructure Assessment') prepared by Elton Consulting analyses the demographics and housing market conditions in the Camden, Liverpool and Campbelltown LGAs.

The Social Infrastructure Assessment makes the following conclusions about the anticipated demography of the future release area:

- There will initially be a comparable proportion of young couples and families with children to other release areas in the region, but a greater range of family types, reflecting the wider range of housing types and price markets to be provided.
- Proportions of empty nesters and older people will be initially similar to that usually experienced in new release areas, but, given the differing housing stock, will rapidly increase to approximate those in the wider district once services and public transport become well established.
- Over time, the population will become more diverse. Increasing proportions of young adults and older people will be attracted to the area once Leppington Major Centre is established. The proportion of the population who are young children and young adults will decline as the population ages and the proportion of older children with older parents grows. The proportion of the population aged 55+ years will also increase considerably as the area matures.
- Owner occupiers are likely to provide a stable group that will age in place through the life cycle stages, while tenant households will experience greater turnover, thereby maintaining a similar age profile as in the initial stages.
- Over time the population profile is likely to come to more closely approximate that of an established area with a variety of age and household characteristics, rather than a traditional new release area with particular age concentrations.
- Changing demographic, cultural and lifestyle patterns that will occur through the life of the development; and the relative uncertainty about the future composition of the population and its precise needs, gives rise to a need to plan for flexibility in social infrastructure facilities to enable them to respond and adapt as the particular requirements and lifestyle preferences of the population are ascertained.

### 3.3.5 Dwelling occupancy rates

The amount and mix of the types of expected residential development will inform estimate of the future population of an area. The need for social infrastructure is usually based on per capita benchmarks. As development contributions are levied on a development-by-development basis, in order for the contribution to be reasonable there needs to be an assumption of how many people are likely to live in the proposed development.

This Plan therefore assumes standard dwelling occupancy rates for the purpose of determining the estimated occupancy of development that is approved during the life of the Plan.

The occupancy rates used to calculate contributions under this Plan are those determined by the Social Infrastructure Assessment. They are shown in Table 3.4.



**Table 3.4 Dwelling occupancy rates assumed in this Plan**

Development type	Occupancy rate
Subdivided lots	3.4 persons per lot
Detached dwelling, detached dual occupancy (each dwelling)	3.4 persons per dwelling
Semi-detached, town house, terrace, attached dual occupancy (each dwelling)	2.6 persons per dwelling
Flat, unit, apartment, secondary dwellings	1.8 persons per dwelling
Seniors living dwellings	1.5 persons per dwelling

### 3.3.6 Anticipated resident population

The anticipated population in the Austral and Leppington North Precincts has been determined on the basis of the Net Developable Area for various types of residential development, the minimum density of dwellings in those areas (specified in the draft SEPP amendment), and the assumed average occupancy rates for those dwellings.

The anticipated population is shown in Table 3.5.

**Table 3.5 Calculation of anticipated resident population**

Dwelling type	Projected dwellings	Assumed dwelling occupancy rate	Population
Low density and environmental living (detached dwellings)	13,184	3.4	44,825
Medium density residential (semi-detached etc.)	3,798	2.6	12,912
Less assumed existing population (see Appendix A)			-2,659
Expected net additional population			55,078

### 3.3.7 Anticipated non-residential floor space

The predominant economic land use in the Precincts will be residential development. There will also be some non-residential development including neighbourhood retail centres, a light industrial area; and a bulky goods retailing area adjoining the neighbouring Leppington Major Centre in Camden LGA.

The anticipated extent of these non-residential developments is shown in Table 3.6.

**Table 3.6 Anticipated non-residential development potential**

Land use category	Net Developable Area (ha)	Projected gross floor area (m <sup>2</sup> )*
Neighbourhood Centre	9.02	40,590
Local Centre	9.44	42,480
Bulky goods	25.70	115,650
Light Industrial	40.26	181,170
<b>Total</b>	<b>84.42</b>	<b>379,890</b>

\* based on an assumed average floor space ratio of 0.45:1

Source: Department of Planning and Infrastructure (now DPIE)



### 3.4 Infrastructure demand arising from the expected development

Future development in the South West Growth Area will result in an additional population of up to 300,000 people.

Existing public amenities and services in the Precincts have been essentially designed to accommodate the existing predominantly rural living environment. A change in the development profile from rural to urban development is now planned. More particularly, the Precincts are planned to have a low density suburban character. The projected influx of an estimated 55,078 new residents demands a significant investment in new and augmented public amenities and services.

Research on infrastructure needs for the impending urban development has identified the following impacts on public services and public amenities:

- increased demand for active and passive recreation facilities, such as recreation centres, sports fields, sports courts, playgrounds, walking trails and bike paths;
- increased demand for spaces that will foster community life and the development of social capital in the Precincts, such as multi-purpose community centres and libraries;
- increased demand for facilities that will support safe and convenient travel between land uses both within the Precincts and to and from destinations outside of the area, such as upgrades to existing roads, new roads, intersections and public transport facilities; and
- increased demand for stormwater drainage facilities as a result of the extra stormwater runoff generated by impervious surfaces associated with urban (as distinct from rural) development, as well as water quality treatment facilities consistent with Water Sensitivity Urban Design (WSUD) principles.

A range of public facilities and public amenities have been identified as being required to address the impacts of the expected development, including:

- open space and recreation facilities;
- community and cultural facilities;
- water cycle management facilities; and
- traffic and transport management facilities.

More detail on the demand for public services and amenities, the relationship with the expected development, and the strategies for the delivery of required infrastructure is included in Part 4 of this Plan.

The costs, indicative timing, and proposed location of individual items for the public amenities and public services included in this Plan are shown in Part 5 of this Plan.

## 4 Strategy plans

### 4.1 Infrastructure costs and delivery generally

#### 4.1.1 Apportionment of the infrastructure costs to expected development

The costs for public services and amenities were informed by the studies that support the infrastructure planning of the area (refer Table 3.2).

The development monetary contribution for each of the facilities identified in this Plan is determined by dividing the total cost of the facility by the contribution catchment (which is expressed in persons or NDA). This process ensures that fair apportionment of facility costs is calculated for development expected to occur under this Plan.

The contribution catchments for each infrastructure type are:

- in the case of open space and recreation facilities land and works, the expected additional resident population of the Precincts;
- in the case of community and cultural facilities land and works, the number of people (or future residents) the respective facility has been designed for;
- in the case of road and transport land and works, the expected additional resident population of the Precincts for residential development and the estimated equivalent Net Developable Area of the Precincts for non-residential development; and
- in the case of stormwater drainage land and works and plan administration, the estimated equivalent Net Developable Area of the Precincts for all development.

The infrastructure included in this Plan has generally been sized to reflect the demand generated by the expected development under this Plan. Some facilities, such as the proposed aquatic and indoor recreation centre, have been designed to serve a wider catchment (although the capital works for this facility are not 'essential works' under this Plan). Council will need to make arrangements to ensure that the cost attributable to the demand sources external to the Precincts is met (for example, by subsequent contributions plans, joint contributions plans, special rates, grants).

More details on this apportionment are discussed in the remainder of Part 4 of this Plan.

#### 4.1.2 Delivery of the infrastructure

Council will require contributions from developers under this Plan toward provision of the public amenities and public services identified in this Plan. These contributions may be in the form of monetary contributions, dedications of land free of cost, or a combination of these.

Developers may choose to provide, subject to the agreement of the Council, one or more infrastructure items identified in this Plan as Works In Kind or provide another type of material public benefit as means of satisfying development contributions required under the Plan (refer clause 2.9.5 of this Plan). A Works In Kind Agreement must be in place prior to commencing the works in accordance with the Council's Works In Kind Agreements Policy.

Substantial research has been applied to the derivation of the Plan's Works Schedule and the planning for the location of all facilities has been completed but detailed design will be carried out in the development phase. The facilities will be developed in a manner that allows them to effectively serve the demand attributable to development envisaged under this Plan.

The facilities strategies included in Part 4 of this Plan are based on strategic information. It is likely that, as the planning process for the different development areas proceeds, modified and more cost effective solutions that still meet the strategy objectives will be developed.

Council will prepare design concepts for the facilities so that specification and costing of the facilities can be more accurately defined as implementation of this Plan proceeds. This may result in amendment of this Plan.

Where alternatives to the Works Schedule are proposed in conjunction with the development of areas and the alternatives are approved by the Council, the development contribution applicable to a development the subject of a development application may be reviewed, or the Works Schedule in this Plan updated, or both.

#### **4.1.3 Infrastructure staging and priority**

The overarching strategy that initially guided the staging and priority of infrastructure was the Infrastructure Delivery Plan. The staging and priorities of infrastructure will continue to be refined in accordance with the anticipated development program for the Austral and Leppington North Precincts.

The initial development areas, as discussed in the Infrastructure Delivery Plan and clause 3.2.3, include:

- Land in and around the Leppington Major Centre.
- Land located north and south of Fifteenth Avenue on the eastern edge of the Austral Precinct.

The second of these areas is within the Liverpool LGA, while the Leppington Major Centre is just south of the border with Camden Council and so the land around this centre may include land in the Liverpool LGA.

Ideally, development will proceed outward from the railway station and retail core. The existing land ownership pattern and other influences (such as the demand for different land use types) however means that this order of development is unlikely to occur. The Infrastructure Delivery Plan strategies reflect this:

There should not be any assumption that services are 'reserved' for particular areas in the early stages. If owners and developers of land located outside the initial development areas consult and work cooperatively with infrastructure providers and owners of adjacent land, there is no reason why those lands could not also be developed.<sup>2</sup>

With these uncertainties, the facility staging and priorities details that are shown in Part 5 of this Plan are general in their scope, and will be subject to regular review.

---

<sup>2</sup> *Austral and Leppington North Precincts Infrastructure Delivery Plan*, Draft Report for Exhibition, prepared by Newplan, August 2011, Section 4.2.

## 4.2 Open space and recreation facilities

### 4.2.1 Relationship between the expected types of development and the demand for additional public facilities

The requirements for local, district and regional scale open space and recreation facilities as a result of the expected development of the Precincts are documented in the report Austral and Leppington North Precincts – Demographic and Social Infrastructure Assessment, prepared by Elton Consulting in August 2011. This is supplemented by an Addendum, prepared by Elton Consulting in July 2012.

The information below comprises a summary of sections of that report that describe the demand for new and upgraded public amenities and services.

#### Existing provision

There are limited open space and recreation facilities accessible to the current residents of the Precincts. However the extent of provision is consistent with the area's small population and semi-rural character.<sup>3</sup>

There are three identified local public open space areas located within the Liverpool LGA part of the Austral and Leppington North Precincts. These are:

- Craik Park (includes children's playground, sports field and tennis courts);
- WV Scott Memorial Park (includes children's playground, sports fields, cricket practice nets, netball courts and bushland); and
- Starr Park (bushland).

In addition there is a significant area of district and regional parks and bushlands on the periphery of the Austral Precinct, including:

- Western Sydney Regional Parklands;
- Grimson Park (in West Hoxton); and
- Kemps Creek Nature Reserve (high conservation value bushland – no public access).

The level of open space provision reflects the rural residential lifestyle of the area. That is, the demand for public open space (particular local and passive open space) is significantly reduced in locations where residents live on their own substantial parcel of land.

With the proposed development of the area to an urban environment and its associated influx of new residents, the area will require significantly more land for open space and recreation purposes.

#### Trends in facility provision

Current and emerging trends and factors that have been considered in the planning and specification of Austral and Leppington North Precincts recreation infrastructure included the following:

- Significant and ongoing popularity of recreation activities (e.g. walking), while activities requiring fixed commitments are declining in favour of more informal and flexible activities.
- Facilities that are flexible in their service provision.

---

<sup>3</sup> Social Infrastructure Assessment, page 16

- Growing awareness and interest in health and fitness as part of a balanced lifestyle rather than an emphasis solely on leisure.
- Increasing demand for outdoor recreation.
- Growing awareness of the importance of incidental exercise within employment and residential areas, increasing the demand for walking and cycling paths.
- An increasing emphasis on quality as well as quantity.
- An increasing demand for access for young people and improved accessibility more generally.
- An increased demand for natural areas and adventure-based activities.
- The increased duration of playing seasons requiring consideration of alternative playing surfaces.

### **Planning principles for open space and recreation**

Principles for the provision of sustainable open space and recreation infrastructure that have guided the selection of infrastructure items included in this Plan include the following:

- Open space should be largely publicly provided.
- Facilities should meet a diverse range of open space and recreation needs and opportunities.
- Level of facility provision should avoid exerting pressure on other open space and recreation facilities in surrounding areas.
- The quality of open space is more important than the quantity.
- Facilities should form a physically and visually connected network; and represent a non-vehicular system that connects major activities and open spaces by walking and cycling.
- Facilities should comprise a local, district and regional hierarchy of spaces.
- Facilities should reflect and complement the natural, ecological, waterway and visual features of the area; and incorporate natural areas and riparian corridors into the open space system where possible.
- There should be an integrated network of open space with stormwater management and water-sensitive urban design where possible.<sup>4</sup>

### **Recreation demand assessment based on forecast demographics**

The size and characteristics of the population in the Precincts is discussed in Part 3 of this Plan.

Implications for recreation demand as a result of the expected mix of residents is discussed in detail in Table 9.1 of the Social Infrastructure Assessment.

In summary:

- Future developments will initially contain a predominance of families with children, adolescents and young people, and only over time will there be a balance of more middle aged and older people.
- The major target groups for recreation planning in new release areas are children aged 0-14 years, and adults aged 25-40 years.

---

<sup>4</sup> Social Infrastructure Assessment, Section 3.1

- Local open space is important in encouraging informal interaction and creating opportunities for new and existing residents to come together, as well as for encouraging extended family activity, for walking and cycling as well as family gatherings.
- The level of local open space will in part be informed by prevailing council standards of provision.

In relation to the last point, the following plans and strategies provide guidance:

- Liverpool City-Wide Recreation Strategy 2020 (2003); and
- Liverpool City Council Provision Rates Indicative Draft 21 September 2010.

The following is a summary of Liverpool City Council's standards relating to open space:

- The provision of open space in new release areas is based on a standard of 2.83 hectares per 1,000 people;
- Local parks (minimum 2,000 square metres) to be provided within a five-minute walk of most dwellings;
- 1 key suburb park (district park) with a minimum size of 3 hectares per 5,000 – 10,000 people;
- 1 double playing field of minimum 4 hectares per 10,000 people (local sporting field);
- 1 district sporting field per 60,000 people approximately;
- District sporting fields to be a minimum 6 hectares and, where possible, co-located with other commercial, community and recreation space in larger neighbourhood activity hubs;
- The split between active and passive open space should reflect quality considerations, rather than a firm 50:50 split; and
- High use recreation facilities and quality open public spaces should be provided away from electricity transmission lines, wherever practicable.<sup>5</sup>

The above considerations have informed the open space and recreation requirements for the future development of the Precincts.

### **Local and district open space requirements**

The total area of local and district open space land required was calculated in the Social Infrastructure Assessment on the basis of meeting the combined needs of the Austral and Leppington North Precincts' developments.

The planning of open space areas was undertaken as part of the Precinct planning phase in an iterative manner. Earlier versions of the ILP identified more extensive passive open space areas aligning with the numerous drainage lines traversing the Austral and Leppington North Precincts. The size of the open space areas was reduced in acknowledgment of the very high cost of acquiring the substantial areas required for meeting open space demands.

The benchmark figure in the original assessment report proposed an overall rate of 2.9 hectares per 1,000 population for Austral and Leppington North Precincts, including both Liverpool City and Camden Council areas of Leppington North. However, the Addendum Report noted that the final ILP provision of approximately 135.44 hectares of open space was below the standard benchmark of 2.83 hectares per 1,000 people (at that time, for an estimated 54,361 people). The report further noted how the shortage is concentrated more in the Liverpool City areas of the Precincts rather than Camden LGA.

This Plan proposes to provide around 120 ha of open space which for a proposed population of 57,737 residents, equates to a rate of provision of 2.08 hectares per 1,000 residents. The rate of provision is based on the final Indicative Layout Plan prepared by the NSW Department of Planning and Infrastructure (now DPIE). It is considered a reasonable level of provision since residents can also access a range of other open space areas, including regional open space facilities and significant bushland

---

<sup>5</sup> Social Infrastructure Assessment, p76

areas, concentrated largely around the riparian corridors. These facilities are described in more detail in subsequent sections below.

For the Precincts, Table 4.1 sets out the proposed provision of open space. This table shows that some of the land is already owned by Council such that only 106.6 hectares of land needs to be acquired under the Plan. Council-owned land includes Craik Park (9.7 hectares of which will be partially embellished under this Plan) and WV Scott Memorial Park and surrounding areas (3.75 hectares upon which the Regional Indoor Sports and Aquatic Centre is likely to be located). It is acknowledged that the land area estimates have been reviewed and updated since the previous version of this Plan.

**Table 4.1 Proposed provision of district and local open space**

Open space	Area (ha)
Land to be acquired	106.6
Land currently owned or managed by Liverpool City Council	13.5
Total open space to be provided in Precincts	120.1
Total population in Precincts (persons)	57,737
Open space provision rate (ha/1,000 persons)	2.08

Source: Department of Planning and Infrastructure (now DPIE)

Table 4.2 provides a breakdown of this open space according to type.

**Table 4.2 Proposed provision of district and local open space**

Open space type	Acquisition land area (ha)	Dedication land area (ha)	Total open space (ha)
Local passive open space	36.51	3.75 (WV Scott Memorial Park/ Council-owned land)	40.26
Local sporting fields (active recreation)	26.37	9.70 (Craik Park)	36.07
District passive open space	34.70		34.70
District sporting fields (active recreation)	9.07		9.07
Total open space	106.64	13.52	120.10

Source: Department of Planning and Infrastructure (now DPIE).

The data in Table 4.1 show a weighting toward the provision of passive rather than active open space. The high percentage of passive open space arises in part because of the extensive creek networks that traverse the Precincts.

The above land also does not include:

- Regional active open space available in Western Sydney Parklands;
- Riparian and other conservation land such as bushland;
- Open space under transmission lines; and
- Playing fields within school sites.

The costs associated with open space land and works will be apportioned solely to new residential development. No contributions for Precincts open space facilities will be required of non-residential development as the need for the facilities has been based on the anticipated residential development only.

