ATTACHMENT BOOKLET

ORDINARY COUNCIL MEETING

27 OCTOBER 2020

LIVERPOOL CITY COUNCIL

LIVERPOOL THE GREAT SOUTH WEST

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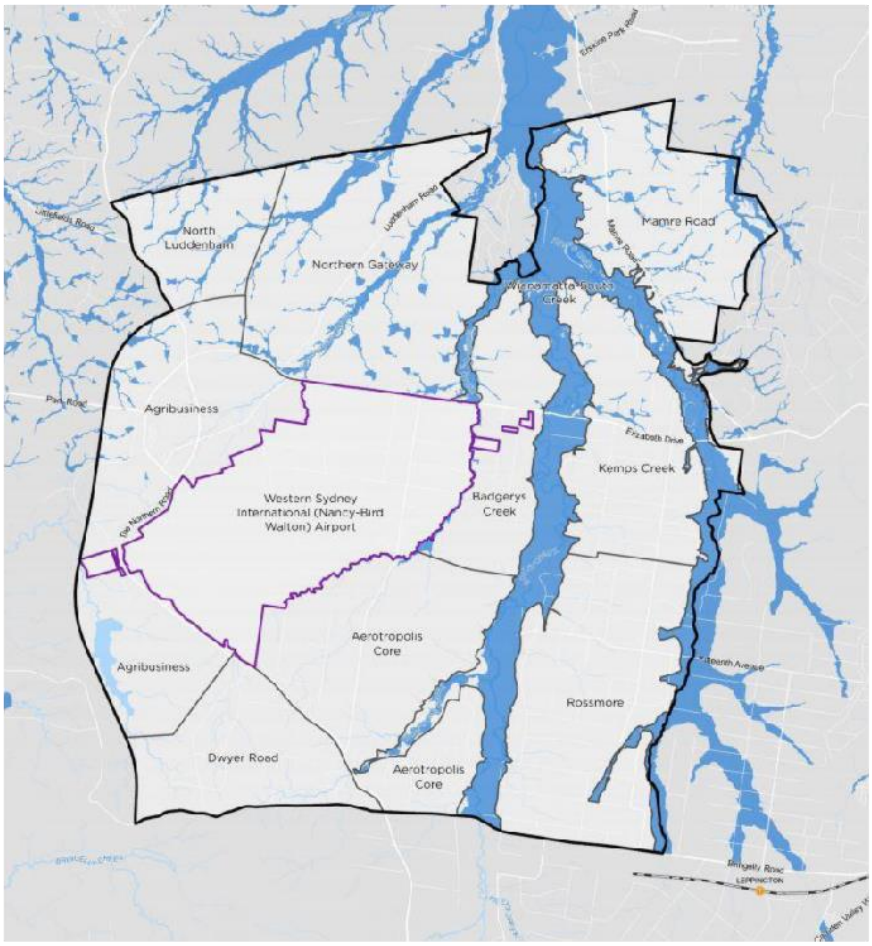
PENRITH CITY COUNCIL

Draft Aerotropolis Contributions Plan 2020



Prepared for Penrith City Council and Liverpool City Council

October 2020

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Part 1 Plan Summary

(a) Introduction

The Western Sydney Aerotropolis will be a new regionally and nationally significant gateway in the Cities of Penrith and Liverpool. Its future development forms an important part of the Western Parkland City's objective to create employment and house up to 1.1 million people by 2036.

The Aerotropolis is an area that surrounds the Western Sydney International (Nancy-Bird Walton) Airport that is currently under construction. Planning for the Aerotropolis is guided by the *Western Sydney Aerotropolis Plan* and *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020*.

This contributions plan is to enable developers of land in the Western Sydney Aerotropolis to make monetary contributions to help meet the cost of providing the local infrastructure that supports the area's development. At the time this plan was prepared, the following Aerotropolis precincts had been rezoned to permit development that together are envisaged to accommodate over 100,000 workers and over 30,000 residents:

- Aerotropolis Core Precinct,
- Agribusiness Precinct,
- Badgerys Creek Precinct
- Northern Gateway Precinct, and
- Wianamatta South Creek Precinct.

The high order infrastructure to support the airport and associated Aerotropolis development – for example, arterial roads, metro lines, and water and wastewater facilities - will be provided by Commonwealth and State government agencies. Local councils and land developers will be responsible for providing local infrastructure such as local and collector roads, stormwater drainage facilities, parks and community services.

Where the demand for local infrastructure is generated by a number of different developments, the infrastructure is funded by development contributions conditions imposed on those developments under either section 7.11 or section 7.12 of the *Environmental Planning and Assessment Act 1979*.

Where the development consent authority is a council or a planning panel, such conditions can only be imposed in accordance with a contributions plan.

The contributions in this plan are based on an assessment of local infrastructure needs only. State or regional infrastructure, including regional open space and recreation purposes in the Wianamatta - South Creek precinct, are not included in this plan. State or regional infrastructure is to be funded through other sources, including for example, a Special Infrastructure Contribution determined by, or state planning agreements negotiated with the Minister.

(b) Fixed rate levy contributions plan

The type of contribution authorised by this plan is called a fixed rate development consent levy (or s7.12 levy), in which the contribution amount imposed on a development is determined by applying a fixed percentage rate to the cost of that development.

The percentage rate has been calculated, using strategic level information, to estimate:

- the different types and total costs of expected development, and

- the types, extent and total costs of shared local infrastructure that will be required to meet the expected development,

in each of the Aerotropolis precincts listed above.

A map and summary of expected development and required infrastructure for this development is contained in Appendix A.

Detailed investigation of infrastructure needs and costs is contained in the *Western Sydney Aerotropolis Local Infrastructure Contributions Plan Background Report* (October 2020).

The s7.12 rate to be applied to development is higher than that currently permitted by the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) and as such, the councils have applied to the Minister to approve the higher levy rate.

(c) Why has a fixed rate levy plan been prepared instead of a nexus-based contributions plan?

At the time this plan was prepared, the specific location and extent of local infrastructure for each Aerotropolis precinct was not yet finalised. A nexus-based – or s7.11 - contributions plan cannot be prepared without specific layouts of collector road, trunk drainage, open space and community facilities networks.

However, several Aerotropolis precincts have already been rezoned and development applications are already being lodged. A contributions plan needs to be in place so that developments can be approved without delay and also make a reasonable contribution towards the cost of shared local infrastructure that will be needed to support the development of each Aerotropolis precinct.

This need is supported by clause 271 of the EP&A Regulation which requires that development (apart from minor development) must not be determined by the consent authority unless a contributions plan has been approved for the land to which the application relates.

This fixed rate levy plan is based on high level information, which was the only information available to the councils when the precinct rezonings were gazetted in September 2020. When more detail is available about the development that is likely to occur in each precinct, and detailed studies of infrastructure requirements for each precinct have been undertaken that accurately specifies the local infrastructure items and their costs, the relevant council would have the opportunity to revise this plan, or prepare a nexus-based (s7.11) contributions plan.

This fixed rate levy plan therefore is needed so that development in the Aerotropolis can be determined without being held up by delays in preparing s7.11 contributions plans. These delays and uncertainty could be magnified by a lack of clarity on when sufficient planning information would be provided to enable the commencement of the preparation of a s7.11 plan.

The only other potential alternative is for each council to negotiate developer provision of, or monetary contributions for, local infrastructure through a planning agreement under s7.4 of the EP&A Act. This approach is not preferred because it is likely to delay the issue of consents because of the time taken to negotiate, draft, exhibit and enter into a planning agreement in respect to each and every development. This is in addition to the fact that such agreements have to be voluntarily entered into, whereas a contributions plan adopted by a council or councils allows developments / CDCs to be determined without delay with the requirement to pay local infrastructure contributions.

(d) Levy rates

The levy rates authorised by this plan are shown in Table 1.

Table 1 - Section 7.12 levy rates

Aerotropolis precinct	Levy rate
Aerotropolis Core Precinct	
Development that has a proposed cost of carrying out the development:	
- up to and including $200,000	Nil
- more than $200,000	6.5% of that cost
Agribusiness Precinct	
Development that has a proposed cost of carrying out the development:	
- up to and including $200,000	Nil
- more than $200,000	6.5% of that cost
Badgerys Creek Precinct	
Development that has a proposed cost of carrying out the development:	
- up to and including $200,000	Nil
- more than $200,000	6.5% of that cost
Northern Gateway Precinct	
Development that has a proposed cost of carrying out the development:	
- up to and including $200,000	Nil
- more than $200,000	6.5% of that cost

Part 2 Administration and operation of this plan

1 Name of this plan

This plan is called the Aerotropolis Local Infrastructure Contributions Plan.

The plan provides information about the local infrastructure contributions payable, how to impose, pay and settle contributions, and other administrative matters.

Appendices A and B of the plan provides the schedule and maps showing the infrastructure planned to be provided on land affected by this plan.

2 Commencement of this plan

This plan commences on the date on which public notice was given under clause 31(2) of the EP&A Regulation or the date specified in that notice if it is a different date.

Note: The plan will only be approved and come into effect if the levy rates in Table 1 of this plan are approved by the Minister by a direction being made under s7.17 of the EP&A Act or by amendment of the EP&A Regulation.

3 Purpose(s) of this plan

The main purpose of this plan is to authorise:

- the consent authority, when granting consent to an application to carry out development to which this plan applies; or
- the Council or an accredited certifier, when issuing a CDC for development to which this plan applies,

to require a fixed development contribution (under section 7.12 of the EP&A Act) to be made towards the provision, extension or augmentation of future local infrastructure required as a consequence of development in the initial Aerotropolis Precincts, or which were provided in anticipation of, or to facilitate, such development.

Other purposes of this plan are as follows:

- To provide an interim framework for the efficient and equitable determination, collection and management of development contributions in the initial Aerotropolis Precincts until there is sufficient information to prepare a revised plan or nexus-based (section 7.11) contributions plans
- To ensure that the early developments in the Aerotropolis Precincts make a reasonable contribution towards the cost of shared local infrastructure needed to support their developments
- To ensure that the broader community in both Penrith and Liverpool LGAs is not unreasonably burdened by the provision of local infrastructure that is required as a result of development in the Aerotropolis Precincts
- To ensure that development approvals are not unnecessarily delayed awaiting the preparation of a s7.11 contributions plan.

4 Authority to impose section 7.12 levy

This plan authorises a council or an accredited certifier, when determining an application for development or an application for a CDC on land to which this plan applies, and subject to other provisions of this plan, to impose a condition requiring a contribution under section 7.12 of the EP&A Act on that approval for:

- the provision, extension or augmentation of local infrastructure to be provided by Liverpool or Penrith Councils; and
- the recoupment of the previous costs incurred by Liverpool or Penrith Councils in providing existing local infrastructure.

The total levy amount that is imposed on any individual development is calculated by multiplying the applicable levy rate in Table 1 by the proposed cost of the development.

A section 7.12 levy cannot be required in relation to development if a section 7.11 contribution is required in relation to that development (under another contributions plan).

The types of development subject to a section 7.12 contribution are identified in clause 6 of this plan.

Accredited certifiers should also refer to clause 10 of this plan as to their obligations in assessing and determining applications.

5 Land to which this plan applies

This plan applies to land in the following precincts identified in *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020*:

- Aerotropolis Core Precinct
- Agribusiness Precinct
- Badgerys Creek Precinct and
- Northern Gateway Precinct

except for:

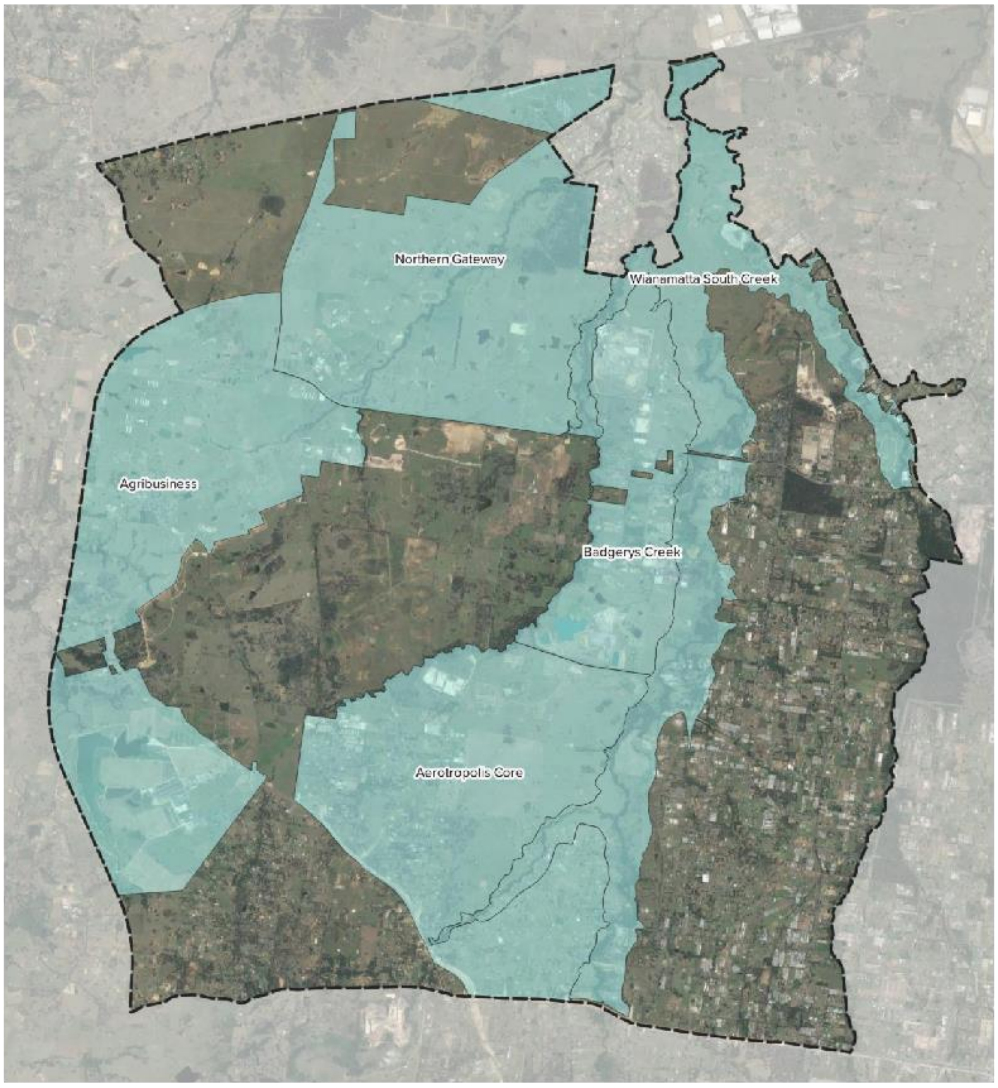
- land identified as Sydney Science Park in clause 7.23 in Penrith Local Environmental Plan 2010.

as shown in Figure 1.

For the sake of clarity, the plan does not apply to any land within the following areas:

- Western Sydney International (Nancy-Bird Walton) Airport site
- Wianamatta-South Creek Precinct (Initial Precinct)
- Dwyer Road Precinct
- North Luddenham Precinct
- Rossmore Precinct and
- Kemps Creek Precinct.

Figure 1 – Land to which plan applies



6 Development to which this plan applies

Subject to clause 7 of this plan (exempted development), this plan applies to development that:

- has a proposed capital investment value of $200,000 or more, and
- that is not otherwise subject to a s7.11 contribution authorised by a s7.11 contributions plan adopted by either Penrith or Liverpool Councils and that is in force.

7 What development is exempted?

This plan DOES NOT apply to the following types of developments:

(a) Development that was permissible on the land immediately before *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020* came into effect.

(b) Repair and replacement of structures impacted by natural forces and unpreventable events such as fire, flooding, earthquakes, lightning, etc.

(c) Development exempted from contributions under section 7.17 of the EP&A Act by way of a direction made by the Minister.

(d) Development for the following purposes:

(i) Government school

(ii) TAFE establishment

(iii) emergency services facility

(iv) health services facility owned or operated by a public authority

(v) passenger transport facility

(vi) place of public worship

(vii) public open space

(viii) public utility undertaking

(ix) bus depot

(x) recreation area

(xi) cemetery within the meaning of the *Cemeteries and Crematoria Act 2013*

(xii) public amenities or public services, for 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 that is in force (when consent is granted for the development)

(xiii) public housing

(xiv) seniors housing or affordable housing, if carried out by or on behalf of a social housing provider.

8 Determination of proposed cost of development

Section 7.12 levies are calculated by the consent authority as a percentage of the cost of development.

Clause 25J of the EP&A Regulation sets out how the proposed cost of carrying out development is determined.

An extract from the EP&A Regulation that was in force at the date this plan was adopted is shown below:

(1) The proposed cost of carrying out development is to be determined by the consent authority, for the purpose of a section 7.12 levy, by adding up all the costs and expenses

that have been or are to be incurred by the applicant in carrying out the development, including the following—

(a) if the development involves the erection of a building, or the carrying out of engineering or construction work—the costs of or incidental to erecting the building, or carrying out the work, including the costs (if any) of and incidental to demolition, excavation and site preparation, decontamination or remediation,

(b) if the development involves a change of use of land—the costs of or incidental to doing anything necessary to enable the use of the land to be changed,

(c) if the development involves the subdivision of land—the costs of or incidental to preparing, executing and registering the plan of subdivision and any related covenants, easements or other rights.

(2) For the purpose of determining the proposed cost of carrying out development, a consent authority may have regard to an estimate of the proposed cost of carrying out the development prepared by a person, or a person of a class, approved by the consent authority to provide such estimates.

(3) The following costs and expenses are not to be included in any estimate or determination of the proposed cost of carrying out development—

(a) the cost of the land on which the development is to be carried out,

(b) the costs of any repairs to any building or works on the land that are to be retained in connection with the development,

(c) the costs associated with marketing or financing the development (including interest on any loans),

(d) the costs associated with legal work carried out or to be carried out in connection with the development,

(e) project management costs associated with the development,

(f) the cost of building insurance in respect of the development,

(g) the costs of fittings and furnishings, including any refitting or refurbishing, associated with the development (except where the development involves an enlargement, expansion or intensification of a current use of land),

(h) the costs of commercial stock inventory,

(i) any taxes, levies or charges (other than GST) paid or payable in connection with the development by or under any law,

(j) the costs of enabling access by disabled persons in respect of the development,

(k) the costs of energy and water efficiency measures associated with the development,

(l) the cost of any development that is provided as affordable housing,

(m) the costs of any development that is the adaptive reuse of a heritage item.

Where a section 7.12 levy is required under this plan in relation to a DA or application for a CDC, the application is to be accompanied by a Cost Summary Report prepared at the applicant's cost, setting out an estimate of the proposed cost of carrying out the development.

The relevant consent authority will validate all Cost Summary Reports before they are accepted using a standard costing guide or other generally accepted costing method. Should the costing as assessed by the relevant consent authority be considered inaccurate, it may, at its sole

discretion and at the applicant's cost, engage a person referred to in clause 9 to review a Cost Summary Report submitted by an applicant.

In all cases, the determination of the proposed cost of development by the consent authority is final.

9 Who may provide a Cost Summary Report?

The following persons are to provide an estimate of the proposed cost of carrying out development to the consent authority:

- where the applicant's estimate of the proposed cost of carrying out the development is less than $3,000,000 – any building industry professional; or
- where the proposed cost of carrying out the development is $3,000,000 or more – a quantity surveyor who is a registered member of the Australian Institute of Quantity Surveyors.

10 Obligations of certifying authorities

(a) Complying Development Certificates

This plan requires that, in relation to an application made to an accredited certifier for a CDC:

- the accredited certifier must, if a CDC is issued, impose a condition requiring a section 7.12 levy, if such a levy is authorised by this plan
- the amount of the levy that the accredited certifier must so impose is the amount determined in accordance with clause 8 of this plan
- the terms of the condition be in accordance with this clause 10(a).

(i) Procedure for determining the section 7.12 levy amount

1. Ensure that the development is not subject to a s7.11 contribution under this plan or any other contributions plan adopted by the relevant council and that remains in force.

2. Determine the s7.12 levy in accordance with the Cost Summary Report prepared by or on behalf of the applicant under **clause 9** of this plan using the rates included in **Table 1** of this plan and taking into account any exempt development specified in **clause 7**.

(ii) Terms of a section 7.12 condition

The terms of the condition requiring a s7.12 levy are as follows:

> *A levy is to be paid to* [insert relevant LGA name] *City Council in the amount of $* [insert amount] *for the purposes of the local infrastructure identified in the Aerotropolis Local Infrastructure Contributions Plan.*
>
> *Indexation*
>
> *The monetary contribution is based on a proposed cost of carrying out the development of $* [insert amount]. *This cost (and consequently the monetary contribution) must be indexed between the date of this certificate and the date of payment in accordance with the following formula:*
>
> $$\text{Indexed development cost (\$)} = \frac{\$Co \times \text{Current CPI}}{\text{Base CPI}}$$
>
> *Where:*
>
> *$Co is the original development cost estimate assessed at the time of the issue of the complying development certificate*
>
> *Current CPI is the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Bureau of Statistics at the quarter immediately prior to the date of payment*
>
> *Base CPI is the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Bureau of Statistics at the quarter ending immediately prior to the date of imposition of the condition requiring payment of a contribution*
>
> *Time for payment*
>
> ***The contribution must be paid prior to any work authorised by this complying development certificate commences**, as required by clause 136L of the EP&A Regulation. Deferred payments of contributions will not be accepted.*
>
> *Works in kind agreement*
>
> *This condition does not need to be complied with to the extent specified, if a works in kind agreement or planning agreement is entered into between the developer and the Council.*

(b) Construction certificates

It is the responsibility of an accredited certifier issuing a construction certificate for building work or subdivision work to ensure that each condition requiring the payment of a monetary contribution before work is carried out has been complied with in accordance with the CDC or development consent.

The accredited certifier must ensure the applicant provides a receipt (or receipts) confirming 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.

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.

11 Timing of payment

A levy amount required to be paid by a condition imposed on the development consent in accordance with this plan is must be paid at the time specified in the condition.

Generally, the condition will provide for payment as follows:

(a) For development where no further approvals area required – before the development consent is issued.

(b) For development involving subdivision – the contribution must be paid prior to the release of the subdivision certificate (linen plan).

(c) For development not involving subdivision, but where a construction certificate is required, the contribution must be paid prior to the release of the construction certificate for any works authorising construction above the floor level of the ground floor.

A levy amount required to be paid by a condition attached to a CDC reflecting the wording in clause 10(a)(ii) of this plan, must be paid prior to any work authorised by the certificate commences, as required by clause 136L of the EP&A Regulation.

At the time of payment, it will be necessary for levy amounts to be updated in accordance with clause 13 of this plan.

12 Deferral of payment of a levy imposed under this plan

Deferred payment of levies will only be permitted where the deferral is in accordance with any direction issued by the Minister under s7.17 of the EP&A Act.

Note: For a development application not involving subdivision, and having a capital investment value of $10 million or more, timing of payment will be in accordance with the Minister's direction dated 25 June 2020 which can be accessed on the website of the Department of Planning, Industry and Environment.

The direction requires that until 25 September 2022 the contribution for these developments must be paid before the issue of the first occupation certificate in respect of any of the buildings to which the consent relates.

After 25 September 2022, payment will be made in accordance with clause 11 (c) above.

13 Adjustment of levy amounts to address the effects of inflation

Levies imposed under this plan are based on a proposed cost of carrying out the development determined by the consent authority. This cost (and consequently the levy amount) must be indexed between the date of DA determination or the issue of the CDC, as the case may be and the date of payment in accordance with the following formula:

$$\text{Indexed development cost (\$)} = \frac{\$Co \text{ X Current CPI}}{\text{Base CPI}}$$

Where:

$Co	is the original development cost estimate assessed at the time of the issue of the complying development certificate
Current CPI	is the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Bureau of Statistics at the quarter immediately prior to the date of payment
Base CPI	is the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Bureau of Statistics at the quarter ending immediately prior to the date of imposition of the condition requiring payment of a contribution

14 Cross-boundary issues

(a) Sharing of levy amounts received from development in Badgerys Creek Precinct and the Agribusiness Precinct

The Badgerys Creek Precinct and the Agribusiness Precinct comprise development areas in both Penrith and Liverpool LGAs.

Levies imposed under this plan will be paid to the relevant council and LGA that the development is located in.

The councils may, by agreement, decide to apportion each levy paid by each development in the Badgerys Creek Precinct and the Agribusiness Precinct according to the overall share of the total precinct infrastructure costs that are attributable to each part of the precinct in each LGA.

If there is no agreement between the councils then the money paid to the relevant council will be retained by that council and applied to infrastructure in its area in a reasonable time.

(b) Sharing of levy amounts where development site is situated in both LGAs

Where the development is located on a site that is situated in both Penrith and Liverpool LGAs, the entire levy will be paid to the council which has the majority of the development site within its area. The council who receives the total levy will arrange for the disbursement of part of the levy amount to the other council that reflects the proportion of the development works that are located in the other council's area.

(c) Coordination of infrastructure delivery near the LGA boundary

The councils will establish a joint management group and / or other management arrangements to ensure that the planning and delivery of infrastructure located near the shared boundary of the Penrith and Liverpool LGAs is carried out in a coordinated and timely manner.

15 Pooling of section 7.12 levies

This plan authorises monetary contributions paid for different purposes in accordance with development consent conditions 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 described in clause 17 of this plan.

16 Alternatives to paying the levy

If a developer wishes to deliver infrastructure that is included in this plan on the Council's behalf, then the developer may – in lieu of paying part or all of a section 7.12 levy imposed under this plan - offer to enter into a planning agreement to undertake works in kind, make monetary contributions, dedicate land, or provide some other material public benefit.

Planning agreements are to be negotiated with any policy on planning agreements adopted by the relevant council.

17 Infrastructure staging and priorities

The local infrastructure included in this plan will be provided as, and when development surrounding the infrastructure occurs.

Staging/timing of delivery of infrastructure is however dependent upon various matters outside the control of the councils, including the making of precinct plans, master plans, the range of developer intentions for respective land parcels, developer works in kind offers or utility authority's growth servicing plans.

Where infrastructure is not provided by a developer as works in kind and is to be provided by a council, the priority items for contributions received (and in pooling any contributions funds as discussed in clause 15 of this plan, will be as follows:

(a) Acquisition of land for the various infrastructure purposes included in this plan.

(b) Acquisition of land and carry out works that 'unlock' development opportunities for many landowners.

18 Relationship to other contributions plans

Where the relevant council has adopted another section 7.12 contributions plan that applies to land within the Aerotropolis and is in force, that plan is deemed to have no effect and does not apply to the development.

This plan however does not affect development consents or CDCs containing conditions requiring contributions or levies under another contributions plan or plans that were determined or issued prior to this plan coming into effect.

19 Savings and transitional arrangements

This plan applies to a development application or application for a CDC that was determined on, or after the date this plan took effect.

20 Accountability and access to information

In accordance with the EP&A Act and EP&A Regulation a contributions register will be maintained by Council and may be inspected upon request.

The register will be maintained at regular intervals and will include the following:

- Particulars sufficient to identify each development consent for which contributions have been sought
- Nature and extent of the contribution required by the relevant condition of consent
- Name of the contributions plan under which the condition of consent was imposed
- Date the contribution was received, for what purpose and the amount.

Separate accounting records will be maintained for each contribution type in this plan and published every year in the relevant council's financial accounts. They will contain details concerning contributions received and expended, including interest for each service or amenity to be provided. The records are held at the relevant council's administration office and may be inspected upon request.

21 Review of plan

Penrith and Liverpool councils intend to regularly review this contribution plan as more detail on the Aerotropolis Precincts becomes available. When more detail is available about each precinct's expected development detailed infrastructure requirements, the relevant council may update this plan, or prepare a nexus-based s7.11 contributions plans that will more accurately quantify local infrastructure contributions obligations.

Part 3 Glossary

Except where indicated in this section, the definitions of terms used in this plan are the definitions included in the EP&A Act, EP&A Regulation and relevant Penrith and Liverpool Local Environmental Plans.

For further clarity, words and phrases in this plan have the following meanings:

ABS means the Australian Bureau of Statistics.

CDC means complying development certificate.

CPI means the *Consumer Price Index (All Groups - Sydney)* published by the ABS.

Consent authority has the same meaning as in section 4.5 of the EP&A Act but also includes an accredited certifier responsible for issuing a complying development certificate.

Cost summary report means a report prepared by a suitably qualified person described in this plan that sets out the proposed cost of carrying out of development as defined in clause 25J of the EP&A Regulation.

DA means development application.

Development has the same meaning as in section 1.5 of the EP&A Act.

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

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

LGA means local government area.

Local infrastructure means public amenities and public services that are traditionally the responsibility of local government, excluding water supply or sewerage services.

Minister means the Minister responsible for administering the NSW *Environmental Planning and Assessment Act 1979*.

Planning agreement means a voluntary agreement referred to in section 7.4 of the EP&A Act.

Proposed cost of development means the cost of development proposed in a development application or a complying development application under the provisions of clause 25J of the EP&A Regulation.

Relevant council means:

- in the case of development on land within the Penrith LGA, Penrith City Council
- in the case of development on land within the Liverpool LGA, Liverpool City Council

Works in kind means the construction or provision of the whole or part of a public facility that is identified in a works schedule in a contributions plan.

Part 4 References

Department of Planning, Industry and Environment (2020), *Western Sydney Aerotropolis Plan,* September

State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

Environmental Planning and Assessment Act 1979

Environmental Planning and Assessment Regulation 2000

Department of Planning, Industry and Environment (2020), *Criteria to request a higher s7.12 percentage Discussion Paper.* April

Appendix A: Relationship between Expected Development and Infrastructure Demand + Infrastructure Schedules

Introduction and Background

1 Purpose

All contributions plans must include information that shows the relationship between expected types of development in contributions plan area and the anticipated increase in demand for public amenities and services to meet that demand.

This part of the Aerotropolis Local Infrastructure Contributions Plan is intended to meet that requirement.

Section 3 of this part of the plan also contains the plan's infrastructure schedules.

More detailed information on the infrastructure needs of the Aerotropolis precincts and the assumptions underpinning them can be found in the *Western Sydney Aerotropolis Local Infrastructure Contributions Plan Background Report*, prepared by Infrastructure & Development Consulting ('the Background Report').

2 Aerotropolis plan overview and initial rezonings

An Aerotropolis is a metropolitan area whose infrastructure, land use and economy are centred on the airport and includes the outlying corridors, and aviation orientated business and residential development that benefit from each other and their accessibility to the airport.[1]

The NSW Government in September 2020 issued the *Western Sydney Aerotropolis Plan* (WSAP) to establish the planning framework for the region surrounding the Western Sydney International (Nancy-Bird Walton) Airport.

The WSAP among other things:

- establishes a vision, objectives and principles for the Aerotropolis
- identifies the intended land use planning outcomes for each of the 10 precincts that comprise the Aerotropolis and a sequenced approach to precinct planning
- defines how the broader region's environment, waterways, strategic transport network, infrastructure and economy will combine to transform the Aerotropolis into a contemporary metropolitan city.[2]

The proposed structure plan for the Aerotropolis precincts setting out the broad land use and transport proposals is shown as Figure 1 over page.

The Aerotropolis area comprises various precincts. In September 2020, the following precincts were rezoned under *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020* (WSAP SEPP):

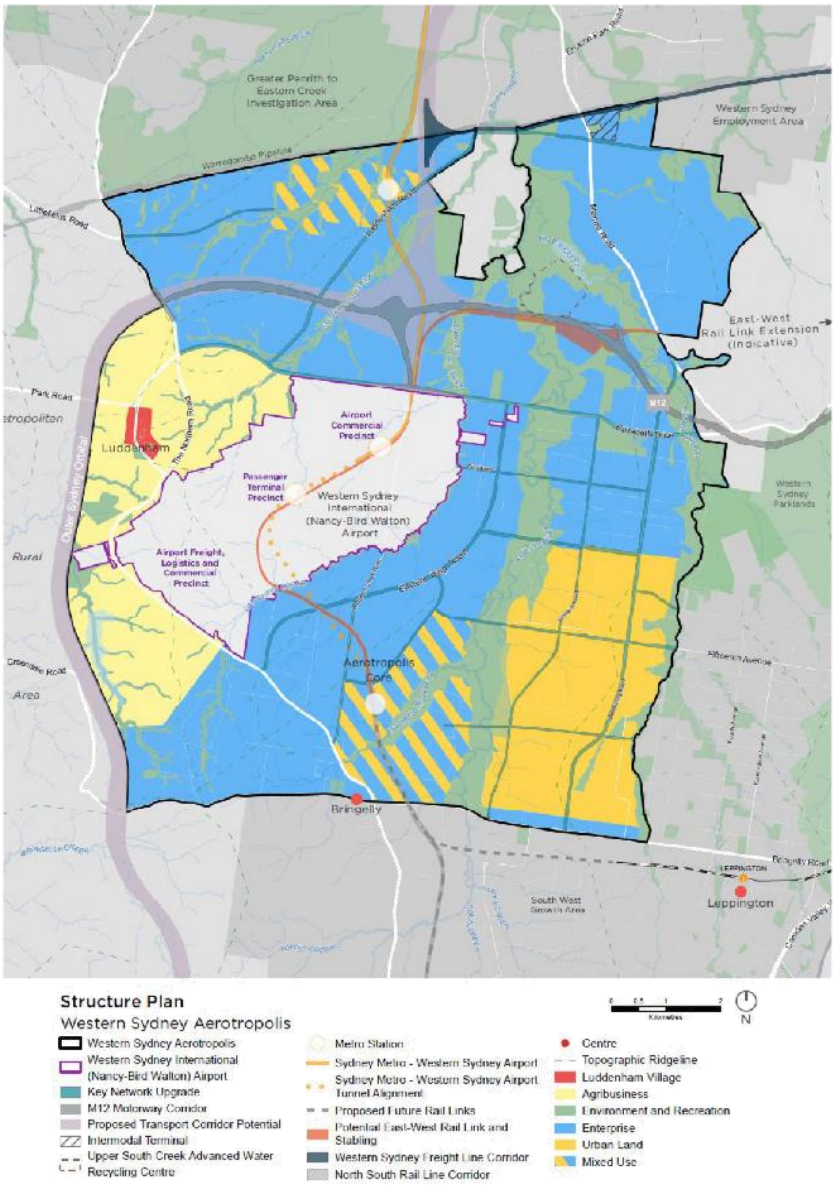
- Aerotropolis Core Precinct,
- Agribusiness Precinct,
- Badgerys Creek Precinct, and
- Northern Gateway Precinct, and
- Wianamatta-South Creek Precinct,

[1] WSAP, p6
[2] Ibid., p8

as shown in Figure 2 over page.