### **Recreation facilities requirements**

The facilities described in Table 4.3 (on the following pages) have been determined in the Social Infrastructure Assessment as being required to meet the needs of expected development in the Austral and Leppington North Precincts, and in some cases the wider Growth Area catchment. Some of the facilities are located in the Camden LGA portion of the Leppington North Precinct and are therefore not included in the Works Schedules that comprise Part 5 of this Plan. The full list of Austral and Leppington North Precincts' requirements is shown for completeness.



Table 4.3 Recreation facilities requirements

Facility	Size	Description	Provision	Provision in the Precincts
Local passive parks	Min. 0.2ha up to 0.5ha	Local parks should have a range of play spaces and opportunities and cater to older children and young people as well as the traditional playground for young children.  Grassed area for ball games, seats, shelter. May contain practice wall, fitness equipment, other elements.	Within 400-500m walking distance of 90% of dwellings	Many dispersed throughout the Precinct mainly focused along the riparian corridors but generally well distributed around the area
District (key suburb) parks	Min. 3ha	'Something for everyone', family parks. Includes a combination of outdoor courts (basketball, netball), skate park, BMX track, shared pathways, children's play equipment, outdoor fitness equipment, performance space, specialised recreation facilities, water feature, picnic / barbecue facilities, unleashed dog exercise area.	6-7 parks	7 concentrations of district passive recreation facilities sized between 3 and 11 hectares
Children's playgrounds (0-4years)	Min. 0.3ha for standalone playgrounds	Co-located with parks, sportsgrounds, courts, schools, community facilities, conservation areas. Regional, district, local hierarchy in terms of play equipment and range of experiences.  Each play area should offer a different experience. Include road safety bike track at regional playground. Include children's bike paths in district and regional playgrounds.  Can be co-located with play spaces for 5 to 12-year olds – within sight distance for carers but physically separated. Fencing if adjacent to water, road, steep slope. Seating, shade, water provided.	11 playgrounds	18 playgrounds or play spaces to be provided on local and district passive parks
Play spaces (5 to 12-year olds)	Min. 0.3ha for standalone playgrounds. Where co-located the space may be reduced.	Allows for more independent play, skill development and cognitive development. However, they still require adult supervision. More challenging equipment. These may include bouldering features, climbing areas, 'learn to' cycleways through to cycle obstacle course, skate facility, BMX/mountain bike jumps and tracks. These areas could be co-located with children's playgrounds, school or community facilities for supervision and convenience of use by carers.	13 play spaces	See above

Facility	Size	Description	Provision	Provision in the Precincts
Local sportsground	Min. 4ha (ideally 5ha)	<p>1 double field per 5,000 people.</p> <p>To accommodate demand for local sport and recreation training and competition. Rather than a series of single fields facilities are grouped to provide economies of scale for infrastructure.</p> <p>To be located close to schools.</p> <p>Inclusions :</p> <ul style="list-style-type: none"> <li>– 2 multi-purpose rectangular fields or 1-2 full-sized cricket/AFL ovals (plus practice nets)</li> <li>– 2 tennis / netball courts – 2 half-court basketball courts, or 2 multi-purpose courts – Lights for training – Amenities with change rooms, canteen, meeting room –</li> </ul> <p>Parking co-located with a playground, school, community facility, play space.</p>	8 double playing fields or 20 single fields.	4 additional local sportsgrounds to complement an existing sportsground at Craik Park
District sportsground	Min. 6ha up to 10ha	<p>The local sports park identified above may be expanded to incorporate one of the proposed district grounds dependent on location and access.</p> <p>Requirements – To be located near public transport routes, no further than 2 km from all dwellings – To be co-located, where possible, with other commercial, community and recreation space in neighbourhood activity hub – Provide for district standard adult competitions and training or junior regional or state school championships. – Amenity buildings, parking, storage core inclusions – Located on land without flooding or transmission line constraints.</p> <p>Given the timeframe before the population threshold warrants a district standard facility. The final mix of courts and fields will require community consultation and council input based on most recent open space planning principles and research.</p> <p>Inclusions: – 4 multi-purpose rectangular fields, parking and landscaped buffer – No flooding or transmission line restrictions – Higher quality fields than local – Maybe combined with playground, netball training courts or multi-purpose tennis/basketball/netball courts. Add practice nets if cricket wickets – May include lawn bowling club or similar.</p>	1 complex of four playing fields	1 complex of four playing fields on a new 9.1ha park located between Ninth and Tenth Avenues

Source: Social Infrastructure Assessment, pages 79-84.

## Regional open space and recreation facilities requirements

The Leppington railway station will be located just outside the southern boundary of the Precincts in the surrounding Major Centre. Leppington Major Centre is the only major centre to be developed in the entire South West Growth Area, and will include some of the land at the southern edge of the Precincts. This centre is being designed to serve a user catchment of around 300,000 residents.

Associated with this centre and located within the Liverpool LGA, the Regional Indoor Sports and Aquatic Centre is proposed to service the population of the Precincts and beyond. Details of this facility are included in clause 4.3 Community and Cultural Facilities.

Other regional open space demands are expected to be met by the Western Sydney Parklands, which adjoin the Austral and Leppington North Precincts to the east. It is expected that the embellishment of the Parklands will be carried out in the manner of other regional parks in the Sydney region (e.g. Centennial Park in the Sydney City LGA).

The Growth Area catchment, equivalent in scale to Canberra, will require substantial recreation facilities to meet the regional demand. Apart from the Aquatic Centre, the planning for regional facilities also includes a regional stadium. The Western Sydney Parklands Trust has prepared an options paper in relation to the stadium and envisages that it will be located in the Western Sydney Parklands.<sup>6</sup>

This Plan does not require contributions toward a stadium or any embellishments in the Western Sydney Parklands.

### 4.2.2 How are the contributions calculated?

Contributions will be collected only from residential development toward open space and recreation facilities identified under this Plan.

Monetary contributions are calculated on a per person or per resident basis, then factored up to a per lot or per dwelling amount.

The monetary contribution per person in a development containing residential dwellings or lots (whether or not that development also comprises non-residential floor space) is calculated as follows:

$$\text{Contribution per resident (\$)} = \sum \frac{(\$INF)}{P}$$

Where:

$\$INF$  = the estimated \$ cost - or if the facility is existing, the indexed, completed cost - of providing each of the open space and recreation facilities (refer Part 5 – Works Schedule).

$P$  = the estimated resident population (in persons) that will demand each facility - that is, the expected net additional population of the Precincts (refer Table 3.5)

The monetary contribution for different residential development types is determined by multiplying the contribution per person by the estimated increase in population as a result of the development and using the assumed occupancy rates included in clause 3.3.5 of this Plan.

For convenience, these rates are reproduced in Table 4.4.

<sup>6</sup> The *Western Sydney Parklands Trust Plan of Management* identifies a proposal for a regional sporting hub in the southern end of the Western Sydney Parklands, in the vicinity of the Austral and Leppington North Precincts, subject to funding.

**Table 4.4 Assumed residential development occupancy rates**

<b>Development type</b>	<b>Occupancy rate</b>
Subdivided lots	3.4 persons per lot
Detached dwelling, detached dual occupancy (each dwelling)	3.4 persons per dwelling
Semi-detached, town house, terrace, attached dual occupancy (each dwelling)	2.6 persons per dwelling
Flat, unit, apartment, secondary dwellings	1.8 persons per dwelling
Seniors living dwellings	1.5 persons per dwelling

## 4.3 Community and cultural facilities

### 4.3.1 What is the relationship between the expected types of development and the demand for additional public facilities?

The requirements for community and cultural facilities as a result of the expected development of the Precincts are documented in the Social Infrastructure Assessment.

The following is summary of the information and approach used to arrive at the community and cultural facilities requirements of the Precinct.

#### Existing provision

There was very limited community and cultural facilities accessible to the current residents of the Precincts at the time of rezoning. They included two (2) schools and three (3) child care centres, three (3) places of worship and two (2) seniors living developments.

Other facilities are located further afield, including in the Camden LGA and surrounding suburbs of Liverpool LGA. District level facilities are located in the newer suburbs further east around Horningsea Park and further south in Camden LGA, and have been designed to meet the needs of incremental urban growth in those locations, rather than any growth envisaged in the Austral and Leppington North Precincts.

The limited extent of provision is consistent with the area's small population and semi-rural character <sup>7</sup>.

#### Principles for sustainable community infrastructure

Principles for the provision of sustainable community facilities infrastructure described in the Social Infrastructure Assessment and that have guided the selection of infrastructure items included in this Plan include the following:

- Facilities should be provided in an efficient, timely and co-ordinated way to support the pattern of development; ensuring that services are available to residents as early as possible and they are not disadvantaged through delays in delivery.
- Efficient use of limited resources by designing facilities to be multipurpose, co-located with other facilities and able to accommodate shared and multiple use arrangements.
- Cluster related facilities and services to promote civic identity, safety and focal points for the community.
- Ensure that facilities, services and open space are accessible by public transport and located to maximise access for pedestrians and cyclists.
- Ensure flexibility in the design and use of facilities, so they can respond and adapt as needs change. Avoid arrangements for single uses or specific target groups that may quickly become outdated.
- Promote equitable access for all sections of the population, through the distribution, design and management (including cost) of facilities.
- Provide environmentally and economically sustainable buildings.
- Ensure viable levels of resourcing of facilities and services, both capital and recurrent funding.
- Promote innovation and creativity between agencies in services delivery and integration
- Develop sustainable ownership, governance, management and maintenance arrangements for facilities.

---

<sup>7</sup> Social Infrastructure Assessment, page 18

## Community facilities demand assessment based on forecast demographics

The anticipated size and characteristics of the resident population in the Precincts is discussed in Part 3 of this Plan.

Various standards of provision for local and district community facilities have been adopted by the Department of Planning and Infrastructure (now DPIE), Camden Council and Liverpool City Council. The standards have been used as a basis for determining facility needs in the Austral and Leppington North Precincts as a whole.

A summary of these standards is included in Table 4.5.

**Table 4.5 Comparison of community facility provision standards**

Facility type	Former Department of Planning & Infrastructure & Growth Centres Commission standard	Camden Council standard	Liverpool City Council standard
Libraries	1 branch facility for each 33,000 persons	39 square metres per 1,000 persons + 20% circulation space	42 square metres per 1,000 persons
- Branch			
- District	1 district facility for each 40,000 persons		
Multi-purpose community centre in smaller activity centre	1 centre for each 6,000 persons Each centre with a size of 2,000-2,500 square metres	42 square metres per 1,000 persons 2.5 x floor area for land component	Indicative 1 centre for each 10,000 people, with an average size of 600 square metres for each centre  To be located in activity centres with shops, schools etc.  Facilities are to provide flexible multipurpose spaces and spaces for outreach services.  Smaller 600m <sup>2</sup> facilities contribute to the overall level of provision of 60-85m <sup>2</sup> per 1,000 people
Multipurpose community centres in larger activity centre	1 centre for each 20,000 persons 1 community service centre for each 60,000 persons	22 square metres per 1,000 persons 2.5 x floor area for land component	Indicative 1 centre for each 60,000 persons, with a built area of about 1,500 square metres  To be located in larger activity centres and commercial and transport hubs to provide flexible multipurpose spaces and provide a base for organisations and the delivery of services  Larger 1,500m <sup>2</sup> facilities contribute to the overall level of provision of 60-85m <sup>2</sup> per 1,000 people
Youth Centre	1 centre for each 20,000 persons	89 square metres per 1,000 persons + outdoor space	No longer provided by Council as a stand-alone purpose-built facility. The size and layout of multipurpose community facilities now provide appropriate and designated spaces for delivering youth services, programs and activities.  Outdoor spaces, like half-court basketball courts and skate parks, are now provided as standard for informal activities and programs for young people.

Sources: Social Infrastructure Assessment Table 8.1

## **Community and cultural facility requirements**

This Plan proposes to provide primarily for a residential population in a suburban setting. Regional level facilities are proposed to be provided in the Leppington Major Centre in Camden LGA. The community and cultural facilities proposed in the Precincts have either a local or district service catchment. This Plan nevertheless proposes that development contribute towards regional facilities that are located in Liverpool LGA, by providing its reasonable share towards the Regional Aquatic Centre including associated public art.

One of the four (4) proposed multi-purpose community centres has been scaled-up to service a district scale population of approximately 40,000 residents, which approximates the catchment of the Precincts. The other three (3) centres will provide for a neighbourhood catchment of approximately 10,000 residents each. The cost of these four facilities are shared equally across the entire Precincts incoming residential population.

## **Proposed community and cultural facility provision**

Regional infrastructure required on the northern fringe of the Leppington Major Centre and provided in the Precincts, and serving a surrounding population of around 120,000, includes the Regional Indoor Sports and Aquatic Centre. This centre is to be located on a 5 hectare site, including a 3 hectare facility and outdoor elements and 2 hectares for parking and landscaping. Building components include the following:

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

Local and district level infrastructure includes the following:

- A multi-purpose community centre in Austral of 1,500 square metres floor area, including a variety of flexible multi-purpose spaces suited to a range of community activities and programs. Also, the building is proposed to include office and service delivery areas for human services and spaces suitable for young people and older people.
- Three (3) multi-purpose community centres in other neighbourhood centres in the Precincts, each with an approximate building area of 750 square metres.

This Plan includes provision for the land and works associated with the multi-purpose facilities and capital works for the Regional Sports and Aquatic Centre, but acknowledges that only the land component for the community facilities is considered 'essential works'.

With respect to the Regional Sports and Aquatic Centre, the demand would be spread over a large catchment (120,000 residents). However, the centre is likely to be located on land majority owned by Council (including WV Scott Memorial Park) such that shared cost apportionment is not required under this Plan.

Council will seek funding from other sources to meet the balance of the cost of the capital works for the facility (as non-essential works).



## Location and staging matters

Facilities should generally be co-located with or adjacent to open space in activity centres. There are multiple ways to arrange the spaces and further planning should concentrate on combination and co-location options.

A number of sites have been identified in the ILP for these purposes but there is a significant amount of planning and acquisition of land required even before preliminary designs can be prepared.

The design of facilities will depend upon a variety of factors, including the availability of funds, the aspirations of the responsible council, and evolving best practice. Detailed needs and feasibility assessments need to be undertaken as the population of the area grows.

Existing higher order facilities in the surrounding region (including those in both the Liverpool and Camden LGAs) offer some opportunity to meet interim needs either in their current form or through expansion (for example, the Casula Powerhouse).

The general principle will be that the local and district community facilities will not be built until the surrounding population that each services has reached a threshold of 5,000 residents for the local centres and 30,000 for the larger district centre. Should the demand for two facilities require the facility to be constructed within a similar time-frame, Council must necessarily prioritise these so to manage the delivery as efficiently as possible within the constraints of funding and resources.

### 4.3.2 How are the contributions calculated?

Contributions will be collected from residential development toward community and cultural facilities identified under this Plan.

Monetary contributions are calculated on a per person or per resident basis, then factored up to a per lot or per dwelling amount.

The monetary contribution per person in a development containing residential dwellings or lots (whether or not that development also comprises non-residential floor space) is calculated as follows:

$$\text{Contribution per resident (\$)} = \sum \frac{(\$INF)}{P}$$

Where:

$\$INF$  = the estimated \$ cost - or if the facility is existing, the indexed, completed cost - of providing each of the community and cultural facilities (refer Part 5 – Works Schedule)<sup>8</sup>

$P$  = the estimated resident population (in persons) that will demand each facility - that is, the expected net additional population of the Precincts (refer Table 3.5)

The monetary contribution for different residential development types is determined by multiplying the contribution per person by the estimated increase in population as a result of the development and using the assumed occupancy rates included in clause 3.3.5 of this Plan.

For convenience, these rates are reproduced in Table 4.6.

<sup>8</sup> In the case of the regional facility, the cost is the cost fairly apportioned to the Precincts' expected population - that is, 41% of the total cost (see section on 'Community and cultural facility requirements' above).

**Table 4.6 Assumed residential development occupancy rates**

<b>Development type</b>	<b>Occupancy rate</b>
Subdivided lots	3.4 persons per lot
Detached dwelling, detached dual occupancy (each dwelling)	3.4 persons per dwelling
Semi-detached, town house, terrace, attached dual occupancy (each dwelling)	2.6 persons per dwelling
Flat, unit, apartment, secondary dwellings	1.8 persons per dwelling
Seniors living dwellings	1.5 persons per dwelling

## 4.4 Water cycle management facilities

### 4.4.1 What is the relationship between the expected types of development and the demand for additional public facilities?

Stormwater runoff in the Austral and Leppington North Precincts was proposed in precinct planning to be managed through a comprehensive Water Sensitive Urban Design (WSUD) approach.

Informed by a range of studies, the report *Austral and Leppington North Precincts Water Cycle Management WSUD Report* (the WSUD Strategy) prepared by Cardno Pty Ltd established the preliminary framework for the management of stormwater quantity and quality related to the expected urban development of the Precincts. This report was informed by other assessments and guiding standards, including:

- Cardno (2011), *Biodiversity Conservation Assessment*, Draft Final Report, prepared for the Department of Planning (now DPIE), January.
- Cardno (2011), *Riparian Corridor and Flooding Assessment*, Draft Final Report, prepared for the Department of Planning, February.
- GeoEnviro Consulting (2010), *Geotechnical, Salinity and Acid Sulfate Soil Investigation*, prepared for the Department of Planning, December.
- JBS Environmental (2010), *Preliminary Environmental Site Assessment*, Final report, prepared for the Department of Planning, December.
- Growth Centres Commission (2006), *Growth Centres Development Code*, November.

The main water management infrastructure was proposed to manage flooding within the project area and to minimise downstream impacts includes detention basins, trunk drainage pipes, overland flow paths/constructed channel systems, and culvert crossings. A series of bioretention systems and gross pollutant traps (GPTs) were also proposed to manage stormwater quality within the project area.

The WSUD Strategy acknowledged that development of an area:

- generates demand for water supply;
- requires management of wastewater as well as stormwater; and
- increases the area of impermeable surfaces and so exacerbates potential flooding issues, impacts on the quality of stormwater and potentially affects riparian corridors.