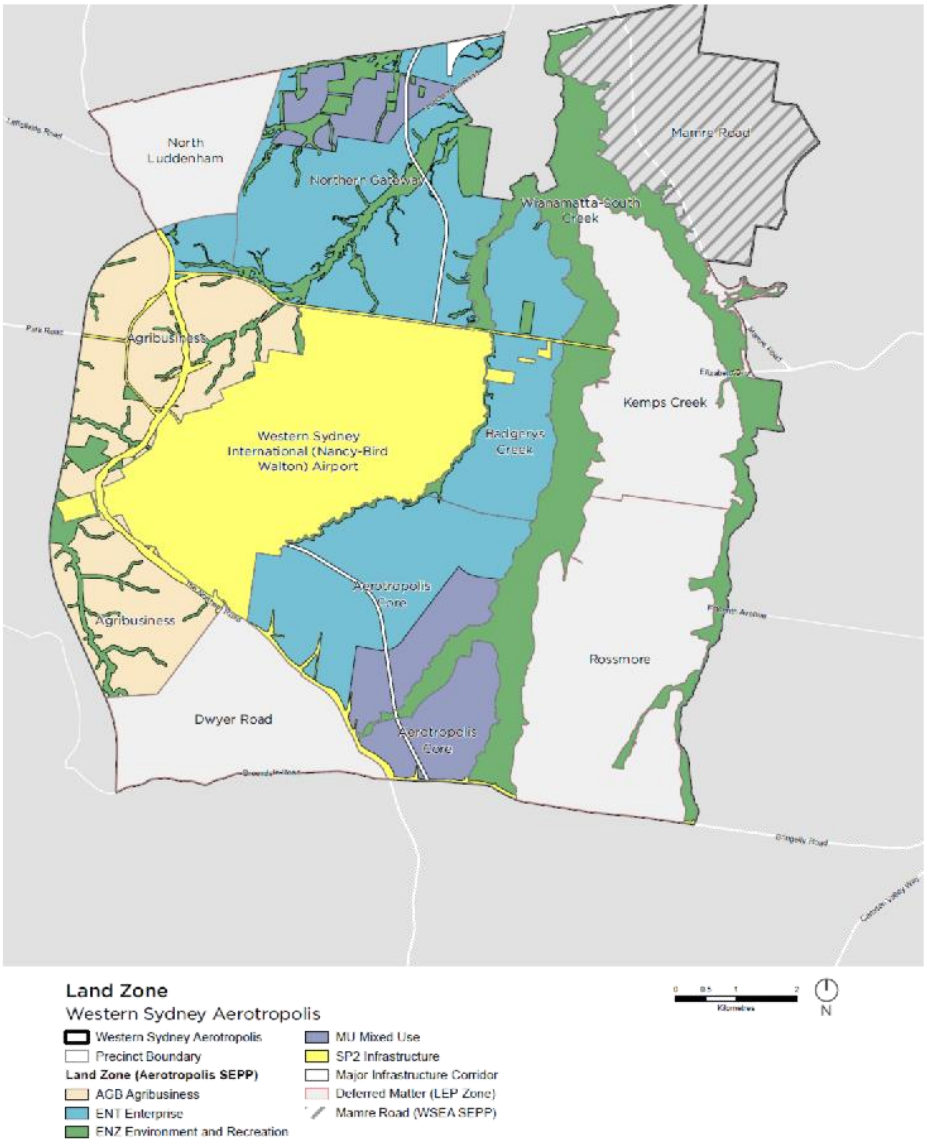
Apart from the Wianamatta-South Creek Precinct, which will be largely used for environmental and recreation purposes, these first release precincts are anticipated to accommodate development that will cater for 102,000 additional jobs and 34,000 additional residents.

Figure 1: WSAP Structure Plan



Source: WSAP, p27

Figure 2: Aerotropolis precincts rezoned under WSAP SEPP in 2020



Source: WSAP p29

3 Land affected by this contributions plan

This contributions plan applies to the precincts rezoned under the WSAP SEPP in 2020 except the Wianamatta-South Creek Precinct, as shown in Figure 3.

The following areas and Aerotropolis precincts are not subject to this contributions plan:

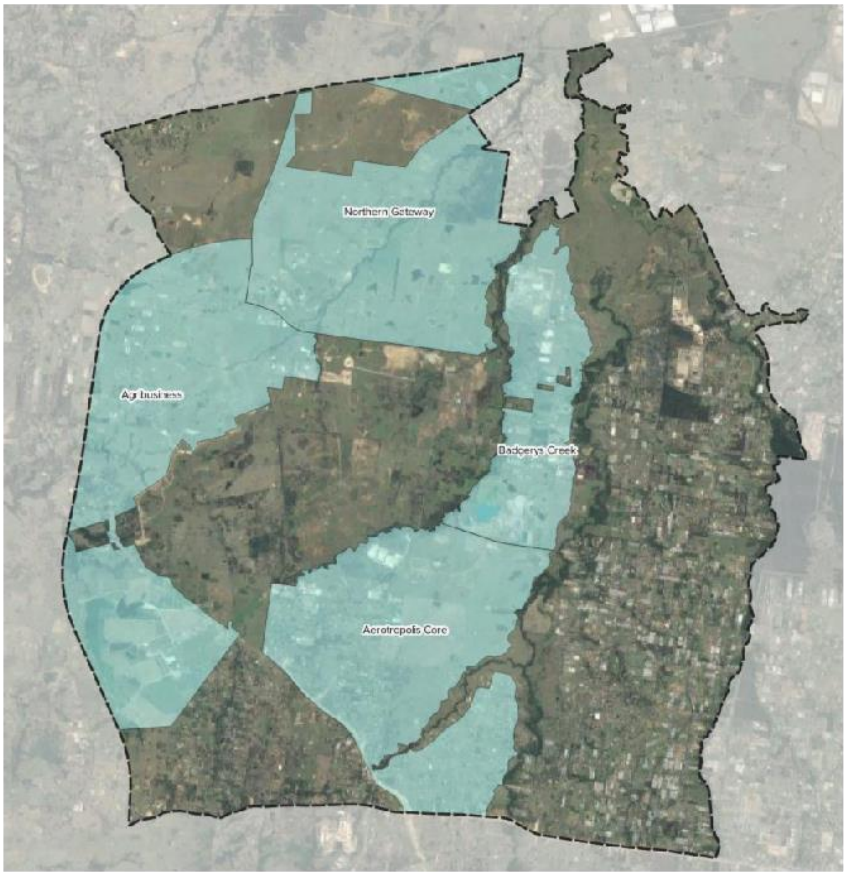
(a) Sydney Science Park land in the Northern Gateway precinct, as the future development of this site is subject to other infrastructure arrangements.

(b) Mamre Road precinct located entirely in Penrith LGA, which has been rezoned under a different environmental planning instrument *State Environmental Planning Policy (Western Sydney Employment Area) 2009*.

(c) A further 4 Aerotropolis precincts have not yet been released for development, being:

- Dwyer Road Precinct
- North Luddenham Precinct
- Rossmore Precinct
- Kemps Creek Precinct

Figure 3: Land subject to this contributions plan



4 Needs assessment methodology

The strategic infrastructure needs for the initial Aerotropolis Precincts are identified in the Background Report.

The following is a summary of the methodology for estimating expected development and quantifying infrastructure demand. Full details of the methodology used to identify the expected level and types of development and the associated infrastructure demands is provided in the Background Report. In summary the approach taken involved:

Estimating expected development and development costs

- Using worker and resident projections included in the draft WSAP.
- Using area and land use assumptions for the proposed Enterprise, Mixed Use, Special Purpose, Agribusiness and Industrial zones identified in the draft WSAP and draft zoning maps to inform anticipated development types and locations.
- Using other western Sydney local contributions plans to estimate dwelling occupancy rates for different dwelling types to derive the anticipated number of dwellings.
- Adopting residential dwelling densities provided in the Western Sydney Aerotropolis Stage 1 LUIIP.
- Using the draft WSAP as a guide to estimate the proportions of development types anticipated with each land use zone within in each Precinct (e.g. an 80/10/10 split between freight and logistics, warehousing and retail uses in the Northern Gateway enterprise zone).
- Reviewing comparable residential and employment developments and industrial and freight and logistics parks to determine reasonable site development metrics, such as floor space, site coverage, hardstand and landscape areas, constrained areas, and areas set aside for subdivision roads.
- Applying the above assumptions with standard development cost rates to determine itemised and total building costs for each precinct.

Estimating local infrastructure demands and costs

- Excluding roads likely to be funded by Special Infrastructure Contributions or other State funding mechanisms.
- Undertaking a baseline infrastructure assessment by reviewing different residential and industrial/employment development locations to derive, on an average per hectare basis, the likely need for local and regional roads and stormwater drainage facilities.
- Applying these rates to each precinct to determine land areas and infrastructure quantities for road and stormwater infrastructure.
- Undertaking a baseline audit of existing social infrastructure and a review of existing contribution plans for comparable areas to determine planning benchmarks for social infrastructure.
- Applying the planning benchmarks to the projected resident population to determine social infrastructure quantities.
- Using standard industry cost rates, and cost rates found in IPART-reviewed contributions plans to determine infrastructure costs and land acquisition costs.

Expected development summary

5 Northern Gateway

The Northern Gateway will act as a key interface between the airport, the Western Parkland City and the rest of the Sydney Metropolitan Area. The precinct will also leverage off the Sydney Science Park for a diverse range of employment and education opportunities.

Desirable land uses within the precinct include high technology commercial enterprise/industry, warehousing and logistics, education, offices, retail, residential, health services, entertainment, tourism facilities, cultural and creative industries, green public and private open spaces, recreation and visitor accommodation.[3]

High level analysis of the expected development in the Northern Gateway Precinct is summarised in the following table:

Land use	Developable area (ha)	GFA (m²)	Development costs
Freight and Logistics	725.5	3,627,395	$5,169,037,476
Warehouse	90.7	453,424	$700,540,605
Retail	90.7	680,137	$1,852,238,429
Total			$7,721,816,510

6 Agribusiness

The Agribusiness Precinct is located around the western edge of the Airport and captures the existing suburb of Luddenham. This Precinct will continue to support the continued growth and development of agriculture and agribusiness and will maintain lands for agricultural production with enabling connections to the airport.

Desirable land uses include agribusiness, intensive fresh and value-added food production, food innovation technology and research, food production and processing, fresh food produce markets, warehousing and logistics, high technology industry, ancillary rural residential, complementary offices and retail, education, circular economy enabling infrastructure, biosecurity enabling infrastructure, and integrated logistics hub.[4]

High level analysis of the expected development in the Agribusiness Precinct is summarised in the following table:

Land use	Developable area (ha)	GFA (m2)	Development costs
Freight and Logistics	921.1	4,605,285	$6,562,531,757
Warehouse	108.4	541,798	$837,078,354
Retail	54.2	406,349	$1,106,623,002
Total			$8,506,233,114

7 Badgerys Creek

[3] WSAP, p59
[4] ibid., p61

The Badgerys Creek Precinct is located to the east of the Airport and South Creek is located on the eastern edge of the Badgerys Creek Precinct. As the precinct is affected by aircraft noise, it is not suited to contain sensitive or residential land uses.

Desirable land uses include defence and aerospace, advanced manufacturing activity, high technology industry, airport supporting development, local retail, Aerotropolis enabling industries, modernised resource recovery industries, light industrial, and social infrastructure.[5]

High level analysis of the expected development in the Badgerys Creek Precinct is summarised in the following table:

Land use	Developable area (ha)	GFA (m²)	Development costs
Freight and Logistics	415.9	2,079,510	$2,963,301,716
Warehouse	48.9	244,648	$377,981,519
Retail	24.5	183,486	$499,694,015
Total			$3,840,977,250

8 Aerotropolis Core

The Aerotropolis Core is anticipated to cater for the most diverse range of future development and would contain the residential development as part of the initial Aerotropolis Precincts and industrial development and social infrastructure including schools and health facilities. The precinct is wholly located in the Liverpool LGA.

Desirable land uses within the precinct include advanced manufacturing, defence and aerospace, research and development activity, high technology industry and infrastructure, education (including vocational and tertiary education); professional services, business incubator hubs, creative industries including 'pop-up installations' and festivals/events, commercial offices, food and beverage, indoor and outdoor recreation and sports facilities, medium to high density residential near the Metro station; retail, community; civic, entertainment, cultural facilities; green open and public space on public and private lands; public and private medical services, visitor accommodation, integrated health hub.[6]

The Mixed Use zone is anticipated to contain the greatest range of development types out of the initial Aerotropolis Precincts due to the presence of residential development and supporting retail services and social infrastructure.

Residential development is anticipated to use 212ha of land in the Aerotropolis Core Precinct. The Background Report suggests up to 9,143 new residential dwellings can be provided based on the assumed dwelling densities and land identified for residential uses in the Aerotropolis Core. This total would include up to 4,000 new medium density dwellings, 4,000 new low rise apartments and 1,143 high rise apartments.

High level analysis of the expected development in the Aerotropolis Core Precinct is summarised in the following table:

Land use	Developable area (ha)	GFA (m²)	Development costs
Freight and Logistics	272.6	1,362,795	$1,941,983,559

[5] ibid., p60
[6] ibid., p58

Warehouse	158.7	793,307	$1,225,659,574
Retail	451.6	4,516,142	$12,012,937,188
Education & Schools	44.8	223,819	$630,050,077
Health Services	22.4	111,909	$373,217,941
Medium Density Dwellings	90.1	720,000	$1,408,631,899
Apartments (Low Rise)	72.1	440,000	$1,102,105,519
Apartments (High Rise)	18.0	102,857	$279,669,237
Total			$18,974,254,994

9 Areas excluded from consideration

Western Sydney International (Nancy-Bird Walton) Airport

The land comprising the Western Sydney International (Nancy-Bird Walton) Airport has been excluded as proposals for activities on this site will be assessed and determined by the Commonwealth Government. Local contributions will not apply to airport activities.

Sydney Science Park

This Plan excludes the Sydney Science Park (SSP) site. This approach has been taken as the WSSP is addressed in an existing VPA between the applicant and Penrith City Council that contains a schedule of monetary contributions, capital works, open space works and road upgrades.

The SSP envisages:

- 3,400 residential dwellings
- 340,000m^2 of research and development floor space
- 100,000m^2 of education floor space and associated student accommodation
- A town centre with 30,000m^2 of retail floor space
- A primary school

It is possible that the SSP concept plan will be modified in the future. If so, Penrith City Council would seek to negotiate a new VPA with the developer or prepare a separate contributions plan for the SSP site.

Summary of Local infrastructure requirements

The range of proposed employment generating uses and new residential development will require new roads and transport infrastructure to ensure residents, business and future airport operations can move effectively across the Aerotropolis and to the rest of the Sydney Metropolitan Area. These new roads would need to perform a range of functions from local roads to collector roads to accommodate a range of vehicles from cars to B-doubles.

The anticipated level of development will see large changes in the pervious and impervious areas and drainage paths into local creeks and the regionally significant South Creek. Therefore, a suite of land will need to be acquired by Councils to provide drainage and stormwater infrastructure and riparian recreation areas.

Precincts accommodating residential development must be supported by new amenities and social infrastructure including new schools, healthcare facilities, district and local parks, multi-use function centres, sports facilities and libraries.

The following sections include tables that summarise the local infrastructure quantities (both land and works) and estimated costs for each precinct.

10 Northern Gateway Precinct infrastructure schedule

	Unit	Quantity	Costs
Engineering Infrastructure			
Local Collector	lin m	1,224	$4,297,102
High Street	lin m	1,224	$4,407,285
Industrial Street	lin m	13,059	$49,622,760
Water Quantity	m^3	244,849	$31,830,389
Water Quality	m^2	163,233	$89,778,019
Total engineering infrastructure costs			*$179,935,555*
Community Facilities			
Council owned and managed early childhood education and care centre	m^2	825	$3,589,470
Parks			
Local Park	Ha	1	$1,000,000
District Park	ha	5	$6,000,000
Total Social Infrastructure Costs			*$10,589,470*
Land acquisition			
Roads	m^2	294,007	$117,602,676
Stormwater	m^2	408,082	$98,959,862
Riparian Corridors	m^2	6,547	$556,495
Community Facilities	m^2	825	$330,066
Open Space	m^2	60,000	$14,550,000
Total land acquisition	*m^2*	*769,461*	*$231,999,099*
Total infrastructure costs			**$422,524,125**

11 Agribusiness Precinct infrastructure schedule

	Unit	Quantity	Costs
Engineering Infrastructure			
Local Collector	lin m	1,243	$4,364,429
High Street	lin m	-	-
Industrial Street	lin m	14,000	$53,200,257
Water Quantity	m²	292,571	$38,034,240
Water Quality	m²	195,047	$107,276,061
Total engineering infrastructure costs			*$202,874,987*
Community Facilities			
Council owned and managed early childhood education and care centre	m²	543	$2,362,888
Parks			
Local Park	Ha	0.5	$500,000
District Park	Ha	5	$6,000,000
Total Social Infrastructure Costs			*$8,862,888*
Land acquisition			
Roads	m²	291,504	$116,601,775
Stormwater	m²	487,618	$118,247,476
Riparian Corridors	m²	76,275	$6,483,375
Community Facilities	m²	543	$217,277
Open Space	m²	55,000	$13,337,500
Total land acquisition	*m²*	*910,941*	*$254,887,403*
Total infrastructure costs			**$466,625,278**

12 Badgerys Creek Precinct infrastructure schedule

	Unit	Quantity	Costs
Engineering Infrastructure			
Local Collector	lin m	330	$1,159,266
High Street	lin m	330	$1,188,990
Industrial Street	lin m	7,437	$28,261,764
Water Quantity	m²	132,110	$17,174,306
Water Quality	m²	88,073	$48,440,350
Total engineering infrastructure costs			*$96,224,676*
Community Facilities			
Council owned and managed early childhood education and care centre	m²	401	$1,362,385
Parks			
Local Park	Ha	0.5	$500,000
District Park	Ha	-	-

Total Social Infrastructure Costs			*$1,862,385*
Land acquisition			
Roads	m²	108,597	$43,438,957
Stormwater	m²	220,183	$53,394,477
Riparian Corridors	m²	180,571	$15,348,535
Community Facilities	m²	401	$160,281
Open Space	m²	5,000	$1,212,500
Total land acquisition	*m²*	514,753	*$113,554,750*
Total infrastructure costs			**$211,641,810**

13 Aerotropolis Core Precinct infrastructure schedule

Aerotropolis Core is the only one of the initial release precincts planned to accommodate dwellings residents. While Sydney Science Park in the Northern Gateway Precinct will also accommodate dwellings, the Sydney Science Park is excluded from this plan.

Industry benchmarks have been adopted to establish a baseline of social infrastructure needs, however, the assessment also factors in best practice approaches involving providing multi use facilities rather than single purpose facilities, locating community space in central, highly accessible locations and to provide community facilities that function as a network across local and district areas.

The social infrastructure needs of the Aerotropolis Core Precinct are shown in the table below

Social Infrastructure Type	Infrastructure Need
Community Facilities	3,260m² of community facility space including: • Library floor space • Multi-purpose community hall space • Flexible meeting spaces • Cultural production space • Community kitchen • Subsidised office space • Foyer, lounge and café • Recording studio spaces • Connected outdoor and public civil space
Parks	New parks consisting of: • 5ha of local parks • 25ha of district parks • 20ha associated with a major destination park or city wide park
Sport and recreation Facilities	• District playing grounds consisting of 2 double playing fields and amenities • Multi-purpose outdoor courts • Play space co-located within park space • Outdoor fitness stations • Youth Precinct • Water play area co-located with the district park
Indoor Leisure	A 3,000m² of leisure potentially including: • Outdoor toddler pool • 25m indoor pool • 2 indoor courts

- Community meeting rooms
- Amenities block
- Adjoining open space/picnic area
- Hydrotherapy indoor pool
- Community meeting rooms
- Youth recreation hang out space
- Foyer, lounge and cafe

Engineering infrastructure and social infrastructure requirements and costs for this precinct are shown in the table below:

	Unit	Quantity	Costs
Engineering Infrastructure			
Local Collector	lin m	12,770	$44,822,739
High Street	lin m	7,003	$25,211,728
Industrial Street	lin m	6,900	$26,218,208
Water Quantity	m²	305,152	$39,669,718
Water Quality	m²	203,434	$111,888,949
Total engineering infrastructure costs			*$247,811,342*
Social infrastructure			
District multi-purpose community hub:			
Library floorspace	m²	1,008	$5,796,000
Multi-purpose community hall space	m²	528	$2,904,000
Flexible meeting space	m²	100	$525,000
Cultural production space (small scale e.g. tech or pottery)	m²	100	$435,000
Community kitchen	m²	150	$709,500
Subsidised office space x 4 offices & hotdesks	m²	150	$415,500
Foyer, lounge & café	m²	300	$1,065,000
Recording studio spaces	m²	80	$284,000
Connected outdoor, public civil space	m²	1,000	$4,350,000
90 space council owned and managed early childhood education and care centre	m²	1,350	$4,590,000
Parks			
Local park	ha	5	$5,000,000
District park	ha	25	$30,000,000
Major destination park/city wide park	ha	20	$24,000,000
Sport and Recreation Facilities			
District sports grounds (2 double playing fields and amenities)	ha	20	$61,600,000
Multi-purpose outdoor courts	ha	0.3	$840,000
Play space (assumed located within a park)	m²	1,200	$7,200,000
Outdoor fitness stations	No.	2	$240,000
Youth precinct	ha	0.1	$8,500,000

Water play (provided in district park)		6	$4,800,000
Indoor Leisure Centre			
Outdoor toddler pool	m²	300	$1,275,000
Outdoor 50m pool (8 lanes)	m²	700	$2,975,000
Shower/changeroom block	m²	200	$580,000
Adjoining open space/picnic area	m²	1,000	$2,850,000
Learn to swim/hydrotherapy indoor pool	m²	500	$2,525,000
25m indoor pool	m²	500	$2,500,000
2x indoor courts	m²	750	$2,970,000
Community meeting rooms	m²	150	$787,500
Youth recreation hang out space	m²	200	$710,000
Foyer, lounge & café	m²	400	$1,420,000
Total social infrastructure costs			*$181,846,500*
Land acquisition			
Roads	m2	357,592	$458,807,296
Stormwater	m2	508,586	$315,329,674
		505,254	$42,946,590
Community facilities	m2	4,610	$1,844,000
Open space and recreation	m2	708,700	$204,730,000
Total land acquisition	*m2*	2,084,742	*$1,023,657,560*
Total infrastructure costs			**$1,453,315,403**

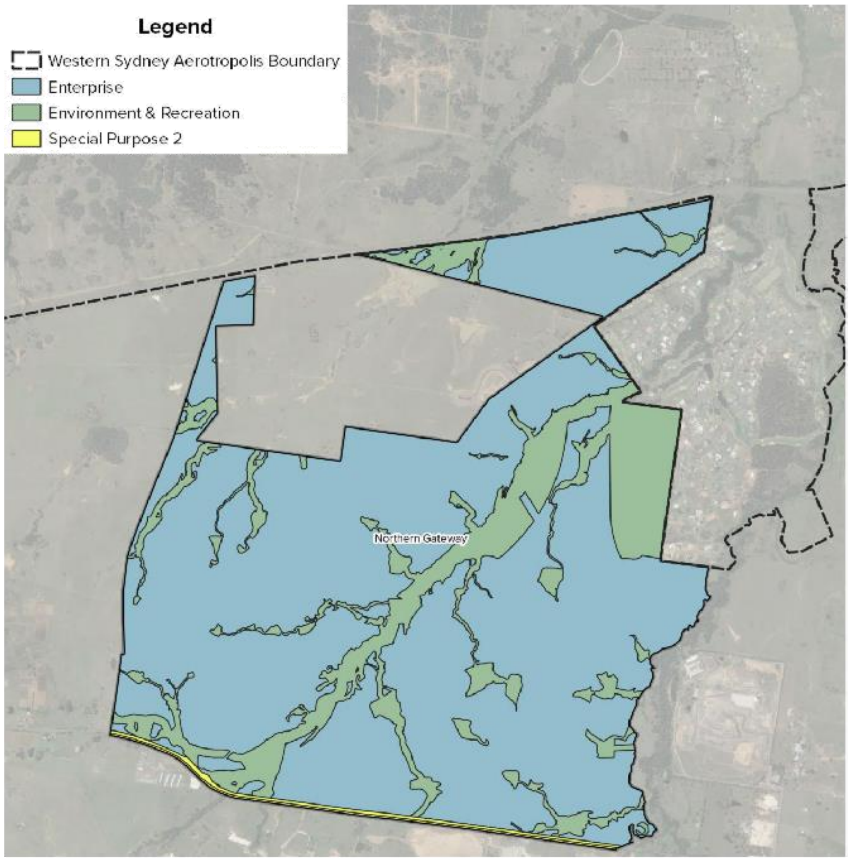
Summary of development and infrastructure costs (by precinct)

	Northern Gateway	Agribusiness	Badgerys Creek	Aerotropolis Core	Total
Development Costs	**$7,722M**	**$8,506M**	**$3,841M**	**$18,974M**	**$39,043M**
Engineering Infrastructure Costs	$180M	$203M	$96M	$248M	$727M
Social Infrastructure Costs	$11M	$9M	$2M	$182M	$203M
Land Acquisition Costs	$232M	$255M	$114M	$1,024M	$1,624M
Total infrastructure costs	**$423M**	**$467M**	**$212M**	**$1,453M**	**$2,554M**
Plan administration (0.2% of plan value)	$0.38M	$0.42M	$0.20M	$0.86M	$1.86M
Total infrastructure costs as % of development costs	**5.5%**	**5.5%**	**5.5%**	**7.7%**	**6.5%**

Totals are rounded

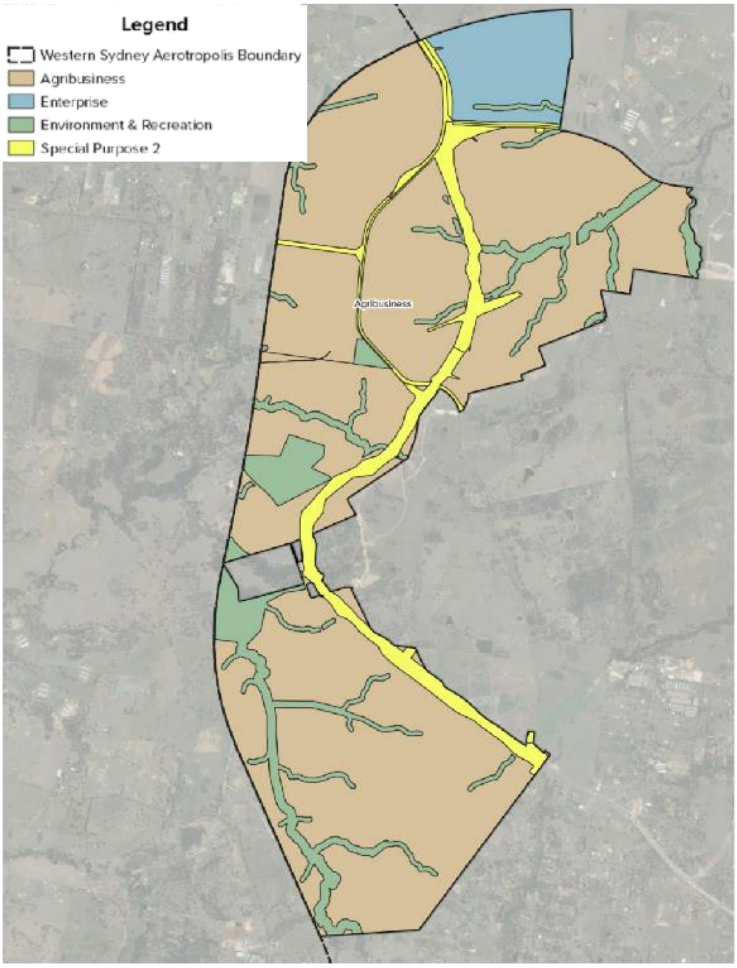
Appendix B: Infrastructure Locations Maps

Northern Gateway Works Schedule Map



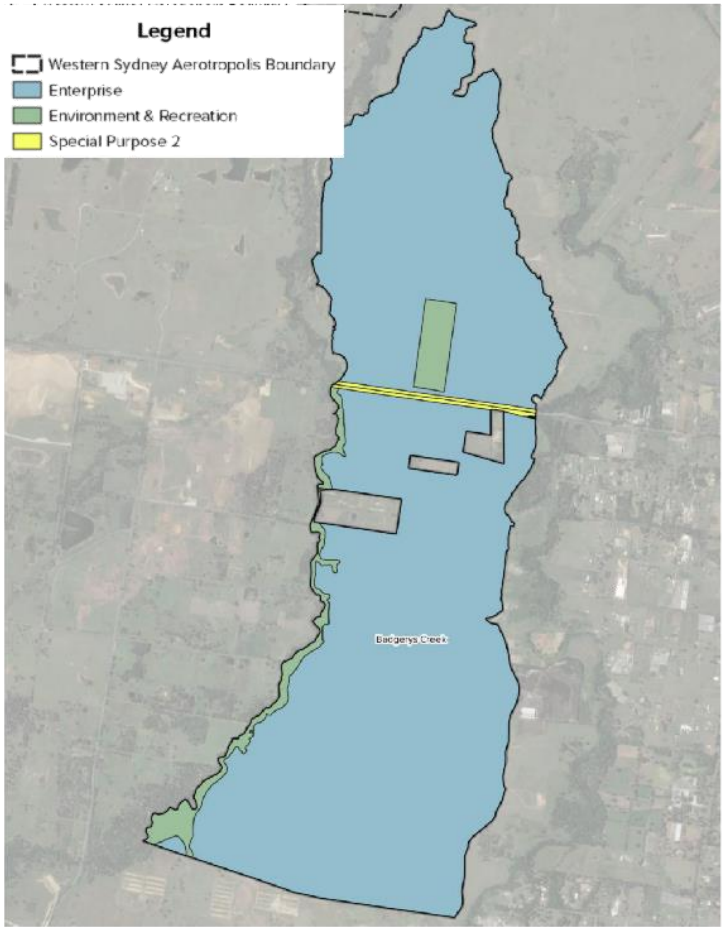
Infrastructure	Quantity
Roads Infrastructure	
Local Collector Road	1,224m
High Street	1,224m
Industrial Street	13,059m
Stormwater Infrastructure	
Water Quantity Management	244,849m^3
Water Quality Management	163,233m^2
Social Infrastructure	
Council Owned and Managed Early Childhood Education & Care Centre	825m^2
Open Space & Recreation Infrastructure	
Parks (Local, District & Major)	6ha

Agribusiness Works Schedule Map



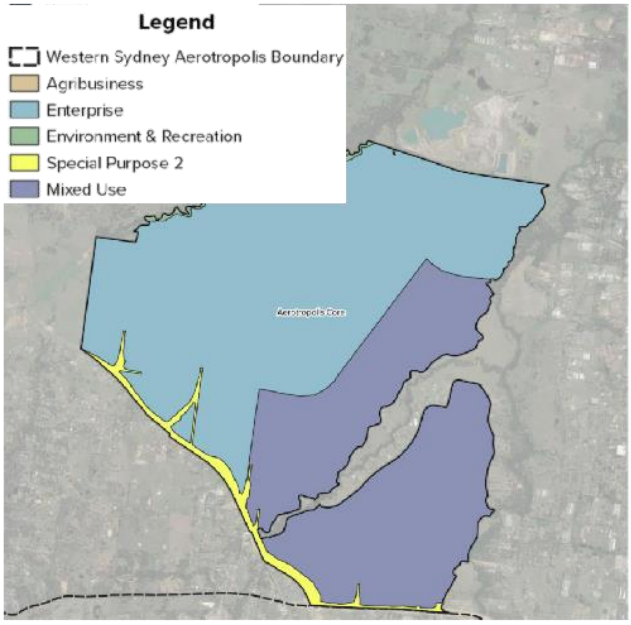
Infrastructure	Quantity
Roads Infrastructure	
Local Collector Road	1,243m
Industrial Street	14,000m
Stormwater Infrastructure	
Water Quantity Management	292,571m^3
Water Quality Management	195,047m^2
Social Infrastructure	
Council Owned and Managed Early Childhood Education & Care Centre	543m^2
Open Space & Recreation Infrastructure	
Parks (Local, District & Major)	5.5ha

Badgerys Creek Works Schedule Map



Infrastructure	Quantity
Roads Infrastructure	
Local Collector Road	330m
High Street	330m
Industrial Street	7,437m
Stormwater Infrastructure	
Water Quantity Management	132,110m^3
Water Quality Management	88,073m^2
Social Infrastructure	
Council Owned and Managed Early Childhood Education & Care Centre	401m^2
Open Space & Recreation Infrastructure	
Parks (Local, District & Major)	0.5ha

Aerotropolis Core Works Schedule Map



Infrastructure	Quantity
Roads Infrastructure	
Local Collector Road	12,770m
High Street	7,003m
Industrial Street	6,900m
Stormwater Infrastructure	
Water Quantity Management	305,152m^3
Water Quality Management	203,434m^2
Social Infrastructure	
District Multi-Purpose Community Hub	3,260m^2
Council Owned and Managed Early Childhood Education & Care Centre	1,350m^2
Open Space & Recreation Infrastructure	
Parks (Local, District & Major)	50ha
District Sports Grounds	20ha
Multi-Purpose Outdoor Courts	0.3ha
Play Spaces (in District Parks)	12
Water Play (in District Parks)	6
Outdoor Fitness Stations	2
Youth Precinct	0.1ha
Indoor Leisure Centre	3,000m^2

infrastructure & development consulting

Western Sydney Aerotropolis
Local Infrastructure Contributions Plan

Background Report

October 2020

Infrastructure planning master planning civil engineering project management contract administration

Table of Contents

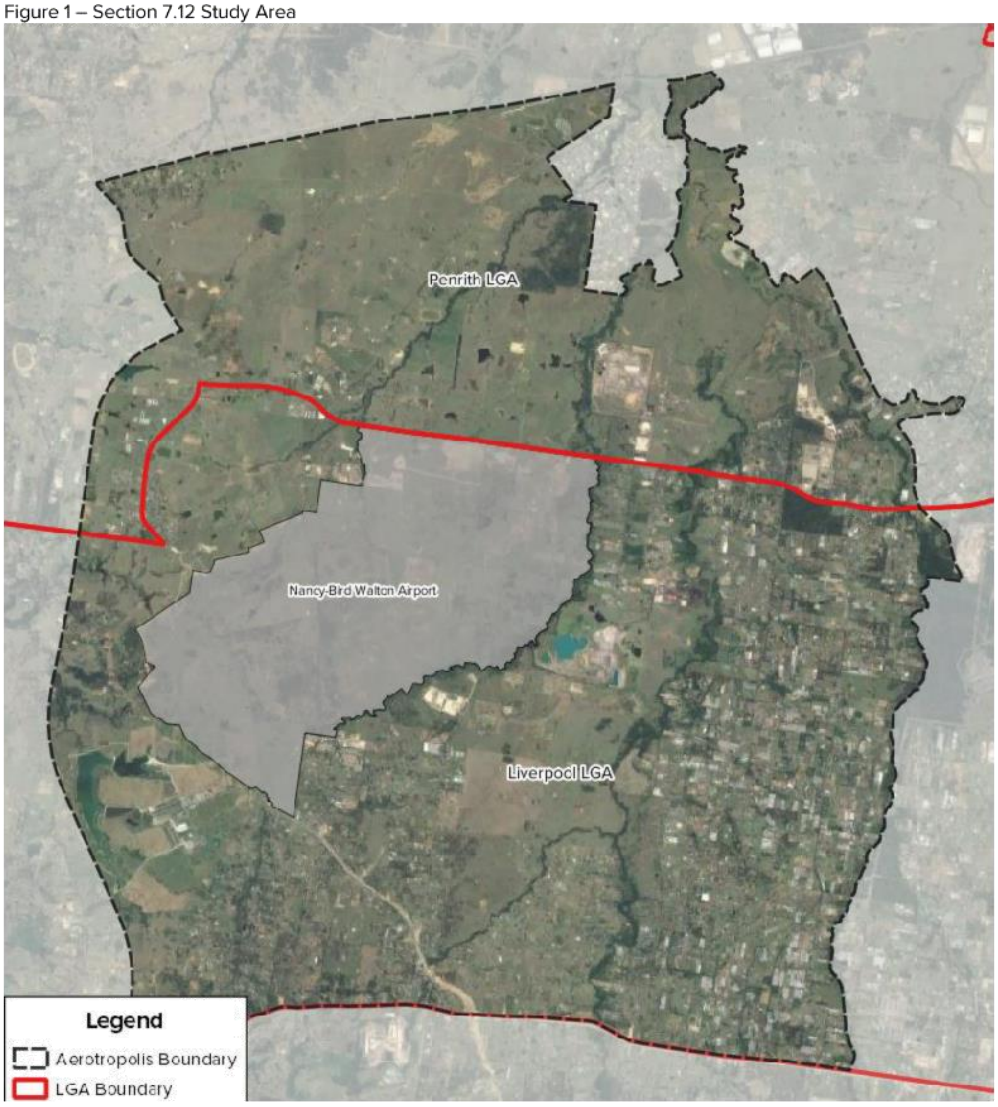
Project Number	20-501	Date	13 October 2020
Project Name	Aerotropolis	Status	Final
Client	Penrith City & Liverpool City Councils	Revision	G
Author	R. Higgisson	Reviewed	C. Avis

1 Introduction

This report has been prepared by infrastructure & development consulting pty ltd (IDC) for Liverpool City Council and Penrith City Council to assist in the preparation of a joint Section 7.12 Contributions Plan to meet the cost of local infrastructure across the Western Sydney Aerotropolis Initial Precincts.

This report provides a summary of the determination of the extent of local infrastructure required to support the development of the Aerotropolis as well as the methodology and calculations for the submission to the Minister for Planning and Public Spaces to justify Liverpool and Penrith Councils' request to implement a Section 7.12 levy in excess of 1% of the cost of development. The Study Area is shown in Figure 1 below.

Figure 1 – Section 7.12 Study Area



2 Purpose & Assumptions

2.1 Purpose

This Contributions Plan (CP) has been developed to allow for development contributions to be levied against development within the Western Sydney Aerotropolis Precincts. As outlined in the Aerotropolis SEPP, development consent cannot be granted until a local contributions plan is in place.

This Section 7.12 Plan has been prepared to ensure that development can occur in advance of detailed, precinct level planning.

It is intended that this will be reviewed and updated periodically as Precinct Planning is undertaken and further, more detailed information becomes available.

2.2 Assumptions

A number of assumptions have been made to assist in the preparation of this Section 7.12 Plan:

- This CP only applies to land contained within the Initial Precincts of the Western Sydney Aerotropolis, as outlined in Section 4.1 of this report
- The Sydney Science Park has been excluded from this Section 7.12 Plan. It has been assumed that all local infrastructure required to support development in the Sydney Science Park will be provided through a Voluntary Planning Agreement that has been entered into between Celestino and Penrith City Council
- The Wianamatta South Creek Corridor has been excluded from this Section 7.12 Plan. It has been assumed that any land acquisition, environmental rehabilitation works and active transport infrastructure located within this Precinct will form part of the Special Infrastructure Contribution plan
- Population and job projections for each Precinct have been extracted from the Western Sydney Aerotropolis Plan (WSAP). Upper range values have been adopted to provide a worst-case estimate of the infrastructure requirements
- A constrained land budget of 15% has been applied to the total site area to determine the Developable Area to allow for flooding, heritage, vegetation, etc.
- Standard development typologies were determined for each land zoning. These typologies were based on the WSAP and comparisons to surrounding areas
- Dwelling densities for high density development have been extracted from the Stage 1 LUIIP
- Dwelling densities for medium density development are based on a review of other Local Contribution Plans, ABS data and GSC projections
- Dwelling occupation rates are based on a review of other Local Contribution Plans, ABS data and GSC projections
- Assumed job densities for employment development typologies have been based on reporting prepared by SGS economics
- Typical road cross sections have been extracted from the Western Sydney Street Design Guideline (Final Draft version dated 18 June 2020)
- Detention and water quality cost and provision rates have been based on an IPART review of Contribution Plans titled *Assessment of Revised Section 94 Contributions Plan No 21 – Marsden Park*
- Land acquisition rates have been based on work undertaken for the Western Sydney Planning Partnership as provided by Atlas Urban Economics

Detailed assumptions are contained within Appendix A.

3 Criteria to Request a Higher S7.12 Percentage

In April 2020 the NSW Government released a discussion paper on the criteria for Council's to request a higher Section 7.12 Levy rate than 1%. Although this has not been implemented, we offer the following demonstration of compliance with these criteria:

Table 1 – Compliance with Criteria to Request a Higher Section 7.12 Percentage

Criteria	Complies	Comment
C1.1 The area must be identified in the relevant strategic plan	Yes	The Western Sydney Aerotropolis SEPP and Western Sydney Aerotropolis Plan (WSAP) have identified the entire area proposed for this Section 7.12 Plan.
C1.2 The strategic plan must include a significant employment growth target for the centre	Yes	The WSAP has identified a goal of 102,000 for the Precincts related to this Contributions Plan (Aerotropolis Core, Northern Gateway, Agribusiness and Badgerys Creek Precincts)
C1.3 Local planning controls must reflect relevant strategic direction and targets for the centre	Yes	This proposed Contributions Plan is based on the population and jobs forecasts in the WSAP.
C1.4 The contributions plan should focus primarily on delivering quality place-based community infrastructure and improvements that enhance amenity of the centre	Yes	The proposed Contributions Plan has been based on the draft Western Sydney Street Design Guidelines, Social infrastructure provision rates and drainage studies undertaken by Councils, Sydney Water and the Western Sydney Planning Partnership.
C1.5 Plan administration cost must not exceed 0.2% of total value of the contributions plan	Yes	An Administration fee of 0.2% has been applied to the plan.
C1.6 The contributions plan should clearly set out the relationship between the expected types of development in the area and the demand for additional public amenities and services	Yes	This report shows the nexus between the forecast population, jobs, development and their required infrastructure.
C1.7 Demonstrate that s7.11 has been considered and why it is not appropriate in this area	Yes	A section 7.11 plan has been considered for the area but is not possible to be implemented due to the flexible zoning controls in the Western Sydney Aerotropolis SEPP. Until a clear spatial plan of the proposed development across the precincts and the associated infrastructure a Section 7.11 plan cannot be prepared. Where this information is available (i.e. Mamre Road Precinct) a Section 7.11 plan has been prepared.
C1.8 Include a financial analysis that demonstrates a 1% fixed levy is insufficient, and forecast the revenue outcomes for a higher percentage levy	Yes	This report and associated worksheets show the infrastructure scope and cost estimates.
C1.9 Changes to the works schedule require approval from the Minister	Yes	We acknowledge ongoing monitoring and review of eligibility for the higher maximum percentage.
C2.1 The contribution plan must include funding and delivery of district-level infrastructure, representing at least 10% of total value of the contributions plan	Yes	This plan includes several district-level infrastructure items including district parks, sports fields, aquatic centre, major riparian corridors that comprise over 12% of the value of the plan.
C2.2 The works schedule must be prepared in consultation with the Department to identify potential district level infrastructure	Yes	We have been in consultation with both DPIE and PPO regarding our works schedule and no objection has been raised to date on the proposed infrastructure

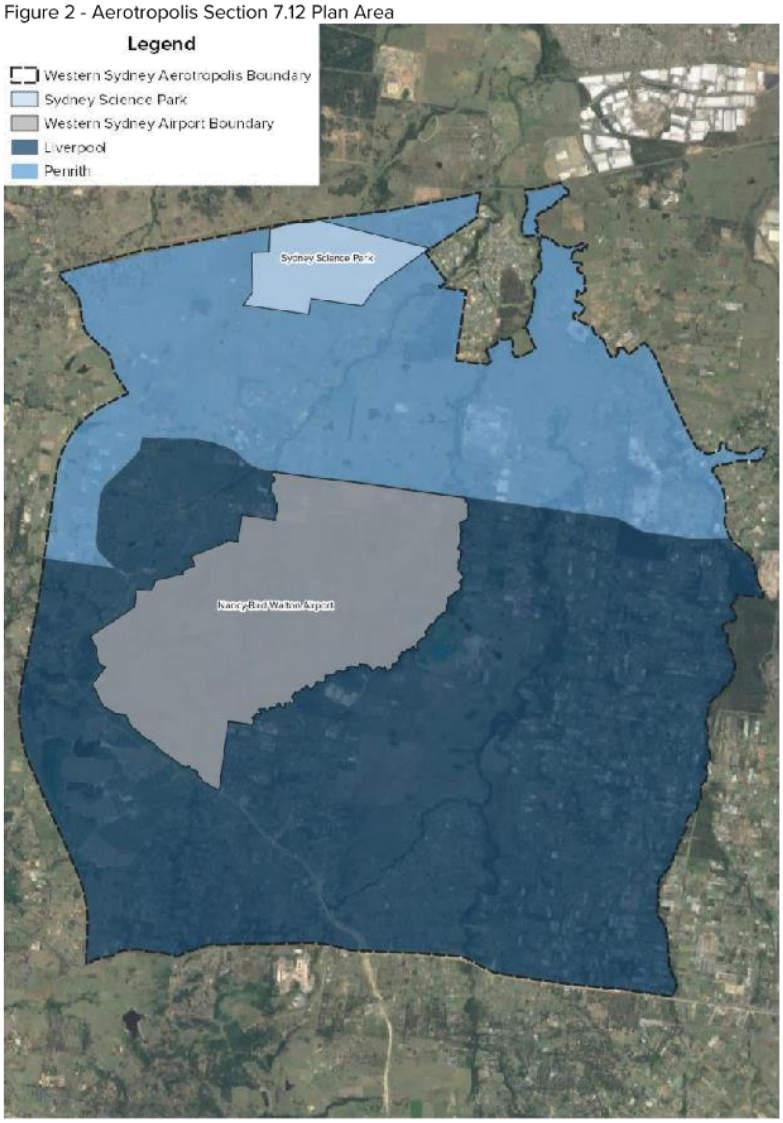
4 The Study Area

4.1 Western Sydney Aerotropolis Section 7.12 Plan Area

The proposed CP applies to land within the Western Sydney Aerotropolis. The Aerotropolis is located within the Penrith City Council and Liverpool City Council Local Government Areas (LGAs). The Aerotropolis is centred around the Western Sydney Airport which will open in 2026. The Aerotropolis area is shown in Figure 2 below.

The Sydney Science Park, located within the Northern Gateway Precinct, has undergone significant planning, including an executed Voluntary Planning Agreement with Penrith City Council. The Sydney Science Park has therefore been excluded from the Section 7.12 Plan area.

Figure 2 - Aerotropolis Section 7.12 Plan Area

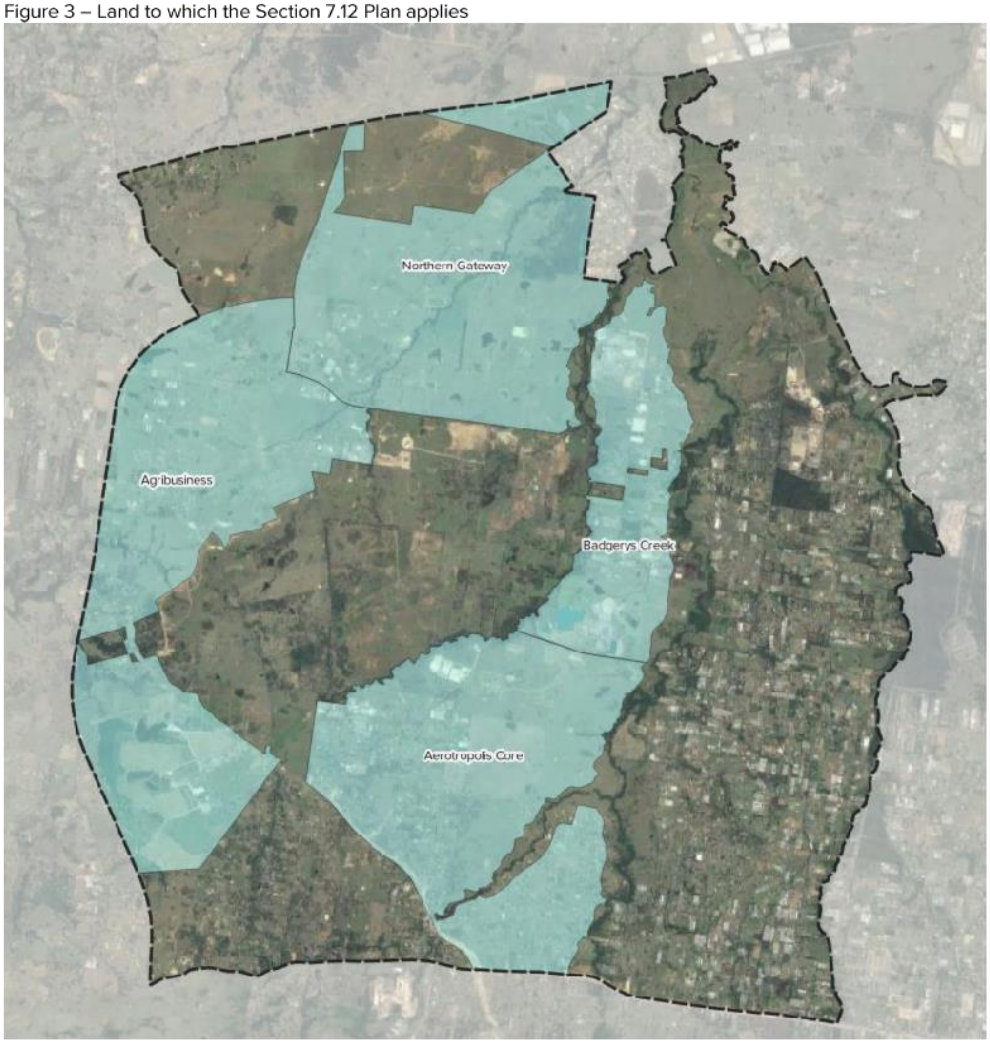


The *Western Sydney Aerotropolis Plan* prepared by the Western Sydney Planning Partnership outlines the vision and planning approach for the 9 precincts within the Aerotropolis. The plan sets out the sequenced approach to precinct planning that aims to optimise the investment in major infrastructure to activate the area.

The Aerotropolis plan identifies 9 precincts based on opportunities and constraints as well as likely future character and connectivity. Of the 9 precincts, five have been identified as "Initial Precincts" which have been brought forward to help create early employment opportunities and better coordinate infrastructure. The remaining four precincts will undergo planning at a later date.

Only the Initial Precincts are covered by this Section 7.12 Plan, with a further excision of the Western Sydney Airport and Sydney Science Park sites as is indicated in Figure 3 below. The Wianamatta-South Creek Precinct has also been excluded. It has been assumed that there is limited to no development potential in the precinct (as it is based on the 1 in 100 year flood extents) and any infrastructure associated with this Precinct may form part of the SIC.

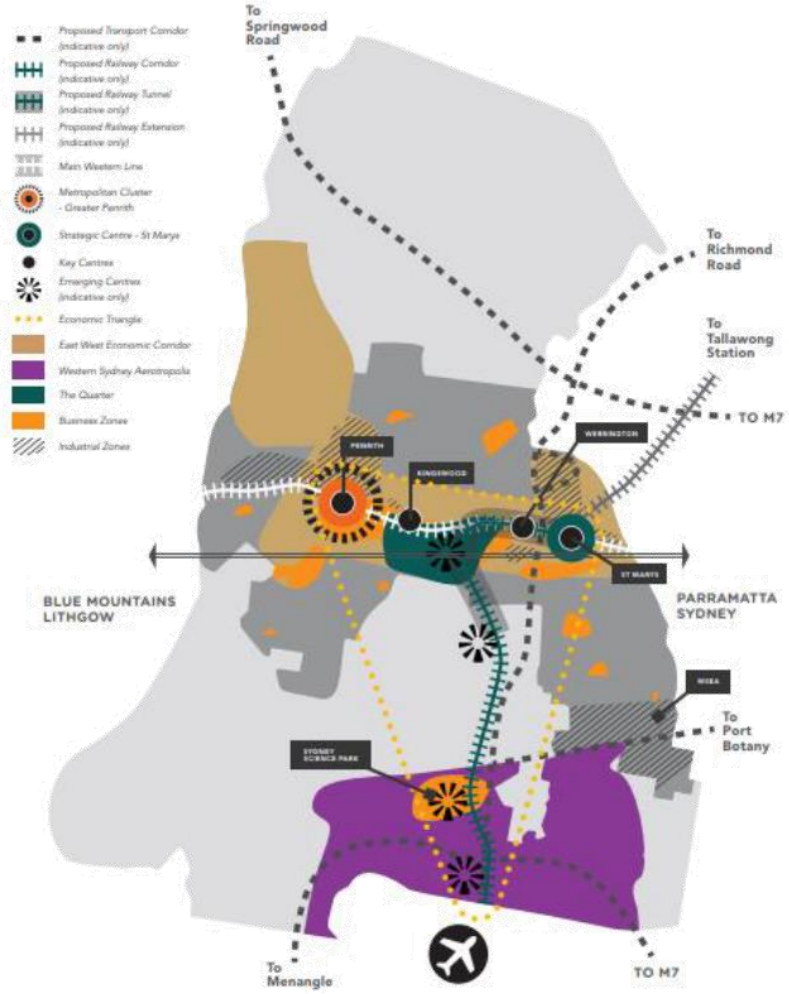
Figure 3 – Land to which the Section 7.12 Plan applies



4.2 The Penrith Economic Triangle

Parts of the Aerotropolis also fall within the southern portion of the Penrith Economic Triangle as outlined in Penrith City Council's *Local Strategic Planning Statement*. The Economic Triangle covers the area between Penrith CBD, St Marys and the emerging centres located to the north of Western Sydney Airport. The proposed North South Rail Link will present opportunities for a north-south economic corridor with new centres to be established around future stations. New centres will be guided by the principles of the Western City District Plan and will be built on principles of innovation and sustainability. The Penrith Economic Triangle is shown in Figure 4 below.

Figure 4 - Penrith Economic Triangle



5 Precincts, Zoning & Land Use

5.1 Land Zoning

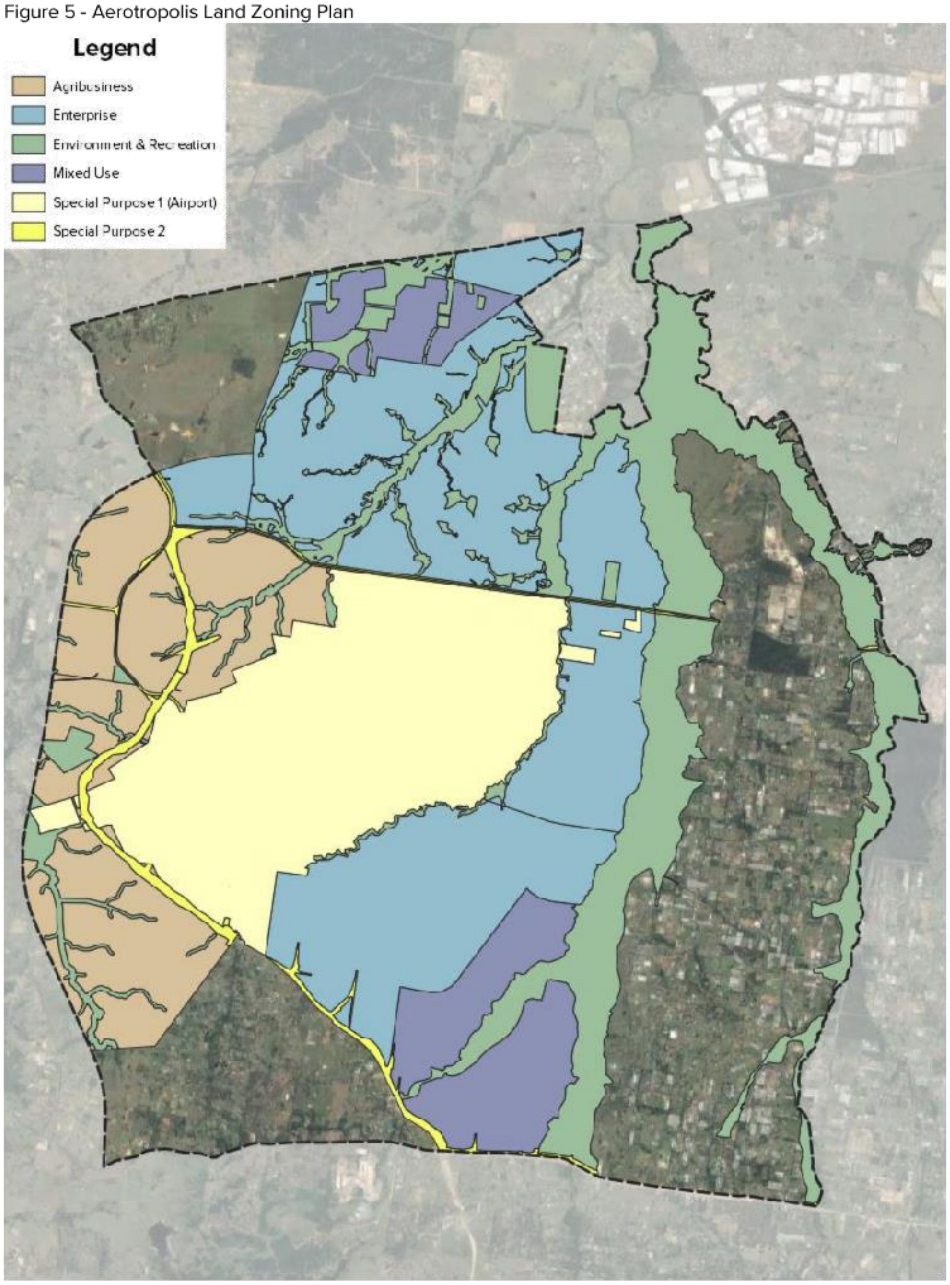
The Western Sydney Aerotropolis contains a number of flexible zoning types. The Western Sydney Aerotropolis Plan (WSAP) contained a brief outline of the flexible zones and the desired Development Typologies and is summarized in Table 2 below.

Table 2 – Proposed Land Zoning

Zone	Code	Description
Enterprise	ENT	Land where enterprise uses are supported while mitigating impacts of airport operations. Residential development and other noise sensitive uses are not permitted
Mixed Use	MU	Mixed flexible employment, residential and noise sensitive uses on land not affected by noise from the airport in high amenity areas well connected to public transport
Special Purpose 1	SP1	The airport and associated land to support airport operations and other special uses
Special Purpose 2	SP2	New and existing road and rail corridors, transport facilities and utilities. These areas will be further refined as additional infrastructure is required
Agribusiness	AGB	Land to support high-tech agribusiness uses including freight, logistics and horticulture
Environment & Recreation	ENZ	Applies to land affected by the 1 in 100 chance per year flood event and will create opportunities for amenity and recreation as well as some permitted uses

The distribution of these proposed assumed zonings used for this Plan are shown in Figure 5 while the proportion of each zoning and anticipated land uses are explained in more detail in Section 5.2.

Figure 5 - Aerotropolis Land Zoning Plan



5.2 Precinct Summaries

The WSAP Draft SEPP outlined the anticipated Zoning and supported land uses in each of the precincts. For each of the Initial Precincts, a brief outline of these has been provided below.

5.2.1 Aerotropolis Core

The Aerotropolis Core will be centred around a new Sydney Metro station and supported by retail, creative industries, civil and cultural facilities and open space. Residential communities and other sensitive land uses will be located outside areas impacted by aircraft noise.

Desirable land uses for the Aerotropolis Core include advanced manufacturing, defence and aerospace, research and development activity, high technology industry and infrastructure, education, professional services, commercial offices, medium to high density residential (near the Metro Station), entertainment & open space.

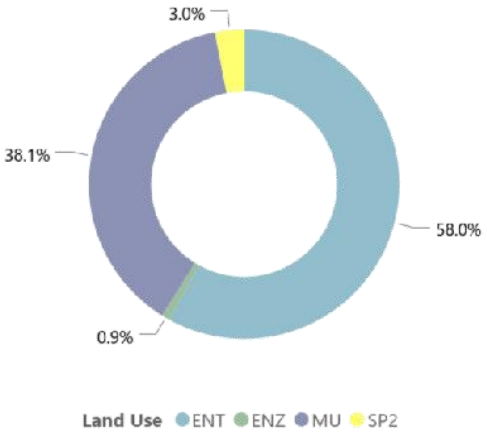
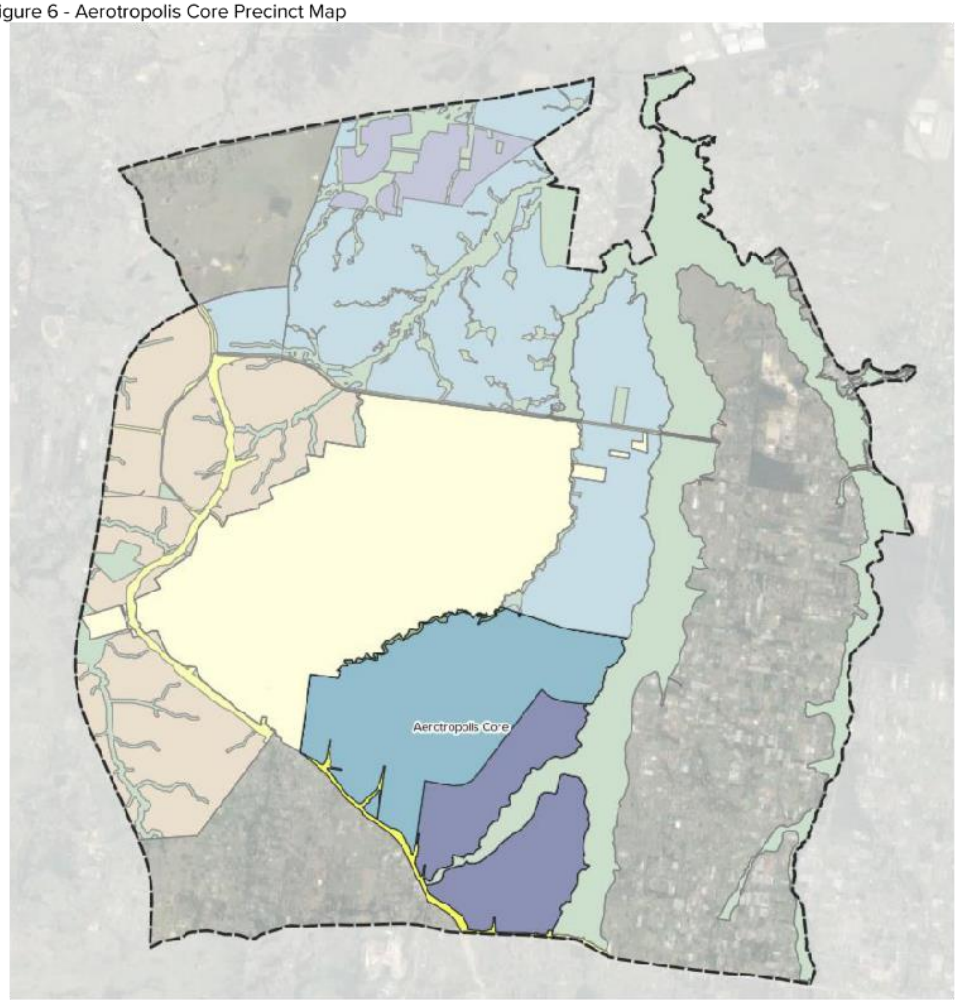


Figure 6 - Aerotropolis Core Precinct Map



5.2.2 Agribusiness

The Agribusiness precinct wraps around the western edge of the Airport and will support the long-term retention and growth of agriculture and agribusiness in the area. The precinct will retain significant peri-urban agricultural lands for production and enabling connections to the airport.

Desirable land uses include agribusiness, agriculture, intensive fresh and value-added food production, food innovation technology and research, food production and processing, fresh food produce markets, warehousing and logistics, high technology and offices and retail.

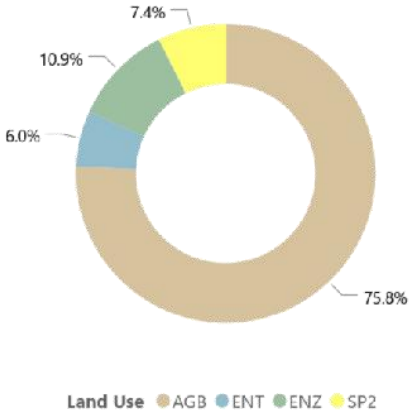
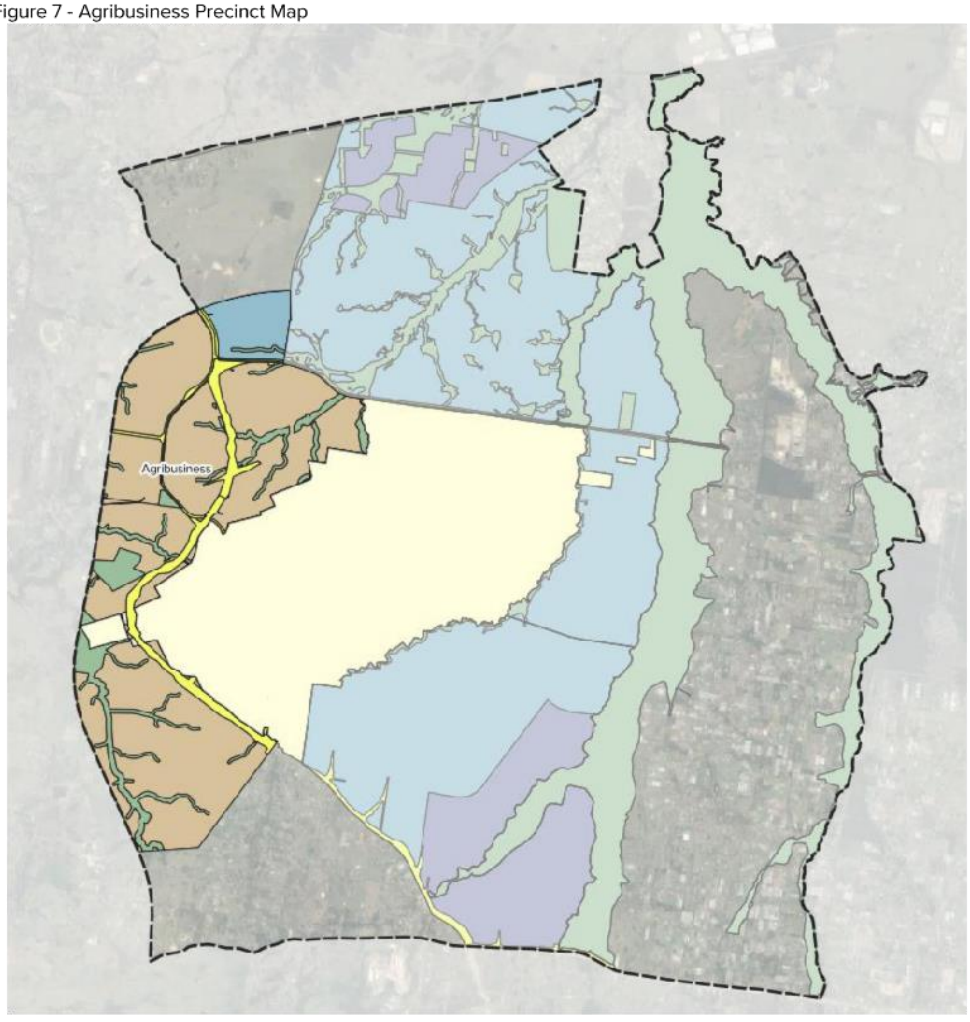


Figure 7 - Agribusiness Precinct Map



5.2.3 Badgerys Creek

The Badgerys Creek precinct is located on the eastern side of the Airport, extending to the north, beyond Elizabeth Drive. The precinct will support airport operations, the urban centre within the Aerotropolis Core to the south and the Northern Gateway to the west. The precinct is not suitable for sensitive land uses such as residential, schools and hospitals.

Desirable land uses include defence and aerospace, advanced manufacturing activity, high technology industry, airport supporting development, local retail, light industrial and social infrastructure.