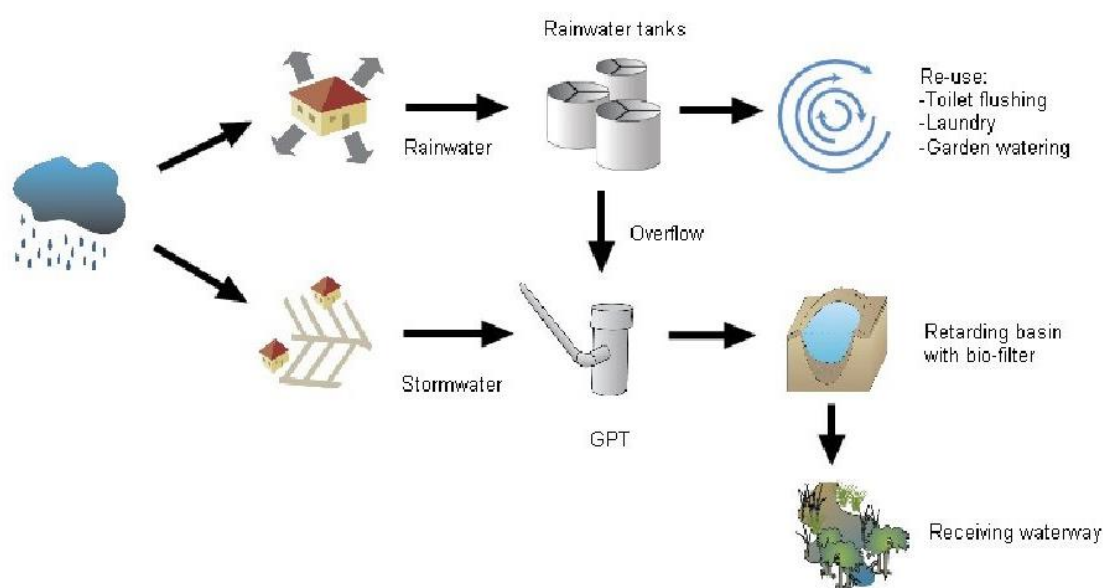
These water related issues are locality based and caused directly and solely by the development activity and so should be ameliorated by that same development activity.

To minimise the potential cost of the stormwater management scheme, the WSUD Strategy investigated the following:

- harvesting of rainwater for toilet, laundry and garden use in residential lots; and
- treatment measures to improve stormwater quality, promote infiltration and attenuate run-off to emulate a more natural rainfall/ runoff regime.

Figure 4.1 (over page) is a schematic describing the approach recommended with the WSUD strategy.

The schematic illustrates that 'rainwater' works will be required in conjunction with development consents for individual dwellings, while other ('stormwater') works relate to the broader catchment and so will be funded through development contributions obtained under this Plan.



Source: Austral and Leppington North Precincts Water Cycle Management WSUD Report, page 17

**Figure 4.1 Concept Stormwater Treatment Train**

### Refinements to the water cycle management strategy

SMEC Australia Pty Ltd (SMEC) was engaged by Council in 2018/19 to refine the water cycle management strategy and undertake investigation and detailed concept design of proposed flood mitigation, water quality control structures and other stormwater infrastructure within the Precincts. This resulted in certain changes to the originally proposed stormwater facilities as explained below.<sup>9</sup>

The concept design of the proposed stormwater management infrastructure was carried out by SMEC in two distinct phases.

The first phase involved a data review, preliminary ecological and environmental assessment, hydrologic and hydraulic modelling and the optimisation of the detention basin layout.

The second phase involved the preliminary concept design and the final detailed concept design of the water management facilities, as well as flood mapping, dam break assessment, additional topographic survey, investigation of utility conflicts, geotechnical assessment and the preparation of a more detailed Review of Environmental Factors (REF).

The basin optimisation and the concept design were carried out in accordance with the Australian Rainfall and Runoff (ARR2016) procedures. The basin optimisation study resulted in a reduced number of detention basins from the earlier WSUD Strategy, and some basins only being designed to control the 50% AEP flows. Another two basins were subsequently removed based on the results of further modelling during the concept design.

As a result of SMEC's findings, the Plan includes:

- eight detention basins designed to control the 50% and 1% AEP flows, and
- eleven basins designed to control only the 50% AEP flow.

<sup>9</sup> SMEC Australia (2019), Detailed Concept Design Report - Austral and Leppington North Design of Water Management Infrastructure, prepared for Liverpool City Council, March (SMEC Concept Design Report).

The remaining flood mitigation infrastructure such as trunk drainage pipes, channels, and culverts are designed to convey flows up to the 1% AEP event.

### **Adopting a systems-based approach to infrastructure design**

SMEC adopted a systems-based or integrated approach for the design of the water management infrastructure. There are 62 drainage systems and these were grouped into three categories as follows:

- Drainage systems with 1% AEP basins
- Drainage systems with 50% AEP basins
- Drainage systems without basins.

A typical drainage system with a basin includes trunk drainage pipes and channels, a detention basin and water quality controls such as GPT/sedimentation pond, biofilters and raingardens. The need for culverts along the major creeks and creek enhancement works have also been identified (see the sections below).

Only eight of the non-basin drainage systems include trunk infrastructure works (either pipe or channel). Streetscape raingardens will be implemented throughout these drainage systems to manage stormwater quality. The drainage and water quality control systems and general locations of proposed trunk infrastructure and streetscape raingardens, are shown in Figures 4.2, 4.3, 4.4 and 4.5 on the following pages.

### **Supplementary streetscape raingardens**

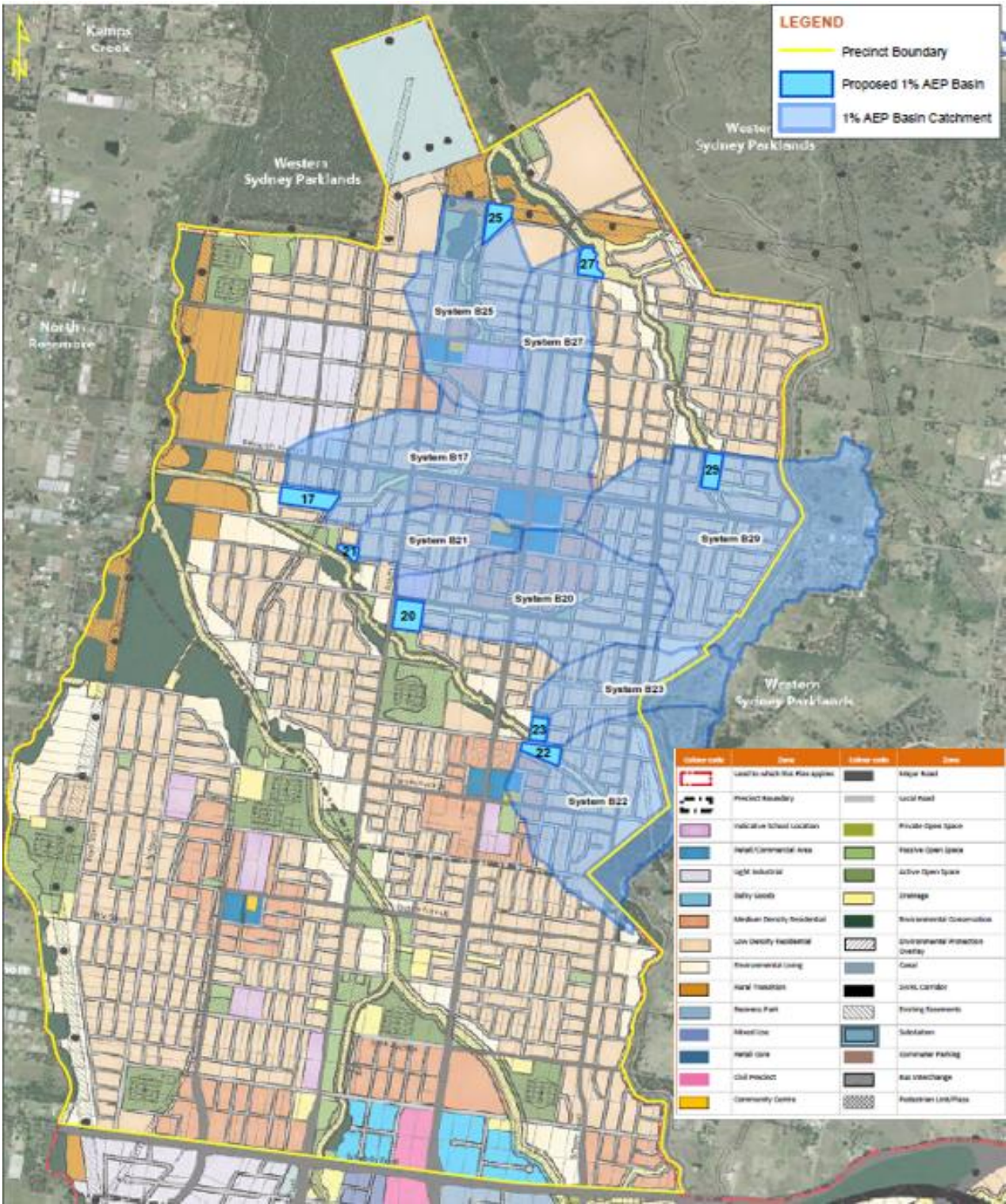
The earlier WSUD Strategy recommended an end-of-pipe approach to managing stormwater quality, by either co-locating bioretention and detention basins or providing stand-alone end-of-pipe biofilters. Although a treatment train approach was advocated, most of the water quality improvement was to be achieved by the end-of-pipe bioretention basins. However, it is not possible to operate a biofilter in some basins due to hydraulic constraints.

Additionally, due to the limited footprint area, the majority of the co-located biofilters were undersized relative to their catchments. Therefore, supplementary streetscape controls (i.e. raingardens) are proposed to meet the water quality treatment targets and replace the stand-alone end-of-pipe biofilters.

For drainage systems with biofilters co-located within detention basins, the required supplementary streetscape raingarden area is defined as a percentage of the total catchment. For drainage systems without co-located biofilters, a minimum raingarden area is defined as a percentage of the development area, based on land use.

SMEC developed a water quality control strategy as shown in Figure 4.5. Its subsequent report (*Final Design Report – Development of Streetscape Raingarden Master Plan for Austral and Leppington North*, February 2021) provided the design procedures and considerations adopted for the development of the Precincts' streetscape raingarden master plan.

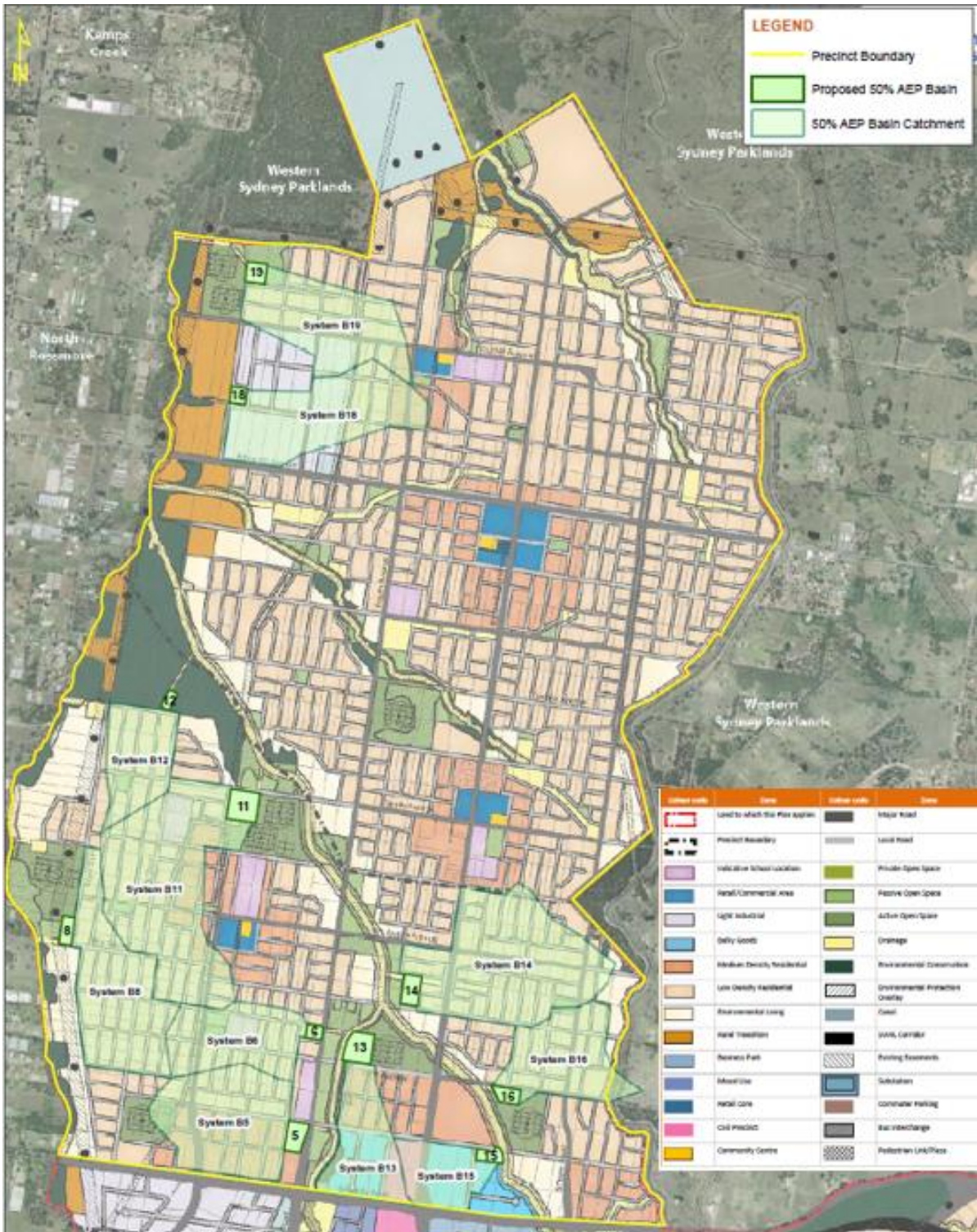
Consistent with this master plan, the Plan includes streetscape raingarden works at 181 intersections, 383 T-junctions and 29 road bends.



Source: SMEC Concept Design Report, page 58.

Figure 4.2 Drainage catchments with 1% AEP basins





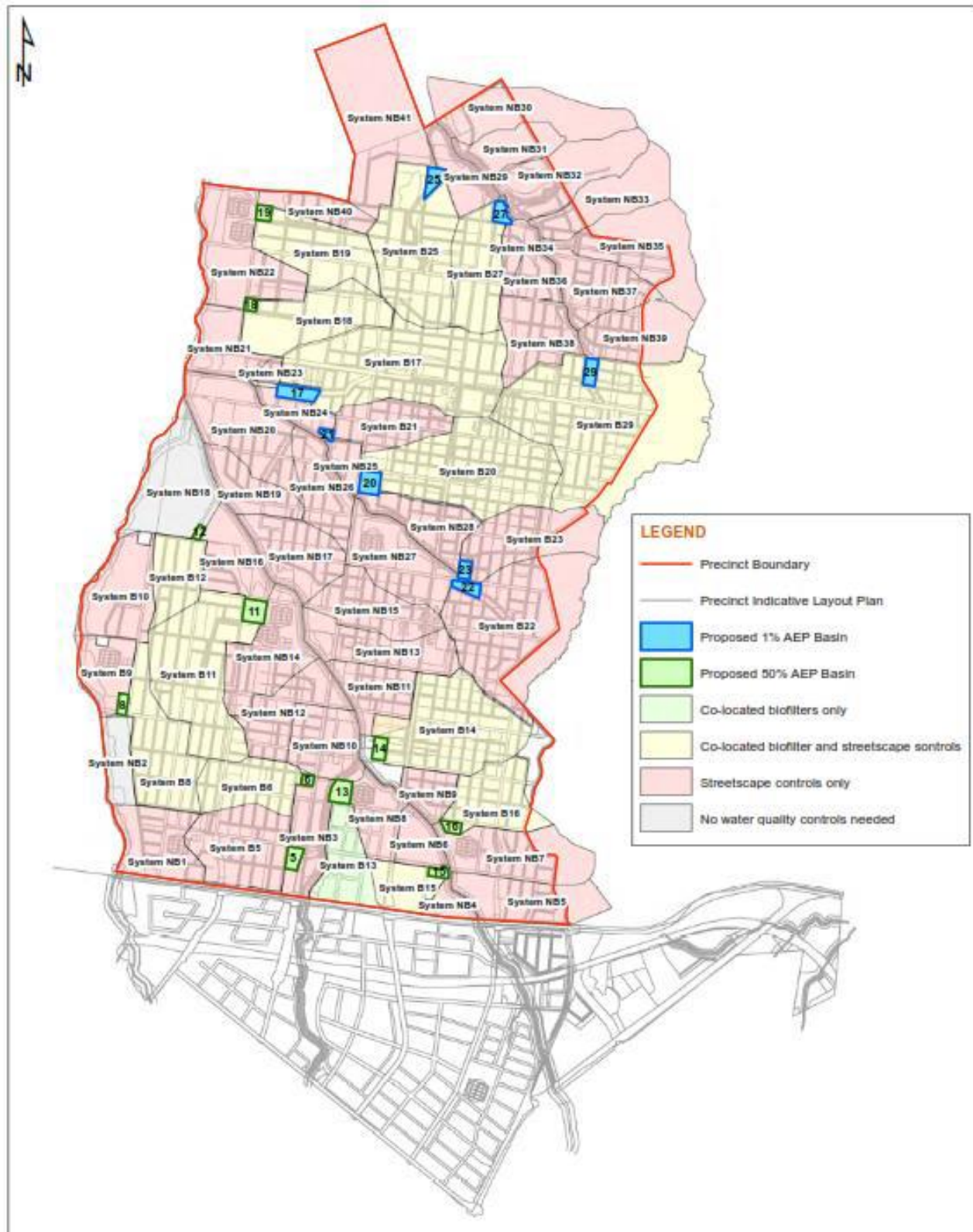
Source: SMEC Concept Design Report, page 98.

Figure 4.3 Drainage catchments with 50% AEP basins



**Figure 4.4 Drainage systems without basins**





Source: SMEC, *Final Design Report – Development of Streetscape Raingarden Master Plan for Austral and Leppington North*, prepared for Liverpool City Council, 10 February 2021, page 5.

Note: the actual locations of streetscape raingardens are to be in accordance with the Streetscape Raingarden Master Plan Map in Appendix B of SMEC's Streetscape Raingarden Master Plan.