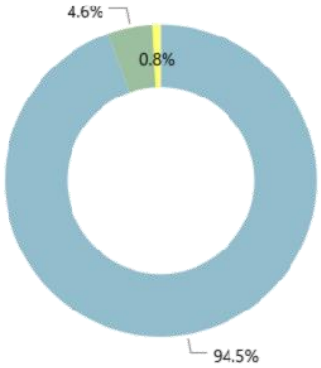
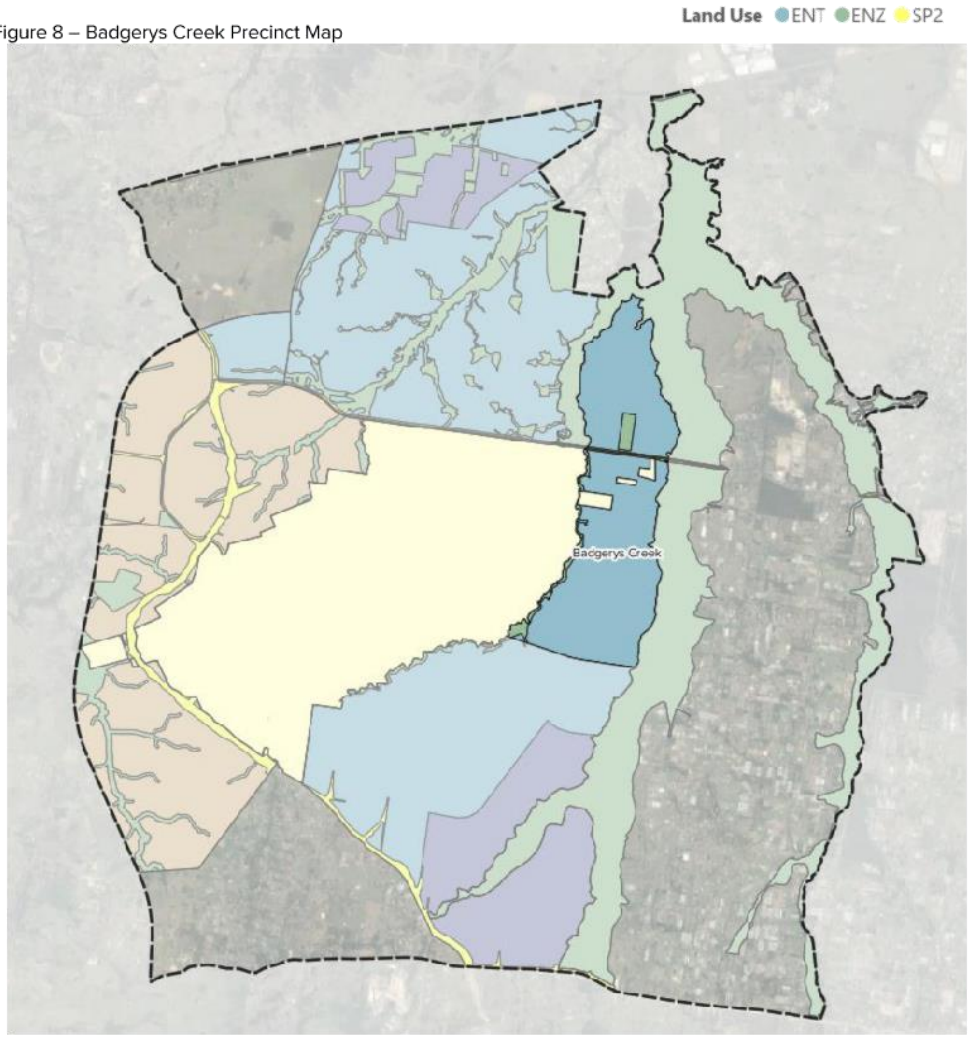


Figure 8 – Badgerys Creek Precinct Map



5.2.4 Northern Gateway

The Northern Gateway will link the Airport with the Western Parkland City Metropolitan Cluster through high frequency public transport, freight, road and rail connections. The precinct will build on the approved Sydney Science Park development to provide a variety of residential and employment generating uses.

Desirable land uses include high technology commercial enterprise/industry, warehousing and logistics, education, offices, retail, residential, health services, entertainment, tourism facilities, etc.

Note that the Mixed-Use Zoning is wholly contained in the Sydney Science Park which is excluded from this plan.

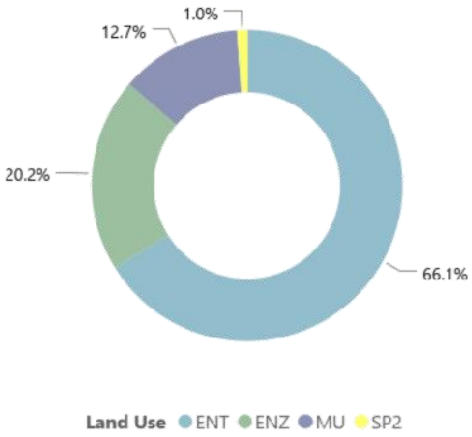
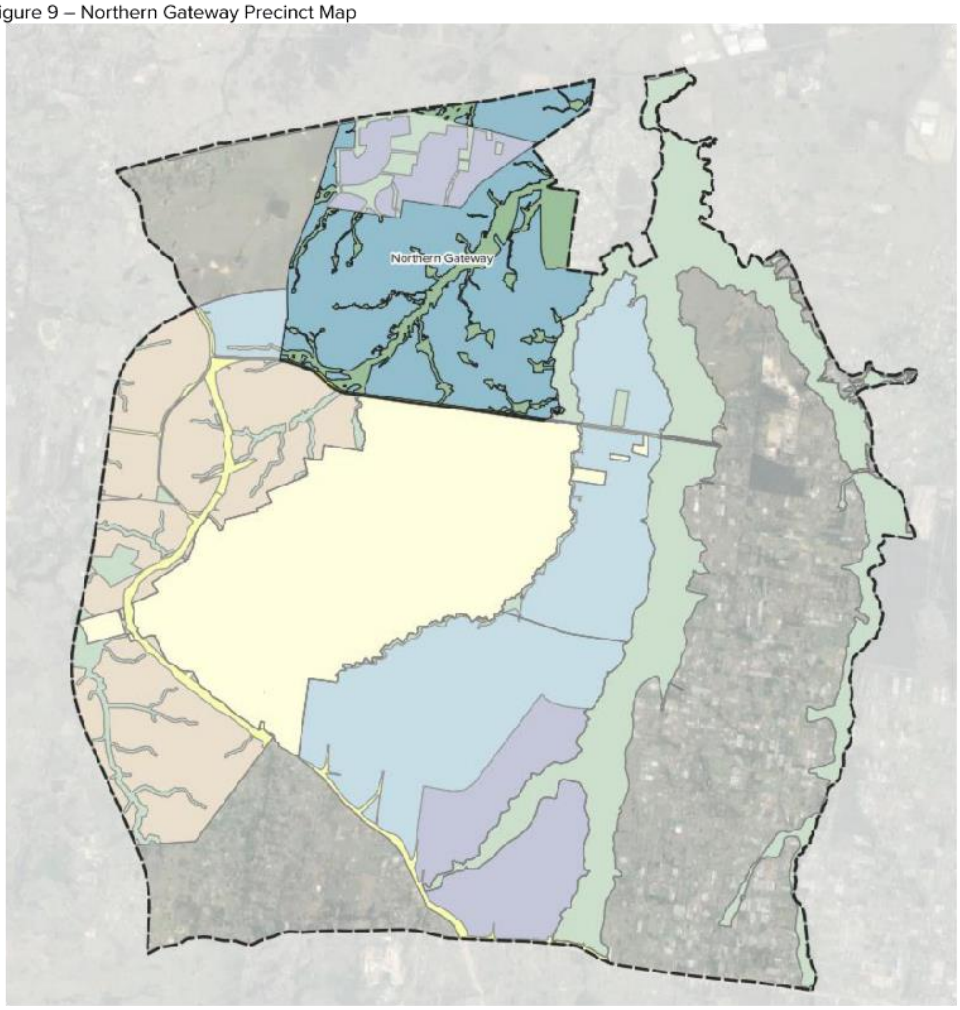


Figure 9 – Northern Gateway Precinct Map



5.2.5 Wianamatta South Creek

Defined by the approximate extents of the 1 in 100 chance per year flood event, the Wianamatta South Creek Precinct contains vast areas of significant vegetation and is the backbone of the blue green grid in the Aerotropolis.

As the entire precinct falls below the 1 in 100 chance per year flood event, we do not expect there to be any development that would be required to make contributions. It has been assumed that any environmental rehabilitation works and active transport infrastructure will form part of the Special Infrastructure Contribution plan.

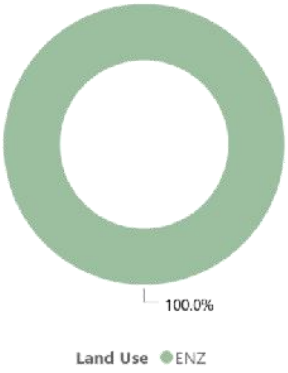
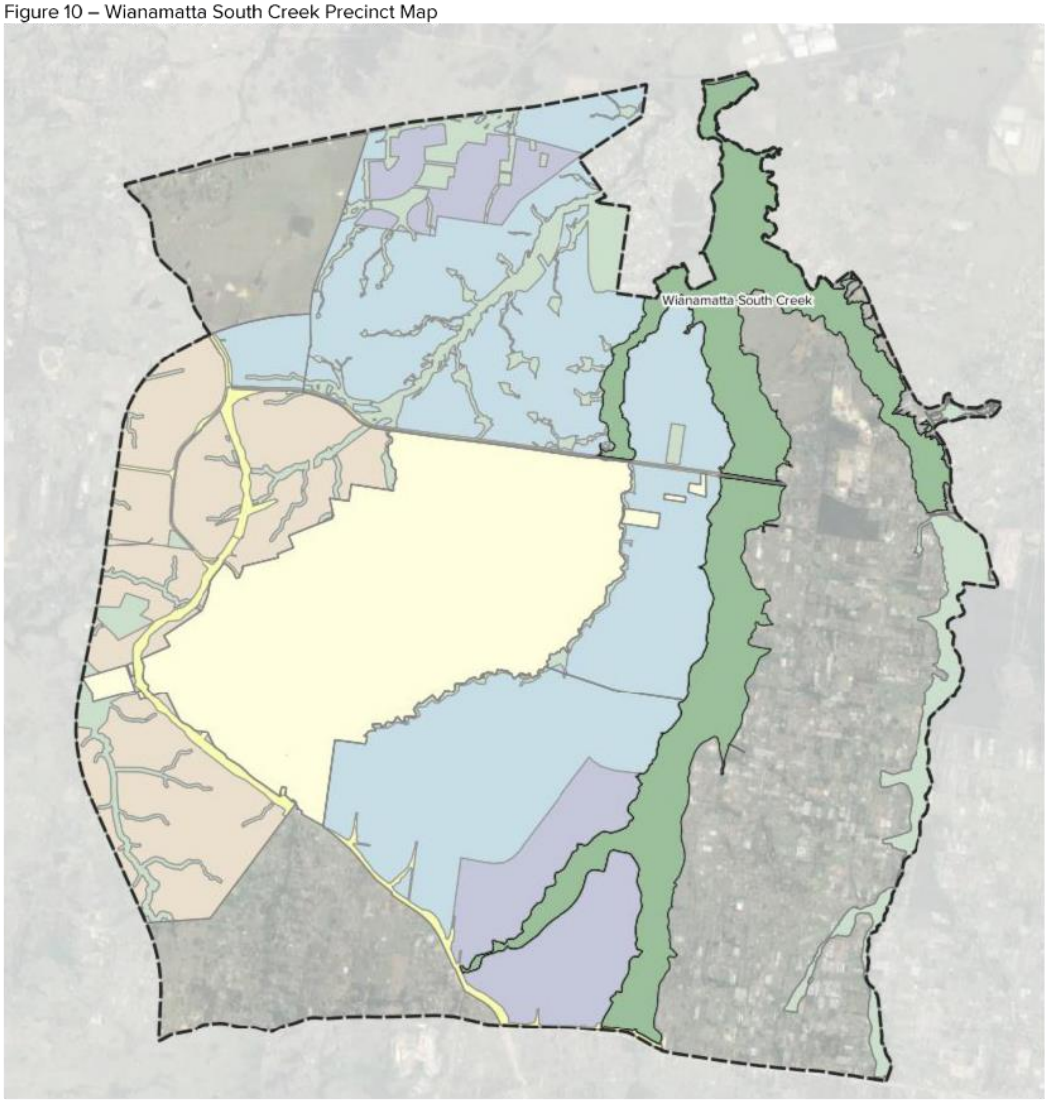


Figure 10 – Wianamatta South Creek Precinct Map



5.3 Precinct Summary

A breakdown of the land zoning within each precinct is provided in Table 3 below.

Table 3 - Precinct Land Use Summary

Precinct	LGA	Zoning	Area (Ha)
Aerotropolis Core	Liverpool	Enterprise	801.6
		Environment & Recreation	12.0
		Mixed Use	526.6
		Special Purpose 2	41.8
Agribusiness	Liverpool	Agribusiness	960.8
		Environment & Recreation	155.5
		Special Purpose 2	97.0
	Penrith	Agribusiness	220.2
		Enterprise	93.8
		Environment & Recreation	13.9
		Special Purpose 2	17.6
Badgerys Creek	Liverpool	Enterprise	366.6
		Environment & Recreation	18.7
		Special Purpose 2	2.6
	Penrith	Enterprise	209.1
		Environment & Recreation	9.6
		Special Purpose 2	2.3
Northern Gateway	Penrith	Enterprise	1,066.9
		Environment & Recreation	243.4
		Special Purpose 2	16.8
		Total	**4876.8**

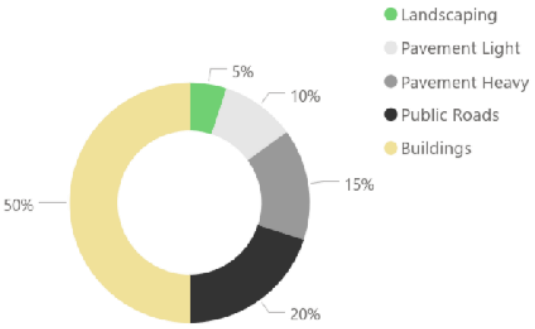
5.4 Development Typologies

In order to calculate the total cost of construction for the anticipated development, each proposed Land Zoning was further broken down into Development Typologies, each with a unique construction profile. These typologies were based on the WSAP and comparisons to surrounding areas.

The construction profiles provide estimates of the required building, pavement (heavy duty), pavement (light duty), public roads and landscaping areas to assist in the cost estimation process. These are shown in the graphs below for each Typology.

5.4.1 Freight and Logistics

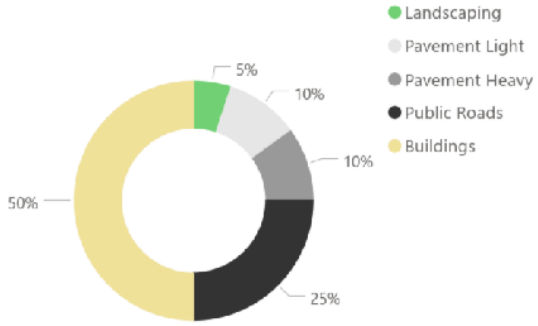
Supporting the movement and transportation of goods across numerous transportation modes (rail, road and air) this typology is made up of very large warehouses and associated carparking with relatively few circulation roads. Similar examples include Oakdale and Erskine Park to the east of the Aerotropolis.



5.4.2 Warehouse & Industrial

This typology is similar to the Freight and Logistics listed above but is based on general industrial uses. It has a smaller average lot size and will accommodate a much wider variety of specific industrial uses.

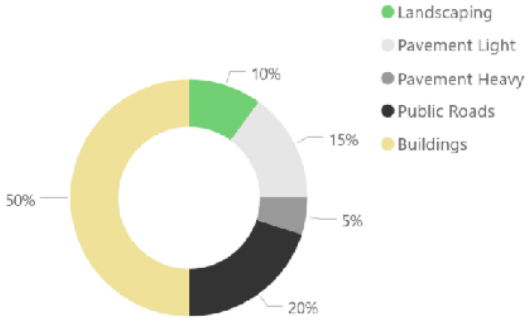
To prevent competition for industrial land, business and retail uses are not expected in these areas.



5.4.3 Retail (Bulky Goods)

This typology is based on retail buildings used primarily for the sale of goods that are such size, shape or weight as to require a large area for handling, display or storage, and/or direct vehicular access to the site of the building or place by members of the public, for the purpose of loading and unloading the items into their vehicle after purchase or hire.

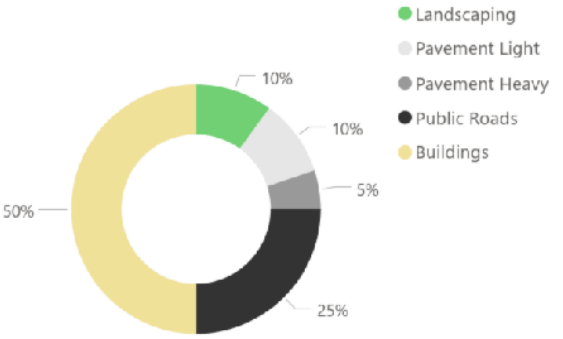
Examples of these goods may be hardware, white goods, baby goods, sporting equipment, etc.



5.4.4 Retail/Commercial

This typology is based on higher grade premises such as a shopping/local centres or high street retail. It anticipates some multi-level retail facilities as well as restaurants and commercial office space.

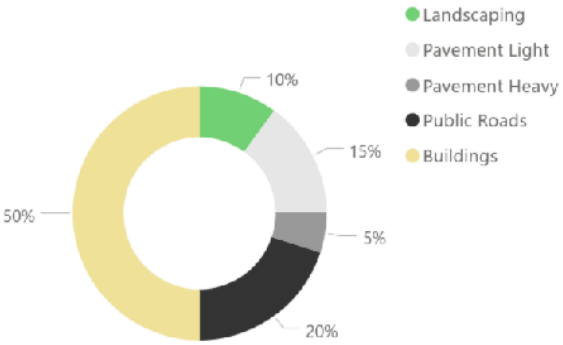
There may be some at grade parking, but some buildings will also have multi-deck parking. Comparable areas would range from local centres through to Liverpool CBD (in the case of the Aerotropolis Core).



5.4.5 Health Services

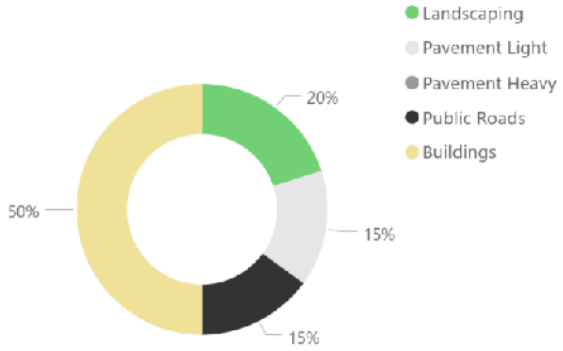
The Health Services typology is primarily based on community health facilities and not hospitals. It anticipates local doctors/GPs, physiotherapists, dentists, etc. Other services may include speech pathology, occupational therapy, counselling.

Similar facilities in Western Sydney include the Penrith and St Clair Community Health Services. Public transport access is a critical requirement of these facilities.



5.4.1 Education

This typology is based on the typical schools (K-12) but with an expectation for some vocational and/or tertiary education facilities (TAFE, universities, etc.). It assumes that any schools would be co-located, or adjacent to open space/sporting fields.



5.4.2 Residential Typologies

In addition to the industrial and commercial building typologies, a similar exercise was undertaken into the likely composition and scale of residential development in the study area to assist in the cost estimation of the works. Population forecasts from the WSAP were used to determine a feasible development mix. This is explained in detail in Section 5.5.1 below.

5.5 Land Use Composition

5.5.1 Residential Uses

Based on the draft SEPP zoning, all new residential development in the Section 7.12 Contributions Plan will be located within the Aerotropolis Core. This excludes development in the Sydney Science Park which, as discussed in Section 4.1 has been excluded from this Plan.

The WSAP indicates that a population of up to 24,000 is expected within the Aerotropolis Core Precinct. The upper range population projections were used to determine an approximate number of dwellings.

Dwelling populations (per household) were determined through a review of population assumptions in various Local Contribution Plans. Six plans from across Western Sydney were reviewed to determine the average household populations for medium density development and apartments.

Table 4 - Household Population Assumptions

Contribution Plan	Medium Density	Apartments			Comment
		1 bed	2 bed	3 bed	
Liverpool City Council Established Areas	3.1	1.8	2.3	3.1	
Edmondson Park	2.4				Up to 38 dw/ha
Showground Precinct	3.0	1.5	2.1	2.6	
Rouse Hill	2.7				Up to 45 dw/ha
Schofields	2.7	1.2	1.9	2.9	
Penrith City Centre	3.1	2.0	2.0	2.0	

Based on the above, the following dwelling population rates were adopted:

Table 5 - Household Population Assumptions

	Medium Density	High Density (low-rise)	High Density (high-rise)
Population per dwelling	3.0	2.4	2.1

The high-density residential developments were based on the Stage 1 LUIIP which stated that:

> *"Residential densities of 45 to 55 dwellings per hectare will frame the South Creek corridor, increasing to 65 to 80 dwellings per hectare in locations serviced by high frequency public transport"*

For the purposes of this report the higher estimates were taken into account, namely low-rise density of 55 dw/Ha & high-rise of 80 dw/Ha.

The medium density development dwelling density was based on a typical R3 zoning with a rate of 32 dwellings per hectare. A summary of the residential development within the Aerotropolis Core is summarised in Table 6.

Table 6 – Residential Development Breakdown Aerotropolis Core

Development Typology	Assumed Dwelling Split	Population per Dwelling	Dwellings per Ha	Area (Ha)	Dwellings	Population
Medium Density Development	50%	3.0	32	125.0	4,000	12,000
Apartments (low rise)	40%	2.4	55	72.7	4,000	9,600

Development Typology	Assumed Dwelling Split	Population per Dwelling	Dwellings per Ha	Area (Ha)	Dwellings	Population
Apartments (high rise)	10%	2.1	80	14.3	1,143	2,400
			Total	**212.0**	**9,143**	**24,000**

5.5.2 Employment Uses

The total population/jobs numbers and commentary from the WSAP was used as a guide, along with our review of similar development areas, to estimate the amount of each employment Development Typology in each of the Precincts. These calculations yielded a total number of jobs in the Aerotropolis of 102,127 against the projection of 102,000 in the WSAP which, for the purposes of preparing this CP was considered acceptable.

Table 7 – Development Typologies – Employment Lands

	Aerotropolis Core	Badgerys Creek	Agribusiness	Northern Gateway
Employment Land Use % of Precinct				
Freight and Logistics	24%	85%	85%	80%
Warehouse & Industrial	14%	10%	10%	10%
Retail/Commercial	40%	5%	5%	10%
Education	4%			
Health Services	2%			
Residential	16%			
Area of Each Development Typology by Precinct				
Freight and Logistics	321	489	1,084	854
Warehouse & Industrial	187	58	127	107
Retail/Commercial	531	29	64	107
Education	53	-	-	-
Health Services	26	-	-	-
Total Jobs by Development Typology and Precinct				
Freight and Logistics	5,344	8,155	10,836	14,225
Warehouse & Industrial	6,222	1,919	1,275	3,556
Retail/Commercial	33,207	1,799	3,984	6,668
Education	3,291	-	-	-
Health Services	1,646	-	-	-
Job Totals	**49,710**	**11,873**	**16,095**	**24,449**
Projected jobs in WSAP	**60,000**	**11,000**	**10,000**	**21,000**

Table 8 – Percentage of Development Typologies by Land Zoning

Land Zoning	Development Typology	Percentage of Total Area
Agribusiness	Freight and Logistics	85%
	Warehouse & Industrial	10%
	Retail/Commercial	5%
Enterprise	Freight and Logistics	85%
	Warehouse & Industrial	10%
	Retail/Commercial	5%
Industrial	Freight and Logistics	85%
	Warehouse & Industrial	10%
	Retail/Commercial	5%
Mixed Use	Retail / Commercial	15%
	Education	30%
	Health Services	10%
	Warehouse & Industrial	5%
	Medium Density Development	20%
	Apartment Dwellings (Low Rise)	16%
	Apartment Dwellings (High Rise)	4%

The Northern Gateway Enterprise Zoning was an exception to the above, with the areas being amended slightly to allow for the expected additional retail developments along the Elizabeth Drive corridor. Table 9 below shows the Northern Gateway's Development Typology split.

Table 9 - Northern Gateway Enterprise Zone Assumed Development Typologies

Northern Gateway	Development Typology	Assumed Percentage of Total Area
Enterprise	Freight and Logistics	80%
	Warehouse & Industrial	10%
	Retail	10%

Note again, that all residential/mixed use development in the Northern Gateway Precinct is situated in the Sydney Science Park development which is excluded from this Section 7.12 Plan.

5.5.3 Total Land Budgets

The development typologies described above were applied an assumed percentage of the overall area within the precinct. For all Precincts, 15% of the gross area was removed as an allowance for constrained land (flooding, vegetation, heritage, etc.) and transport corridors. The results are summarised in Table 10 below.

Table 10 – Development Typology Land Area by Precinct (Ha)

Land Use	Development Typology	Aerotropolis Core	Badgerys Creek	Agribusiness	Northern Gateway
Enterprise, Agribusiness & Industrial	Freight and Logistics	321	489	1,084	854
	Warehouse	160	58	127	107
	Retail	321	29	64	107
Mixed Use	Warehouse	26			
	Retail	211			
	Education & schools	53			
	Health services	26			
	Medium Density Development	125			
	Apartments (low rise)	73			
	Apartments (high rise)	14			

6 Baseline Assessment of Existing Infrastructure

The existing infrastructure within the study area was reviewed to determine the baseline infrastructure available. This included an inventory of collector roads, open space and community facilities.

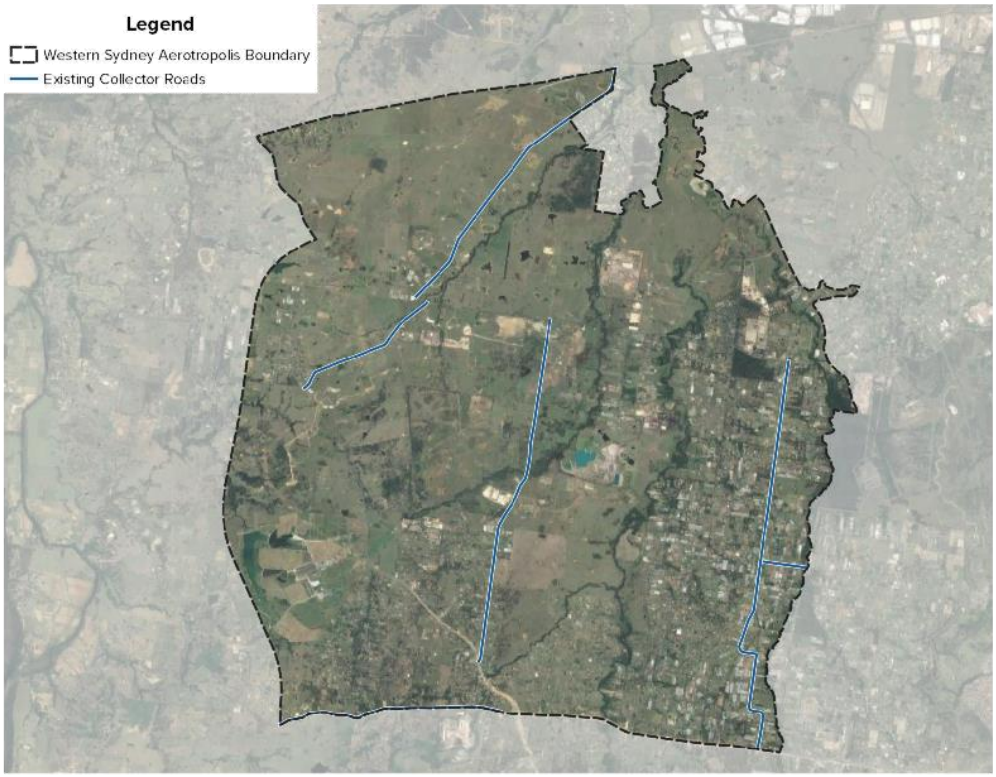
6.1 Roads

Existing collector roads were extracted from NSW Spatial Services GIS data. For the purpose of this assessment it was assumed that roads labelled as "Distributor" be classified as local collector roads.

The collector road within the western side of the Aerotropolis connects Mamre Road in the north to The Northern Road in the south via Elizabeth Drive. The two north-south connections located within the central and eastern parts of the Aerotropolis both connect Elizabeth Drive in the north to Bringelly Road in the south.

The existing collector roads that were considered in the baseline assessment are shown in Figure 11 below. However, the existing rural nature of these roads means that significant realignment, widening and reconstruction works will be required. For the purposes of this assessment we have assumed that these roads will need to be fully reconstructed and no credit should be applied.

Figure 11 - Existing Collector Roads



6.2 Stormwater Drainage

At present there is little to no stormwater drainage infrastructure used for water quantity and quality management purposes within the study area. Existing stormwater infrastructure is largely limited to the pit and pipe network located within the road reserve.

All new detention basins and water quality treatment measures for development within the Study Area will be funded through this Section 7.12 plan.

6.3 Social Infrastructure

A desktop audit was undertaken to determine existing open space, recreation facilities, childcare and community facilities within the subject site and 2km from the border (See Appendix C).

Schools were also audited to assess whether there were any potential opportunities to share open space and/or community facilities with schools as they also grow to meet the demands of the incoming population.

A wider regional audit was also conducted to understand the provision of major regional cultural and recreation facilities, and libraries within 5km and 10km of the Aerotropolis site boundary. A 5km and 10km radius was used because regional/district facilities generally have a larger service catchment (See Appendix C).

Social infrastructure: The only community facility within the site is the Bringelly Community Centre, a refurbished old-style brick building located beside Bringelly Public School.

No major cultural facilities were found to be located within 10km of the site boundaries. While there are 3 libraries within 10km of the site boundaries, these are only branch/district libraries that are already at capacity servicing their own catchments. The regional audit therefore found that the site will not be serviced by existing cultural facilities and libraries.

Open space and recreation: There are currently 5 parks and reserves located within the Aerotropolis site that service the current community. There is potential to embellish these reserves to meet the needs of the incoming population.

The regional audit found that there are no existing recreation facilities within 10km of the site boundaries.

6.3.1 Potential future social infrastructure and open space in surrounding suburbs

A meeting with Liverpool Council's Open Space, Recreation and Community Facilities team was also held to understand future plans for any new facilities and/or upgrades to facilities in the surrounding areas that could also potentially service the Aerotropolis site. While there are significant plans for new district and regional infrastructure, these facilities will not have scope to service the incoming population on the Aerotropolis site, in addition to the projected 70,000 new residents in Austral and have therefore not been included in our analysis.

7 SIC Infrastructure

The *Western Sydney Aerotropolis Plan* outlines the future transport network to link the Aerotropolis with greater Sydney. The proposed road network includes major city and city servicing connections.

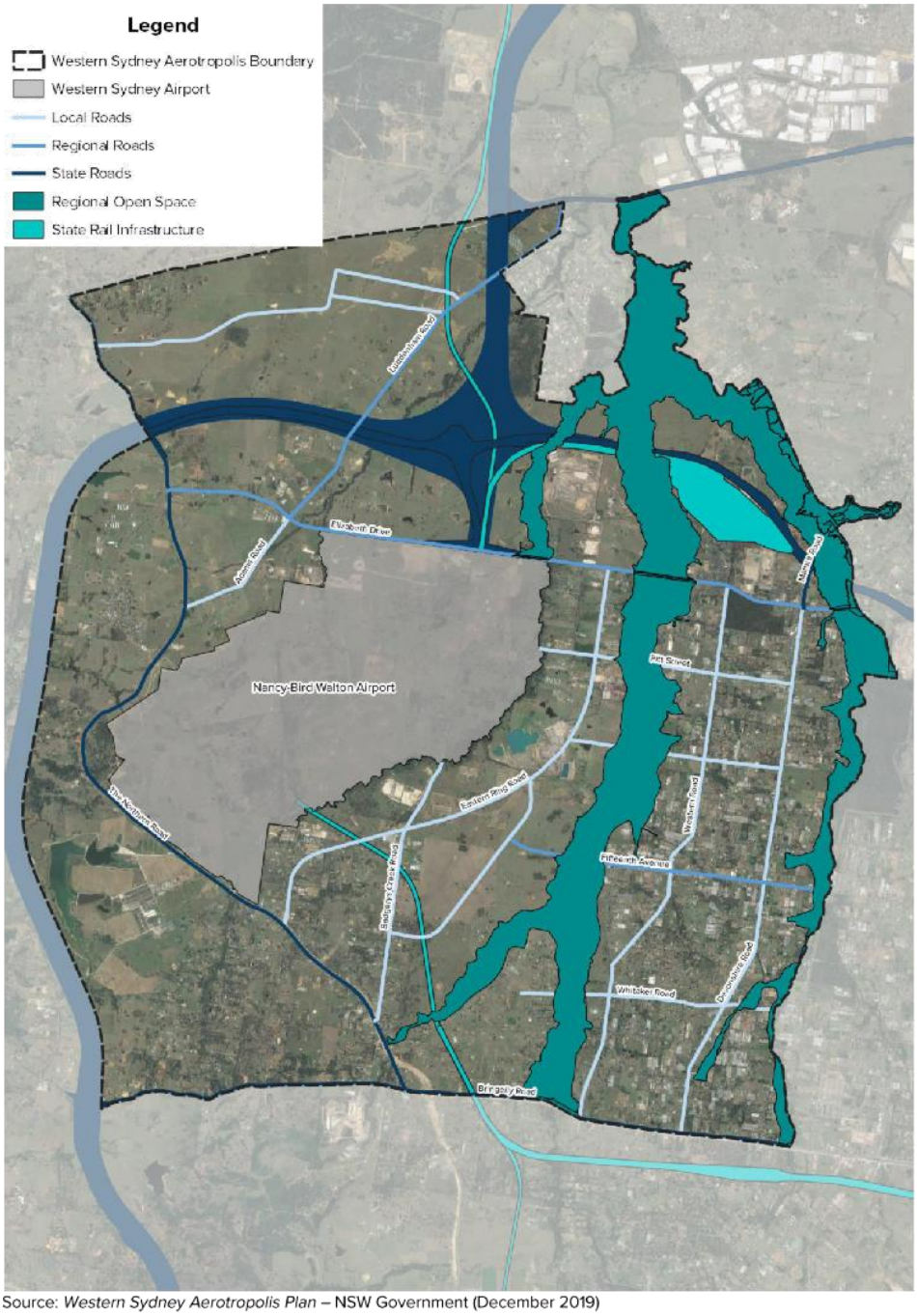
While a Special Infrastructure Contribution (SIC) plan has not yet been prepared for the Aerotropolis precinct, many roads outlined in the WSAP provide a greater regional benefit and are therefore likely to be funded through the SIC or other sources.

In addition, several roads within the Aerotropolis Precinct have received federal funding for upgrade and improvement works. A summary of the proposed roads included in the WSAP is provided in Table 11 below. All of these items have been assumed to be funded via the proposed SIC. Should these roads not be provided as part of the SIC, the Section 7.12 contribution rate may need to be increased.

Table 11 - Aerotropolis SIC Infrastructure

Road Name	Type
Adams Road	Road
Badgerys Creek Road	Road
Bringelly Road	Road
Devonshire Road	Road
Eastern Ring Road	Road
Elizabeth Drive	Road
Fifteenth Avenue	Road
Luddenham Road	Road
Mamre Road	Road
Pitt Street	Road
The Northern Road	Road
Western Road	Road
Whitaker Road	Road
Northern Gateway Road 1	Road
Northern Gateway Road 2	Road
Aerotropolis Core Road	Road
Badgerys Creek Road	Road
M12	Road
Outer Sydney Orbital	Road
East West Rail Link & Stabling Yard	Rail
North South Rail Link	Rail
South West Rail Link Extension	Rail
South Creek Corridor	Open Space

Figure 12 –Assumed SIC Infrastructure



Source: *Western Sydney Aerotropolis Plan* – NSW Government (December 2019)

8 Identification of Proposed Infrastructure

The following sections outline the approach taken to determine the infrastructure requirements to support the proposed land uses within the Aerotropolis. Although high-level in nature, these have been necessary in advance of the Precinct Planning which is currently progressing.

8.1 Collector Roads

Several recent development sites have been reviewed assist in the preparation of the Section 7.12 plan. A mixture of low density, medium density, mixed use and industrial developments were reviewed to determine the required length of collector roads for each development typology. The development layouts for each site were reviewed to determine the site area and land use mix. Where a development is not yet complete, the master plan was also used to determine the road layout.

Per the existing infrastructure baseline assessment, cadastral information including lot boundaries and road centrelines were extracted from the NSW Spatial Services GIS data. All distributor roads were assumed as collector roads for the purpose of this assessment. In addition, roads labelled as "Local" which front retail, commercial or town centre areas have also been classified as collector roads for this assessment. The developments that were reviewed are summarised in the following sections.

8.1.1 Residential Benchmarking

Four development sites were reviewed to determine the required road infrastructure to support residential uses.

Jordan Springs (Low Density)

The Jordan Springs development is located within the Penrith LGA. The site is 316 hectares in size and will provide a total of 3,620 dwellings. Jordan Springs is zoned "Urban" under the St Marys SREP 30. The objective of the Urban Zone is to ensure development within this area is primarily used for residential purposes and associated facilities. The development has an approximate density of 12 dwellings/Ha and has therefore been considered a low-density residential development for the purpose of this assessment. The average collector road length within the site is 43m/ha.

Figure 13 - Jordan Springs Site

Oran Park (Low Density)

Oran Park is located within the Camden LGA. The site assessed (shown in Figure 14 below) covers an area of 408 hectares and has an average collector road rate of 49m/ha. The majority of land within Oran Park is zoned R1 – General Residential with pockets of R3 Medium Density Residential surrounding the local centre. The development has an approximate density of 9 dwellings/Ha and has therefore been considered a low-density residential development for the purpose of this assessment.

Figure 14 - Oran Park Site

Edmondson Park (Mixed Density)

The Edmondson Park precinct is located within the Liverpool City Council and Campbelltown City Council LGAs and covers the area surrounding the Edmondson Park train station. The precinct was rezoned in May 2008 and is expected to provide up to 6,000 homes.

The Edmondson Park precinct covers an area of 424 hectares with an average dwelling density of 23 dwellings/ha. The site has an average collector road rate of 42m/ha. The Edmondson Park area reviewed as part of this study is shown in Figure 15 below.

Figure 15 - Edmondson Park Site

Tallawong Station Precinct (Mixed Density)

The Tallawong Station Precinct (formerly Area 20 Precinct) is located within the Blacktown City Council LGA and forms part of the North West Growth Area (NWGA). The development is centres around Tallawong Station, located on the new Sydney Metro line. The study area is 233 hectares in size with an approximate dwelling density of 20 dwellings/Ha. The Precinct has an average collector road rate of 31m/ha. The area reviewed is shown in Figure 16 below.

Figure 16 - Tallawong Station Site

8.1.2 Industrial & Employment Benchmarking

Four sites were reviewed to determine the required road infrastructure to support mixed use and industrial uses and are explained in more detail below.

Oakdale South (Industrial & Logistics)

The Oakdale South site forms part of the Oakdale Industrial Estate owned by Goodman and located within the Western Sydney Employment Area. The site is zoned IN1 – General Industrial and is used for logistics purposes. The site covers a total area of 117 hectares with an average collector road rate of 32m/ha.

Figure 17 - Oakdale South Benchmarking Site

Erskine Park (Industrial & Logistics)

The Erskine Park precinct is located within the Western Sydney Employment Area. The precinct has been reviewed to determine an appropriate collector road rate for industrial land uses. Many of the sites within the precinct are used for predominantly warehouse and logistics purposes. The Erskine Park precinct has an average collector road rate of 13m/ha.

Figure 18 - Erskine Park Benchmarking Site

Macquarie Park (Mixed Use)

The Macquarie Park core area is bound by The M2 Motorway to the north and east, Epping Road to the south and Herring Road to the west. Within this area the predominant land uses include mixed-use and commercial uses. The residential land to the south has been excluded. The Macquarie Park core area has an average collector road rate of 26m/ha.

Figure 19 - Macquarie Park Benchmarking Site

Rydalmere (Mixed Use)

Rydalmere is located 2km north-east of the Parramatta CBD and covers an area of approximately 220 hectares. The majority of the precinct is characterised by industrial and business uses, with low-density housing located in the north. The average collector road rate within Rydalmere is approximately 29m/ha.

Figure 20 – Rydalmere Benchmarking Site

8.1.3 Rates Summary

The collector road provision rates calculated from the above case studies are summarised in the table below. An average rate of provision was calculated for each land use type, which will be applied to the proposed land uses within the Aerotropolis.

Table 12 - Collector Road Rates

Development Type	Development Site	Collector Road Rate (m/Ha)	Adopted Collector Road Rate (m/Ha)	Applicable 7.12 Development Typology
Low/Medium Density	Jordan Springs	43	45	Low Density Development
	Oran Park	49		
Mixed Density	Edmondson Park	42	32	Medium Density Apartments (low rise) Apartments (high rise)
	Tallawong Station	31		
Industrial/Logistics	Oakdale South	20	16	Freight & Logistics Warehouse
	Erskine Park	13		
Mixed Use	Macquarie Park	26	27	Retail Education & Schools Health Services
	Rydalmere	29		

8.1.4 Quantities

The rates summarised in Table 12 were applied to the proposed land uses for the Aerotropolis S7.12 Plan Area to determine the required quantum of collector roads for each precinct.

The results are summarised in Table 13 below.

Table 13 – Required Infrastructure – Collector Roads

Precinct	Total Area (Ha)	Total Length (m)
Aerotropolis Core	35.8	26,673
Agribusiness	29.2	15,243
Badgerys Creek	10.6	8,098
Northern Gateway	29.4	15,507
Total	**105.0**	**65,521**

8.2 Stormwater

Existing Local Contribution Plans have been reviewed to determine the required provision of new regional stormwater detention and water quality management infrastructure.

8.2.1 Examples

Four local contributions plans were reviewed to determine the average land take requirements for both detention and water quality infrastructure. The total provision of detention basins and water quality management infrastructure was used to determine a rate per Net Developable Area (NDA) required for new development. These rates will be applied to development within the Aerotropolis S7.12 Plan Area.

For the purpose of this assessment, the highest and lowest values have been excluded, and an average has been taken of the remaining five values to provide a conservative estimate. The results are provided in Table 14.

Table 14 – Stormwater Infrastructure Rates

Contribution Plan	Oran Park & Turner Road		Austral & Leppington North	East Leppington	Riverstone East & Rouse Hill		
	South Creek	Cobbity Creek			First Ponds Creek	Killarney Chain of Ponds	Second Ponds Creek
Contributing Catchment (NDA)	389.57	181.72	1,131	75.59	240.5	105.3	104.6
Detention Area (m^2)	82,100	47,800	252,168	3,285	95,150	41,250	
Detention %	2.1%	2.6%	2.2%	0.4%	4.0%	3.9%	
WQ Area (m^2)	61,300	14,100	823,104	28,341	17,879	16,300	16,385
WQ %	1.6%	0.8%	7.3%	3.7%	0.7%	1.5%	1.6%

Based on the above, the following rates were adopted for both residential and employment land uses:

- Detention infrastructure – 2.7% of Net Developable Area
- Water Quality infrastructure – 1.8% of Net Developable Area

8.2.2 Quantities

The rates outlined above were applied to the proposed land uses for the Aerotropolis S7.12 Plan Area to determine the required quantum of stormwater management infrastructure.

For the purpose of this assessment it has been assumed that the NDA is equal to 85% of the gross area which assumes 15% of the site is constrained land (e.g. flooding, vegetation, transport corridors, heritage, etc). The results are shown in Table 15.

Table 15 – Required Infrastructure – Stormwater

Precinct	Development Typology	Net Developable Area (Ha)	Stormwater Detention (m^3)	Water Quality (m^2)
Aerotropolis Core	Freight & Logistics	273	73,591	49,061
	Warehouse	159	42,839	28,559
	Retail	452	121,936	81,291
	Education & Schools	45	12,086	8,057
	Health Services	22	6,043	4,029
	Medium Density Development	90	24,328	16,219
	Apartments (low rise)	72	19,463	12,975
	Apartments (high rise)	18	4,866	3,244
Agribusiness	Freight & Logistics	921	248,685	165,790
	Warehouse	108	29,257	19,505
	Retail	54	14,629	9,752
Badgerys Creek	Freight & Logistics	416	112,294	74,862
	Warehouse	49	13,211	8,807
	Retail	24	6,606	4,404
Northern Gateway	Freight & Logistics	725	195,879	130,586
	Warehouse	91	24,485	16,323
	Retail	91	24,485	16,323
	Total	**3,610**	**974,683**	**649,787**

8.3 Social Infrastructure

The purpose of this analysis is to inform the Western Sydney Aerotropolis Development Contributions Plan (Section 7.12) for Liverpool City Council and Penrith City Council.

Adequate provision of social infrastructure and open space is critical to building strong and resilient communities. As a greenfield site, the Aerotropolis presents an opportunity to deliver adequate and best practice provision of social infrastructure and open space that supports the needs of future residents. Our approach to assessing future community need is summarised below:

8.3.1 Consideration of Best Practice Approaches to Social Infrastructure and Open Space Delivery

In addition to benchmarking, it also important to consider current best practice to social infrastructure and open space delivery. Key best practice approaches to social infrastructure, including principles for delivery, are summarised below.

Social Infrastructure

- **Multi-purpose rather than single purpose:** best practice is to provide facilities that combine a range of uses in the one building (e.g. childcare, library and community hall, and indoor courts combined). This results in larger, centralised facilities rather than small and dispersed.
- This approach aligns with Liverpool City Council's policy to not support new single purpose and small community facilities, with a preference for larger multipurpose centres of around 1,000m^2 that service a suburb or multiple suburbs.
- Benchmarking for social infrastructure in Penrith City Council will be an outcome of the Community Cultural Facility Needs Study being completed in 2020.
- **Accessible and co-located:** Social infrastructure should be located in central locations, co-located with other compatible land uses such as shops, services or schools, meet universal design standards and be accessible via public and active transport. Community facilities and libraries located in town centres are proven to stimulate social and economic activity.
- **Networked**: Community facilities should function as part of a network of facilities that together meet community needs. A hierarchy of facilities exists including higher order facilities (such as a regional or district community hub) that service the whole of community, vs local facilities that meet day to day needs.

Open Space and Recreation

When planning for open space in greenfield sites the opportunity exists to provide a network of well-located and accessible parks. While at this stage the future density of Aerotropolis is not confirmed, good planning of the open space network early can result in a more efficient use of land while also meeting the performance outcomes for open space recreation. The following considerations apply to meet future community needs:

Distribution: Distribution or proximity benchmarks can assess the geographic distribution and accessibility of open space: how far from home, work, or school do people need to travel to access open space?

The following targets are applied to residential areas:

- All residents can walk to a park of at least 0.3ha within 400m
- All residents living in high density can walk to a park within 200m of at least 0.1ha

Quantity: The standard benchmark of 2.83ha/1000 people has been applied to determine quantum of open space.

The following benchmarks have also been applied as per the Government Architect Greener Places (specifically for greenfield sites):

- Major/destination parks: 1:20,000 people
- District parks (2-5ha): 1:5,000 people
- Local parks (0.3 - 2ha) 1:2,500 people

Quality: The quality of open space is key to its usability and attractiveness. Quality indicators can include for example amenity (e.g. maintenance, noise, facilities and equipment, aesthetics); access (visual and physical access, disability access); safety; size, shape and topography; vegetation and setting. A large amount of poor-quality open space may not meet a community's needs as well as a smaller, high quality provision.

Benchmarking for recreation facilities helps to ensure useable, quality open spaces are delivered for the future community. See Appendix A for benchmarks applied for this needs analysis.

It's also important that open space design is inclusive and apply the NSW *Government Everyone Can Play* principles' of 'Can I get there? Can I play? Can I stay?' With the provision of accessible paths, adequate and large sheltered areas, accessible amenities blocks and toilets, appropriate lighting, planting and shade for a cool and comfortable park experience. This higher standard may have impact on embellishment rates.

Diversity: The range of open space types within an area determines that diversity of recreation opportunities for a community. Co-locating different uses in one space can support activation and create a space for the whole community to come together. Benchmarking can look at the number of different types of recreation opportunities available in an area.

Hierarchy and size: Hierarchy approaches recognise that not all parcels of open space can or should be the same level of development and is a useful approach to ensure different needs (e.g. for local community space vs major regional space) are met efficiently. Generally, public open space is classified into some form of a local, district and regional hierarchy, based on size and uses. The hierarchy proposed aligns with NSW planning guidelines.

Climate and local characteristics: When planning for open space in the context of Western Sydney it's also important to consider the increased heat that this area experiences, resulting in a greater need for further embellishments such as shading, use of natural materials (such as timber and mulch) for exercise and play equipment where possible, and water play to enable continued enjoyment of parks and opens spaces across the Summer.

8.3.2 Recommendations

Recommendations have been organised according to Council area, based on the Aerotropolis precincts. Table 16 summarises the identified social infrastructure needs for the residential population in the Aerotropolis Core. Table 17 and Table 18 summarise the identified open space and recreation needs for the Aerotropolis Core.

Size assumptions for spaces within/adjoining facilities have been based on precedent case studies.

Table 16 - Social Infrastructure Needs (Aerotropolis Core)

Facility	Facility Size (m^2)	Land Size	Location
District Multi-Purpose Community Hub with the following features:	Facility total: 2,260m^2 Adjoining civic open space: 1,000m^2	0.8 ha	Aerotropolis Core. Located within the town centre located with other services such as shops and schools.
Library floorspace	1,008		
Multi-purpose community hall space (capable of also being used for district performance & rehearsal space)	528		
Flexible meeting space	100		
Cultural production space (small scale e.g. tech or pottery)	100		
Community kitchen	150		
Subsidised office space x 4 offices & hot desks	150		
Foyer, lounge and cafe	300		
Recording studio spaces	80		
Connected outdoor, public civic space	1000		
High quality child space council owned and managed Early childhood education and care centre	1,350 (indoor and outdoor spaces)	0.3 ha	As above.

Table 17 – Quantity Benchmark Requirements for Open Space & Recreation (Aerotropolis Core)

Hierarchy/Facility	Size	Quantity	Total Land Required
Number of Parks (Government Architect NSW – specifically for greenfield sites)			
Local Parks	Average size > 0.5ha	11	Approx. 5ha Assume that 100% of local is in urban areas
District Parks	Average size > 5ha	5	Approx. 25ha Assume 40% urban, 60% sport and recreation green grid corridor zones
Major Destination Parks	Minimum size 20ha	1	Up to 20ha Assume 100% South Creek corridor
Sport and Recreation Facilities (Office of Sport/Growth Centres Commission/Parks and Leisure Australia)			
District sports grounds	10ha	2	20ha
Multi-purpose outdoor courts	Approx. 0.05ha per court + runoff space and amenities	6	0.3ha
Play space	100m^2 minimum within a park	12	N/A
Outdoor fitness stations	Varies - could be provided as multiple nodes along a recreation trail or one larger facility	2	N/A
Youth Precinct	Approx. 1,000m^2	1	0.1ha
Water Play	Scale can vary	6	N/A

Table 18 – Pools and Leisure (Aerotropolis Core)

Facility	Facility Size (m^2)	Land Size	Location
Indoor Leisure Centre with the following features:	Facility total: 3,000m^2	Land size should be large enough to accommodate future expansion of the facility (and courts) if required.	Aerotropolis Core. Located on the edge of the South Creek Corridor to reinforce the recreation corridor.
1 x learn to swim/hydrotherapy indoor pool	500		
1 x 25m indoor pool	500		
2 x indoor courts	750		
Shower/changerooms	200		
Community meeting rooms	150		
Youth recreation hang out space	200		
Foyer, lounge and cafe	400		
1 x outdoor toddler pool	300		
1 x outdoor 50m pool	700		
Adjoining open space/picnic area	1,000		

In addition to the above, social and recreational infrastructure will be provided for the working population across the Aerotropolis Growth Area. For the purpose of this Section 7.12 Plan, it has been assumed that additional open space and childcare will be required to support this population.

The demand for social infrastructure generated by the working population is based on the rates outlined in the City of Sydney Development Contributions Plan 2015. In this plan, the following assumptions were adopted based on survey data:

- One worker generates demand for open space equivalent to 0.2 residents
- One worker generates demand for childcare equivalent to 0.6 residents

It has been assumed that the working population within the Aerotropolis Core Precinct can be suitably serviced by the proposed infrastructure listed above.

Table 19 – Social, Open Space & Recreation Infrastructure Needs (Working Population)

Facility	Number of Parks/Facility Size	Land Size (Ha)	Location
Local Park	4	2	To be confirmed during the Precinct Planning phase
District Park	2	10	
Major Destination Park	1	20	
High quality, 118 space council owned and managed early childhood education and care centre	1,769m^2 (indoor and outdoor spaces)	0.4	

8.4 Riparian Corridors

The Section 7.12 Plan includes an allowance for land acquisition for roads, drainage and social infrastructure. In addition to the infrastructure listed above, it has been assumed that Penrith and Liverpool City Councils will acquire all riparian corridors for third and fourth order creeks. It has been assumed that first and second order creeks will be managed by developers.

The total riparian corridor area to be acquired in each Precinct was taken from geospatial data available from NSW Spatial Data Services and is summarised in Table 20 below. The Riparian corridors within the Wianamatta South Creek Precinct was excluded from these numbers and is assumed to be contained in a future SIC.

Table 20 - Riparian Corridor Area for Acquisition

Precinct	3rd and 4th Order Riparian Corridor Area (m^2)
Aerotropolis Core	505,254
Badgerys Creek	180,571
Agribusiness	76,275
Northern Gateway	6,547
Total	**768,647**

9 Cost Estimates

9.1 Cost Rates

9.1.1 Collector Roads

It is anticipated that all new collector roads will be constructed in accordance with the *Western Sydney Street Design Guidelines*, prepared by the Western Sydney Planning Partnership. For the purpose of this assessment it has been assumed that the roads included in the S7.12 Plan will adopt the "Local Collector", "High Street" and "Industrial Street" typologies.

Table 21 – Street Types

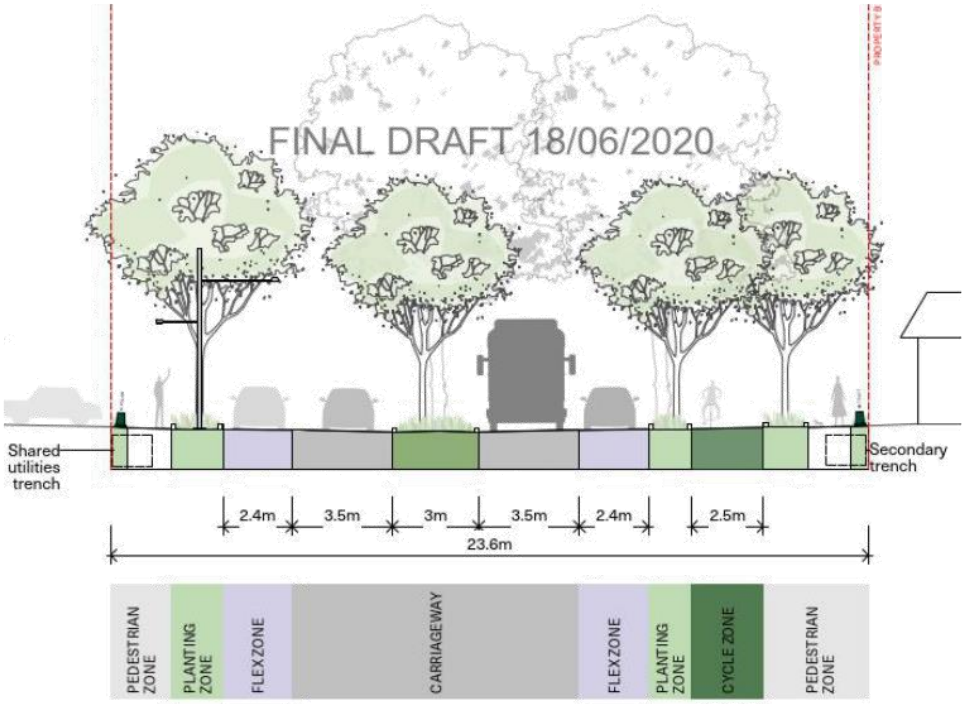
Street Type & Description	Nominal Corridor Width	Indicative Traffic Volume (VPD)
Local Collector Slow speed streets to and through neighbourhoods.	23-24m	3,000 – 6,000
High Street Unique to commercial centres where ground flood building uses require high quality public domain amenity and generous verge space for street activities.	20m	≤ 3,000
Industrial Street Higher-order neighbourhood streets that typically facilitate the connection of the arterial road network to local street networks.	22-23m	3,000 – 6,000

Source: Western Sydney Street Design Guidelines – Western Sydney Planning Partnership (2019)

It should be noted that the *Western Sydney Street Design Guidelines* also include typical sections for local streets, laneways and sub-arterial roads. These road typologies have not been included as they are assumed to fall outside the scope of the S7.12 plan. Sub-arterial roads are assumed to be included in the Special Infrastructure Contributions Plan, and lower order roads will be provided by developers at their own cost in accordance with current practice.

Typical sections for the assumed road typologies are provided below. Cost rates for collector roads were determined using contractor rates provided to IDC on past projects. A summary of the cost rates is provided in the following tables. Costs are provided on a per metre basis. It should be noted that the cost rates do not include an allowance for contingency.

Figure 21 – Local Collector Typical Section (Case Study B)

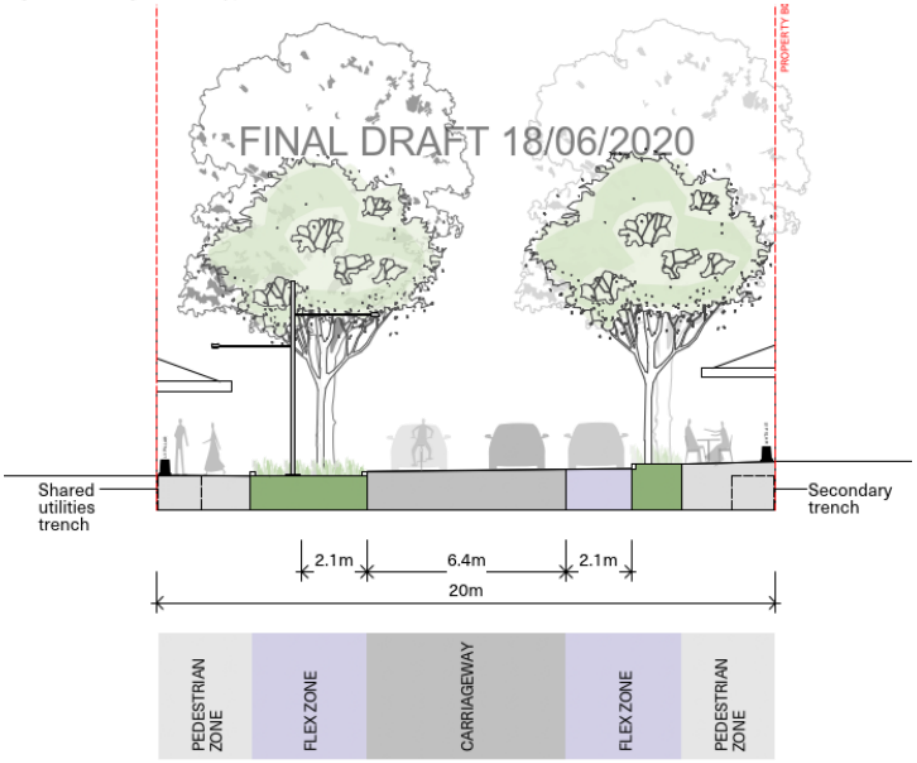


Source: Western Sydney Street Design Guidelines – Western Sydney Planning Partnership (2019)

Table 22 – Local Collector Cost Rate

Item	Rate ($/m)
Earthworks	$11.80
Traffic Lanes	$703.70
Flex Zone (landscaping/parking)	$280.80
Utilities & Stormwater	$1,310.00
Verge & Landscaping	$1,203.15
Total	**$3,510.00**

Figure 22 – High Street Typical Section

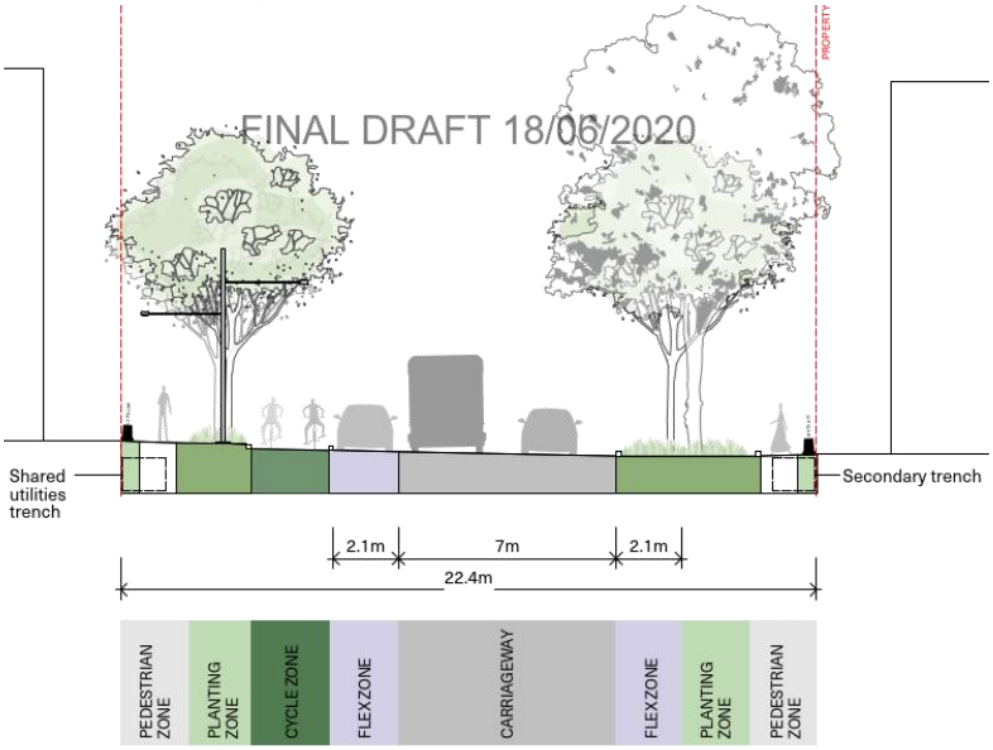


Source: Western Sydney Street Design Guidelines – Western Sydney Planning Partnership (2019)

Table 23 – High Street Cost Rate

Item	Rate ($/m)
Earthworks	$10.00
Traffic Lanes	$662.30
Flex Zone (landscaping/parking)	$267.75
Utilities & Stormwater	$1,310.00
Verge & Landscaping	$1,351.50
Total	**$3,600.00**

Figure 23 – Industrial Street Typical Section



Source: Western Sydney Street Design Guidelines – Western Sydney Planning Partnership (2019)

Table 24 – Industrial Street Cost Rate

Item	Rate ($/m)
Earthworks	$11.20
Traffic Lanes	$1,131.65
Flex Zone (landscaping/parking)	$245.70
Utilities & Stormwater	$1,310.00
Verge & Landscaping	$1,098.35
Total	**$3,800.00**

It has been assumed that all collector roads within residential areas will be in the "Local Collector" typology and all collector roads within freight and logistics, warehousing, service and other industrial and agribusiness will be of the "Industrial Street" typology. Within retail, health services and school areas it has been assumed that 50% of collector roads will be of the "High Street" typology and 50% will be of the "Local Collector" typology.

Table 25 – Collector Road Cost Rates

Road Type	Cost Rate	Applicable Development Typologies
Local Collector	$3,510/m	Residential, retail, health services, schools
High Street	$3,600/m	Retail, health services. Schools

Road Type	Cost Rate	Applicable Development Typologies
Industrial Street	$3,800/m	Freight and logistics, warehouse, service and other industrial, agribusiness

9.1.2 Stormwater Drainage

Stormwater drainage cost rates were extracted from the *Assessment of Revised Section 94 Contributions Plan No 21 – Marsden Park* prepared by IPART in 2017. The IPART assessment provided a comparison of detention basin cost rates across various local contribution plans. The results are summarised in Table 26 below.

As per the calculation of stormwater provision rates outlined in Section 8.2, the highest and lowest values have been excluded and an average has been calculated for the remaining rates. The result was then adjusted for inflation using the CPI data from the Australian Bureau of Statistics.

Table 26 - Comparison of per cubic metre basin cost estimates and size ($June 2016)

Contribution Plan	Basin Volume Total (m^3)	Basin Cost Total ($M)	Number of Basins	Average Basin Volume (m^3)	Average Basin Cost ($/$m^3$)
CP21 (BCC)	634,618	131.8	20	31,731	208
CP21 (JWP)	596,795	50.8	20	29,840	85
CP20 (BCC)	563,706	143.4	35	16,106	254
CP24 (BCC)	93,998	17.4	11	8,545	185
CP15 (THSC)	436,000	36.5	9	48,444	84
CP16 (THSC)	183,700	18.9	6	30,617	103
Austral & Leppington North (Camden & Liverpool)	332,310	37.2	27	12,308	112

Source: Assessment of Revised Section 94 Contributions Plan No 21 – Marsden Park - IPART (2017)

This process was also undertaken for raingarden costs. The results of the IPART assessment are summarised in Table 27.

Table 27 - Raingarden cost comparison of existing contribution plans ($June 2016)

Contribution Plan	Total Raingarden Area (m^2)	Cost Total ($M)	Number of Raingardens	Average Raingarden Area (m^2)	Average Raingarden Cost ($/$m^2$)
CP21 (BCC)	9,900	7.4	8	1,23	752
CP21 (JWP)	10,340	5.6	8	1,239	545
CP20 (BCC)	79,420	37.6	34	2,336	473
CP24 (BCC)	3,250	5.5	7	464	1,704
CP15 (THSC)	17,200	6.6	9	1,911	384
CP16 (THSC)	14,480	6.5	13	1,114	450
Austral & Leppington North (Camden & Liverpool)	N/A	N/A	N/A	1,200	262

Source: Assessment of Revised Section 94 Contributions Plan No 21 – Marsden Park - IPART (2017)

Based on the above, the following cost rates were adopted:

- Detention Basins $130/$m^3$
- Raingardens $550/$m^2$

It should be noted that the above costs include works only. Land acquisition costs have been excluded due to the variable nature of land value across Western Sydney.

9.1.3 Social Infrastructure

Social infrastructure cost rates were provided by Penrith City Council. Where rates were unavailable, rates from previous projects undertaken by Cred were adopted.

Table 28 - Social Infrastructure Cost Rates

Facility	Base Building Rate ($/m²)	Fit out Rate ($/m²)	Source
District Multi-Purpose Community Hub & Library			
Library floorspace (m²/person)	$3,250	$2,500	Cred
Multi-purpose community hall space (m²/person)	$2,500	$3,000	Cred
Flexible meeting space	$3,000	$2,250	Cred
Cultural production space (small scale e.g. tech or pottery)	$2,500	$1,850	Cred
Community kitchen	$2,880	$1,850	Cred
Subsidised office space x 4 offices & hot desks	$1,790	$980	Cred
Foyer, lounge & café	$2,200	$1,350	Cred
Recording studio spaces	$2,060	$1,490	Cred
Connected outdoor, public civil space	$2,500	$1,850	Cred
High quality, council owned and managed early childhood education and care centre	$2,200	$1,200	Cred
Parks			
Local park (rate per ha)	$1,000,000		Council
District park (rate ha)	$1,200,000		Council
Major destination park/city wide park (rate ha)	$1,200,000		Council
District sports grounds (2 double playing fields and amenities) (rate per ha)	$3,000,000	$80,000	Council
Multi-purpose outdoor courts (rate per ha)	$1,200,000	$1,600,000	Council
Play space (assumed located within a park) (rate per play space)	$600,000		Council
Outdoor fitness stations (rate per station)	$120,000		Council
Youth precinct	$4,000	$4,500	Council
Water play (provided in district park)	$800,000		Council
Indoor Leisure Centre			
Outdoor toddler pool	$3,700	$550	Council
Outdoor 50m pool (8 lanes)	$3,700	$550	Cred
Shower/changeroom block	$2,000	$900	Cred
Adjoining open space/picnic area	$1,000	$1,850	Council
Learn to swim/hydrotherapy indoor pool	$3,500	$1,550	Cred
25m indoor pool	$3,500	$1,500	Cred
2x indoor courts	$2,480	$1,480	Cred
Community meeting rooms	$3,000	$2,250	Cred
Youth recreation hang out space	$2,200	$1,350	Cred
Foyer, lounge & café	$2,200	$1,350	Cred

9.1.4 Land Acquisition

Land acquisition rates have been provided by Atlas Urban Economics. The rates adopted for this Section 7.12 Plan are summarised in Table 29.

For the purpose of this assessment, it has been assumed that all road infrastructure will be located within developable land. Stormwater infrastructure is assumed to be located in both developable and constrained land at a 50/50 split. Riparian corridors are assumed to be located within constrained land and will therefore be acquired at the constrained land acquisition rate.