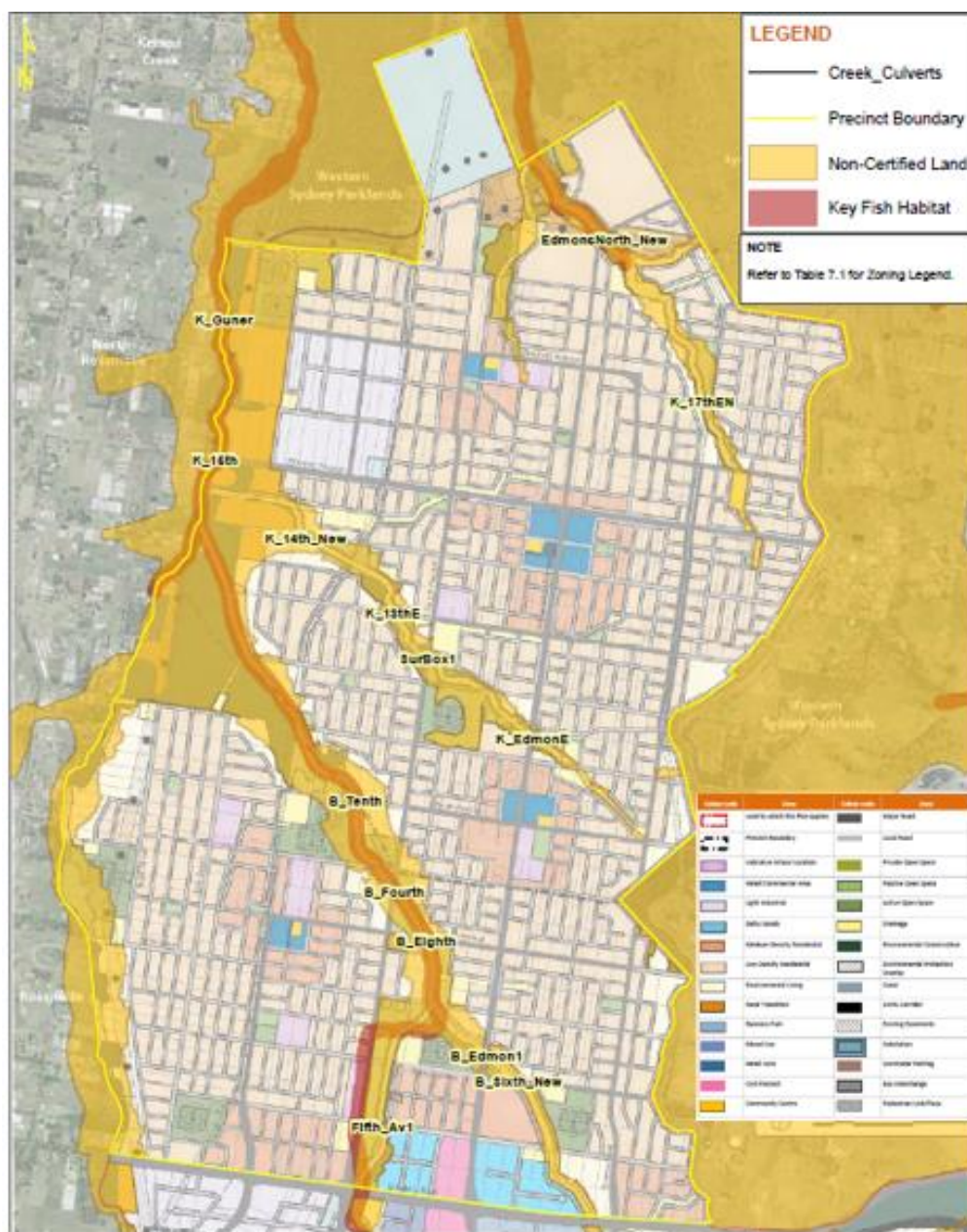
Figure 4.5 Water quality control strategy

## Creek enhancement works

In addition to the design of the drainage and water quality infrastructure, creek enhancement works (i.e. filling of flood fringe areas up to the post development 1% AEP flood level), were proposed to maximise development potential. SMEC's modelling results indicated that the 1% AEP flood levels were increased in some locations because of the filling, but the increases were not significant. Therefore, for future development the post development 1% AEP flood levels (with filling) should be adopted as the flood planning level.

## Creek culverts

This Plan also includes 8 creek culverts based on SMEC's recommendations to remove 14 existing culverts, redesign nine existing culverts and add three new culverts compared with the earlier WSUD Strategy. The 12 creek culvert locations are shown in Figure 4.6.



Source: SMEC Concept Design Report, page 179.

### Figure 4.6 Creek culverts

SMEC Australia provided Council with updated cost estimates for each of the stormwater infrastructure facilities<sup>10</sup> and Council has adopted these estimates with some revisions, mainly to reflect a lower allowance for contaminated soil disposal but also to ensure consistency of costing assumptions and that culverts are not double counted with the road costings. A contingency is still retained in the cost estimates to account for the major risks in delivering the infrastructure which were identified by SMEC. These risks include the possible variations to the finished design surface levels, conflicts with other utility infrastructure, the need to dispose of contaminated soil offsite and soft soil conditions<sup>11</sup>.

More detail on all of the drainage systems and infrastructure items and their costs (for which contributions are collected under this Plan) are included in the maps and schedules included in Part 5. Council will encourage the provision of water cycle management facilities as Works In Kind in conjunction with the civil works undertaken as part of land subdivision.

A range of 'non-trunk' reticulation works not addressed by this Plan will also be required to be undertaken directly by the developer as conditions of consent under section 4.17(1)(f) of the EP&A Act. The facilities may include lot-scale on-site detention (OSD) basins, rainwater tanks, construction of kerb, gutter and piping in local roads, installation of drainage pits and grates, and pipe connections to the trunk drainage network.

#### **4.4.2 How are the contributions calculated?**

Contributions are determined on a Net Developable Area basis.

The monetary contribution per hectare is calculated as follows:

$$\text{Contribution per hectare of equivalent net developable land (\$)} = \sum \frac{(\$INF)}{NDA}$$

Where:

**\$INF** = the estimated cost, or if the facility has been completed, the indexed actual cost, of providing each of the water cycle management infrastructure items in the area to which this Plan applies (refer Part 5 – Works Schedule)

**NDA** = the total area of equivalent net developable land (in hectares) that will generate demand for facilities – refer to Table 3.3 of this Plan

To determine the total contribution that would apply to a proposed development, multiply the contribution rate by the amount of net developable land (in hectares) on the site the subject of the proposed development.

<sup>10</sup> SMEC Concept Design Report, pp 210-211 and SMEC, *Final Design Report – Development of Streetscape Raingarden Master Plan for Austral and Leppington North*, prepared for Liverpool City Council, 10 February 2021, Appendix D.

<sup>11</sup> SMEC Concept Design Report, pp x-xi.

## 4.5 Transport management facilities

### 4.5.1 What is the relationship between the expected types of development and the demand for additional public facilities?

Occupants of expected development in the Precincts will utilise a transport network comprising:

- facilities for private vehicles, including roads and intersections;
- facilities for public transport, including rail and bus facilities focused on the planned Leppington railway station; and
- facilities for walking and cycling.

The existing transport network, including the network for pedestrians and cyclists, has been planned to serve existing and approved developments (that is, predominantly rural residential developments) in the area, and not the future development envisaged for the area.

The ILP for the Austral and Leppington North Precincts and the *Austral and Leppington North (ALN) Precincts Transport Assessment* prepared by AECOM (the 'Transport Assessment') together identify a range of transport infrastructure works that will be required to mitigate the impacts and otherwise accommodate the expected development.

Details of:

- the assumptions of expected land use and development;
- the methodology used to determine the need for transport facilities attributable to the expected development in the Austral and Leppington North Precincts; and
- the scope and specification of those facilities,

are contained in the Transport Assessment.

The following is a summary of the approach utilised in the Transport Assessment for planning for the transport needs in the Precincts.

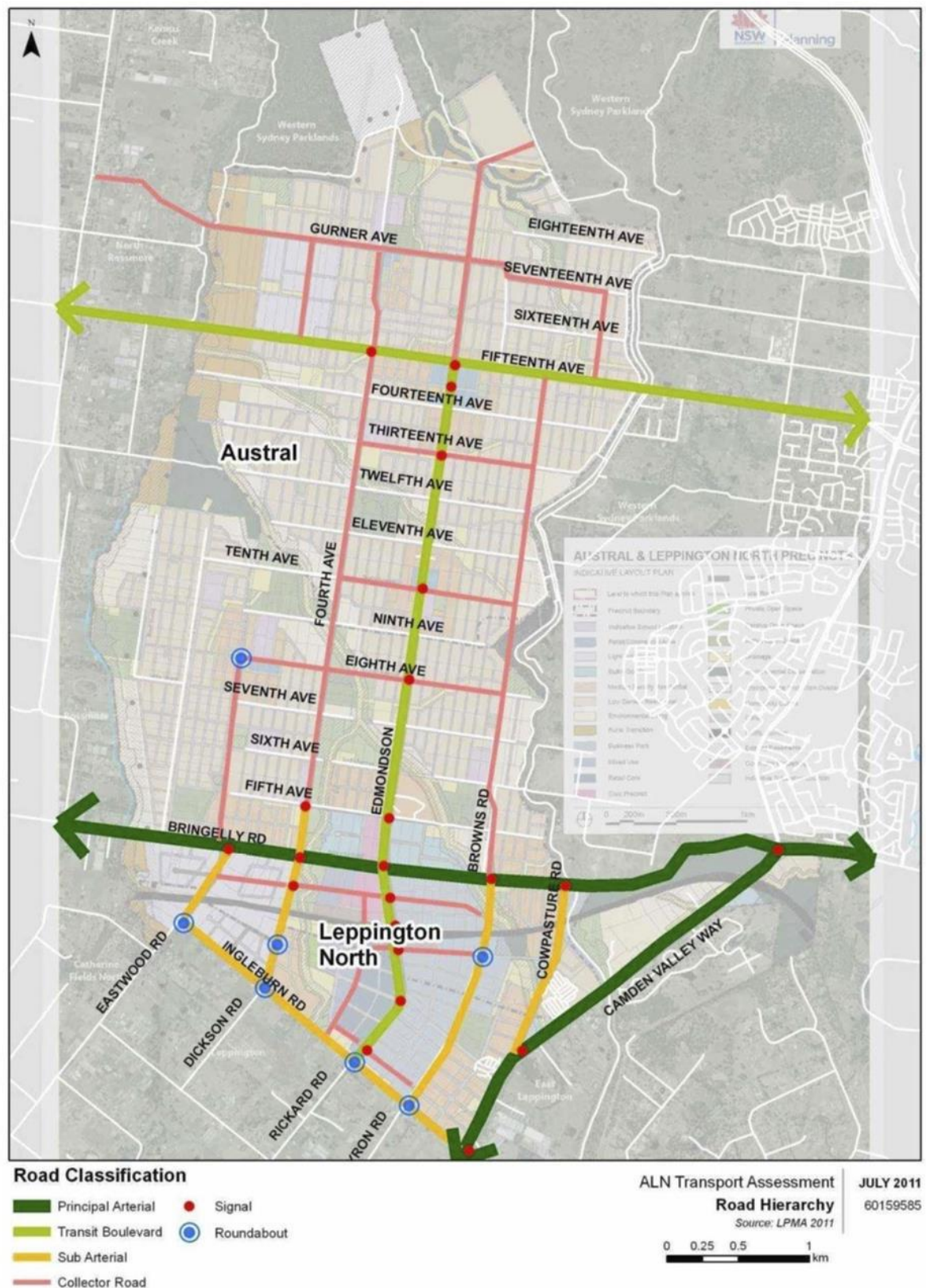
### Proposed road and intersection hierarchy

The proposed road network complements a broader hierarchy envisaged for the South West Growth Area.

The proposed hierarchy comprises 'principal arterial', 'transit boulevard', 'sub arterial' and 'collector' roads. These will connect to a network of existing and new roads in adjoining Growth Area Precincts. Following finalisation of the ILP a road safety assessment of the proposed street network was undertaken by Council. As a result additional roundabouts were found necessary and are included in the contributions plan.

The proposed road hierarchy and intersection treatments for the future development of the Austral and Leppington North Precincts are shown in Figure 4.7.





Source: Transport Assessment, Figure 13

Figure 4.7 Proposed road hierarchy and intersection treatments – Austral and Leppington North Precincts

## **Proposed walking and cycling facilities**

Providing viable alternatives to the private car for journeys with destinations both within and outside the development area is viewed as essential to encouraging sustainable development. A comprehensive bicycle network is proposed for both the Austral and Leppington North Precincts, which will link the centres, schools, transport nodes and various residential neighbourhoods with key strategic routes and onward destinations.

The proposed network will include a mixture of dedicated bicycle facilities that will take the form of:

- Off-Road (Shared Path);
- On-Road (Cycle Lane); and
- On-Road (Signed Route).

All proposed roads throughout the Austral and Leppington North Precincts will have dedicated pedestrian footpaths. Footpaths will be provided in conjunction with the adjacent road project with an increased width of footway allowed for – i.e. 1.2 to 2.5m.

Leppington North Precinct will be a focus for walking and cycling trips because of the location of the Leppington Major Centre but there is proposed to be a similar level of provision in the Austral Precinct. In addition, an off-road cycleway is proposed to be provided along the edge of the Western Sydney Parklands. This facility to be funded from sources apart from development contributions.

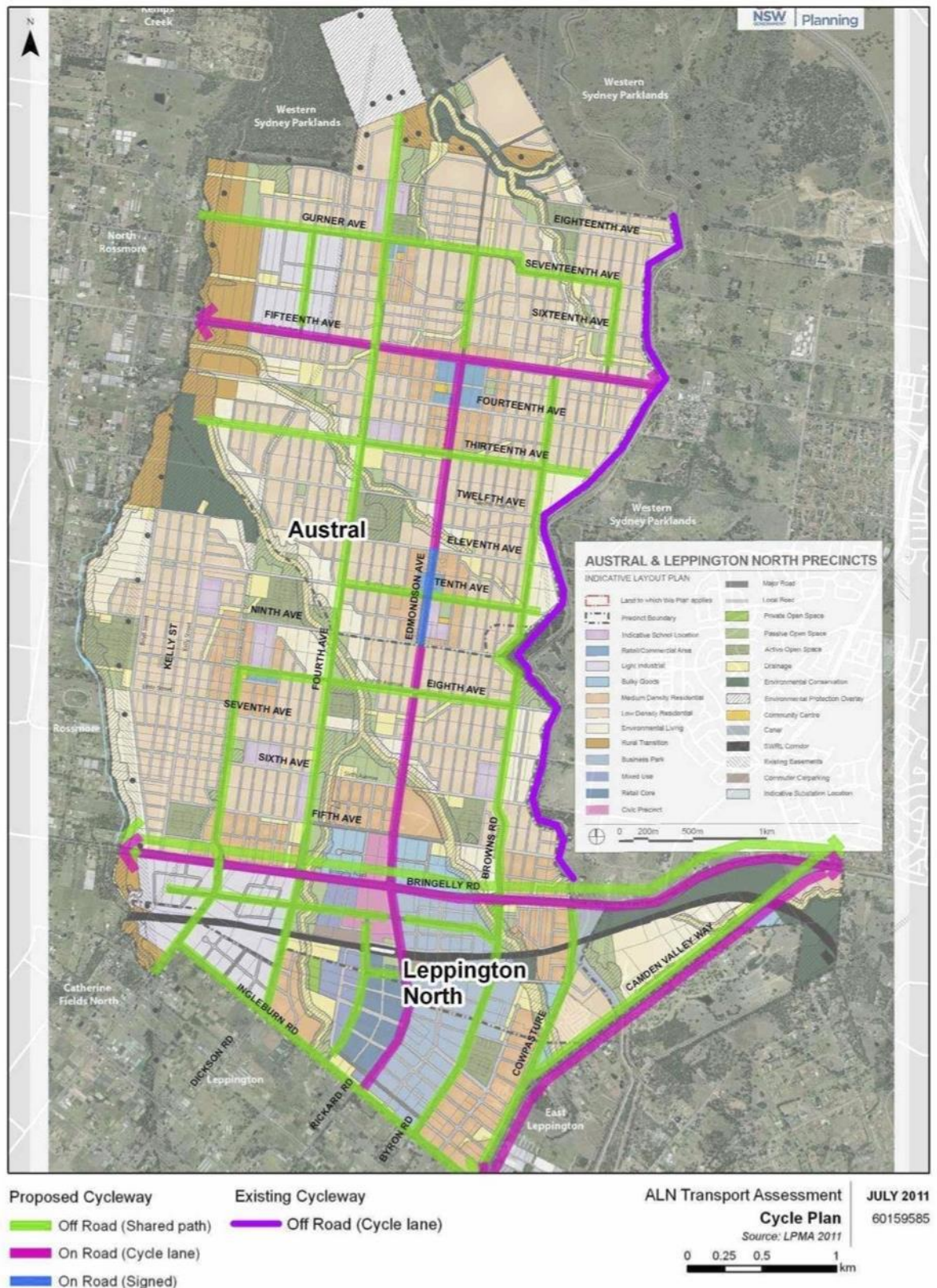
Figure 4.8 over page shows the proposed walking and cycle network for Leppington North Precinct.

## **Public transport facilities**

The Austral and Leppington North Precincts are proposed to benefit from good public transport accessibility through the South West Rail Line and a comprehensive proposed bus network and bus servicing strategy linking key centres, transport nodes, schools, employment opportunities and residential areas.

The only public transport work addressed by this Plan is the proposed provision of bus shelters to serve bus routes throughout the Precincts. All other public transport works, apart from the roads and intersections that will cater for buses and other general traffic and bus shelters, are not addressed by this Plan and will be delivered using funding and delivery mechanisms apart from development contributions.





Source: Transport Assessment, Figure 25

Figure 4.8 Proposed walkways and cycleways

## Funding and delivery dependent on road hierarchy

Some of the required transport works are to meet a regional demand that extends beyond the Precincts boundary to the remainder of the South West Growth Area.

The State Government has identified a number of works in the Precincts that are intended to be provided through the State budget or through Special Infrastructure Contributions under the EP&A Act (refer to *Environmental Planning and Assessment (Special Infrastructure Contribution - Western Sydney Growth Areas) Determination 2011*). The works include arterial road and public transport links as well as rail and bus passenger transport facilities (such as interchanges and bus shelters on roads to be funded via Special Infrastructure Contributions).

Figure 4.9 over page shows the major road infrastructure planned to be provided across both the Austral and Leppington North Precincts, including delineation of those roads that are intended to be funded via Special Infrastructure Contributions.

Special Infrastructure Contributions will be imposed via conditions of consent on developments in the Precinct. More details on the applicability of Special Infrastructure Contributions can be found by accessing the DPIE's website.