Composite acquisition rates have been developed for social and recreation infrastructure. It has been assumed that all passive open space (across all precincts) will be located within constrained land. Acquisition rates for active open space and social infrastructure have been estimated based on an assumed mix of developable and constrained land.

Table 29 - Land Acquisition Rates

Development Typology	Land Type	Acquisition Rate ($/m^2)
Freight & Logistics and Warehouse	Developable	$400.00
	Constrained	$85.00
Retail (Bulky Goods)	Developable	$500.00
	Constrained	$85.00
Retail/Commercial	Developable	$2,000.00
	Constrained	$85.00
Education and Health Services	Developable	$200.00
	Constrained	$85.00
Medium Density Residential	Developable	$800.00
	Constrained	$85.00
Apartments (Low Rise)	Developable	$1,500.00
	Constrained	$85.00
Apartments (High Rise)	Developable	$2,000.00
	Constrained	$85.00
All Land Uses	Passive Open Space	$85.00
	Active Open Space	$400.00
	Social Infrastructure	$400.00

9.2 Development Costs

The anticipated development cost for both residential and employment land uses has been calculated for all precincts within the Aerotropolis. The methodology for calculating the total development cost is outlined in the following sections.

9.2.1 Site & Cost Rate Assumptions

Development costs were determined by first developing a typical site area breakdown. For employment development typologies, each site was split into hardstand, landscape, roads & drainage, and developable area. These assumptions are summarised in Table 30.

In addition to the above, it has been assumed that site utilisation equates to 85% of the total area. The remaining 15% of the site is assumed to be constrained and cannot be developed. Constrained land includes flood prone land, riparian corridors, heritage items and transport corridors.

For residential development typologies it was assumed that 25% of the site will be required for roads and drainage infrastructure. 10% of the total site area is assumed to be constrained. Costs for hardstand and landscaped areas are assumed to be included in building costs, which forms the balance of the site area.

Table 30 – Typical Employment Site Area Breakdown

Development Typology	Site Coverage	Hardstand (Light)	Hardstand (Heavy)	Landscape	Roads & Drainage
Freight and Logistics	50%	10%	15%	5%	20%
Warehousing	50%	10%	10%	5%	25%
Retail, business premises	50%	15%	5%	10%	20%
Education & schools	50%	15%	0%	20%	15%
Health services	50%	15%	5%	10%	20%

Hardstand areas have been separated into light and heavy to account for varying pavement thicknesses.

The following cost rates were assumed for each development typology.

Table 31 – Assumed Building Cost Rates

Development Typology	Hardstand (Light) ($/m^2)	Hardstand (Heavy) ($/m^2)	Landscape ($/m^2)	Roads & Drainage ($/m^2)	Building Cost ($/m^2 GFA)
Freight and Logistics	$150	$300	$50	$100	$1,100
Warehousing	$150	$300	$50	$100	$1,250
Retail, business premises	$150	$300	$50	$125	$2,500
Education & schools	$150	$300	$50	$125	$2,500
Health services	$150	$300	$50	$125	$3,000
Medium Density Development	incl in build	incl in build	incl in build	$125	$1,800
Apartment dwellings (low rise)	incl in build	incl in build	incl in build	$125	$2,300
Apartment dwellings (high rise)	incl in build	incl in build	incl in build	$125	$2,500

Source: Rawlinsons (2020)

9.2.2 Summary

The approximate development costs were calculated based on the assumptions outlined above. A breakdown of these costs per development typology is provided below. The total cost of development of the initial precincts is expected to be in the order of $39 billion. These costs will be revised as further detail on development typologies becomes available.

Table 32 - Cost Summary

Development Typology	Aerotropolis Core	Badgerys Creek	Agribusiness	Northern Gateway
Freight and Logistics	$1,941,983,559	$2,963,301,716	$6,562,531,757	$5,169,037,476
Warehousing	$1,225,659,574	$377,981,519	$837,078,354	$700,540,605
Retail, business premises	$12,012,937,188	$499,694,015	$1,106,623,002	$1,852,238,429
Education & schools	$630,050,077			
Health services	$373,217,941			
Medium Density Development	$1,408,631,899			
Apartments (low rise)	$1,102,105,519			
Apartments (high rise)	$279,669,237			
Total	**$18,974,254,994**	**$3,840,977,250**	**$8,506,233,114**	**$7,721,816,510**

10 Section 7.12 Contribution Plan Rate

A summary of the total development costs, Section 7.12 infrastructure costs and applicable Section 7.12 contribution rate is provided in Table 33.

An administration fee has been added to the proposed levy (as is permissible in the draft guidelines) to account for the scale of additional resources that will be required by both Councils to implement and manage the contributions plan.

Table 33 - Proposed Section 7.12 Contribution Rate

Component	Total
Development Costs	$ 39,043,281,868
Engineering Infrastructure Costs	$726,846,560
Social Infrastructure Costs	$203,161,243
Land Acquisition Costs	$1,624,098,812
Sub-Total (Infrastructure & Land Acquisition)	**$2,554,106,616**
Plan Administration (0.2% of the Infrastructure Costs)	$1,860,016
Proposed Section 7.12 Levy Rate	**6.5%**

The proposed Section 7.12 levy rate was converted to a contribution rate per net developable hectare to provide a comparison against similar local contribution plans for predominantly industrial/employment areas across Western Sydney. The results are provided in Table 34 and show a good correlation with the two most recent Contributions Plans that cover industrial/employment lands (i.e. Marsden Park Industrial and Box Hill Industrial).

Table 34 – Contribution Rate Comparison

Area	LGA	Contribution Rate ($/ha)
Western Sydney Aerotropolis (This Plan)	Penrith City Council & Liverpool City Council	$703,008
Box Hill Industrial	The Hills	$540,000 - $960,000 #
Marsden Park Industrial	Blacktown	$589,000 - $905,000 #
Eastern Creek Stage 3	Blacktown	$219,000 or $385,000 #

Contributions rates are stormwater catchment dependent

Appendix A – Assumptions

#	Planning & Land Use Assumptions		Source
1.1	The Aerotropolis Section 7.12 Plan will apply only to land within the initial Precincts.		N/A
1.2	The Sydney Science Park has been excluded from the Section 7.12 Area		Existing Agreed VPA with Penrith City Council
1.3	Population and job projections have been extracted from the *Western Sydney Aerotropolis Plan (WSAP).*		WSAP
1.4	The upper range value has been adopted to provide a conservative approach to infrastructure estimation. For employment, the following projections were adopted:		WSAP
	Aerotropolis Core	60,000	WSAP
	Badgerys Creek	11,000	WSAP
	Agribusiness	10,000	WSAP
	Northern Gateway	21,000	WSAP
	Mamre Road	17,000	WSAP
	For population, the following projection was adopted:		
	Aerotropolis Core	24,000	WSAP
1.5	All dwellings within the Northern Gateway Precinct are located within the Sydney Science Park site, per 1.1 the Sydney Science Park has been excluded from the S7.12 Area.		WSAP
1.6	Land Budget allowance for Constrained Land (flooding, heritage, etc.) and Corridors	15%	IDC assumption
1.7	Aerotropolis Core **Enterprise zone** will be comprised of:		
	Freight and Logistics	40%	Solved to match the projections in WSAP
	Warehouse	20%	Solved to match the projections in WSAP
	Retail	40%	Solved to match the projections in WSAP
1.8	Aerotropolis Core the **Mixed-Use** zone will be comprised of:		
	Warehouse	5%	Solved to match the projections in WSAP
	Retail	40%	Solved to match the projections in WSAP
	Education & Schools	10%	Solved to match the projections in WSAP
	Health Services	5%	Solved to match the projections in WSAP
	Residential	40%	Solved to match the projections in WSAP
1.9	Northern Gateway **Enterprise** zone will be comprised of:		
	Freight and Logistics	80%	Solved to match the projections in WSAP
	Warehouse	10%	Solved to match the projections in WSAP
	Retail	10%	Solved to match the projections in WSAP
1.10	For all Precinct, except for the Northern Gateway, the **Enterprise, Agribusiness and Industrial** zones will be comprised of:		

	Freight and Logistics	85%	Solved to match the projections in WSAP
	Warehouse	10%	Solved to match the projections in WSAP
	Retail	5%	Solved to match the projections in WSAP
1.11	**Assumed average site coverage for employment development typologies:**		
	Freight and Logistics	0.50	Benchmarked Developments
	Warehouse	0.50	Benchmarked Developments
	Retail	0.50	Benchmarked Developments
	Education & Schools	0.50	Benchmarked Developments
	Health Services	0.50	Benchmarked Developments
1.12	Assumed GFA for Retail (Bulky Goods)	0.75	Benchmarked Developments
	Assumed GFA for Retail/Commercial	1.00	Benchmarked Developments
1.13	**Assumed average GFA for residential development typologies:**		
	Medium Density	180	IDC assumption
	Apartments (low rise)	110	IDC assumption
	Apartments (high rise)	90	IDC assumption
1.14	**Residential Development Typology Split**		
	Low Density	0%	IDC assumption
	Medium Density	50%	IDC assumption
	Apartments Low Rise	40%	IDC assumption
	Apartments High Rise	10%	IDC assumption
1.15	**Dwelling Densities (dwellings per hectare)**		
	Low Density	17	Review of other Contributions plans, ABS data & GSC projections
	Medium Density	32	Review of other Contributions plans, ABS data & GSC projections
	Apartments Low Rise	55	Stage 1 LUIIP
	Apartments High Rise	80	Stage 1 LUIIP
1.16	**Dwelling Occupation Rates (population per dwelling)**		
	Medium Density	3.00	Review of other Contributions plans, ABS data & GSC projections
	Apartments Low Rise	2.40	Review of other Contributions plans, ABS data & GSC projections
	Apartments High Rise	2.10	Review of other Contributions plans, ABS data & GSC projections
1.17	**Employment Rates (Jobs per square metre)**		
	Freight and Logistics	300	NSW DPIE Mamre Road Precinct Report (2019)
	Warehouse	150	NSW DPIE Mamre Road Precinct Report (2019)

	Retail	80	SGS Economics (2015)
	Education & Schools	80	SGS Economics (2015)
	Health Services	80	SGS Economics (2015)
	Agribusiness	500	IDC Estimate
1.18	**Road Rates**		
	Flex Zone Composition		
	Local Collector (pavement percentage)	50%	IDC assumption
	High Street (pavement percentage)	75%	IDC assumption
	Industrial Road (pavement percentage)	50%	IDC assumption
	Assumed Recycled water "Purple Pipe" reticulation on all roads	Yes	IDC assumption
	Percentage of Collector road corridors with no land acquisition required (i.e. Use existing road corridors)	40.0%	Badgerys Creek and Aerotropolis Core only - Based on Aerial Imagery
	Percentage of Collector road corridors with no land acquisition required (i.e. Use existing road corridors)	15.0%	Northern Gateway and Agribusiness only - Based on Aerial Imagery
	Design, Legal, professional fees for road designs	12.5%	IDC assumption
1.19	**Drainage Costs**		
	On-Site Detention Basin costs ($/m^3)	$ 130	From IPARTs benchmarking of several CPs unit costs
	Raingarden Basin costs ($/m^3)	$ 550	From IPARTs benchmarking of several CPs unit costs
	Mixed Use On-Site Detention Basin Size (% of NDA)	2.7%	Benchmarked Rates
	Mixed Use Raingarden Size (% of NDA)	1.8%	Benchmarked Rates
	Enterprise, Agribusiness & Industrial On-Site Detention Basin Size (% of NDA)	2.7%	Benchmarked Rates
	Enterprise, Agribusiness & Industrial Raingarden Size (% of NDA)	1.8%	Benchmarked Rates
1.20	**Precinct Costs**		
	Freight & Logistics and Warehouse Developable Land Acquisition Rate ($/m^2)	$ 400.00	Atlas Urban Economics
	Freight & Logistics and Warehouse Constrained Land Acquisition Rate ($/m^2)	$ 85.00	
	Retail (Bulky Goods) Developable Land Acquisition Rate ($/m^2)	$ 500.00	
	Retail (Bulky Goods) Constrained Land Acquisition Rate ($/m^2)	$ 85.00	
	Retail/Commercial Developable Land Acquisition Rate ($/m^2)	$2,000.00	
	Retail/Commercial Constrained Land Acquisition Rate ($/m^2)	$ 85.00	
	Education & Health Services Developable Land Acquisition Rate ($/m^2)	$ 200.00	
	Education & Health Services Constrained Land Acquisition Rate ($/m^2)	$ 85.00	
	Medium Density Developable Land Acquisition Rate ($/m^2)	$ 800.00	
	Medium Density Constrained Land Acquisition Rate ($/m^2)	$ 85.00	
	Apartments (Low Rise) Developable Land Acquisition Rate ($/m^2)	$ 1,500.00	
	Apartments (Low Rise) Constrained Land Acquisition Rate ($/m^2)	$ 85.00	

	Apartments (High Rise Rise) Developable Land Acquisition Rate ($/m^2)	$2,000.00	
	Apartments (High Rise) Constrained Land Acquisition Rate ($/m^2)	$ 85.00	
	Passive Open Space Acquisition ($/m2)	$ 85.00	
	Active Open Space Acquisition ($m2) (estimated rate based on land use mix)	$ 800.00	
	Social Infrastructure Acquisition (estimated rate based on land use mix)	$ 800.00	

Appendix B – Social Infrastructure Benchmarks

Benchmarks Used for Social Infrastructure

Table 35 – Social Infrastructure & Indoor Recreation Infrastructure Needs

Facility	Source	Benchmark/Evidence
Regional Facilities 50,000 and over		
Central library	NSW State Library	1:50,000 to 150,000 people
Major civic/performance space	Growth Centre Commission	2,000m^2 to 4,000m^2 GFA to 100,000 to 150,000 people
Library floorspace	Liverpool City Council	42m^2 per 100 people
Indoor leisure centre (dry)	Parks and leisure 2012	1:50,000 to 100,000 people
Indoor leisure centre (wet)	Growth Centre Commission	1:30,000 to 60,000 people
District Level Facilities 20,000 – 50,000		
Community floorspace		
Branch library	Liverpool City Council	1:10,000 to 15,000 people
Community exhibition space	Growth Centre Commission	1:20,000 to 30,000 people
Multi-purpose community centre	Growth Centre Commission	1:20,000 to 30,000 people
Multi-purpose community centre (floorspace)	Liverpool City Council	0.022m^2 per resident
Performing arts centre	Growth Centre Commission	Approx. 800 – 1,000m^2, co-located with multi-purpose centre for every 40,000 – 50,000 people
Function and conference centre	Growth Centre Commission	1:20,000 to 30,000 people
Out of School Hours Care	Based on National Usage rates in Australia of 16% all children accessing OSHC	0.16 places per child
Local/Neighbourhood Level 10 to 20,000 people		
Community meeting room/small hall/small community centre		1:6,000 to 15,000 people
Early education and care (0 to 5)	Liverpool City Council	1 place per 8 children aged 0-4

Quantity Benchmarks Used for Open Space

Table 36 - Quantity Benchmark Requirements for Open Space

Hierarchy	Benchmark	Size
Council S94 Plan		
Per person	2.83ha per 1,000	N/A
Government Architect NSW (specifically for greenfield sites)		
Local Parks	1 per 2,500 people	Average size > 0.5ha Minimum size 0.3ha
District Parks	1 per 5,000 people	Average size > 5 ha Minimum size 2ha
Linear parks, other multiple use open space	N/A for linear	Minimum 20m wide
Major destination parks/city wide parks	1 per 20,000 people	No average. Minimum size 20ha, can be less depending on design and focus.
Office of Sport/Growth Centres Commission/Parks and Leisure Australia		
District sports grounds	2 double playing fields (4 fields total) and amenities per 10,000 people	10ha
Multi-purpose outdoor courts	1:4,200 people	approx. 0.05ha per court + runoff space and amenities
Play space	1 play space per 2000 people	100m^2 minimum within a park
Outdoor fitness stations	1 station per 15,000 people	Varies - could be provided as multiple nodes along a recreation trail or one larger facility
Pools	1 station per 15,000 people	50m pool (competition standard)
	1:30,000	25m leisure pool

Distribution Benchmarks Used for Open Space

Table 37 – Distribution Benchmarks Used for Open Space

Hierarchy	Distribution/Rate
Greater Sydney Commission/Government Architect NSW (Greener Places Open Space for Recreation Guide (Issue no.1 2018, Draft for Discussion)	
Regional park	within 5 to 10km to all residents
District park	within 2km to all residents
Local park	within 400m walkable of all residents, with walkable connections and no major barriers
High density areas	within 200m of all residents living in high density, with walkable connections and no major barriers

Appendix C – Social Infrastructure Audit

Table 38 - Audit Methodology

Type	Methodology	Source
Open space	Desktop analysis using a combination of six maps, Council's website which has some information on sport and recreation facilities and satellite imagery to further explore recreation facilities within parks.	Six maps Liverpool/Penrith website Google earth
Community Facilities	Desktop analysis using Council's website	Liverpool/Penrith website
Childcare	Desktop analysis by suburb using the Australian Children's Education & Care Quality Authority (ACECQA) audit	ACECQA
Schools	Desktop analysis by suburb using 'my school' a national audit of schools containing consistent data about every school in Australia (https://www.myschool.edu.au/)	My school
Regional cultural facilities	Desktop search and Council websites (Penrith, Liverpool, Blacktown, Bankstown)	Council websites Google searches
Local/District/Regional Libraries	Desktop search and Council websites	Penrith/Liverpool Websites

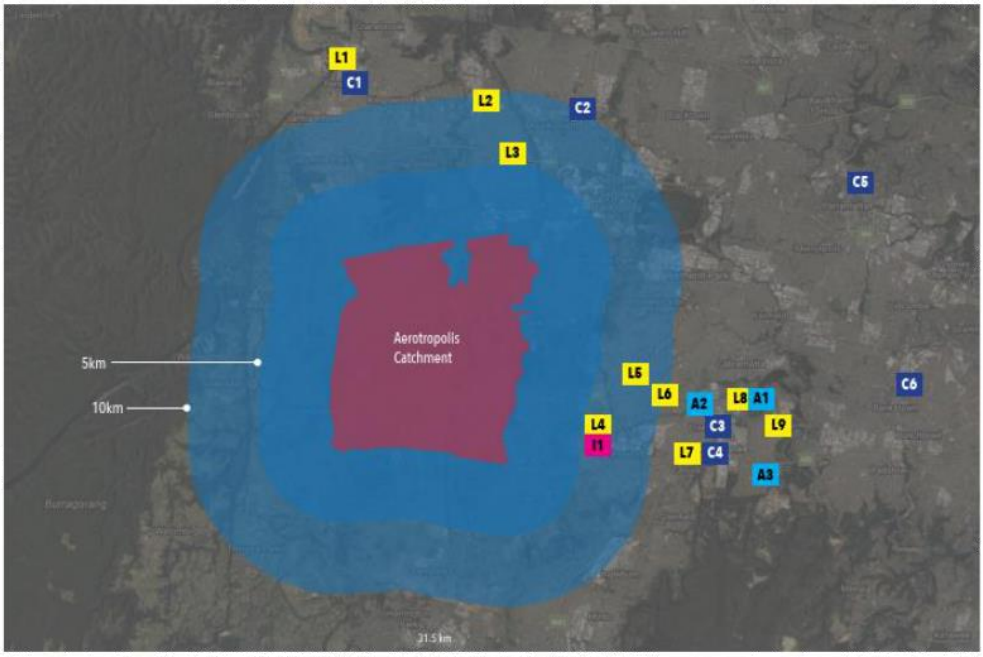
Figure 24 - Aerotropolis Social Infrastructure and Open Space Audit

KEY

Child Care & Early Education
Open space and sports facilities
Community Facilities
Indoor Recreation
Schools

E1	Luddenham Child Care Centre
E2	Bringelly Child Care Centre
E3	Clementson Drive Early Educational Centre
E4	Annabelle Early Learning Centre
E5	Community Kids Austral Early Education Centre
P1	Sales Park
P2	Robert Green Oval
P3	Bringelly Park
P4	Overett Reserve
P5	Bill Anderson Reserve
P6	WV Scott Memorial Park
P7	Catalina Park
P8	Wallacia Memorial Park
P9	Craik Park
C1	Bringelly Community Centre
C2	Greenway Park Community Centre
R1	Sydney International Shooting Centre
S1	Holy Family Catholic Primary school
S2	Luddenham public school
S3	Bringelly public school
S4	Bellfield College
S5	Rossmore public school
S6	Kemps Creek Public School
S7	Christadelphian Heritage College Sydney
S8	Emmaus Catholic College
S9	Trinity Primary School
S10	Al-faisal College
S11	Austral Public School

Figure 25 - Aerotropolis Regional Social Infrastructure and Open Space Audit



KEY

Library
Large cultural facilities
Aquatic Centre
Leisure/indoor recreation

L1	Penrith City Library
L2	St Marys Library
L3	St Clair Library
L4	Carnes Hills Library
L5	Green Valley Library
L6	Miller Library
L7	Casula Library
L8	Liverpool Library
L9	Moorebank Library

C1	Joan Sutherland Performing Arts Centre
C2	Sydney Coliseum Theatre
C3	Liverpool Regional Museum and Family History Centre
C4	Casula Powerhouse Arts Centre
C5	Riverside Theatre
C6	Bryan Brown Theatre

I1	Michael Clarke Recreation Centre
A1	Michael Wenden Aquatic Leisure Centre,
A2	Whitlam Leisure Centre
A3	Holsworthy Aquatic Centre

LIVERPOOL CITY COUNCIL

LIVERPOOL CONTRIBUTIONS PLAN 2009

Adopted: 14 December 2009

Amended: ~~10 June 2020~~TBC

Content Manager: 107975.2020

LIVERPOOL THE GREAT SOUTH WEST

Liverpool Contributions Plan 2009

Table of Contents

1. Introduction

Liverpool continues to experience significant new urban development, which creates a need for additional public amenities and services. In order that the existing residents are not burdened with the cost of providing these public services and amenities it is necessary for new urban development to provide these at no cost to existing residents.

Section 7.11 of the *Environmental Planning and Assessment Act, 1979* (the Act) enables the Council to require new urban development to provide these public services and amenities at no cost to Council. In particular Section 7.*12* enables the Council to require, as a condition of development consent, that land is dedicated or a cash contribution is made or both, for the provision of public services and amenities. Any such requirement must be in accordance with a contributions plan prepared by the Council.

The *Liverpool Contributions Plan 2009* provides information on the extent of anticipated new development, the extent of new public services and amenities needed to support the new development and the contributions that the new development must make to fund the public services and amenities.

Section 2 - Schedule of Contributions

This provides the monetary contribution rates for development in the various areas of the Liverpool LGA. There is a hierarchy of contributions levied under this plan. That is, a development may be levied for facilities that serve all of Liverpool (Citywide Facilities), a group of suburbs (District Facilities) and a particular suburb or release area (Local Facilities).

Section 3 - Administration

This provides background on S7.11 of the Act, details on how development will be levied contributions and when the contributions plan was adopted and subsequently amended.

Section 4 City Wide Planning Context, Development Trends and Nexus

This outlines how Council's vision for Liverpool, which is contained in Liverpool Directions, relates to the contributions plan. Further the section provides an outline on how this plan relates to *Liverpool Local Environment Plan 2008* and *Liverpool Development Control Plan 2008*. It also provides a guide on the scope of public services and amenities that are considered needed for residents in Liverpool. It also provides information on City Wide Development and Demographic Trends.

Sections 5 – 13

Sections 5 – 13 provide details on the actual facilities that contributions will fund, the nexus between development and facilities to be funded by contributions, the formulae for determining the contributions and a general comment on the timing of facilities. As *Liverpool Local Environmental Plan 2008* is amended to allow new urban areas to develop additional sections will be added.

The range of public services and amenities that are funded by developer contributions includes:

- **Community Facilities -** including multi-purpose community centres, libraries and cultural facilities.
- **Recreation Facilities** – including bushland reserves, outdoor passive facilities, Indoor and outdoor sporting facilities and bike paths.
- **Transport** – including various pedestrian, bike paths and traffic facilities, public transport facilities, frontage to public land uses and sub arterial roads.
- **Drainage** – including natural creek corridors, pipes, water treatment and detention basins.

2. Schedule of Contributions

Contributions are payable for development on land which is the subject of a Development Application in accordance with the following tables and subject to the provisions elsewhere in the contributions plan. In particular the contribution rates shown here are indexed in accordance with Section 3.7.6.

2.1 Established Areas

Table 2.1

Purpose	Lots > 450 sqm	Lots < 450 sqm	Multi dwelling housing			Aged / Disabled
			3 Bed +	2 Bed	1 Bed	
Community Facilities	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
City Library Extensions	$167	$161	$161	$120	$62	$45
Powerhouse	$119	$115	$115	$85	$45	$32
District	$187	$181	$181	$135	$70	$59
Recreation						
Whitlam Centre Extensions	$245	$238	$238	$176	$92	$77
District	$695	$673	$673	$499	$260	$217
Local	$2,778	$2,691	$2,691	$1,997	$1,042	$868
Other						
Administration	$50	$49	$49	$36	$19	$16
Total	**$4,241**	**$4,108**	**$4,108**	**$3,048**	**$1,590**	**$1,313**

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5.

The Established Areas includes the areas shown on the following map. It excludes the Liverpool City Centre, which is subject to *Liverpool Contributions Plan 2007 (Liverpool City Centre)*.

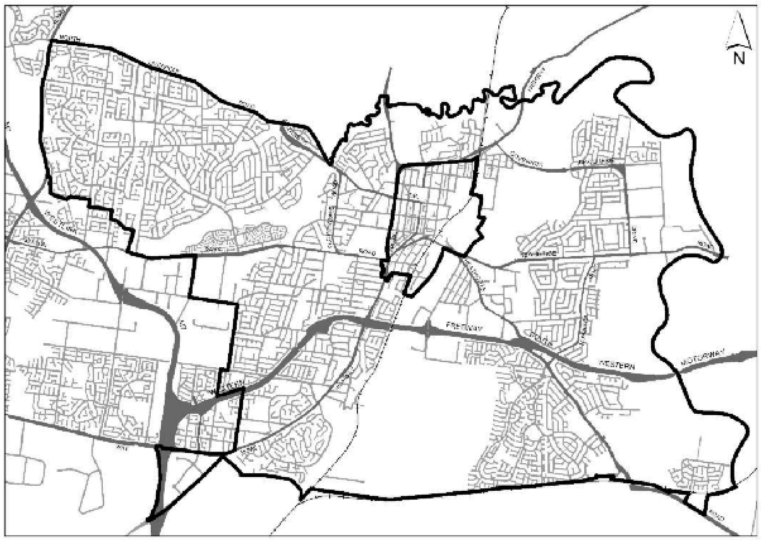


Figure 2.1 Established Areas Catchment Area

2.2 Pleasure Point East

Table 2.2

Purpose	Dwellings in River Heights Rd	Dwellings in River View Rd	Dwellings in Green St	Dwellings in Pleasure Point Rd
Community Facilities	Per dwelling	Per dwelling	Per dwelling	Per dwelling
City Library Extensions	$167	$167	$167	$167
Powerhouse	$119	$119	$119	$119
Recreation				
Whitlam Centre Extensions	$245	$245	$245	$245
Transport				
Local Streets	$14,782	$3,273	$2,718	
Drainage				
Inter-allotment Drainage	$2,623	$2,623	$2,623	$2,623
Other				
Administration	$64	$64	$64	$64
Professional & Legal Fees	$228	$228	$228	$228
Plan Establishment Costs	$392	$392	$392	$392
Total	**$18,620**	**$7,111**	**$6,556**	**$3,838**

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5.

Pleasure Point East includes the areas shown on the following map.

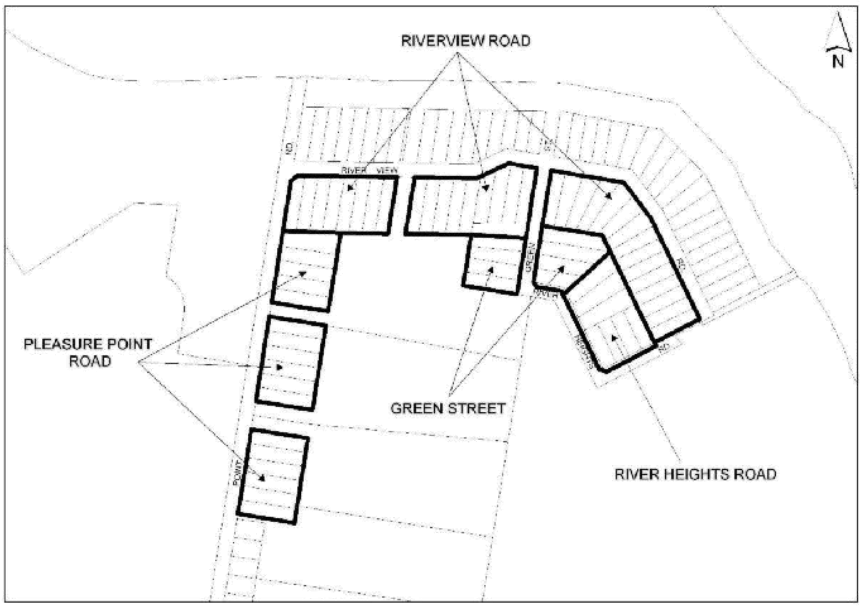


Figure 2.2 Pleasure Point East Catchment Area

2.3 Pleasure Point

Table 2.3

Purpose	Lots > 450 sqm	Lots < 450 sqm
Community Facilities	Per dwelling	Per dwelling
City Library Extensions	$193	$172
Powerhouse	$137	$122
District	$187	$95
Recreation		
Whitlam Centre Extensions	$284	$253
Local - Land	$1,416	$1,263
Local - Works	$1,902	$1,697
Transport		
Local - Land	$10,586	$9,480
Local - Works	$4,906	$4,394
Other		
Administration	$280	$250
Total	**$19,891**	**$17,725**

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5. The land index is 1.

Pleasure Point includes the areas shown on the following map.

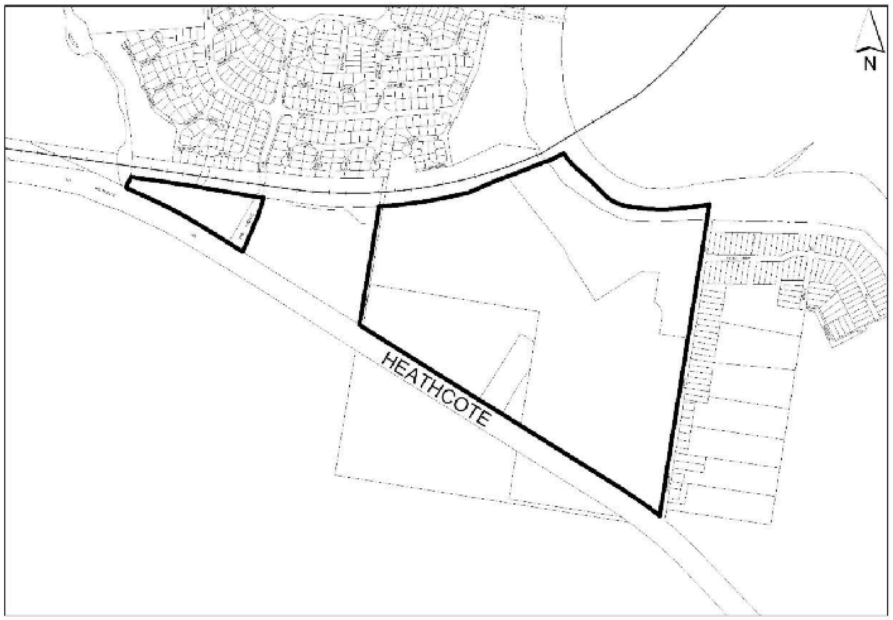


Figure 2.3 Pleasure Point Catchment Area

2.4 Hoxton Park, Carnes Hill and Prestons

Table 2.4

Purpose	Lots > 450 sqm	Lots < 450 sqm	Multi dwelling housing 3 Bed +	Multi dwelling housing 2 Bed	Multi dwelling housing 1 Bed	Aged / Disabled
Community Facilities	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
City Library Extensions	$193	$172	$172	$120	$94	$52
Powerhouse	$137	$122	$122	$85	$67	$37
District - Land	$107	$95	$95	$66	$52	$29
District - Works	$1,105	$986	$986	$687	$538	$299
Local - Works	$652	$582	$582	$405	$317	$176
Recreation	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
Whitlam Centre Extensions	$284	$253	$253	$176	$138	$77
District Recreation - Land	$1,290	$1,150	$1,150	$802	$628	$349
District Recreation - Works	$1,043	$930	$930	$648	$507	$282
Local Recreation - Land	$8,110	$7,233	$7,233	$5,041	$3,945	$2,192
Local Recreation - Works	$4,434	$3,954	$3,954	$2,756	$2,157	$1,198
Transport	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
District - Land	$826	$740	$740	$493	$407	$223
District - Works	$2,199	$1,969	$1,969	$1,313	$1,083	$594
Local (select sub catchment)						
East of Bernera Road - Land	$1,868	$1,673	$1,673	$1,115	$920	$505
East of Bernera Road - Works	$2,057	$1,842	$1,842	$1,228	$1,013	$556
West of Bernera Road - Land	$1,867	$1,672	$1,672	$1,114	$919	$505
West of Bernera Road - Works	$1,433	$1,284	$1,284	$856	$706	$387
East of Cowpasture Road - Land	$2,106	$1,886	$1,886	$1,258	$1,038	$569
East of Cowpasture Road - Works	$1,187	$1,063	$1,063	$709	$585	$321
West of Cowpasture Road - Land	$2,625	$2,350	$2,350	$1,567	$1,293	$709
West of Cowpasture Road - Works	$2,605	$2,333	$2,333	$1,555	$1,283	$704
Nineteenth Avenue - Land	$3,117	$2,792	$2,792	$1,861	$1,535	$843
Nineteenth Avenue - Works	$2,635	$2,360	$2,360	$1,573	$1,298	$712
Whitford Road South - Land	$1,981	$1,774	$1,774	$1,182	$975	$535
Whitford Road South - Works	$1,426	$1,277	$1,277	$851	$702	$385
Drainage	Per sqm	Per sqm	Per sqm	Per sqm	Per sqm	Per sqm
District - Land	$4.32	$4.98	$4.98	$4.98	$4.98	$4.98
District - Works	$1.21	$1.40	$1.40	$1.40	$1.40	$1.40
Local (select sub catchment)						
Prestons Central - Land	$2.59	$2.99	$2.99	$2.99	$2.99	$2.99
Prestons Central - Works	$4.23	$4.88	$4.88	$4.88	$4.88	$4.88
Prestons West - Land	$1.57	$1.81	$1.81	$1.81	$1.81	$1.81
Prestons West - Works	$4.08	$4.71	$4.71	$4.71	$4.71	$4.71
West of Cabramatta Creek - Land	$2.10	$2.42	$2.42	$2.42	$2.42	$2.42
West of Cabramatta Creek - Works	$3.94	$4.55	$4.55	$4.55	$4.55	$4.55
Other	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
Streetscape - Land	$252	$225	$225	$157	$123	$68
Streetscape - Works	$118	$105	$105	$73	$57	$32
Administration	$280	$250	$250	$174	$136	$76

Professional and Legal Fees	$251	$224	$224	$156	$122	$68

Purpose	Schools	Business & Non Res
Drainage	Per sqm	Per sqm
District - Land	$4.32	$6.31
District - Works	$1.21	$1.77
Local (select sub catchment)		
Prestons Central - Land	$2.59	$3.79
Prestons Central - Works	$4.23	$6.18
Prestons West - Land	$1.57	$2.29
Prestons West - Works	$4.08	$5.96
West of Cabramatta Creek - Land	$2.10	$3.07
West of Cabramatta Creek - Works	$3.94	$5.76
Other		
Streetscape - Land	$0.56	$0.56
Streetscape - Works	$0.26	$0.26
Administration	$0.26	$0.26
Professional and Legal Fees	$0.62	$0.62

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5. The land index is 1.