Planned higher order roads for the Precinct not covered by State Government funding are to be provided by councils. They are usually funded through land or monetary development contributions but are often constructed as Works In Kind by the developer (that is, works carried out instead of, or as payment towards, a development contribution). Such roads can be constructed by the developer through a Works In Kind agreement at the time of subdivision and dedicated to the local council as public roads once constructed.

Collector roads may be delivered by a combination of development contributions and direct provision by developers as a condition of development consent. Usually, where private development lots front onto a collector road then that road is usually provided by the developer as part of the subdivision works. On existing streets, half frontages to open space and drainage will be funded by contributions.

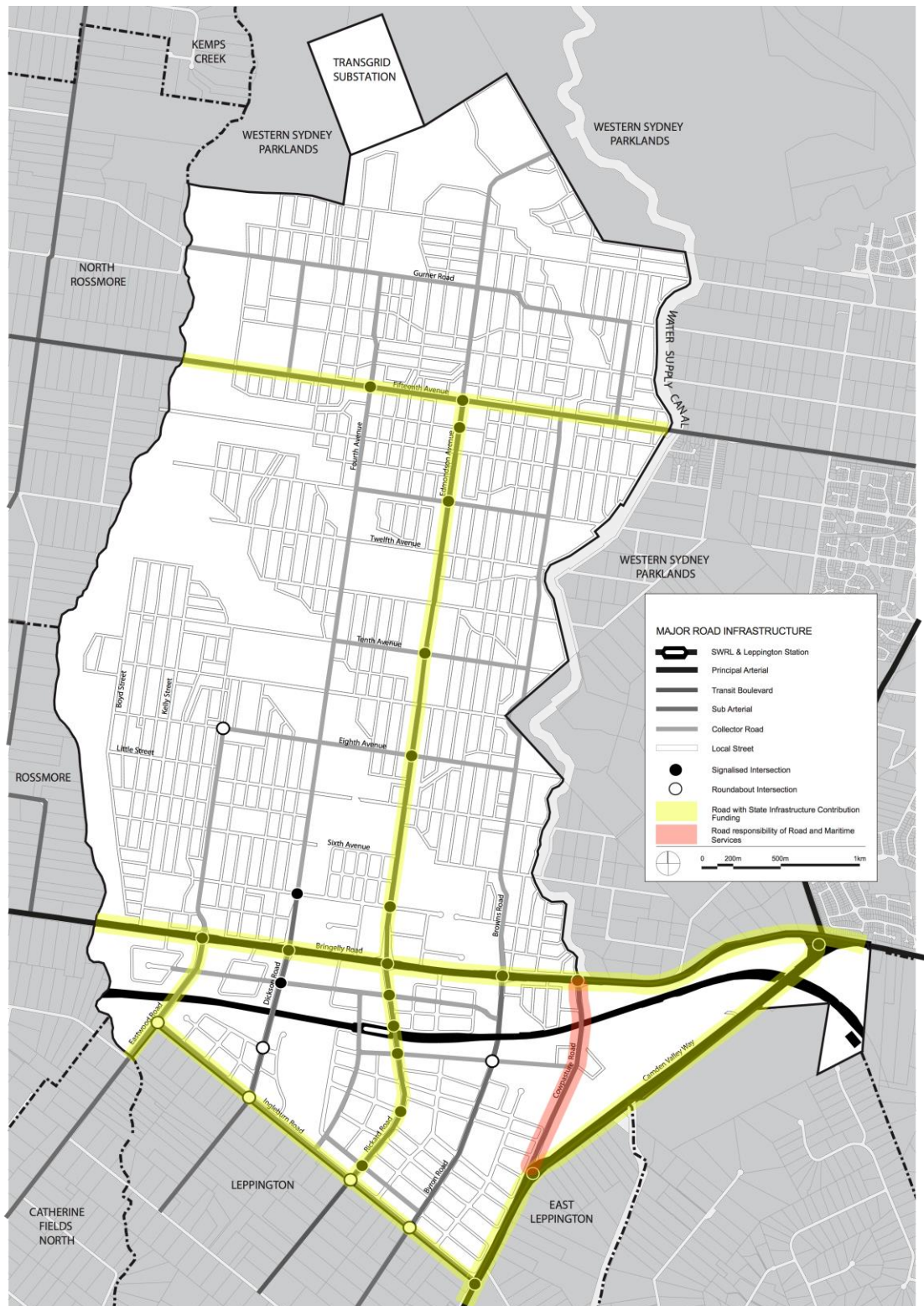
New local roads are also usually provided by developers as, in most cases, they have private lots fronting onto them and are needed for the development to function safely. In this Plan there are a number of works defined as 'new road half-width' and 'upgrade road half-width'. These works relate to circumstances where the 'half-road' does not adjoin private land and is therefore not able to be provided by that development. Roads in front of public parks fall into this category.

Roads that do not or will not have development fronting them - such as bridges and crossings of open space - are often funded through development contributions. In some cases, development will front a road that is half on the adjoining property and in turn fronts open space. In this situation it would be difficult to construct the road without contributions.

For public schools only two frontages are expected to be funded by the school. In some cases frontages to a school site on an existing street will be funded by contributions.

The selection of some facilities for inclusion in this Plan has also been based on the land ownership arrangement given that there may be difficulty in developers providing key transport links through parts of the Precincts where the ownership is fragmented. The integrated use of the different implementation mechanisms cited above will result in the transport infrastructure that is required as a consequence of the expected development in the Precincts being provided.





Source: Department of Planning and Infrastructure (now DPIE)

Figure 4.9 Planned major road infrastructure - Austral and Leppington North Precincts

## Infrastructure works identified in this Plan

Works the subject of a development contribution condition that are addressed under this Plan include the following and a detailed list is included in the Works Schedules in Part 5 of this Plan:

- Approximately 12.5 kilometres of new roads or road upgrades for full or half road widths as required;
- 11 pedestrian crossings (plus road sections over creek culverts and crossings otherwise in drainage costs)
- Fifty (50) pedestrian refuge crossings or thresholds;
- 10 intersections (9 new roundabouts and one new signalized intersection); and
- Forty-two (42) bus shelters.

### 4.5.2 How are the contributions calculated?

The determination of reasonable contribution rates for transport facilities in development contributions plans is often based on the number of vehicle trips generated by development. Apportionment to the different classes of development (that is, residential, commercial, employment, etc.) of the costs of facilities that are determined on a per trip basis is then derived by calculating the degree to which the traffic generated by each land use class will use the different road links and intersections included in the contributions plan.

However, at the time of preparing this Plan, there has been limited knowledge of likely trip origins and destinations by different development classes available to inform this method of apportionment.

This Plan instead determines contributions for traffic and transport facilities by first splitting the costs between residential and non-residential development based on the relative net developable areas of each class of development. It then levies residential development its share of the costs on a per person basis and non-residential development its share of costs on a net developable land basis.

The per resident approach for residential development is considered to best reflect the demand for traffic and transport facilities by the additional population. The net developable land area approach for determining contributions for non-residential development is considered reasonable because the land use mix and employment numbers attributable to the different non-residential land uses expected in the Precinct have been assessed only at a strategic network level at the time of preparing this Plan.

### Formula for Residential Development

Contributions will be collected from residential development toward road and transport facilities identified under this Plan.

Monetary contributions are calculated on a per person or per resident basis, then factored up to a per lot or per dwelling amount.

The monetary contribution per person in a development containing residential dwellings or lots (whether or not that development also comprises non-residential floor space) is calculated as follows:

$$\text{Contribution per resident (\$)} = \sum \frac{(\$INF)}{P}$$

Where:

$\$INF$  = apportioned share to residential development (93.06%) of the estimated \$ cost - or if the facility is existing, the indexed, completed cost - of providing each of the road and transport facilities (refer Part 5 – Works Schedule).

$P$  = the estimated resident population (in persons) that will demand each facility - that is, the expected net additional population of the Precincts (refer Table 3.5)

The monetary contribution for different residential development types is determined by multiplying the contribution per person by the estimated increase in population as a result of the development and using the assumed occupancy rates included in clause 3.3.5 of this Plan.

For convenience, these rates are reproduced in Table 4.7.

**Table 4.7 Assumed residential development occupancy rates**

Development type	Occupancy rate
Subdivided lots	3.4 persons per lot
Detached dwelling, detached dual occupancy (each dwelling)	3.4 persons per dwelling
Semi-detached, town house, terrace, attached dual occupancy (each dwelling)	2.6 persons per dwelling
Flat, unit, apartment, secondary dwellings	1.8 persons per dwelling
Seniors living dwellings	1.5 persons per dwelling

### Formula for Non-Residential Development

Contributions for non-residential development are determined on a Net Developable Area basis.

The monetary contribution per hectare is calculated as follows:

$$\text{Contribution per ha of equivalent net developable land (\$)} = \sum \frac{(\$INF)}{NDA}$$

Where:

**\$INF** = the apportioned share to non-residential development (6.94%) of the estimated cost, or if the facility has been completed, the indexed actual cost, of providing each of the transport management infrastructure items in the area to which this Plan applies (refer Part 5 – Works Schedule).

**NDA** = the total area of equivalent net developable land (in hectares) that will generate demand for each facility by non-residential development – refer to Table 3.3 of this Plan.

To determine the total contribution that would apply to a proposed non-residential development, multiply the contribution rate by the amount of equivalent net developable land (in hectares) on the site the subject of the proposed development.

## 4.6 Plan management and administration

### 4.6.1 What is the relationship between the expected types of development and the demand for additional public facilities?

Councils incur significant costs in the preparation and administration of contributions plans.

Council staff are deployed to:

- prepare and review contributions plans;
- account for contributions receipts and expenditure; and
- co-ordinate the implementation of contributions plans and works, including involvement in negotiating Works in Kind and material public benefit agreements.

Consultant studies are also commissioned by Council from time to time in order to determine the value of land to be acquired, the design and cost of works, as well as to review the development and demand assumptions of the contributions plan. Council is also required to engage the services of legal professionals from time to time to assist it in the administration of this Plan.

As these costs arise directly as a result of the development in the Plan area, it is reasonable that the costs associated with preparing and administering this Plan be recouped through contributions from development.

Costs associated with the ongoing administration and management of the Plan will be levied on all applications that are required to pay a development contribution.

Costs included in this Plan for these purposes are determined are based on the recommended rate by IPART, being 1.5% of the cost of works.

### 4.6.2 Calculation of contributions

Contributions will be collected from development toward Plan preparation and administration activities.

The monetary contribution per hectare of net developable land is calculated as follows:

$$\text{Contribution per ha of equivalent net developable land (\$)} = \sum \frac{(\$INF)}{NDA}$$

Where:

\$Admin = 1.5% of capital works costs in accordance with IPART's benchmark (refer Part 5 – Works Schedule)

NDA = the total area of equivalent net developable land (in hectares) of the area to which this Plan applies as shown in Table 3.3 of this Plan.

To determine the total contribution that would apply to a proposed development, multiply the contribution rate by the amount of equivalent net developable land (in hectares) on the site the subject of the proposed development.

## 5 Works Schedules and Map

### Works Schedules

The schedules contained in this section are extracted from the following MS Excel spread sheet:

Liverpool S7.11 Schedules March 2021.xlsx

The spread sheet also contains details on the components of each facility, as well as the assumptions informing the calculation of costs included in this Part. Refer to the source spread sheet file for more information on works and land items included in this Plan.

### Infrastructure Map

The infrastructure referred to in the contributions plan is shown on the Austral Leppington North Infrastructure Map, which is a separate document. This map can be viewed at a large scale and shows all the infrastructure items on the one map in relation to property boundaries and the proposed local streets under the ILP.

The map can also be viewed using council's online mapping service at [www.eplanning.liverpool.nsw.gov.au](http://www.eplanning.liverpool.nsw.gov.au).

## 5.1 Open space and recreation facilities

### Land

Item	Facility	Area (ha)	Cost
	Future Land Acquisition		
LALP	Local passive open space facilities	36.5056	\$98,662,549
LALS	Local sporting field facilities	26.3658	\$75,654,487
LADP	District passive open space facilities	34.6994	\$78,489,715
LADS	District sporting field facilities	9.0691	\$27,676,785
	Subtotal	106.6399	\$280,483,536
	Land Acquisition Contingency		\$33,658,024
<b>TOTAL ESSENTIAL OPEN SPACE INFRASTRUCTURE LAND ACQUISITION COSTS</b>		<b>106.6399</b>	<b>\$314,141,561</b>

Staging / Priority of infrastructure - when surrounding development proceeds.

#### LALP - Local Passive Open Space

Item	Area (ha)	Acquisition Cost
LP2	1.6146	\$6,288,602
LP4	0.4661	\$1,815,356
LP5	1.8031	\$2,104,541
LP6	0.5036	\$1,961,384
LP7	0.6757	\$3,328,196
LP8	2.3162	\$2,910,269
LP10	1.3320	\$1,327,910
LP11	1.4399	\$2,077,918
LP12	1.2173	\$1,341,376
LP13	0.9572	\$1,038,684
LP16	0.6532	\$2,361,725
LP17	0.6713	\$2,614,603
LP22	1.2139	\$5,909,926
LP25	0.9098	\$1,406,986
LP26	0.1708	\$264,139
LP27	0.4352	\$1,695,032
LP28	0.6337	\$700,034
LP29	1.3538	\$3,246,563
LP30	0.4333	\$578,853
LP31	0.5520	\$704,822
LP32	2.1575	\$3,314,017
LP33	0.5072	\$883,458
LP34	0.3354	\$938,776
LP35	0.8813	\$3,453,239
LP39	0.5964	\$2,322,767
LP40	0.5879	\$2,896,073
LP44	0.4985	\$1,674,377
LP45	2.1657	\$8,013,006
LP46	0.2426	\$251,240
LP49	0.5679	\$1,177,967
LP50	0.4252	\$265,700

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Item	Area (ha)	Acquisition Cost
LP51	0.3487	\$870,182
LP52	0.1733	\$425,862
LP53	0.3139	\$1,546,340
LP55	0.5859	\$2,886,151
LP56	0.3316	\$1,405,380
LP57	0.1351	\$58,446
LP58	0.1913	\$744,890
LP59	0.2575	\$1,003,026
LP60	0.3275	\$1,275,588
LP61	0.2725	\$1,061,201
LP62	1.2146	\$4,730,628
LP63	0.0325	\$126,753
LP64	2.3271	\$9,063,651
LP65	0.2558	\$996,262
LP66	1.4202	\$3,600,650

**LADP - District Passive Open Space**

Item	Area (ha)	Acquisition Cost
DP2	3.6531	\$4,016,423
DP3	3.9971	\$10,184,600
DP4	2.2378	\$3,587,716
DP5	2.0380	\$3,359,464
DP6	6.1467	\$18,241,572
DP7	0.3658	\$246,555
DP8	0.5594	\$2,178,771
DP9	0.3295	\$1,283,348
DP10	10.4330	\$20,729,299
DP11	4.1797	\$12,608,618
DP12	0.7593	\$2,053,349

**LALS - Local Sporting Fields**

Item	Area (ha)	Acquisition Cost
LS1	5.7054	\$23,692,025
LS4	6.0676	\$17,899,504
LS8	2.6640	\$4,970,420
LS9	11.9288	\$29,092,539

**LADS - District Sporting Fields**

Item	Area (ha)	Acquisition Cost
DS1	9.0691	\$27,676,785

## Works

Item	Area (ha)	Cost	Project On Costs	Demolition Allowance	Total Cost
Local Passive Open Space embellishment					
LP2	1.6146	\$1,277,577	\$348,778	\$57,514	\$1,683,869
LP4	0.4661	\$357,037	\$97,471	\$0	\$454,508
LP5	1.8031	\$1,420,539	\$387,807	\$28,757	\$1,837,103
LP6	0.5036	\$383,829	\$104,785	\$0	\$488,615
LP7	0.6757	\$506,796	\$138,355	In DC15	\$645,152
LP8	2.3162	\$1,767,393	\$482,498	\$0	\$2,249,891
LP10	1.3320	\$963,262	\$262,970	\$57,514	\$1,283,746
LP11	1.4399	\$1,040,900	\$284,166	\$0	\$1,325,066
LP12	1.2173	\$984,381	\$268,736	\$0	\$1,253,117
LP13	0.9572	\$700,409	\$191,212	\$0	\$891,621
LP16	0.6532	\$489,718	\$133,693	\$0	\$623,412
LP17	0.6713	\$503,679	\$137,504	\$0	\$641,183
LP22	1.2139	\$991,234	\$270,607	\$86,270	\$1,348,112
LP25	0.9098	\$674,112	\$184,033	\$28,757	\$886,901
LP26	0.1708	\$122,055	\$33,321	\$0	\$155,376
LP27	0.4352	\$334,960	\$91,444	\$57,514	\$483,918
LP28	0.6337	\$472,007	\$128,858	\$57,514	\$658,378
LP29	1.3538	\$1,084,430	\$296,049	\$57,514	\$1,437,993
LP30	0.4333	\$330,140	\$90,128	In DC25	\$420,268
LP31	0.5520	\$414,443	\$113,143	In DC25	\$527,586
LP32	2.1575	\$1,658,141	\$452,672	\$28,757	\$2,139,570
LP33	0.5072	\$359,527	\$98,151		\$457,677
LP34	0.3354	\$236,762	\$64,636	\$0	\$301,398
LP35	0.8813	\$752,226	\$205,358	\$0	\$957,584
LP39	0.5964	\$450,134	\$122,887	\$0	\$573,020
LP40	0.5879	\$444,107	\$121,241	\$28,757	\$594,105
LP44	0.4985	\$380,210	\$103,797	\$0	\$484,008
LP45	2.1657	\$1,570,562	\$428,763	\$0	\$1,999,326
LP46	0.2426	\$171,261	\$46,754	\$0	\$218,015
LP49	0.5679	\$424,668	\$115,934	\$28,757	\$569,359
LP50	0.4252	\$297,099	\$81,108	\$0	\$378,207
LP51	0.3487	\$270,754	\$73,916	\$28,757	\$373,427
LP52	0.1733	\$122,462	\$33,432	\$0	\$155,894
LP53	0.3139	\$248,297	\$67,785	\$0	\$316,082
LP55	0.5859	\$542,478	\$148,097	\$0	\$690,575
LP56	0.3316	\$260,909	\$71,228	\$0	\$332,138
LP57	0.1351	\$93,861	\$25,624	\$0	\$119,485
LP58	0.1913	\$160,633	\$43,853	\$0	\$204,485
LP59	0.2575	\$207,994	\$56,782	\$0	\$264,777
LP60	0.3275	\$258,003	\$70,435	\$0	\$328,437
LP61	0.2725	\$218,668	\$59,696	\$0	\$278,364
LP62	1.2146	\$891,916	\$243,493	\$0	\$1,135,410
LP63	0.0325	\$47,220	\$12,891	\$0	\$60,111
LP64	2.3271	\$1,686,918	\$460,529	\$0	\$2,147,447
LP65	0.2558	\$206,753	\$56,444	\$0	\$263,197