Hoxton Park, Carnes Hill & Prestons includes the areas shown on the following map.

Refer to Section 9 for sub catchments within Hoxton Park, Carnes Hill & Prestons.

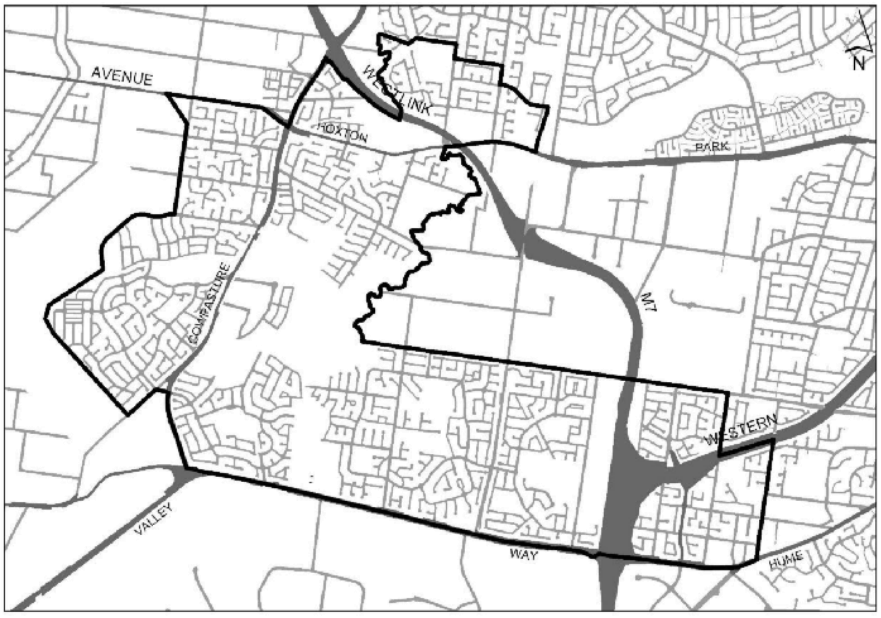


Figure 2.4 Hoxton Park, Carnes Hill & Prestons Catchment Area

2.5 Cecil Hills

Table 2.5

Purpose	Lots > 450 sqm	Lots < 450 sqm	Multi dwelling housing 3 Bed +	2 Bed	1 Bed	Aged / Disabled
Community Facilities	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
City Library Extensions	$193	$172	$172	$120	$94	$52
Powerhouse	$137	$122	$122	$85	$67	$37
District - Land	$107	$95	$95	$66	$52	$29
District - Works	$1,105	$986	$986	$687	$538	$299
Local - Works	$704	$628	$628	$438	$343	$190
Recreation						
Whitlam Centre Extensions	$284	$253	$253	$176	$138	$77
District - Land	$1,290	$1,150	$1,150	$802	$628	$349
District - Works	$1,043	$930	$930	$648	$507	$282
Local - Works	$2,778	$2,691	$2,691	$1,997	$1,042	$751
Drainage	Per sqm	Per sqm	Per sqm	Per sqm	Per sqm	Per sqm
District - Land	$4.32	$4.98	$4.98	$4.98	$4.98	$4.98
District - Works	$1.21	$1.40	$1.40	$1.40	$1.40	$1.40
Other	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
Administration	$280	$250	$250	$174	$136	$136

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5. The land index is 1.

Cecil Hills includes the areas shown on the following map.

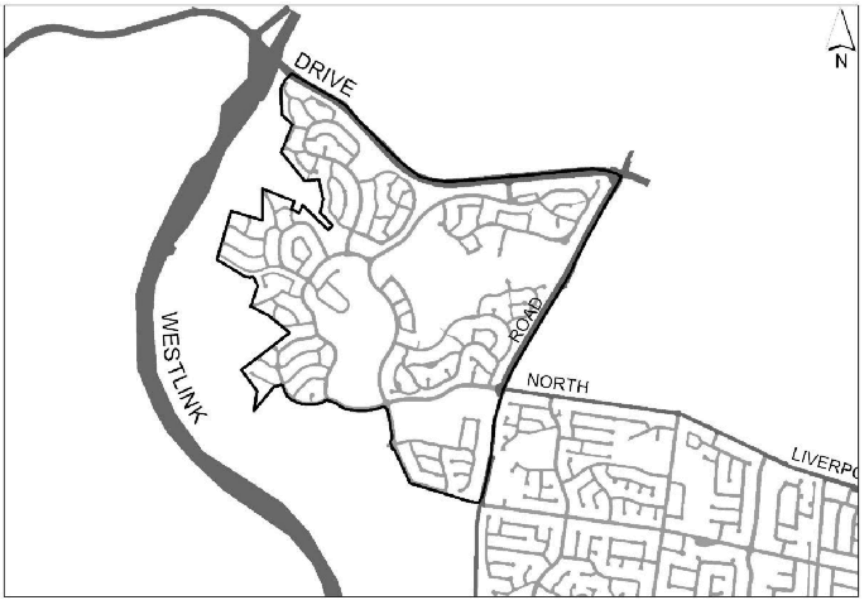


Figure 2.5 Cecil Hills Catchment Area

2.6 Elizabeth Hills

Table 2.6

Purpose	Lots > 450 sqm	Lots < 450 sqm	Multi dwelling housing 3 Bed +	2 Bed	1 Bed	Aged / Disabled
Community Facilities	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
City Library Extensions	$193	$172	$172	$120	$94	$52
Powerhouse	$137	$122	$122	$85	$67	$37
District - Land	$107	$95	$95	$66	$52	$29
District - Works	$1,105	$986	$986	$687	$538	$299
Local - Works	$704	$628	$628	$438	$343	$190
Recreation						
Whitlam Centre Extensions	$284	$253	$253	$176	$138	$77
District - Land	$1,290	$1,150	$1,150	$802	$628	$349
District - Works	$1,043	$930	$930	$648	$507	$282
Other						
Administration	$280	$250	$250	$174	$136	$76
Total	**$5,143**	**$4,587**	**$4,587**	**$3,197**	**$2,502**	**$1,390**

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5. The land index is 1.

Elizabeth Hills includes the areas shown on the following map.

Figure 2.6 Elizabeth Hills Catchment Area

2.7 Prestons Industrial Area

Subdivision

Table 2.7a applies to land, which is the subject of a Development Application for the purpose of subdivision where the intention is to prepare the land for subsequent development and/or to on-sell the properties to industrial companies and/or future industrial land developers. This table does not apply to Development Applications, which involve the construction of buildings and/or the use of the land for any purpose in cases where the land has not been the subject of a previous approval involving developer contributions. In such cases, please refer to Table 2.7c.

Table 2.7a

Purpose	Per Sqm
Transport	
Local (select sub catchment)	
East of M7 - Works	$0.96
West of M7 - Land	$0.86
West of M7 - Works	$0.73
West of M7 & Road A2 East of Bernera Road - Land	$5.34
West of M7 & Road A2 East of Bernera Road - Works	$2.94
West of M7 & Road B East of Bernera Road - Land	$8.46
West of M7 & Road B East of Bernera Road - Land	$4.50
West of M7 & Road C West of Kookaburra Road - Land	$34.33
West of M7 & Road C West of Kookaburra Road - Works	$19.75
West of M7 & Road D East of Kookaburra Road - Land	$33.42
West of M7 & Road D East of Kookaburra Road - Works	$15.78
Drainage	
Local (select sub catchment)	
East of M7 - Land	$1.57
East of M7 - Works	$6.35
West of M7 - Land	$1.94
West of M7 - Works	$6.33
North of M7 - Land	$9.12

Buildings (where contribution has been paid for subdivision)

Table 2.7b is applicable to development applications for the construction of buildings and/or the use of land where developer contributions in accordance with Table 1 have been paid as a result of subdivision approved after this Plan came into force.

Table 2.7b

Purpose	Per Sqm
Transport	
District - Land	$1.21
District - Works	$3.22
Drainage	
District - Land	$6.31
District - Works	$1.77
Other	
Landscape - Buffer Land	$0.91
Landscape - Buffer Works	$0.08
Administration	$0.27
Professional and Legal Fees	$0.56

Buildings (where contribution for subdivision has not been paid)

Table 2.7c is applicable to development applications for the construction of buildings and/or the use of land where no previous developer contributions have been paid.

Table 2.7c

Purpose	Per Sqm
Transport	
District - Land	$1.21
District - Works	$3.22
Local (select sub catchment)	
East of M7 - Works	$0.96
West of M7 - Land	$0.86
West of M7 - Works	$0.73
West of M7 & Road A2 East of Bernera Road - Land	$5.34
West of M7 & Road A2 East of Bernera Road - Works	$2.94
West of M7 & Road B East of Bernera Road - Land	$8.46
West of M7 & Road B East of Bernera Road - Land	$4.50
West of M7 & Road C West of Kookaburra Road - Land	$34.33
West of M7 & Road C West of Kookaburra Road - Works	$19.75
West of M7 & Road D East of Kookaburra Road - Land	$33.42
West of M7 & Road D East of Kookaburra Road - Works	$15.78
Drainage	
District - Land	$6.31
District - Works	$1.77
Local (select sub catchment)	
East of M7 - Land	$1.57
East of M7 - Works	$6.35
West of M7 - Land	$1.94
West of M7 - Works	$6.33
North of M7 - Land	$9.12
Other	
Landscape - Buffer Land	$0.91
Landscape - Buffer Works	$0.08
Administration	$0.27
Professional and Legal Fees	$0.56

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5. The land index is 1.

Prestons Industrial Area includes the areas shown on the following map.

Refer to Section 10 for sub catchments within Prestons Industrial Area.

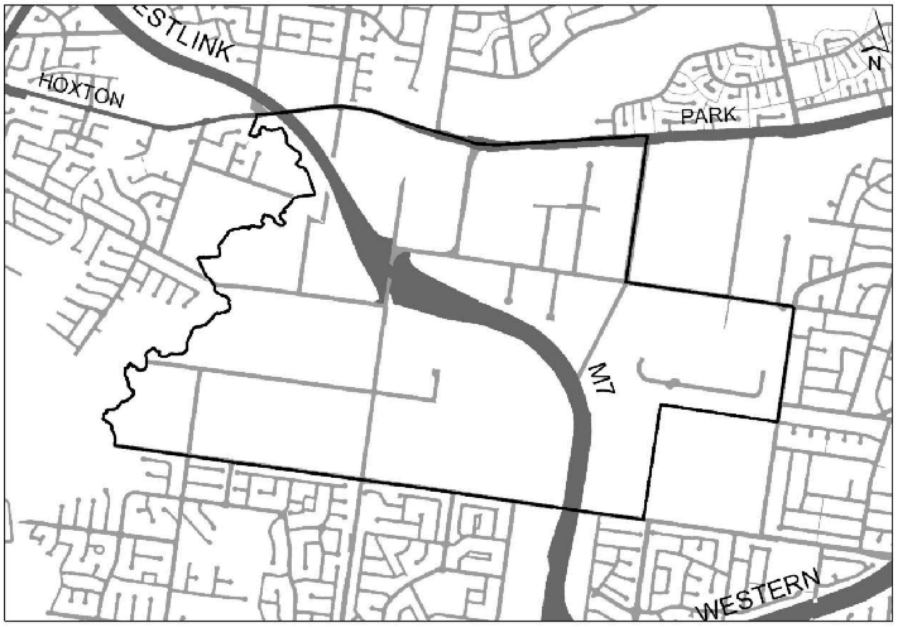


Figure 2.7 Prestons Industrial Area Catchment Area

2.8 Middleton Grange

Table 2.8

Purpose	Lots > 450 sqm	Lots < 450 sqm	Multi dwelling housing 3 Bed +	Multi dwelling housing 2 Bed	Multi dwelling housing 1 Bed	Aged / Disabled
Community Facilities	Per Lot	Per Lot	Per Dwelling	Per Dwelling	Per Dwelling	Per person
City Library Extensions	$193	$172	$172	$120	$94	$52
Powerhouse	$137	$122	$122	$85	$67	$37
District - Land	$107	$95	$95	$66	$52	$29
District - Works	$1,105	$986	$986	$687	$538	$299
Local - Land	$48	$43	$43	$30	$23	$13
Local - Works	$704	$628	$628	$438	$343	$190
Recreation						
Whitlam Centre Extensions	$284	$253	$253	$176	$138	$77
District - Land	$1,290	$1,150	$1,150	$802	$628	$349
District - Works	$1,043	$930	$930	$648	$507	$282
Local Recreation - Land	$6,817	$6,080	$5,423	$3,371	$1,640	$1,842
Local Recreation - Works	$2,223	$1,982	$1,768	$1,099	$535	$601
Transport						
District - Land	$826	$740	$740	$493	$407	$223
District - Works	$2,199	$1,969	$1,969	$1,313	$1,083	$594
Local - Land	$1,311	$1,174	$1,174	$783	$646	$354
Local - Works	$3,751	$3,359	$3,359	$2,239	$1,847	$1,014
Drainage (see below)						
Other						
Administration	$254	$254	$254	$254	$254	$69
Professional services	$120	$120	$120	$120	$120	$32
Implementation	$1,204	$1,204	$1,204	$1,204	$1,204	$325
Total	**$23,614**	**$21,261**	**$20,389**	**$13,927**	**$10,124**	**$6,382**

Drainage per dwelling	Land in 15 Dw / Ha	Land in 23 Dw / Ha	Land in 30 Dw / Ha	Aged Persons
	Per sqm	Per sqm	Per sqm	Per sqm
Drainage - Land	$9.96	$14.56	$14.56	$11.50
Drainage - Works	$4.79	$7.00	$7.00	$5.52

Purpose	Schools	Business & Non Res
Drainage	Per sqm	Per sqm
Local - Land	$9.96	$14.56
Local - Works	$4.79	$7.00
Other		
Administration	$0.56	$0.56
Professional services	$0.27	$0.27
Implementation	$2.68	$2.68

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5. The land index is 1.

Middleton Grange includes the areas shown on the following map.

Figure 2.8 Middleton Grange Catchment Area

2.9 Rural Areas

Table 2.9

Purpose	Additional lots	Dual Occupancy Dwellings		
		3 Bed +	2 Bed	1 Bed
		Per Dwelling	**Per Dwelling**	**Per Dwelling**
Community Facilities				
City Library Extensions	$177	$161	$120	$94
	$126	**$115**	**$85**	**$67**
Powerhouse				
Recreation				
	$261	**$238**	**$176**	**$138**
Whitlam Centre Extensions				
Other				
Administration	$7	$6	$5	$4
Total	$570	$520	$386	$302

The above rates are as at the September 2010 Quarter CPI.

The works index is 172.5. The land index is 1.

Rural Areas include the areas shown on the following map.

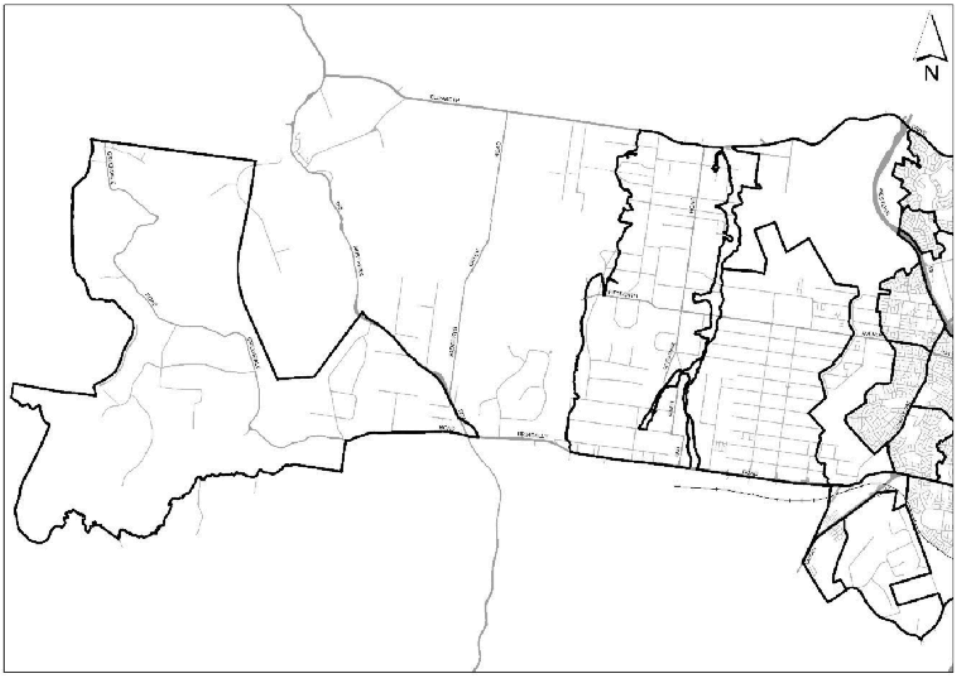


Figure 2.9 Rural Areas Catchment Area

2.10 Contributions to be levied

Contribution rates for development types other than conventional lots are calculated using the formulae contained within this plan. The conventional lot is the basis for most formulae. Contributions for development types other than conventional lots must be calculated individually based on the number of bedrooms, site area, number of residents etc. The actual amounts are not stated in this schedule, as each development is unique in terms of these factors.

Aged and Disabled Persons Housing Development

This plan seeks to levy contributions for Housing for Seniors or People with a Disability as defined under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004. The formulae for such contributions are contained within various sections of the plan.

Developer contributions are proposed to be levied for aged and disabled persons housing development on the following grounds:

- The standard nexus between the new population and the demand for additional services.
- Older and disabled people will be future users of the citywide community and recreation facilities identified in this plan. and
- Residents' requirements for citywide community and recreation facilities cannot be met from services provided on site.

The contribution formula for Housing for Seniors or People with a Disability shows that such facilities will be levied relative to the number of persons anticipated for the development.

2.11 Credits for existing development

When calculating contributions for a particular development, other than in an industrial zone, a contribution credit equivalent of one conventional lot is given for each lot, which exists prior to subdivision or development. The basis of this practice is that each existing lot has an existing dwelling (or the potential to construct it) and no opportunity exists to levy contributions retrospectively. This practice also applies when recently created residential lots are re-subdivided or developed in some other form.

Where an existing dwelling is located over two or more small lots, these will be considered as one conventional lot.

3. Administration

3.1 Name of Plan

This plan is called *Liverpool Contributions Plan 2009*.

This Contributions Plan has been prepared in accordance with the provisions of Section 7.11 of the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*.

The contributions plan consists of this document and a series of maps entitled *Liverpool Contributions Plan 2009 Infrastructure Map*. The maps match the maps contained in *Liverpool Local Environmental Plan 2008.*

3.2 Applies to

This Contributions Plan applies to all land in Liverpool except that those areas covered by:

- *Liverpool Contributions Plan ~~2006~~2018 (Liverpool City Centre)~~ and~~*
- *Liverpool Contributions Plan 2008 (Edmondson Park)*
- *Liverpool Contributions Plan 2014 – Austral and Leppington North Precincts*
- *Liverpool Contributions Plan 2014 – East Leppington*
- *Liverpool Contributions Plan 2018 – Established Areas*
- Land identified on the land application map under *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020.*

3.3 Purpose of Plan

The purpose of the Contributions Plan is to:

(a) Provide an administrative framework under which specific public facilities strategies may be implemented and coordinated,

(b) Ensure that adequate public facilities are provided for as part of any new development,

(c) Authorise the council to impose conditions under S7.11 *of the Environmental Planning and Assessment Act 1979* when granting consent to development on land to which this plan applies,

(d) Provide a comprehensive strategy for the assessment, collection, expenditure, accounting and review of development contributions on an equitable basis,

(e) Ensure that the existing community is not burdened by the provision of public amenities and public services required as a result of future development,

(f) Enable the council to be both publicly and financially accountable in its assessment and administration of the contributions plan.

3.4 Adoption of Contributions Plan

Council adopted the plan on 14 December 2009. The plan originally came into force on 15 December 2010. The value of works and land is at the September 2010 Quarter. The CPI for this quarter was 172.5.

Amendments to Contributions Plan

Liverpool Contributions Plan 2009 has been amended as follows:

No	Adoption date	Amendment date	Description of Amendment
1	10 June 2020	10 June 2020	Enacted Council resolutions of 29 April 2020 to clarify CDC and contributions; remove city wide facilities and update clause references to the Act and implement Covid-19 response.
2	TBC	TBC	Remove land to which State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 from the Plan and minor housekeeping amendment to clarify relationship to other contributions plans.

Previous Contributions Plans

Liverpool Contributions Plan 2009 replaces *Liverpool Contributions Plan 2001*.

3.5 Relationship to other Plans

The land to which this contributions plan applies is also subject to the following plans:

- *Liverpool Local Environmental Plan 2008.*
- *Liverpool Development Control 2008.*

3.6 Types of Development to be levied

Council will levy all development in Liverpool, whether approved by a development consent or complying development certificate, which generates the need for additional amenities, facilities and services, which the Council provides. Development includes subdivision, new additional dwellings (except secondary dwellings) and non-residential development.

Development approved pursuant to *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* will be levied development contributions in accordance with the Contributions Plan. Self contained dwellings and in-fill self-care housing (as defined in the policy) will be levied.

3.7 Payment of Contributions

3.7.1 Levying of Contributions

Council will require, as a condition of development consent (on a development application or complying development certificate), the payment of a monetary contribution and/or the dedication of land for the provision of public facilities specified in this Contributions Plan, from development, which it considers will contribute to the need for those facilities. The Contributions Plan applies to applications determined after the plan comes into force.

Contributions for subdivisions will be calculated according to the number of dwellings proposed on the allotment (with the exclusion of drainage and stormwater, which will be based on site area). Should the ultimate number of dwellings proposed on that allotment increase, post sub-division development consent, then contributions for additional dwellings must be paid to Council.

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 a Private 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 shall be paid to Council prior to the issuing of the Construction Certificate, whether by Council or a Private Certifier. Dedication of land to Council, such as road widening, 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 a Private 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.

Complying Development Certificates and Principal Certifying Authorities

In accordance with Cl 146 of the *EP&A Regulation 2000*, a certifying authority must not issue a construction certificate for building work or subdivision work under a development consent unless it has verified that each condition requiring the payment of levies has been satisfied.

In accordance with Cl 136L of the *EP&A Regulation 2000*, a certifying authority must not issue a complying development certificate for work unless it has included a condition requiring payment of contributions prior to commencement of work.

In particular, the certifier must ensure that the applicant provides a receipt(s) confirming that levies 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 Cl142(2) of the of the *EP&A Regulation 2000*. Failure to follow this procedure may render such a certificate invalid. The only exceptions to the requirement are where a works in kind, material public benefit, dedication of land or deferred payment arrangement has been agreed by the Council.

In such cases, Council will issue a letter confirming that an alternative payment method has been agreed with the applicant.

Landcom

Landcom is not required to submit final subdivision plans to Council for certification. Rather, subdivision plans are deposited directly with the Land Titles Office. Contributions (monetary, material public benefits and land transfer) shall be paid by Landcom to Council prior to the registration of subdivision plans. Any dedication of land to Council, in lieu of monetary contribution, shall be shown on the plan of subdivision.

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 seek 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 include 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.

3.7.2 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. or
- In other circumstances, to be outlined in writing by the applicant and determined formally by Council on the merits of the case.

Deferred payments as outlined above are acceptable only where an unconditional bank guarantee is provided for the amount deferred. Bank guarantees will be accepted on the following conditions:

- The bank guarantee must carry specific wording, for example, "drainage contributions for Stage 3".
- The bank 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 section 3.7.3).
- Council may call up the bank 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. In merit cases, the period of deferral will be as approved by Council. The period of deferral may be extended subject to providing a renewed bank guarantee, which includes anticipated future interest.
- 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.

3.7.3 Formula for Bank Guarantee Amounts

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

Guarantee Amount = P + P (C I x Y), where:

P = Contribution due.

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

Y = Period of deferral (years).

3.7.4 Method of Payment

Contributions shall only be made by way of monetary contribution and will only be accepted in cash or by bank cheque.

Works in Kind and Transfer of Land

Applicants are encouraged to provide works in kind and transfer land identified in the contributions plan in conjunction with the development of land. However the works and land will not be offset against contributions payable for individual applications.

Where works and / or land identified in the contributions plan are proposed to be provided in conjunction with the development Council will reimburse the developer for the cost of the works in

accordance with Council's *Developer Contributions Works in Kind Policy*.

Where land, which is the subject of a development application contains land identified for acquisition under this Contributions 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 land to be dedicated in lieu of payment of cash.

3.7.5 Credit for Existing Development

When calculating contributions for a particular development, a contribution credit equivalent of one conventional allotment is given for each allotment, which exists prior to subdivision or development. The basis of this practice is that each existing lot has an existing dwelling (or potential to construct) and no opportunity exists to levy contributions retrospectively. This practice also applies when recently created residential lots are re-subdivided or developed to the same dwelling type. Where an existing dwelling is located over two or more lots, these will be considered as one conventional lot, for the purposes of calculating applicable contributions.

3.7.6 Adjustment to Contribution Rates

The monetary contribution rates shown in Section 2 - Schedule of Contributions, 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 the development consent.

The adjusted contribution rates will be shown on Council's Web Page and updated quarterly.

This is distinct from Section 3.8, which deals with future reviews of the contributions plan. Future reviews will not affect any consent granted in accordance with this contributions plan.

Works, Administration, Professional and Legal Fees

The works, administration, professional and legal fee components of the monetary contributions rates set out in this plan are adjusted in accordance with the formula below headed **"Contribution at time of development consent"** at the time of imposing a condition on a development consent requiring payment of the monetary contribution to reflect quarterly variations in the *Consumer Price Index (All Groups Index Number for Sydney)* since the quarter year period shown for each Area in Section 1 – Schedule of Contributions.

In addition to the above adjustment, the works, administration, professional and legal fees components of the monetary contributions set out in this plan are adjusted in accordance with the formula below headed "**Contribution at time of payment"** at the time that the monetary contribution is to be paid pursuant to the condition imposed on the development consent to reflect quarterly variations in the *Consumer Price Index (All Groups Index Number for Sydney)* since the date that the consent was granted.

In that regard a condition imposed upon a development consent requiring payment of a monetary contribution set out in this plan that includes a works, administration, professional or legal fees component, shall include a requirement for the amount of the relevant component in the condition to be adjusted at the time that the contribution is to be paid to reflect quarterly variations in the *Consumer Price Index (All Groups Index Number for Sydney)* since the date that the consent was granted in accordance with the formula below headed **"Contribution at time of payment"**.

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 =	Works, administration, professional and legal fees components of the contributions as shown in this contributions plan
C_2 =	Works, administration, professional and legal fees components of the contributions subject of the conditions imposed on the development consent
C_3 =	Works, administration, professional and legal fees components of the contributions at the time that the contribution is to be paid
CPI_1 =	Latest "Consumer Price Index: All Groups Index Number" for Sydney available from the Australian Bureau of Statistics shown in *Liverpool Contributions Plan 2009* for the respective area in Section 1
CPI_2 =	Latest "Consumer Price Index: All Groups Index Number" for Sydney available from the Australian Bureau of Statistics as at the time of granting the relevant development consent
CPI_3 =	Latest "Consumer Price Index: All Groups Index Number" for Sydney available from the Australian Bureau of Statistics at time that the contribution is to be paid

Land

The land components of the monetary contributions rates set out in this plan are adjusted in accordance with the formula below headed **"Contribution at time of development consent"** at the time of imposing a condition on a development consent requiring payment of the monetary contribution to reflect quarterly variations in the **Average Estimated Land Acquisition Cost Per Square Metre** since the quarter year period shown for each Area in Section 1 – Schedule of Contributions.

In addition to the above adjustment, the land components of the monetary contributions set out in this plan are adjusted in accordance with the formula below headed **"Contribution at time of**

payment" at the time that the monetary contribution is to be paid pursuant to the condition imposed on the development consent to reflect quarterly variations in the **Average Estimated Land Acquisition Cost Per Square Metre** since the date that the consent was granted.

In that regard a condition imposed upon a development consent requiring payment of a monetary contribution set out in this plan that includes a land component, shall include a requirement for the amount of the land component in the condition to be adjusted at the time that the contribution is to be paid to reflect quarterly variations in the **Average Estimated Land Acquisition Cost Per Square Metre** since the date that the consent was granted in accordance with the formula below headed **"Contribution at time of payment"** .

In this clause **"Average Estimated Land Acquisition Cost Per Square Metre"** means the index figure prepared and published by or on behalf of the Council that represents the total costs that would have been incurred by the Council in respect of all land acquired by Council during the previous quarter year period divided by the number of square metres of such land and the phrase **"land"** where used herein means land that is in an englobo state being regular in shape, good average level land with an area of 2 ha with services available in the area for connection, subject to the payment of necessary developer contributions rates and not yet developed.

Contribution at time of development consent

$$C_2 = \frac{C_1 \times L_2}{L_1}$$

Contribution at time of payment

$$C_3 = \frac{C_2 \times L_3}{L_2}$$

where:

C_1 =	Land component of contributions as shown in this contributions 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
L_1 =	The latest Average Estimated Land Acquisition Cost Per Square Metre shown in *Liverpool Contributions Plan 2009* for the respective area in Section 1
L_2 =	The latest Average Estimated Land Acquisition Cost Per Square Metre published by the Council at the time of granting the relevant development consent
L_3 =	The latest Average Estimated Land Acquisition Cost Per Square Metre published by the Council at time that the contribution is to be paid

3.7.7 Goods and Services Tax

No Goods and Services Tax (GST) is applicable to the payment of contributions made under *Section 7.11 of the Environmental Planning and Assessment Act 1979.* This exemption applies to both cash contributions and land or works in lieu of contributions.

3.8 Review of Plan and Contributions

Council will review the contributions plan on a regular basis. The review process will canvass, where data is available:

- Development activity in terms of latest information on net additional dwellings and populations.
- Likely total development activity to be experienced in the future.

- Progress in the delivery of public facilities and amenities identified in the schedules of facilities.
- Modification of facility concepts, changes in anticipated facility costs, facility timing and land values.
- Annual contributions received and expenditure information.
- Any other factors likely to affect the delivery of works identified in this contributions plan.
- Changes resulting from amendments to *Liverpool DCP 2008*.

Any significant reviews of this contributions plan must be undertaken in accordance with the *EP&A Act 1979* and *EP&A Regulation 2000* and placed on public exhibition for a period of 28 days. The nature of the proposed changes and reasons for these changes would be clearly outlined as part of the exhibition.

Contributions will be adjusted, taking account of more recent information and, where relevant, the following:

- Consumer Price Index.
- Annual changes in land values.
- Actual costs of completed works.
- Reviewed costs yet to be completed works and land acquisition.
- Adjustment in projected project management and contingency costs associated with works.
- Management and legal costs associated with land acquisition.

This section is distinct from Section 3.7.6 Adjustment to Contribution Rates, which deals with future adjustment of contributions granted in accordance with the contributions plan. Future reviews under Section 3.8 will not affect any consent granted under this contributions plan.

3.9 Pooling of Funds

Council will administer money obtained under this plan and make decisions on the funding and provision of the projects in accordance with the EP&A Act and EP&A Regulation.

The funds collected under this plan may be pooled for projects included in the works schedule in other contribution plans which council administers. The priority for expenditure of pooled funds will be determined based on endorsed Council Strategies.

Council's ability to forward fund infrastructure identified in this Plan is very limited because it is contingent upon the availability of contributions funds.

To provide a strategy for the orderly delivery of the public services and amenities, this Contributions Plan authorises monetary contributions paid for different purposes, under this Plan and any other contributions plan approved by the Council, to be pooled and applied progressively for those purposes.

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.

4. City Wide Planning Context, Development Trends and Nexus

4.1 Planning Context

4.1.1 Major Plans of Council

Liverpool Directions 2006 - 2016

Liverpool Directions 2006-2016 is the community view on the future for Liverpool City. It was developed as a result of Council's Creating Our Future Together Partnership Project.

About 1,700 residents, workers, students and visitors were directly involved in developing *Liverpool Directions*. *Liverpool Directions* is used by Council, government agencies and community organisations in planning for the future of the City. It has been incorporated into Council's Corporate Plan as community outcomes that drive Council strategies. Council is planning its specific work directly in response to the issues and aspirations identified in 'Liverpool Directions'.

Liverpool Directions provides a basis for a range of Council strategies including the funding of public infrastructure by development.

The community view of Liverpool today serves as the starting point for thinking about the future. It is derived from community surveys of residents and from information collected at Partnership Project workshops.

Liverpool has a mix of land uses and offers a variety of lifestyles, from rural or country style, to traditional low-density suburban areas, to a large metropolitan centre. It also has prominent and highly valued natural features. Liverpool's people value the City's natural areas, in particular waterways such as the Georges River, Nepean River and the Cabramatta Creek system and appreciate access to the natural environment.

Liverpool is an area of urban growth. Historically it has accommodated some of Sydney's population expansion and provided homes and facilities for young families. Because Liverpool is a community with many young families, our community values resources, spaces and initiatives that support families. Development, change and growth are evident in Liverpool. Liverpool's people value appropriate progress in line with the City's past, existing land use and characteristics of its people. They also value the City's suburban and semi-rural heritage where new development fits into the existing character of an area.

Growth has brought with it people from many birthplaces, backgrounds and cultures. Liverpool's people value such diversity and the opportunities this provides. People also value a cohesive, harmonious community with strong social networks and connections. Wanting to feel safer in public spaces is a strong sentiment.