Item	Area (ha)	Cost	Project On Costs	Demolition Allowance	Total Cost
LP66	1.4202	\$1,034,533	\$282,427	\$0	\$1,316,960
Subtotal	36.5056	\$27,814,998	\$7,593,494	\$546,378	\$35,954,870

District Passive Open Space embellishment

DP2	3.6531	\$2,969,562	\$810,691	\$115,027	\$3,895,280
DP3	3.9971	\$2,818,729	\$769,513	\$86,270	\$3,674,512
DP4	2.2378	\$1,517,198	\$414,195	\$86,270	\$2,017,664
DP5	2.0380	\$1,814,308	\$495,306	\$115,027	\$2,424,641
DP6	6.1467	\$4,591,267	\$1,253,416	\$115,027	\$5,959,710
DP7	0.3658	\$254,215	\$69,401	\$0	\$323,615
DP8	3.7543	\$2,962,782	\$808,840	\$0	\$3,771,622
DP9	0.3295	\$917,902	\$250,587	\$57,514	\$1,226,003
DP10	10.4330	\$7,496,497	\$2,046,544	\$57,514	\$9,600,554
DP11	6.4326	\$4,702,158	\$1,283,689	\$0	\$5,985,847
DP12	0.7593	\$509,499	\$139,093	\$57,514	\$706,105
Subtotal	40.1472	\$30,554,117	\$8,341,274	\$690,162	\$39,585,553

Local Sporting Fields embellishment

LS1	5.7054	\$5,053,856	\$1,379,703	\$115,027	\$6,548,586
LS4	6.0676	\$5,282,347	\$1,442,081	\$172,541	\$6,896,969
LS5	4.3250	\$5,339,003	\$1,457,548	\$0	\$6,796,551
LS8	2.6640	\$3,419,857	\$933,621	\$115,027	\$4,468,505
LS9	11.9288	\$9,593,149	\$2,618,930	\$115,027	\$12,327,106
Subtotal	30.6908	\$28,688,213	\$7,831,882	\$517,622	\$37,037,717

District Sporting Fields embellishment

DS1	9.0691	\$7,064,258	\$1,928,542	\$258,811	\$9,251,611
Subtotal	9.0691	\$7,064,258	\$1,928,542	\$258,811	\$9,251,611

Total Construction Costs \$94,121,585 \$25,695,193 \$2,012,973 \$121,829,751

Construction Contingency \$6,729,419

**TOTAL ESSENTIAL OPEN SPACE CONSTRUCTION COSTS \$128,559,170**

Staging / Priority of infrastructure - as and when surrounding development proceeds.

Project On Costs excludes construction and contingency

## 5.2 Community and cultural facilities

### Land

Item	Facility	Area (ha)	Cost
	Future Land Acquisition		
LACF	Land for Local Community Facilities	1.4341	\$6,571,275
	Subtotal	1.4341	\$6,571,275
	Land Acquisition Contingency		\$788,553
<b>TOTAL ESSENTIAL COMMUNITY FACILITY INFRASTRUCTURE LAND ACQUISITION COSTS</b>		<b>1.4341</b>	<b>\$7,359,828</b>

LACF - Local Community Facilities

Item	Total Area	Acquisition Cost
CF2	0.3412	\$1,563,433
CF3	0.2867	\$1,313,705
CF4	0.5339	\$2,446,415
CF5	0.2723	\$1,247,722

### Works

Item	Facility	Area (ha)	Cost to Plan	Project On Costs	Demolition Allowance	Total Cost to Plan	Priority / Staging
Regional Community Facility							
LS1	Aquatic and Indoor Recreation Centre construction	5.2141	\$26,292,267	\$7,177,789	\$25,241	\$33,495,297	1
	Subtotal	5.2141	\$26,292,267	\$7,177,789	\$25,241	\$33,495,297	
Local Community Facilities							
CF2	Local Community Facility construction	0.3412	\$2,965,605	\$809,610	\$30,096	\$3,805,311	2
CF3	Local Community Facility construction	0.2867	\$2,901,755	\$792,179	\$30,096	\$3,724,031	2
CF4	Local Community Facility construction	0.5339	\$5,711,507	\$1,559,241	\$30,096	\$7,300,844	3
CF5	Local Community Facility construction	0.2723	\$2,884,885	\$787,574	\$0	\$3,672,459	2
	Subtotal	1.4341	\$14,463,752	\$3,948,604	\$90,288	\$18,502,644	
Public Art							
PA1	Regional Community Facility	\$863,344	\$235,693	\$0	\$1,099,038	\$863,344	4
PA2	Local Community Facilities	\$433,913	\$118,458	\$0	\$552,371	\$433,913	5
	Subtotal	\$1,297,257	\$354,151	\$0	\$1,651,408	\$1,297,257	
	Total Construction Costs	\$44,539,158	\$12,159,190	\$117,915	\$56,816,263	\$44,539,158	
	Construction Contingency				\$3,125,995		
<b>TOTAL NON ESSENTIAL COMMUNITY FACILITY CONSTRUCTION COSTS</b>						<b>\$59,942,258</b>	

Note Cost of Regional Community Facility LS5 has been adjusted to reflect residential catchment within the Precincts that will contribute to facility (41.4%) as facility will serve population of 120,000 people.

Project On Costs excludes construction and contingency

Priority / Staging

- 1 As residential catchments in adjoining Precincts establish, facility to serve 120,000 population.
- 2 As population in catchment area reaches 10,000.
- 3 At completion of residential development within the Precincts, facility to serve population of 40,000.
- 4 To be delivered with Aquatic and Indoor Recreation Centre.
- 5 To be delivered with Local Community Facilities.

## 5.3 Water cycle management facilities

### Land

Item	Facility	Area (ha)	Cost
Future Land Acquisition			
LAC	Land for Trunk Drainage Channels	48.4657	\$45,904,344
LAB	Land for Trunk Drainage Basins	24.1392	\$82,841,265
	Subtotal	72.6049	\$128,745,608
	Land Acquisition Contingency		\$15,449,473
<b>TOTAL ESSENTIAL DRAINAGE INFRASTRUCTURE LAND ACQUISITION COSTS</b>		<b>72.6049</b>	<b>\$144,195,081</b>

LAC - Trunk Drainage Channels

Item	Total Area	Acquisition Cost
Chn B19	0.9455	\$1,343,341
Chn B18	0.2824	\$413,215
Chn B17.4	1.8932	\$2,175,511
DC6	0.4735	\$189,845
DC7A	1.8283	\$733,055
DC9	1.8287	\$733,181
Chn B8	0.2857	\$314,160
Chn B11	0.2343	\$280,649
DC18	1.1021	\$441,879
DC19A	1.1322	\$453,934
DC20	3.1912	\$1,279,478
Chn B6	0.2135	\$391,897
Chn B14.2	0.2563	\$301,434
DC23	0.4119	\$165,132
DC24	2.2938	\$919,666
DC25	0.8323	\$333,704
CHN B17.2-3	1.1949	\$1,368,392
CHN B17.1-2	1.6094	\$6,271,142
Chn B25	1.4446	\$579,205
DC32	3.1592	\$1,266,638
DC33	4.6023	\$2,710,845
Chn NB33	0.5620	\$317,589
DC38	0.5157	\$1,180,590
DC40	1.0908	\$437,351
DC41	1.2289	\$502,504
Chn B29C	0.6988	\$2,244,155
Chn 29b.2	0.4357	\$975,602
Chn 29b.1	0.4715	\$491,368
Chn B20.1-3	1.2827	\$4,756,274
DC53	1.0245	\$410,769
Chn B20.5	0.0481	\$53,293
DC54	0.8779	\$354,327
DC55	0.5351	\$230,441
Chn B22	1.3585	\$3,153,149
Chn B14.1	0.5553	\$1,221,951
DC61	0.6753	\$270,754
Chn B16	0.1352	\$163,382
DC63	3.0978	\$1,242,024
Chn NB5	0.8075	\$3,008,673
DC65	0.4990	\$200,063
DC66	1.2761	\$848,120
DC67	1.4295	\$917,136
SP2*	0.6448	\$258,525

\* LCC identified acquisition need for this Bonds Creek portion of land located between Camden Valley Way and Cow Pasture Road (formerly an easement) in early 2021.

LAB - Trunk Drainage Basins

Item	Total Area	Acquisition Cost
B5	1.4259	\$6,656,149
B6	0.5423	\$2,112,182
B8	0.8821	\$3,435,499
B11	2.2508	\$7,614,409
B13	1.8546	\$8,239,558
B14	1.3321	\$4,523,399
B15	0.8328	\$3,068,564
B16	0.9374	\$3,650,934
B17	2.2928	\$8,930,016
B18	0.6628	\$2,581,548
B19	1.0110	\$2,530,775
B20	2.0244	\$6,580,733
B21	0.5808	\$1,541,153
B22	1.3260	\$5,185,754
B23	0.9568	\$2,392,797
B25	1.6643	\$4,541,540
B27	1.2901	\$4,250,434
B29	1.4567	\$3,085,031
B32	0.8157	\$1,920,791

Staging / Priority of infrastructure - As land affected by acquisition is developed or as required to service development.

**Works**

System	Detention Basin	Trunk Drainage Works	Water Quality Works	Construction Cost	Project On Costs	Contingency	Total Cost
Drainage Systems with 1% AEP Basins							
Drainage System B17	Basin 17	Chn B17.1, Chn B17.2, Chn B17.3 and Chn B17.4 (open channel)	Bioretention B17, GPT B17	\$24,724,953	\$3,708,743	\$4,578,218	\$33,011,913
Drainage System B20	Basin 20	Chn B20.1, Chn B20.2 and Chn B20.3 (open channels), B20 pipe (Pipe B20.1, Pipe B20.2, Pipe B20.3, Pipe B20.4, Pipe B20.5, Pipe B20.6 and Pipe B20.7	Bioretention B20, GPT B20	\$10,660,639	\$1,599,096	\$1,873,346	\$14,133,081
Drainage System B21	Basin 21	Pipe B21.1, Pipe B21.2 and Pipe B21.3	GPT B21	\$2,096,786	\$314,518	\$377,275	\$2,788,579
Drainage System B22	Basin 22	Chn B22 (open channel)	GPT B22	\$8,852,312	\$1,327,847	\$1,642,256	\$11,822,414
Drainage System B23	Basin 23	Pipe B23.1, Pipe B23.2 and Pipe B23.3	GPT B23	\$3,392,519	\$508,878	\$606,350	\$4,507,746
Drainage System B25	Basin 25	Pipe B25.1, Pipe B25.2 and Pipe B25.3, Chn 25 (open channel)	Bioretention B25, GPT B25	\$10,813,302	\$1,621,995	\$1,973,563	\$14,408,861
Drainage System B27	Basin 27	Pipe B27.1, Pipe B27.2 and Pipe B27.3	Bioretention B27, GPT B27	\$5,109,919	\$766,488	\$879,589	\$6,755,996
Drainage System B29	Basin 29	Chn B29b.1, Chn B29b.2, Chn B29c (open channels), Pipe B29a.1, Pipe B29a.2, Pipe B29a.3, Pipe	GPT B29a, GPT B29b and GPT B29c, Sedimentation pond B29,	\$11,889,508	\$1,783,426	\$2,097,108	\$15,770,043

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

		B29a.4, Pipe B29a.5 and Pipe B29a.6, Pipe B29b.1, Pipe B29b.2, Pipe B29b.3 and Pipe B29b.4	Bioretention – B29				
Subtotal				\$77,539,938	\$11,630,991	\$14,027,705	\$103,198,633
Drainage Systems with 50% AEP Basins							
Drainage System B5	Basin 5	Pipe B5.1, Pipe B5.2, Pipe B5.3 and Pipe B5.4	GPT B5	\$6,959,806	\$1,043,971	\$1,219,440	\$9,223,217
Drainage System B6	Basin 6	Pipe B6.1, Pipe B6.2, Pipe B6.3, Pipe B6.4 and Pipe B6.5, Chn B6	Bioretention B6, GPT B6	\$4,306,547	\$645,982	\$735,787	\$5,688,316
Drainage System B8	Basin 8	Pipe B8.1, Pipe B8.2, Pipe B8.3, Pipe B8.4 and Pipe B8.5, Chn B8	Bioretention B8, GPT B8	\$5,253,102	\$787,965	\$927,638	\$6,968,706
Drainage System B11	Basin 11	Pipe B11.1, Pipe B11.2, Pipe B11.3, Pipe B11.4, Pipe B11.5, Pipe B11.6, Pipe B11.7, B11.8, B11.9, and Pipe B11.10, Chn B11	Bioretention B11, GPT B11	\$12,031,371	\$1,804,706	\$2,022,057	\$15,858,133
Drainage System B12	Basin 12	Chn B12	Bioretention B12, GPT B12	\$2,829,668	\$424,450	\$514,398	\$3,768,516
Drainage System B13	Basin 13	Pipe B13.1, Pipe B13.2 and Pipe B13.3	Bioretention B13, GPT B13	\$7,136,079	\$1,070,412	\$1,303,495	\$9,509,986
Drainage System B14	Basin 14	Pipe B14.1, Pipe B14.2, Pipe B14.3, Pipe B14.4, Pipe B14.5, Pipe B14.6, Pipe B14.7, Pipe B14.8, Pipe B14.9, Pipe B14.10, and Pipe B14.11, Chn B14.1 and Chn B14.2	Bioretention B14, GPT B14	\$10,375,468	\$1,556,320	\$1,749,610	\$13,681,399
Drainage System B15	Basin 15		Bioretention B15, GPT B15	\$2,428,356	\$364,253	\$435,511	\$3,228,121
Drainage System B16	Basin 16	Pipe B16.1, Pipe B16.2, Pipe B16.3 and Pipe B16.4, CHN B16	Bioretention B16, GPT B16	\$5,212,161	\$781,824	\$892,184	\$6,886,169
Drainage System B18	Basin 18	Pipe B18.1, Pipe B18.2, Pipe B18.3, Pipe B18.4, Pipe B18.5, Pipe B18.6 and Pipe B18.7	Bioretention B18, GPT B18	\$5,519,305	\$827,896	\$799,112	\$7,146,313
Drainage System B19	Basin 19	Pipe B19.1, Pipe B19.2, Pipe B19.3, Pipe B19.4, Pipe B19.5, Pipe B19.6, Pipe B19.7 and Pipe B19.8, Chn B19	Bioretention B19, GPT B19	\$8,113,111	\$1,216,967	\$1,373,972	\$10,704,050
B32*	Basin 32	DC65, DC66		\$4,401,683	\$660,252	\$748,286	\$5,810,221
Sub Total				\$74,566,658	\$11,184,999	\$12,721,490	\$98,473,147
Drainage Systems without Basins							
Drainage System NB5				\$3,697,360	\$554,604	\$417,352	\$4,669,316
Drainage System NB13				\$1,115,154	\$167,273	\$152,598	\$1,435,025

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Drainage System NB14	\$791,343	\$118,701	\$109,175	\$1,019,219
Drainage System NB15	\$1,443,961	\$216,594	\$199,371	\$1,859,927
Drainage System NB33	\$1,030,538	\$154,581	\$130,178	\$1,315,297
Drainage System NB35	\$1,715,888	\$257,383	\$230,042	\$2,203,313
Drainage System NB37	\$1,025,499	\$153,825	\$140,706	\$1,320,030
Drainage System NB38	\$453,475	\$68,021	\$63,860	\$585,356
Sub Total	\$11,273,219	\$1,690,983	\$1,443,281	\$14,407,483
Creek Culverts (stormwater works only)				
B_Eighth	\$1,125,124	\$168,769	\$154,822	\$1,448,715
B_Fourth	\$1,257,128	\$188,569	\$176,429	\$1,622,126
B_Tenth	\$1,372,165	\$205,825	\$190,011	\$1,768,001
EdmonsNorth New	\$1,040,079	\$156,012	\$153,691	\$1,349,781
Fifth_Av1	\$1,513,952	\$227,093	\$210,615	\$1,951,661
K_13thE	\$244,961	\$36,744	\$34,038	\$315,742
K_17thEN	\$775,540	\$116,331	\$106,976	\$998,848
Surbox1	\$602,126	\$90,319	\$83,274	\$775,720
Sub Total	\$7,931,075	\$1,189,661	\$1,109,856	\$10,230,592
Streetscape Raingardens				
Intersection raingardens	\$21,081,237	\$3,162,185	\$4,216,247	\$28,459,669
T-junction raingardens	\$25,225,491	\$3,783,824	\$5,045,098	\$34,054,412
Road bend raingardens	\$1,238,882	\$185,832	\$247,776	\$1,672,491
Sub Total	\$47,545,609	\$7,131,841	\$9,509,122	\$64,186,572
<b>TOTAL ESSENTIAL STORMWATER INFRASTRUCTURE</b>	<b>\$218,856,498</b>	<b>\$32,828,475</b>	<b>\$38,811,454</b>	<b>\$290,496,427</b>

"Basin 32 (B32) was outside the scope area of the SMEC study  
Staging / Priority of infrastructure - when surrounding development proceeds.

Project On Costs excludes construction and contingency

## 5.4 Transport management facilities

### Land

Item	Facility	Area (ha)	Cost
	Future Land Acquisition		
LACR	Land for new Collector Roads	4.3614	\$18,309,448
LALR	Land for new Local Roads	1.2954	\$5,256,860
	Subtotal	5.6568	\$23,566,308
	Land Acquisition Contingency		\$2,827,957
<b>TOTAL ESSENTIAL ROAD INFRASTRUCTURE LAND ACQUISITION COSTS</b>		<b>5.6568</b>	<b>\$26,394,265</b>

#### LACR - Collector Roads

Item	Total Area	Acquisition Cost
CR1	0.4470	\$1,740,992
CR14	0.5150	\$2,359,812
CR15	0.3010	\$1,172,346
CR16	0.3270	\$1,273,611
CR17	1.2800	\$6,305,052
CR18	0.4733	\$1,603,744
CR1A	0.4610	\$1,795,519
CR21	0.0748	\$289,455
CR22	0.4032	\$1,460,836
CR35	0.0791	\$308,082

#### LALR - Local Roads

Item	Total Area	Acquisition Cost
LR28	0.0254	\$125,116
LR33	0.0912	\$355,209
LR39A	0.0628	\$244,596
LR39B	0.0480	\$186,952
LR39C	0.0680	\$264,849
LR39D	0.0899	\$350,146
LR48	0.1254	\$321,679
LR59A	0.0886	\$345,082
LR59B	0.0522	\$137,201
LR61	0.0459	\$223,466
LR64	0.1440	\$560,856
LR67	0.2641	\$681,069
LR68	0.0238	\$92,697
LR69A	0.0716	\$278,870
LR70	0.0650	\$297,840
LR72	0.0402	\$198,018
LR73	0.1150	\$447,906
LR74	0.0219	\$85,297
LR76	0.0808	\$60,009

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

**Works**

Item	Facility	Length (m)	Cost	Project On Costs	Demolition Allowance	Total Cost	Staging / Priority
Local Roads							
LR3	Upgrade road half width	160	\$320,589	\$79,506	\$0	\$400,095	*1
LR5	Upgrade road half width	140	\$280,516	\$69,568	\$0	\$350,083	*1
LR6	Upgrade road half width	225	\$450,828	\$111,805	\$0	\$562,634	*1
LR11	Upgrade road half width	90	\$180,331	\$44,722	\$0	\$225,054	*1
LR13	Upgrade road half width	455	\$911,675	\$226,095	\$0	\$1,137,771	*1
LR13A	Upgrade road half width	240	\$480,884	\$119,259	\$0	\$600,143	*1
LR16	Upgrade road half width	105	\$210,387	\$52,176	\$0	\$262,563	*1
LR18	Upgrade road half width	120	\$240,442	\$59,630	\$0	\$300,071	*1
LR22	Upgrade road half width	235	\$470,865	\$116,775	\$0	\$587,640	*1
LR24	Upgrade road half width	80	\$160,295	\$39,753	\$0	\$200,048	*1
LR26	Upgrade road half width	280	\$561,031	\$139,136	\$0	\$700,167	*1
LR27	Upgrade road full width	150	\$464,394	\$115,170	\$0	\$579,563	*1
LR28	Upgrade road half width	85	\$170,313	\$42,238	\$0	\$212,551	*1
LR33	New road full width	90	\$262,760	\$65,165	\$0	\$327,925	*1
LR35	Upgrade road half width	510	\$1,021,878	\$253,426	\$0	\$1,275,304	*1
LR36	Upgrade road full width	330	\$1,021,666	\$253,373	\$0	\$1,275,039	*1
LR37	Upgrade road half width	325	\$651,197	\$161,497	\$0	\$812,694	*1
LR39	Upgrade road half width	80	\$160,295	\$39,753	\$0	\$200,048	*1
LR39A	New road half width	80	\$129,954	\$32,228	\$0	\$162,182	*1
LR39B	New road half width	60	\$97,465	\$24,171	\$0	\$121,637	*1
LR39C	New road half width	85	\$138,076	\$34,243	\$0	\$172,318	*1
LR39D	New road half width	115	\$186,808	\$46,328	\$0	\$233,137	*1
LR46	Upgrade road half width	65	\$130,239	\$32,299	\$0	\$162,539	*1
LR46B	Upgrade road half width	50	\$100,184	\$24,846	\$0	\$125,030	*1
LR46C	Upgrade road half width	55	\$110,203	\$27,330	\$0	\$137,533	*1
LR48	Upgrade road half width	144	\$288,530	\$71,555	\$0	\$360,086	*1
LR57	Upgrade road full width	320	\$990,707	\$245,695	\$0	\$1,236,402	*1
LR59A	New road half width	60	\$97,465	\$24,171	In DC47	\$121,637	*1
LR59B	New road half width	35	\$56,855	\$14,100	\$28,224	\$99,179	*1
LR61	New road half width	100	\$162,442	\$40,286	\$0	\$202,728	*1
LR64	New road full width	90	\$262,760	\$65,165	\$0	\$327,925	*1
LR67	New road half width	300	\$487,326	\$120,857	In LS7 and LP42	\$608,183	*1
LR69	Upgrade road half width	90	\$180,331	\$44,722	\$0	\$225,054	*1
LR69A	New road full width	90	\$262,760	\$65,165	\$0	\$327,925	*1
LR70	New road half width	65	\$105,587	\$26,186	\$0	\$131,773	*1
LR72	New road half width	100	\$162,442	\$40,286	\$0	\$202,728	*1
LR73	New road half width	100	\$162,442	\$40,286	\$28,224	\$230,952	*1
LR74	New road half width	30	\$48,733	\$12,086	\$0	\$60,818	*1
LR76	New road half width	160	\$259,907	\$64,457	\$28,224	\$352,588	*1
	Subtotal	5,894	\$12,441,561	\$3,085,507	\$84,673	\$15,611,741	
Collector Roads							
CR1	Upgrade road half width	475	\$1,116,537	\$276,901	\$0	\$1,393,438	*1
CR1A	New road full width	225	\$774,648	\$192,113	\$56,448	\$1,023,209	*1
CR7	Upgrade road half width	115	\$270,320	\$67,039	\$0	\$337,359	*1
CR7A	Upgrade road full width	105	\$404,103	\$100,218	\$0	\$504,321	*1
CR8	Upgrade road half width	240	\$564,145	\$139,908	\$0	\$704,053	*1



**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Item	Facility	Length (m)	Cost	Project On Costs	Demolition Allowance	Total Cost	Staging / Priority
CR9	Upgrade road full width	70	\$269,402	\$66,812	\$0	\$336,214	*1
CR10	Upgrade road half width	85	\$199,801	\$49,551	\$0	\$249,352	*1
CR11	Upgrade road full width	345	\$1,327,768	\$329,287	\$0	\$1,657,055	*1
CR12	Upgrade road half width	130	\$305,579	\$75,783	\$0	\$381,362	*1
CR14	New road half width	495	\$958,351	\$237,671	\$112,897	\$1,308,918	*1
CR15	New road full width	155	\$533,646	\$132,344	\$28,224	\$694,215	*1
CR16	New road half width	340	\$658,261	\$163,249	\$112,897	\$934,406	*1
CR17	New road full width	320	\$1,101,722	\$273,227	\$56,448	\$1,431,397	*1
CR18	New road half width	420	\$813,146	\$201,660	\$28,224	\$1,043,030	*1
CR19	Upgrade road full width	80	\$307,888	\$76,356	\$0	\$384,245	*1
CR19A	Upgrade road half width	80	\$188,048	\$46,636	\$0	\$234,684	*1
CR21	New road half width	70	\$135,524	\$33,610	\$0	\$169,134	*1
CR21A	Upgrade road half width	70	\$164,542	\$40,806	\$0	\$205,349	*1
CR22	New road half width	325	\$629,220	\$156,047	\$225,794	\$1,011,060	*1
CR24	Upgrade road half width	115	\$270,320	\$67,039	\$0	\$337,359	*1
CR25	Upgrade road full width	215	\$827,450	\$205,208	\$0	\$1,032,657	*1
CR26	Upgrade road full width	150	\$577,291	\$143,168	\$0	\$720,459	*1
CR27	Upgrade road full width	155	\$596,534	\$147,940	\$0	\$744,474	*1
CR27A	Upgrade road full width	140	\$538,804	\$133,624	\$0	\$672,428	*1
CR28	Upgrade road half width	150	\$352,591	\$87,442	\$0	\$440,033	*1
CR29	Upgrade road half width	400	\$940,242	\$233,180	\$0	\$1,173,422	*1
CR29A	Upgrade road full width	160	\$615,777	\$152,713	\$0	\$768,489	*1
CR30	Upgrade road half width	95	\$223,307	\$55,380	\$0	\$278,688	*1
CR31	Upgrade road half width	90	\$211,554	\$52,465	\$0	\$264,020	*1
CR35	New road half width	70	\$135,524	\$33,610	\$0	\$169,134	*1
CR38	Upgrade road half width	80	\$188,048	\$46,636	\$0	\$234,684	*1
CR39	Upgrade road half width	60	\$141,036	\$34,977	\$0	\$176,013	*1
CR40	Upgrade road half width	30	\$70,518	\$17,488	\$0	\$88,007	*1
CR42	Upgrade road full width	285	\$1,096,852	\$272,019	\$0	\$1,368,871	*1
CR43	Upgrade road half width	50	\$117,530	\$29,147	\$0	\$146,678	*1
CR44	Upgrade road half width	50	\$117,530	\$29,147	\$0	\$146,678	*1
CR45	Upgrade road half width	240	\$564,145	\$139,908	\$0	\$704,053	*1
D1	Design of Collector Road upgrade of Fourth Avenue	Item	\$1,385,497	\$0	\$0	\$1,385,497	*7
D2	Design of Collector Road of Browns Road Extension	Item	\$521,596	\$0	\$0	\$521,596	*8
	Centre line design of existing roads	34350	\$687,000	\$0	\$0	\$687,000	*9
	Subtotal		\$20,901,800	\$4,540,311	\$620,932	\$26,063,043	
Street Tree Planting to Roads delivered by Council							
	Planting to Local Roads half widths	4434	\$69,143	\$0	\$0	\$69,143	*1
	Planting to Local Roads full widths	1070	\$33,371	\$0	\$0	\$33,371	*1
	Planting to Collector Roads half widths	4275	\$66,664	\$0	\$0	\$66,664	*1
	Planting to Collector Roads full widths	2405	\$75,006	\$0	\$0	\$75,006	*1
	Subtotal	12,184	\$244,184	\$0	\$0	\$244,184	
Pedestrian/Bridge Crossings							

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Item	Facility	Length (m)	Cost	Project On Costs	Demolition Allowance	Total Cost	Staging / Priority
PB1	Pedestrian crossing of DC20	Item	\$108,463	\$26,899	\$0	\$135,362	*4
PB2	Pedestrian crossing of DC19A	Item	\$108,463	\$26,899	\$0	\$135,362	*5
PB4	Pedestrian crossing of DC14	Item	\$108,463	\$26,899	\$0	\$135,362	*3
PB5	Pedestrian crossing of DC53	Item	\$108,463	\$26,899	\$0	\$135,362	*3
PB6	Pedestrian crossing of DC26	Item	\$108,463	\$26,899	\$0	\$135,362	*3
PB7	Pedestrian crossing of DC33	Item	\$108,463	\$26,899	\$0	\$135,362	*3
PB8	Pedestrian crossing of DC30	Item	\$108,463	\$26,899	\$0	\$135,362	*3
PB10	Pedestrian crossing of DC63	Item	\$108,463	\$26,899	\$0	\$135,362	*1
PB11	Pedestrian crossing of DC61 at Sixth Ave	Item	\$108,463	\$26,899	\$0	\$135,362	*1
PB13	Pedestrian crossing - Creek Twelfth Avenue	Item	\$108,463	\$26,899	\$0	\$135,362	*1
PB14	Pedestrian crossing - Creek Fourteenth Avenue	Item	\$108,463	\$26,899	\$0	\$135,362	*2
PB15	Pedestrian crossing - Bonds Creek Ninth Avenue	Item	\$108,463	\$26,899	\$0	\$135,362	*4
	Subtotal		\$1,193,095	\$295,888	\$0	\$1,488,983	
Road segments over culverts							
Civ B29.b.2	Channel Crossing Type 2	50	\$854,251	\$211,854	\$0	\$1,066,105	*3
Chn NB5	Channel Crossing Type 1	25	\$427,126	\$105,927	\$0	\$533,053	*3
Civ B20.2	Channel Crossing Type 2	30	\$512,551	\$127,113	\$0	\$639,663	*3
Civ B20.3	Channel Crossing Type 2	30	\$512,551	\$127,113	\$0	\$639,663	*3
Civ B17.3	Channel Crossing Type 2	30	\$512,551	\$127,113	\$0	\$639,663	*3
Civ B17.1	Channel Crossing Type 2	30	\$512,551	\$127,113	\$0	\$639,663	*3
BR1	Scalabrini Creek Fifth Avenue (replace collector road pavement)	60	\$185,757	\$46,068	\$0	\$231,825	*2
BR2	Bonds Creek Eighth Avenue (upgrade crossing to 100 ARI) (Collector Street)	110	\$5,183,520	\$1,285,513	\$31,579	\$6,500,613	*1
BR3	Bonds Creek Ninth Avenue (replace local road pavement)	130	\$402,475	\$99,814	\$0	\$502,288	*1
BR4	Bonds Creek Tenth Avenue (replace local road pavement)	80	\$247,677	\$61,424	\$0	\$309,100	*2
BR5	Unnamed Creek Twelfth Avenue (replace local road pavement)	130	\$402,475	\$99,814	\$0	\$502,288	*2
BR6	Bonds Creek Fourth Avenue (upgrade crossing to 100 ARI) (Collector Street)	175	\$5,183,520	\$1,285,513	\$31,579	\$6,500,613	*1

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Item	Facility	Length (m)	Cost	Project On Costs	Demolition Allowance	Total Cost	Staging / Priority
BR7	Unnamed Creek Fourth Avenue (upgrade crossing to 100 ARI) (Collector Street)	100	\$3,210,859	\$796,293	\$31,579	\$4,038,731	*1
BR8	Unnamed Creek Thirteenth Avenue (upgrade crossing to 100 ARI)	95	\$3,221,722	\$798,987	\$31,579	\$4,052,288	*1
BR9	Unnamed Creek Fourteenth Avenue (replace local road pavement)	150	\$577,291	\$143,168	\$0	\$720,459	*3
BR10	Unnamed Creek Seventeenth Avenue (replace collector road pavement)	105	\$404,103	\$100,218	\$0	\$504,321	
BR11	Unnamed Creek Sixteenth Avenue (replace local road pavement)	70	\$216,717	\$53,746	\$0	\$270,463	
BR12	Crossing upgrade - Kemps Creek Gurner Road (upgrade crossing to 100 ARI)	120	\$3,880,826	\$962,445	\$18,421	\$4,861,692	
BR13	Unnamed Creek Eleventh Avenue (replace local road pavement)	110	\$340,555	\$84,458	\$0	\$425,013	
	Subtotal		\$26,789,077	\$6,643,691		\$33,577,506	
Intersections							
IN2	Roundabout Eighth Avenue/Western N-S Collector	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN3	Traffic Signals Fourth Avenue / Fifth Avenue	Item	\$833,800	\$206,782	\$0	\$1,040,582	*1
IN4	Roundabout Fourth Avenue / Eighth Avenue	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN5	Roundabout Gurners Ave / Fourth Ave	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN6	Roundabout Gurners Ave / Extension of Edmondson Ave	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN7	Roundabout Sixteenth Ave / North South Collector Street	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN8	Roundabout Fourth Ave / Thirteenth Ave	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN9	Roundabout Thirteenth Ave / North South Collector Street	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN10	Roundabout Fourth Ave / Eleventh Ave	Item	\$174,708	\$43,328	\$0	\$218,035	*1
IN11	Roundabout Fourth Ave / Tenth Ave	Item	\$174,708	\$43,328	\$0	\$218,035	*1
	Subtotal		\$2,406,170	\$596,730	\$0	\$3,002,900	
Pedestrian Crossings							
PC1	Allowance for 50 Pedestrian Crossing/Refuge Works locations TBD	50	\$1,383,533	\$343,116	\$0	\$1,726,649	*2
	Subtotal		\$1,383,533	\$343,116	\$0	\$1,726,649	
Public Transport Facilities							
PT1	Allowance for 42 bus shelters locations TBD	42	\$987,847	\$244,986	\$0	\$1,232,833	*1
	Subtotal	42	\$987,847	\$244,986	\$0	\$1,232,833	
	Total Construction Costs		\$66,347,266	\$15,750,229	\$705,605	\$82,947,839	
	Construction Contingency					\$4,693,701	

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Item	Facility	Length (m)	Cost	Project On Costs	Demolition Allowance	Total Cost	Staging / Priority
<b>TOTAL ESSENTIAL ROAD INFRASTRUCTURE COSTS</b>						<b>\$87,641,540</b>	

Note cost of BR12 has been apportioned 50% to the Austral and Leppington North Precincts and 50% to the Rossmore Precinct.

Priority / Staging

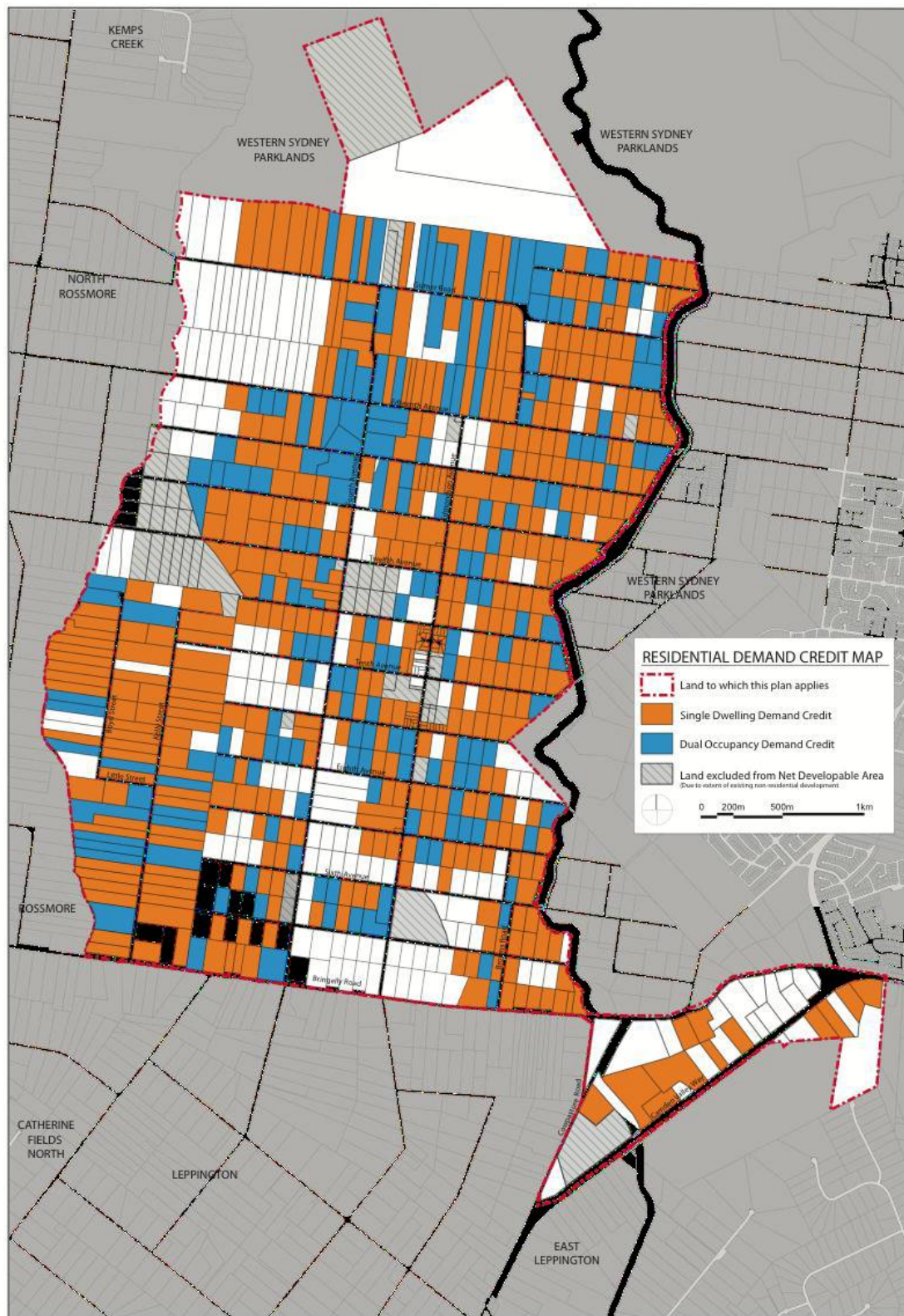
- \*1 When surrounding development proceeds.
- \*2 As adjoining road upgrades are carried out.
- \*3 When the drainage channel is constructed.
- \*4 When Open Space DP4 is constructed
- \*5 When Open Space LP13 is constructed.
- \*6 As and when surrounding development proceeds and after Rossmore Precinct rezoned.
- \*7 Prior to construction of Fourth Avenue upgrade works.
- \*8 Prior to construction of Browns Road Extension works.
- \*9 Prior to development taking place

## **Appendix A**

### **Demand Credit Analysis for Precincts**

## Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts

Allowances for existing development in the calculation of open space and recreation, and community and cultural facilities contributions



## Demand credits

Land Use	Single Dwelling Demand Credits	Dual Occupancy Demand Credits	Population Demand Credit
Environmental Living (4 Dwellings/ha)	33	14	207.4
Environmental Living (6 Dwellings/ha)	20	6	108.8
Low Density Residential	300	133	1,924.4
Medium Density Residential	89	26	479.4
<b>Total</b>	<b>442</b>	<b>179</b>	<b>2,720</b>

## Assumed occupancy

Single dwelling	3.4
Dual occupancy	6.8
Special use	1.5

## Land Use Coding

Environmental Living (4 dwellings / ha)	EL
Environmental Living (6 dwellings / ha)	LL
Low density residential	LD
Medium density residential	MD

## Lots with Single Dwelling Demand Credit

Lot No.	DP	Land Type
19	3403	LD
18	3403	LD
17	3403	LD
16	3403	LD
15	3403	LD
1	233174	LD
2	233174	LD
12	3403	LD
111	1010191	LD
14	831988	LD
1	519215	LD
22	791237	LD
21	791237	LD
A	416820	LD
2	201865	LD
144	2475	LD
143	2475	LD
142	2475	LD
140	2475	LD
139	2475	LD
138	2475	LD
160	2475	LD
2	512264	LD
1	512264	LD
156	2475	LD
154	2475	LD
153	2475	LD
152	2475	LD
151	2475	EL
218	2475	LD
A	373652	LD
B	373652	LD
215	2475	LD
229	2475	LD
228	2475	LD
2	615379	LD



**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
226	2475	LD
225	2475	LD
224	2475	LD
223	2475	LD
291	2475	LD
2	34883	LD
1	331146	LD
289	2475	LD
288	2475	EL
1	619379	LD
B	417374	LD
303	2475	LD
302	2475	LD
301	2475	LD
300	2475	LD
298	2475	LD
296	2475	LD
295	2475	LD
B	369323	LD
358	2475	LD
357	2475	LD
356	2475	LD
354	2475	LD
352	2475	LD
350	2475	LD
349	2475	LD
348	2475	LD
3600	1000185	MD
363	2475	MD
365	2475	MD
368	2475	MD
369	2475	MD
370	2475	MD
B	413204	LD
A	413204	LD
B	414227	LD
11	1103748	MD
36	3403	MD
B	411087	LD
2	395169	LD
1	619739	LD
2	619739	LD
2	631289	LD
1	631289	LD
431	6222608	LD
3601	1000185	LD
321	778465	LD
320	778465	LD
1	562807	MD
1	574738	LD
2	574738	LD
379	2475	LD
380	2475	LD
431	2475	LD
B	339407	LD
A	339407	LD
426	2475	LD
425	2475	LD
424	2475	LD
423	2475	LD
422	2475	MD
421	2475	MD

**Appendix A**

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
490	2475	MD
488	2475	LD
487	2475	LD
486	2475	LD
485	2475	LD
484	2475	LD
483	2475	LD
482	2475	LD
480	2475	LD
479	2475	LD
478	2475	LD
416	2475	MD
415	2475	MD
D	406540	MD
3	510228	LD
5	510228	LD
4	30409	LD
6	30409	EL
5	30409	EL
15	30409	EL
16	30409	EL
17	30409	EL
647	2475	EL
21	30409	EL
22	30409	LD
532	2475	LD
10	874699	LD
1	938137	LD
2	938137	LD
3	938137	LD
4	938137	LD
5	938137	MD
6	938137	MD
640	2475	LD
A	414563	MD
B	414563	MD
C	414563	LD
547	2475	LD
548	2475	LD
549	2475	LD
550	2475	LD
551	2475	LD
552	2475	LD
626	2475	LD
628	2475	LD
631	2475	LD
632	2475	LD
634	2475	LD
636	2475	MD
637	2475	MD
100	1022124	LD
2	201514	LD
3	201514	LD
671	2475	LD
672	2475	LD
673	2475	LD
674	2475	LD
676	2475	EL
721	2475	EL
722	2475	LD
726	2475	LD
4	201514	LD

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
101	1022124	LD
2	503020	LD
3	503020	LD
4	503020	LD
A	386133	LD
714	2475	LD
715	2475	LD
716	2475	LD
717	2475	LD
718	2475	LD
684	2475	LD
685	2475	LD
686	2475	LD
688	2475	LD
689	2475	LD
690	2475	LD
691	2475	LD
11	1044691	LL
2	548700	LL
12	1044691	LL
706	2475	LD
709	2475	LD
710	2475	LD
712	2475	LD
713	2475	LD
769	2475	LD
768	2475	LD
767	2475	LD
766	2475	LD
763	2475	LD
762	2475	LD
787	2475	LD
784	2475	LD
783	2475	LD
782	2475	LD
780	2475	LD
2	555992	LD
752	2475	LD
2	570646	LD
1	570646	LD
A	370483	LD
11	776297	LD
12	776297	EL
799	2475	LD
101	591853	LD
102	591853	LD
A	363000	LD
802	2475	EL
803	2475	EL
804	2475	LD
85	2475	LD
806	2475	LD
807	2475	LD
808	2475	LD
847	2475	LD
810	2475	LD
812	2475	LD
814	2475	MD
1	238636	MD
2	238636	MD
3	238636	MD
4	238636	MD

**Appendix A**

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
5	238636	MD
6	238636	MD
7	560787	MD
8	560787	MD
9	560787	MD
B	40482	MD
A	40482	MD
841	2475	LD
842	2475	LD
819	2475	LD
820	2475	LD
822	2475	LD
823	2475	LD
824	2475	LL
827	2475	LL
828	2475	LL
829	2475	LD
830	2475	LD
831	2475	LD
832	2475	LD
833	2475	LD
834	2475	MD
872	2475	LD
871	2475	LD
870	2475	LD
869	2475	LD
867	2475	MD
874	2475	LD
875	2475	LD
876	2475	LD
877	2475	LD
878	2475	MD
213	813479	MD
212	813479	MD
211	813479	MD
20	708107	MD
31	632173	MD
32	632173	MD
101	790560	MD
100	790560	MD
1	31151	MD
2	31151	MD
3	31151	MD
4	31151	MD
5	31151	MD
6	538235	MD
71	627424	MD
72	627424	MD
882	2475	MD
883	2475	LD
885	2475	LD
887	2475	LD
861	2475	LD
860	2475	LD
855	2475	LD
85	740973	EL
86	740973	EL
87	740973	EL
88	740973	EL
89	740973	EL
141	707894	LD
142	707894	LD

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
131	732036	LD
132	732036	LD
101	712544	LD
101	854174	LD
82	740973	LD
81	740893	LD
7	2756	LD
61	596624	LD
1	802655	LD
2	802655	LD
42	791236	LD
41	791236	LD
D	411796	LD
C	411796	LD
B	411796	LD
A	411796	LD
B	391036	LD
19	2756	LD
18	2756	LD
A	385901	LD
16	2756	LD
15	2756	LD
11	519909	MD
12	519909	MD
131	879822	MD
132	879822	MD
1	598602	MD
111	591857	MD
B	378927	MD
2	567541	MD
3	538092	MD
2	538092	MD
941	2475	MD
11	571579	MD
10	571579	MD
899	2475	EL
1900	614637	EL
1901	614637	EL
933	2475	EL
903	2475	EL
906	2475	LD
927	2475	LD
928	2475	LD
909	2475	LD
911	2475	LD
919	2475	LD
920	2475	LD
923	2475	LD
42	623270	LD
20	565535	LD
2	557622	LD
5	563539	LD
4	563539	LD
1	211782	LD
2	211782	LD
B	405649	LD
1	795818	LD
A	386802	LD
B	386802	LD
4	615872	LD
3	615872	LD
51	610394	LD
52	610394	LD
A	417196	LD

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
B	417196	LD
3	2756	MD
11	1007049	MD
B	408221	MD
1	581050	MD
2	581050	MD
D	408221	MD
1130	2475	MD
1128	2475	MD
1126	2475	MD
1119	2475	LD
1060	2475	LD
1059	2475	LD
1057	2475	LD
1049	2475	LD
1050	2475	LD
999	2475	LD
998	2475	LD
996	2475	LD
993	2475	LD
988	2475	LD
989	2475	LD
952	2475	LD
953	2475	LD
5	236726	LD
6	236726	LD
1004	2475	EL
1005	2475	EL
1006	2475	EL
1065	2475	MD
1066	2475	MD
1067	2475	MD
1114	2475	MD
1116	2475	MD
14	533382	EL
4	126820	EL
1145	2475	EL
1144	2475	EL
1102	2475	LD
1103	2475	LD
2	201643	LD
1013	2475	LD
1012	2475	LD
1011	2475	LD
1010	2475	LD
1007	2475	LD
1040	2475	EL
971	2475	LD
972	2475	LD
976	2475	LD
977	2475	LD
954	2475	LD
955	2475	LD
956	2475	LD
958	2475	LD
959	2475	LD
961	2475	LD
963	2475	LL
968	2475	LL
970	2475	LL
101	789832	LL
102	789832	LL
1017	2475	LL
1031	2475	LL
1078	2475	LD



**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
1079	2475	LD
1101	2475	LD
1100	2475	LD
1099	2475	LD
1098	2475	LD
1148	2475	MD
1163	2475	MD
1161	2475	MD
1160	2475	MD
1	126822	MD
10	1124205	MD
A	355182	MD
1159	2475	MD
11	1124205	MD
C	337828	LD
2	501499	LL
1	501499	LL
14	19406	LL
2	513043	LL
C	389531	LL
D	389531	LL
2	531654	LL
2	205472	LD
3	205472	LD
5	205472	LD
6	205472	LD
1037	2475	LD
20	730327	LD
41	623270	EL
362	2475	

# Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts

## Lots with Dual Occupancy Demand Credit

Lot No.	DP	Land Type
3	233174	LD
112	1010191	LD
2	606317	LD
100	634734	LD
100	634734	LD
2	519215	LD
4	3403	LD
B	416820	LD
1	3403	LD
1	201865	LD
3	201865	LD
141	2475	LD
157	2475	LD
155	2475	LD
150	2475	LD
221	2475	LD
220	2475	LD
219	2475	LD
217	2475	LD
212	2475	LD
231	2475	LD
230	2475	LD
1	34883	LD
C	417374	LD
294	2475	LD
A	369323	LD
359	2475	LD
353	2475	LD
364	2475	MD
366	2475	MD
367	2475	MD
372	2475	LD
4	1117859	LD
12	1103748	MD
2	749642	LD
1	395169	LD
3	395169	LD
2	562807	MD
3	574738	LD
377	2475	LD
378	2475	LD
433	2475	LD
432	2475	LD
429	2475	LD
428	2475	LD
427	2475	LD
489	2475	MD
481	2475	LD
479	2475	LD
5	1117859	MD
B	389089	MD
C	406540	LD
495	2475	MD
6	1117859	LD
2	510228	LD
1	510228	LD
4	510228	LD
405	2475	LD
404	2475	LD
403	2475	LD
14	30409	EL

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
118	575004	LD
119	575004	LD
20	30409	LD
23	30409	LD
24	30409	LD
655	2475	LD
25	30409	EL
2	204217	LD
535	2475	LD
638	2475	MD
641	2475	LD
545	2475	LD
546	2475	LD
629	2475	LD
633	2475	LD
635	2475	MD
13	776298	EL
723	2475	LD
724	2475	LD
687	2475	LD
711	2475	LD
765	2475	LD
779	2475	LL
781	2475	LD
761	2475	EL
760	2475	EL
790	2475	LD
32	878676	LD
10	776297	LD
798	2475	LD
103	591853	LD
846	2475	EL
845	2475	EL
844	2475	LD
811	2475	LD
840	2475	LD
839	2475	LD
817	2475	MD
821	2475	LD
825	2475	LL
835	2475	MD
873	2475	LL
859	2475	LD
858	2475	LD
886	2475	LD
884	2475	LD
856	2475	EL
83	740973	EL
84	740973	EL
9	2756	LD
121	738282	LD
122	738282	LD
102	712544	LD
A	391036	LD
112	591857	MD
A	378927	MD
940	2475	MD
942	2475	MD
102	621868	MD
898	2475	EL
936	2475	LD
935	2475	LD

**Appendix A**

**Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts**

Lot No.	DP	Land Type
934	2475	EL
904	2475	LD
905	2475	LD
907	2475	LD
908	2475	LD
926	2475	LD
929	2475	LD
930	2475	LD
912	2475	LD
913	2475	LD
914	2475	LD
921	2475	LD
922	2475	LD
924	2475	LD
43	623270	LD
21	565535	LD
1	557622	LD
A	388784	LD
B	388784	LD
2	2756	LD
2	596773	LD
1	596773	LD
6	2756	LD
A	408221	MD
1	581189	MD
1123	2475	LD
1120	2475	LD
1058	2475	LD
1048	2475	LD
997	2475	LD
986	2475	LD
951	2475	LD
1063	2475	MD
1064	2475	MD
1115	2475	MD
1113	2475	MD
A	416093	MD
B	416093	MD
1164	2475	EL
1146	2475	EL
1077	2475	LD
1008	2475	LD
1009	2475	LD
978	2475	LD
975	2475	LD
974	2475	LD
973	2475	LD
1	126820	LL
969	2475	LL
964	2475	LL
960	2475	LD
957	2475	LD
3	519215	LD
725	2475	LD
786	2475	LD
764	2475	LD

## Liverpool Contributions Plan 2021 - Austral and Leppington North Precincts

Lots with No Demand Credit

Lot No.	DP	Land Type
1	606317	LD
91	1050385	LD
15	831988	LD
158	2475	LD
214	2475	LD
213	2475	LD
222	650859	LD
297	2475	LD
299	2475	LD
355	2475	LD
37	3403	LD
1	749642	LD
1	204217	LD
627	2475	MD
630	2475	MD
639	2475	MD
707	2475	LD
708	2475	LD
809	2475	LD
813	2475	LD
843	2475	LD
818	2475	MD
857	2475	EL
868	2475	LD
111	875377	LD
112	875377	LD
9	2756	LD
62	596624	LD
102	854174	LD
C	385901	LD
2	598602	MD
910	2475	LD
915	2475	LD
917	2475	LD
918	2475	LD
12	1007049	MD
1125	2475	MD
1127	2475	MD
1129	2475	MD
1122	2475	LD
1056	2475	LD
1055	2475	LD
994	2475	LD
995	2475	LD
987	2475	LD
946	2475	LD
945	2475	LD
944	2475	LD
943	2475	LD
1	236726	EL
962	2475	LL
1014	2475	LD
1035	2475	LD

## **Appendix B**

### **Background Information**

## **Background Information**

AECOM Australia Pty Ltd (2011), *Austral and Leppington North (ALN) Precincts Transport Assessment*, prepared for NSW Department of Planning and Infrastructure, July

Cardno (NSW/ACT) Pty Ltd (2011), *Austral & Leppington North Precincts Water Cycle Management WSUD Report*, prepared for NSW Department of Planning and Infrastructure, April

CivicMJD (2018), *Valuation Report – Various Residential and Industrial Release Areas (in Liverpool LGA)*, June

CivicMJD (2019), *Land Valuations for the Austral Precinct*, 1 July

Department of Planning and Infrastructure (2011), *Precinct Planning Package*

Elton Consulting (2011), *Austral and Leppington North Precincts - Demographic and Social Infrastructure Assessment*, July

Environmental Planning and Assessment (Special Infrastructure Contribution - Western Sydney Growth Areas) Determination 2011

MJ Davis Valuations Pty Ltd (2011), *Section 94 Contributions and Infrastructure Delivery Plan - Austral and Leppington North Precincts*

Newplan (2011), *Austral and Leppington North Precincts Infrastructure Delivery Plan*, Draft Report for Exhibition, prepared by Newplan, August

NSW Department of Planning and Environment (2019), *Local Infrastructure Contributions Practice Note – January 2019*

NSW Department of Infrastructure, Planning and Natural Resources (2005), *Development Contributions Practice Notes – July 2005*

SMEC Australia (2019), *Detailed Concept Design Report - Austral and Leppington North Design of Water Management Infrastructure*, prepared for Liverpool City Council, March

SMEC, *Final Design Report – Development of Streetscape Raingarden Master Plan for Austral and Leppington North*, prepared for Liverpool City Council, February 2020