Liverpool is a convenient location in which to live. It is accessible to the rest of Sydney with good transport connections. Road congestion is a problem and short term parking in the City Centre is not considered to be adequate by some. On the other hand Liverpool is well provided with shops and essential services. The variety of parks, open spaces, recreational areas, walking tracks, bike tracks, lakes and rivers in Liverpool offer many leisure opportunities but there are indications that these may not currently cater to all demands. Residential areas are family-friendly, peaceful and safe. These could be made cleaner and more attractive.

Liverpool's people are enriched by their respect for those who came before them in the waves of settlement in Liverpool, and appreciate the wisdom of Aboriginal people, descendants of early settlers, those from overseas birthplaces and older people. Also valued are places and buildings from Liverpool's history. Liverpool's people acknowledge the need to leave a sound legacy for the young. They are mindful of the way things are today and are willing to look to the future.

In thorough community consultations, local residents, students and workers nominated the following as the directions for Liverpool's future. Each theme is followed by a brief commentary on the role of Council in implementation in relation to the provision of developer-funded infrastructure.

The Regional City for South West Sydney

Elements of theme	Relevance to Contributions Plan
The Liverpool City Centre will offer a variety of places, which foster an active social and cultural life for all age groups.	Applies to *Liverpool Contributions Plan 2007 (Liverpool City Centre).* Contributions will augment community facilities as well as fund the upgrading of existing parks around the City Centre to provide for a variety of places, which foster an active social and cultural life for all age groups.
Strong regional-level precincts and activities will emerge over time: a major medical centre and health precinct centred on Liverpool Hospital; a commercial centre employing more people in the business and financial services; an education precinct of tertiary and secondary education; tourist activities highlighting heritage buildings and precincts; more street-front retail rather than in shopping centres; and civic and other events utilising suitable indoor and outdoor public spaces.	Not applicable.
The City Centre will be highly convenient and accessible to all: safe, pedestrian friendly, well signposted, with good public transport, free-flowing roads and convenient parking.	Applies to *Liverpool Contributions Plan 2007 (Liverpool City Centre).* Contributions will fund facilities such as– car parks, bridge link across railway line and bus priority measures.
Access will be opened in the City Centre to the Georges River and the open space corridor extending all the way to the Casula Powerhouse Arts Centre.	Applies to *Liverpool Contributions Plan 2007 (Liverpool City Centre).* Contributions will fund facilities such as bridge link across railway line and park land embellishment along the Georges River foreshore.
The southern part of the City Centre will experience increased economic activity and development.	Not applicable.
The City's transport services and assets will be designed around the needs of people.	Applies to *Liverpool Contributions Plan 2007 (Liverpool City Centre).* Contributions will fund facilities such as car parks, bridge link across railway line and bus priority measures.
Better integrated and user-friendly public transport will attract more passengers.	Applies to *Liverpool Contributions Plan 2007 (Liverpool City Centre).* Contributions will fund facilities such as bus priority measures.
Free-flowing roads and a convenient public transport system will be supported by funding from State and Federal Government resources.	Not applicable.

Council has a significant role to provide and maintain civil and open space infrastructure (roads, footpaths, drainage structures, parks). Council's planning roles in existing urban areas flow from its high-level Local Environment Plan and Development Control Plans, which guide the zoning of land uses and design of buildings.	Applies to *Liverpool Contributions Plan 2007 (Liverpool City Centre)*. Contributions will fund facilities such as parkland embellishment to contribute to improvement of the public domain.

Neighbourhoods and Villages

Elements of theme	Relevance to Contributions Plan
Liverpool's neighbourhoods and villages will be safe, clean, well landscaped and well lit.	Contributions will fund certain landscaping in public areas and parklands.
Liverpool will be a place where housing, community facilities and neighbourhoods meet the needs of young families.	Contributions will fund community facilities and their surroundings for the residents of the neighbourhoods.
Each of the many neighbourhoods and villages will become more self-sufficient and have adequate local services (such as shops, medical services, schools, parks).	Contributions will fund infrastructure such as parks and community facilities as well as cycleways, certain walkways and streets and bus shelters.
People of all ages, levels of interest and skill will be able to find activities and venues for their sporting, recreation, leisure and community interests.	Contributions will fund infrastructure such as a variety of recreation facilities, parklands and community facilities.
Infrastructure will be provided as new urban areas are settled.	Contributions will fund the infrastructure as new urban areas develop.
There will be many ways of getting around neighbourhoods and villages, including cycleways and walkways that people regularly use.	Contributions will fund infrastructure such as cycleways, certain walkways and streets and bus shelters.
Neighbourhoods and village centres will be part of an integrated transport system linked with major centres.	Contributions will fund infrastructure such as cycleways, certain walkways and streets and bus shelters to facilitate an integrated transport system.
The character and heritage of existing suburbs, villages and semi-rural areas will guide new development.	Infrastructure that is funded by contributions will be consistent with the existing character and heritage of existing suburbs and villages.
Commercial and residential high-rise will ideally be located in major centres near transport interchanges, complemented by open space and landscaped areas.	Contributions will fund public open space and landscaping in public areas.

Council has a significant role to provide and maintain civil and open space infrastructure (roads, footpaths, drainage structures, parks). Council's planning roles in existing urban areas flow from its high-level Local Environment Plan and Development Control Plans, which guide the zoning of land uses and design of buildings.	Contributions will fund upgrading of recreation and community facilities in the Established Areas.

The Land between Two Rivers where City and Country Meet

Elements of theme	Relevance to Contributions Plan
The City's natural areas, in particular waterways such as the Georges River, Nepean River and the Cabramatta Creek system, will be cleaner, healthier and more widely and responsibly enjoyed as places for recreation.	Contributions will fund work in certain creek systems that drain new urban development to ensure that the development does not have an adverse impact on the creek system and flooding.
Some of the rural character of Liverpool will be maintained as significant urban development takes place.	Contributions will fund certain works such as parklands and creek works which will contribute to maintaining the rural character of Liverpool.
Agricultural land, open space and protected bushland will be part of an inviting and attractive mix of land uses.	Contributions will fund certain works such as parklands, including some bushland and creek works which will contribute to an inviting and attractive mix of land uses.
Because natural systems don't fit administrative boundaries, Council has a role to maintain working relationships with government agencies and other parties in the management of natural areas and waterways. Council has a role to improve the appearance and health of waterways through rehabilitation projects, including partnerships with environmental groups and volunteers. As part of its planning role, Council can influence the protection of rural land uses.	Contributions will fund infrastructure in certain creek systems that drain new urban development to ensure that the development does not have an adverse impact on the creek system. The provision of this infrastructure will provide a basis for forming partnerships for further work.

A Place for People

Elements of theme	Relevance to Contributions Plan
Liverpool's people will continue to value the diversity of Liverpool.	Not applicable.
People will celebrate the rich variety of cultures forming a cosmopolitan and multicultural City through events based on the City's cultural diversity and creativity.	Contributions will fund infrastructure such as community and recreation facilities that will provide venues for conducted such events.

Liverpool will be an integrated community with strong social networks and connections that will be strengthened by working together, promoting harmony and celebrating the City's unity.	Contributions will fund infrastructure such as community and recreation facilities that will provide venues to facilitate development of an integrated community.
Liverpool's people will care for and support others in the City, particularly those who are disadvantaged. Practical help and support will come from community organisations and volunteering, as well as programs offered or funded by government.	Contributions will fund infrastructure such as community and recreation facilities that will provide venues for community organisations to operate.
Liverpool's history and the City's unique places will be used to better guide current action and plans for the future.	This may inform the design of future infrastructure that is funded by contributions.
Enjoyment of culture and the arts as well as participation in artistic production will be catered for by cultural centres including the Casula Powerhouse Arts Centre, Liverpool Regional Museum and libraries, offering increased variety of exhibitions, performances and education.	Contributions will partly fund infrastructure such as Casula Powerhouse Arts Centre and the libraries.
State and Federal Government resources will support the rapidly growing and changing City.	Such resources may supplement infrastructure provided by contributions.
People will know what's available in Liverpool and where to get support because the City's main attractions, local services and facilities will be promoted and signposted.	Some of the attractions and local services will in part be funded by contributions.
Council has a role in social planning. It is required by law to complete a social plan, which identifies actions needed from Council and other organisations toward achieving community outcomes.	The social plan provides input to the provision of community and recreation facilities that may be funded by contributions.
In community development, Council has coordinating, advisory, advocacy and partnership roles. It works with government agencies in obtaining services and grants for Liverpool. It conducts activities, which promote community unity and harmony.	Contributions will fund infrastructure such as community and recreation facilities that will provide venues for community and government organisations to operate.

Communities and Governments Working Together

Elements of theme	Relevance to Contributions Plan

Council decision-making on Liverpool will be visible, open to participation and accompanied by practical steps enabling everyone's involvement.	The contributions plan was adopted following public consultation in accordance with the Environmental Planning and Assessment Act 1979.
The community will be encouraged to engage in Council initiatives and actions.	The provision of certain major infrastructure will involve input from the public.
Information will be available on Council services, actions and future proposals.	The provision of certain major infrastructure will involve input from the public.
One of Council's primary roles is to engage with the community at the local level through initiatives such as the Partnership Project, a range of consultative mechanisms and information on Council's activities. Council also uses neighbourhood forums, consultations and surveys to track its performance and make improvements.	The provision of certain major infrastructure will involve input from the public.
Council provides opportunities for participation in decision-making and civic activities.	The provision of certain major infrastructure will involve input from the public.

Sustainability

Elements of theme	Relevance to Contributions Plan
Community, business and governments will deliver specific programs, which make Liverpool more sustainable.	The concept of sustainability has influenced the scope and type of infrastructure that will be provided, including that funded by contributions.
Reduced waste, pollution and water usage will be the major noticeable results of future actions for sustainability.	Reduced waste, pollution and water usage have influenced the scope and type of infrastructure that will be provided, including that funded by contributions.
There will be local or easily accessed education and training for all ages, supported by well-equipped and convenient libraries.	Contributions will fund infrastructure such as libraries to facilitate such training.
Workers living in Liverpool will have increased access to local employment and job diversity.	Not applicable.
Liverpool will be a competitive city with good business opportunities.	Not applicable.

As part of its environmental leadership role, Council has developed programs to improve the sustainability of its own operations and services. It also promotes sustainable development through its policy-making, education and regulatory roles. Council has a role to establish and maintain sound working relationships with government agencies in their management of environmental pollution, water conservation and energy usage. Through its planning roles (zoning, infrastructure planning and urban design) Council encourages business and industrial development.

The concept of sustainability has influenced the scope and type of infrastructure that will be provided, including that funded by contributions.

Liverpool Local Environmental Plan 2008

Liverpool Local Environmental Plan 2008 was gazetted on 29 August 2008. It identifies the various land use zones and in particular the extent of land that is available for medium density and higher density development. Estimates of development trends take into account the development potential that the plan permits.

Liverpool Development Control Plan 2008

Liverpool Development Control Plan 2008 came into force on 29 August 2008. Each of the release areas has a chapter in the DCP regulating the subdivision pattern. These form the basis of the costing of facilities relevant to these areas in this plan. The relationship of the relevant chapter is specified in the next sub-section.

4.1.2 Development prior to the 1980's

Pre 1970's Development

Development in Liverpool during this time took place in the area around Miller and at Moorebank. There was also development at Casula and Lurnea.

Sydney Region Outline Plan

The *Sydney Region Outline Plan*, released in 1968 identified areas on the fringe of Sydney for urban development. The bulk of the land to the west of Liverpool identified in the plan now forms Hoxton Park Release Area, Stages 1 & 2. This was subsequently incorporated in the *Urban Development Program* (now *Metropolitan Development Program*) of the *Department of Planning*.

1970's Development

The bulk of urban fringe land development took place in Chipping Norton and Moorebank and to a lesser extent at Green Valley and Casula. There was also some urban redevelopment adjacent to Liverpool City Centre.

4.1.3 Development in the 1980's

Environmental Planning and Assessment Act, 1979

The *Environmental Planning and Assessment Act, 1979* came into force on 1 September 1980 replacing Part 12A of the *Local Government Act 1919* as the Act which administered land use planning in New South Wales. The Act provided Council's the power to levy development for contributions toward public facilities. It was not until 1992 that Council's were required to prepare contributions plans in order to levy development for contributions.

Hoxton Park Stage 1 Release Areas

Development in the 1980's commenced in the areas known as the Hoxton Park Stage 1 Release Area. These included:

- Green Valley Hinchinbrook Release Area (former *Liverpool Contributions Plan No 1*)
- Casula West Release Area (former *Liverpool Contributions Plan No 2*)
- Casula East Release Area (former *Liverpool Contributions Plan No 3*)

These areas were designated for urban development on 6th April 1982 by the then Minister of Environment and Planning. These areas are included in the *Metropolitan Development Program* for the Sydney Region.

Green Valley Hinchinbrook Release Area

- The area was rezoned under *Liverpool LEP 108* on 24 October 1984 and added to subsequently.
- The area was subject to *Liverpool DCP No 2*, which came into force on 9th January 1985 until it was incorporated into *Liverpool DCP 2008*.
- *Liverpool Contributions Plan No 1* was approved by Council on 12 October 1992 and came into force on 26 October 1992.
- *Liverpool Contributions Plan No 1* was amended Council on 11 April 1994.
- *Liverpool Contributions Plan No 1* was amended in August 1997 to exempt granny flats from the requirement to pay contributions.
- *The range of facilities in Plan No 1* was incorporated into *Liverpool Contributions Plan 2001*.
- Development in the area is almost complete.
- The area is now incorporated into the "Established Areas" under *Liverpool Contributions Plan 2009*.

Casula West Release Area

- The area was rezoned under *Liverpool LEP No 103* on 10th August 1984.
- The area was subject to *Liverpool DCP No 1*, which came into force on 9th January 1985 until it was incorporated into *Liverpool DCP 2008*.
- *Liverpool Contributions Plan No 2* adopted by Council on 9 November 1992 and came into force on 23 November 1992.
- *Liverpool Contributions Plan No 2* was amended in August 1997 to exempt granny flats from the requirement to pay contributions.
- The range of facilities in *Liverpool Contributions Plan No 2* was incorporated into *Liverpool Contributions Plan 2001*.
- Development in the area is almost complete.
- The area is now incorporated into the "Established Areas" under *Liverpool Contributions Plan 2009*.

Casula East Release Area

- The area was rezoned under *Liverpool LEP No 80* on 11th March 1983.
- The area was subject to *Liverpool DCP No 83/2*, which came into force on 26th January 1984 until it was incorporated into *Liverpool DCP 2008*.
- *Liverpool Contributions Plan No 3* adopted by Council on 23rd November 1992 and came into force on 7th December 1992.
- *Liverpool Contributions Plan No 3* was amended in August 1997 to exempt granny flats from the requirement to pay contributions.

- The range of facilities in *Liverpool Contributions Plan No 3* was incorporated into Liverpool Contributions Plan 2001.
- Development in the area is almost complete.
- The area is now incorporated into the "Established Areas" under *Liverpool Contributions Plan 2009*.

4.1.4 Development in the 1990's

Hoxton Park Stage 2 Release Areas Structure Plan

Council adopted a Structure Plan for the Hoxton Park Stage 2 Release Area in April 1989. The area is included in the Urban Development Program of the Department of Planning for the Sydney Region. The Structure Plan divided the release area into six (6) precincts. These precincts were primarily delineated on the basis of staged availability of utility services. Major roads and creeks also formed boundaries to the Precincts.

Hoxton Park, Carnes Hill and Prestons Release Areas

- These release areas form parts of the Hoxton Park Stage 2 Release Areas Structure Plan.
- Hoxton Park was rezoned under *Liverpool LEP No 236* (Precinct 1) on 15 May 1992.
- Prestons was rezoned under *Liverpool LEP 238* (Precinct 5) on 15 May 1992.
- Carnes Hill was rezoned under *Liverpool LEP No 237* (Precinct 4) on 10 July 1992.
- Council approved a DCP for Precinct 1, 4 and 5 in December 1995 known as *Liverpool DCP No 31* until it was incorporated into *Liverpool DCP 2008*.
- *Liverpool Contributions Plan 6* was originally approved by Council on 23 November 1992 and came into force on 7 December 1992.
- *Liverpool Contributions Plan No 6* was subsequently amended in 1995 and 1997.
- *Liverpool Contributions Plan No 6* was amended on in August 1997 to exempt granny flats from the requirement to pay contributions.
- *Liverpool Contributions Plan No 6* was subsequently amended by Council on 11 October 1999 and came into force on 20 October 1999.
- This area contributes to district facilities, which serve the Hoxton Park Stage 2 Release Area.
- There is still some development remaining to take place.
- The range of facilities in *Liverpool Contributions Plan No 6* was incorporated into *Liverpool Contributions Plan 2001*.
- These facilities have largely been incorporated into *Liverpool Contributions Plan 2009*.

Cecil Hills Release Area

- The area forms part of the Hoxton Park Stage 2 Release Areas Structure Plan.
- The area was rezoned under *Liverpool LEP No 220*, on 12th April 1991.
- The area was subject to *Liverpool DCP No 23*, which came into force on 24th April 1991 until it was incorporated into Liverpool DCP2008.
- *Liverpool Contributions Plan 4* adopted by Council on 23rd November 1992 and came into force on 7th December 1992.
- *Liverpool Contributions Plan 4* was amended in August 1997 to exempt granny flats from the requirement to pay contributions.
- This area contributed to district facilities, which serve the Hoxton Park Stage 2 Release Area and is still incorporated in estimates of development potential for such facilities.

- Development is generally complete.
- The range of local facilities in *Liverpool Contributions Plan 4* was incorporated into *Liverpool Contributions Plan 2001*.
- These were not been incorporated in this plan, as these are now complete.
- The range of facilities in Cecil Hills now largely only includes District and City Wide Facilities under *Liverpool Contributions Plan 2009*.

Prestons Industrial Release Area

- The area forms part of the Hoxton Park Stage 2 Release Areas Structure Plan.
- The area was rezoned on 12 October 1990.
- The area was subject to *Liverpool DCP No19 Prestons Industrial Release Area*, *Liverpool DCP No 6 Industrial Development* and *Liverpool DCP No3 Car Parking and Service Provision* until it was incorporated into *Liverpool DCP 2008*.
- *Liverpool Contributions Plan No 7* was originally approved by Council on 23 November 1992 and came into force on 7 December 1992.
- *Liverpool Contributions Plan No 7* was subsequently updated in 1995 and 1997.
- *Liverpool Contributions Plan No 7* was subsequently amended by Council on 11 October 1999 and came into force on 20 October 1999.
- This area contributes to District Facilities involving transport and drainage, which serve the Hoxton Park Stage 2 Release Area and is incorporated in estimates of development potential for such facilities.
- Development is still occurring.
- The range of facilities in *Liverpool Contributions Plan No 7* was incorporated into *Liverpool Contributions Plan 2001*.
- Some additional area was rezoned in 2007. This was incorporated into *Liverpool Contributions Plan 2001* in 2007.
- These facilities have largely been incorporated into *Liverpool Contributions Plan 2009*.

Wattle Grove Release Area

- The area was rezoned under *Liverpool LEP No 221* on 19 April 1991, which added the land to LEP NO 108.
- The area was subject to *Liverpool DCP No 24*, which came into force on 1st May 1991.
- Prior to the current planning controls, residential development was permitted under the previous Interim Development Order with the concurrence of the Director of Planning.
- *Liverpool Contributions Plan No 5* was approved by Council on 23rd November 1992 and came into force on 7 December 1992.
- *Liverpool Contributions Plan No 5* was amended in August 1997 to exempt granny flats from the requirement to pay contributions.
- Development is now complete.
- The range of facilities in *Liverpool Contributions Plan No 5* was not incorporated in *Liverpool Contributions Plan 2001*, as they were complete.
- The area was included into the "Established Areas" under *Liverpool Contributions Plan 2001.*
- The area is included in the "Established Areas" under *Liverpool Contributions Plan 2009.*

Pleasure Point East

- The area was subdivided in the 1920's but not built upon. The lots fronting the riverside reserve were developed with dwelling houses in the 1970's.
- The zoning of the other 65 lots was amended on 8 July 1994 to permit dwelling houses to be constructed following agreement with Sydney Water to provide water and sewerage services to the land.
- *Liverpool Contributions Plan No 12* was adopted by Council on 13 December 1999, and came into force on 23 December 1999.
- Development is still taking place in the area.
- The range of facilities in *Liverpool Contributions Plan No 12* was incorporated into *Liverpool Contributions Plan 2001*.
- These facilities have been incorporated into *Liverpool Contributions Plan 2009*.

Cross Roads Transport Terminal

- The area was rezoned under *Liverpool LEP No 182* on 4 November 1988.
- The area was subject to *Liverpool DCP No 5*, which came into force on 9 February 1989 and which aimed to permit the development of an integrated transport terminal on this site.
- This original proposal did not eventuate. The controls have been amended to allow the subdivision of the land so that the sites may be developed independently.
- *Liverpool Contributions Plan No 8* was approved by Council on 19th December 1994 and came into force on 25th January 1995.
- Development is now complete.
- The range of facilities in *Liverpool Contributions Plan No 5* was not incorporated in *Liverpool Contributions Plan 2001*, as the facilities were complete.

Liverpool City Centre

- This plan was originally approved by Council on 8 August 1994 and came into force on 10 August 1994.
- The plan was amended by Council on 10 July 2000 and came into force on 19 July 2000.
- The plan was subsequently incorporated in *Liverpool Contributions Plan No 10* on 9 May 2001.
- The range of facilities in *Liverpool Contributions Plan No* 9 was incorporated into *Liverpool Contributions Plan 2001*.
- In conjunction with a new LEP for Liverpool City Centre in 2006 (subsequently incorporated into *Liverpool LEP 2008*) Council adopted a separate contributions plan known as *Liverpool Contributions Plan 2006 (Liverpool City Centre).* Accordingly these facilities have been not been incorporated into *Liverpool Contributions Plan 2009*.

4.1.5 Development in the 2000's

Established Areas

- Prior to 1992 Council levied contributions on some development in the established areas. While most development in the 1990's was taking place in the release areas it has become apparent that redevelopment will continue to occur in the established areas and generate the need for augmenting facilities.
- *Liverpool Contributions Plan No 10* was adopted by Council on 24 April 2001, and came into force on 9 May 2001.

- Redevelopment is still taking place in the area.
- The range of facilities in *Liverpool Contributions Plan No 10* was incorporated into *Liverpool Contributions Plan 2001*.
- These facilities have largely been incorporated into *Liverpool Contributions Plan 2009*.

City Wide Facilities

- It has become apparent that development in both the established areas and release areas will be substantial and generate the need to augment certain major Council facilities that serve all of Liverpool.
- *Liverpool Contributions Plan No 11* was adopted by Council on 24 April 2001, and came into force on 9 May 2001.
- Development is still taking place in the release areas and redevelopment is still taking place in the established areas.
- The range of facilities in *Liverpool Contributions Plan No 11* was incorporated into *Liverpool Contributions Plan 2001*.
- These facilities have been incorporated into *Liverpool Contributions Plan 2009* subject to the deletion of various facilities.

Middleton Grange

- The area was rezoned under *Liverpool LEP 1997 (Amendment No 71*) on 18 June 2004.
- The area was subject to *Liverpool DCP No 48*, which came into force on 26 June 2002 until it was incorporated into *Liverpool DCP 2008*.
- The inclusion of the area into *Liverpool Contributions Plan 2001* was approved by Council on 11 June 2002 and came into force on 26 June 2002.
- Development is still taking place in the area.
- The range of facilities for this area has been incorporated in *Liverpool Contributions Plan 2009*, subject to amendment.

Moorebank former Boral Quarry

- The area was rezoned under *Liverpool LEP 1997 (Amendment No 75)* on 9 July 2004.
- The area was subject to *Liverpool DCP No 50*, which came into force on 22 September 2003 until it was incorporated into *Liverpool DCP 2008*.
- Development is still taking place in the area.
- The area is within the Established Areas Catchment and as such is subject to contributions in that catchment except as provided for in accordance with a Developer Deed for the site.

Edmondson Park

- The area was rezoned under *Liverpool LEP 1997 (Amendment No 114)* on 31 March 2006.
- The area is covered by *Liverpool Contributions Plan 2008 (Edmondson Park)* for Edmondson Park.
- Accordingly this area is not subject to this contributions plan.

Len Waters Estate (Former Hoxton Park Aerodrome)

- The area was rezoned under *Liverpool LEP 2008* on 29 August 2008.
- It forms part of the Hoxton Park Stage 2 Release Areas.
- Local facilities are to be provided via a Voluntary Planning Agreement.
- The residential component has now been included into Elizabeth Hills.
- Contributions will be payable for residential development for City Wide Facilities and for District for Community and Recreation Facilities.

Pleasure Point

- The area was rezoned under *Liverpool LEP 2008* on 29 August 2008.
- Development is expected to take place in the area shortly.
- The range of facilities for this area has been incorporated in *Liverpool Contributions Plan 2009*.

Elizabeth Hills

- This area has not yet been rezoned for residential development.
- It is anticipated that facilities not contained in this contributions plan will be provided by way of a Voluntary Planning Agreement.
- It forms part of the Hoxton Park Stage 2 Release Areas.
- Contributions will be payable for residential development for City Wide Facilities and for District for Community and Recreation Facilities.

4.2 City Wide Development and Demographic Trends

Allotment / Dwelling Estimates

Estimates of the rate of housing development for the coming 5 years in the established areas, rural areas and release areas have been prepared in consultation with the Department of Planning through the *Metropolitan Development Program*. An allowance has been made for replacement dwellings based on Council consent records. Figures beyond the 5-year period have been projected by Council.

The following table summarises the dwelling forecasts for the period from mid 2000 to mid 2021.

Table 4.1 Dwelling Estimates Mid 2001 - Mid 2021

Area	Dwellings at Mid 2001	Dwellings at Mid 2006	Estimated Dwellings at Mid 2011	Estimated Dwellings at Mid 2021
Established Areas (including Liverpool City Centre)	31,650	32,850	34,450	39,350
Rural Areas	3,580	3,450	3,450	3,450
Release Areas	15,670	19,800	21,300	32,000
Total	**50,900**	**56,100**	**59,200**	**74,800**

Population Estimates

The range of community, recreation, transport and streetscape facilities is based on the estimated additional population in Liverpool. The methodology for estimating the additional population that will reside in Liverpool at 2021 is as follows:

- Estimate existing population of Liverpool;
- Estimate existing number of dwellings in Liverpool;
- Estimate occupancy rate in Liverpool at mid 2021;
- Estimate dwellings in Liverpool at mid 2021;
- Deduce population in Liverpool at mid 2021;
- Estimate increase in population from present to mid 2021.

Occupancy rates have been estimated for 2021, having regard to occupancy rates in the 2001 Census and the projections of the *Department of Planning*. These have been used in conjunction with estimates of dwellings to estimate the population of Liverpool in 2021.

The estimated population of Liverpool at mid 2021 is as follows.

Table 4.2 Population Projections Mid 2001 – Mid 2021

Area	Population at Mid 2001	Population at Mid 2006	Estimated Population at Mid 2011	Estimated Population at Mid 2021
Established Areas (including Liverpool City Centre)	92,700	93,600	97,450	109,800
Rural Areas	11,700	11,250	11,500	11,500
Release Areas	54,500	66,000	88,700	107,000
Total	**158,900**	**170,850**	**197,650**	**228,500**

Occupancy rates

The occupancy rate estimate of 3.7 persons per lot has been adopted in the Hoxton Park Stage 2 Release Areas. This estimate is derived from the following indicators:

- Council's study "Hoxton Park Stage 2 Release Areas Retail Review" estimated that Stage 2 release areas would resemble closely the Edensor Park area in Fairfield LGA. At 1986 Census, that area had an average of 3.69 persons per household.
- Council's 1990 Release Area Social Plan estimated Hinchinbrook would have a density of 3.7 persons per lot. Within 5 years of development commencing, the population density in that area was 3.5 persons per lot (1991 Census Preliminary Data). The increase to 3.7 persons per lot was estimated to occur after 5 years and up to 15 years following the commencement of development.
- A review of the 2001 and 2006 census has confirmed this estimate of occupancy rate in these areas.
- For projection purposes and calculating anticipated population, lots of less than 450 sqm are taken as generally indicating most types of medium density housing. As for Hinchinbrook, a density of 3.3 persons per lot can be expected for these types of development overall.

The occupancy rates for established areas and rural areas these rates are based upon analysis of 1996 Census data as these areas are well established.

Table 4.3 Occupancy Rates

Dwelling Type or Lot Size	Occupancy Rate per lot or dwelling		
	Established Areas	Release Areas (except Edmondson Park)	Rural Areas
Residential Lots 450 sqm or larger	3.2	3.7	3.4
Residential Lots smaller than 450 sqm	3.1	3.3	
Semi-detached dwellings, Multi dwelling housing & residential flat buildings (where permitted)			
3 or more bedrooms	3.1	3.3	3.1
2 bedrooms	2.3	2.3	2.3
1 bedroom	1.8	1.8	1.8

4.3 Nexus

Community Facilities

New development, which leads to an increase in the number of residents, will also increase the demand for community facilities including multi-purpose community centres, libraries and cultural facilities.

Local and district level facilities are levied for the various sub catchments in the established and release areas.

Recreation Facilities

Open space is a source for outdoor recreation opportunities and provides natural and open areas within an urban environment, which is experiencing increasing residential growth. The community is demanding that Council provide adequate open space for a variety of reasons. The community needs open space as a buffer against urban developments, a resource for flora and fauna, to link and consolidate diminishing natural areas, as well as a place for sports, recreation, play and outdoor activities.

A Leisure Needs Analysis for the Liverpool Community undertaken for Council revealed the need for the following facilities. To some extent these reflect the needs of the existing residents. Nevertheless they provide some guide to the needs of existing and future residents.

- Multi screen cinema
- Swimming pools
- Libraries
- Bushland reserves
- Nature reserves
- Dancing
- Gyms and fitness training
- Martial arts
- Picnicking

Sporting organisations have expressed the need for the following items:

- Provision of drinking water
- Directional signage
- Provision of seating
- Provision of change rooms / toilets

In relation to passive recreation facilities residents expressed the need for the following items:

- Improving lighting in parks
- Establishing more trees
- Improving toilet cleanliness and availability, particularly where barbecues and other facilities are provided
- Increase barbecue facilities and further develop and maintain the parks where this occurs, thus encouraging the use of the areas for other recreational activities
- Develop and promote the use of available bushland for recreational use
- Extending bike paths (including through bushland) and explore possibilities of providing bike lanes on suburban streets
- Maximising the recreational possibilities of all waterways in the Liverpool area, particularly the Georges River

Open space and recreation facilities, which are needed for an area the size of Liverpool, vary from local parks to major sporting and entertainment venues. The local parks are informal play areas within walking distance of where residents live while the major sporting and entertainment venues cater for large numbers of people and have a substantial catchment area.

This suggests a hierarchy of open space and recreation facilities. Accordingly there is a hierarchy of contributions. All new residential development creates the need to augment facilities that serve a citywide population. In the established areas of Liverpool new residential development creates the need to augment existing local and district facilities. In the release areas there is a need to provide all the open space facilities, as there are no existing facilities.

Transport

The cost of provision of streets in conjunction with a subdivision is normally borne by the individual developer. However the cumulative affect of numerous subdivisions requires provision of higher order roads and, various traffic facilities and frontage to public land uses. The cost of this should not

fall on developers of individual land uses but rather be shared amongst all developers.

Drainage

Community standards require that stormwater be conveyed through urban areas in a manner that emphasises the cost-effective achievement of safety and, to a lesser extent, amenity.

This requirement leads to a development standard where drainage is managed on a catchment wide basis in a system of pipes, channels, culverts and basins. The responsibility to contribute, or nexus, is a combination of the characteristics of land development that:

- Increase stormwater runoff volumes and flow rates so that a system of pipes and channels and/or stormwater detention basins is required to offset these impacts downstream.
- Increase population levels in the vicinity of potentially hazardous, uncontrolled rural standard drainage systems so that improvements, particularly large pipes and channel systems, are required to minimise and clearly demark the area of hazard potential.

The development of new release areas generally leads to a significant change in the stormwater runoff characteristics of drainage catchments. This change partially results from an increase in the ratio of runoff volumes to rainfall volumes due to a reduction in previous areas to absorb rainfall into the ground. It also influenced by the reduction in catchment response times, where the impact of piping and channelising more efficiently conveys concentrated runoff to the catchment outlets. It may also be influenced by a reduction in flood plain storage of runoff volumes due to developments that incorporate landfill.

5. City Wide Facilities

5.1 Community Facilities

Nexus

Council has funded major works such as the Casula Powerhouse Arts Centre and Liverpool Central Library in anticipation of population growth within the local government area. These facilities are intended to serve the broader cultural needs of the entire Liverpool community irrespective of geographic location and as such adopt a citywide status.

Accordingly it is reasonable to require a contribution for citywide facilities from all future residential development within the local government area inclusive of release areas, established residential areas and rural areas.

The cost of the city wide facilities is only partially recovered from new development as the demand from existing development and outside users is borne by Council. This is reflected in the contribution formulae.

Liverpool Central Library

Background

Liverpool City Council provides library services to the Liverpool community through its central library in the City Centre and branch library network at Miller, Moorebank, Casula and Green Valley.

The central library is the focus of the library service and provides a greater range of services/facilities than the branch libraries. Services provided from the central library not available at branch libraries include major lending collections; extensive reference and specialised information services; specialised programs for elderly, disabled and housebound residents; community language and English as a second language (ESL) materials and activities.

The higher tier services provided at the central library cater for the broader needs of the entire population of the Liverpool LGA and accordingly it is considered a citywide facility. These services cannot be provided at local branch libraries for economic and practical reasons. New development, which leads to an increase in the number of residents, will also increase the demand for central library facilities and services to be levied for under this contribution plan.

The State Library's recommended standard for a resident population of 100,000 is that there is a major central library facility. The State Library recommendation for floor space is a minimum of 2,100 sqm of net floor space for a population of 100,000 persons. *(The Planning and Design of Public Library Buildings - Sydney State Library of NSW, 1990)*.

The lack of an adequate central library was identified in the study "*Leisure Requirements for the Residents of Liverpool*" - March 1994. Council subsequently undertook to upgrade and extend the central library to cater for the needs of the anticipated total future population. This upgrade altered the status of the library from a "district" to "citywide" facility. This plan seeks to recoup part of the costs to Council of upgrading the central library in anticipation of future population growth.

Cost of Facilities

The cost of the central library upgrade was $12,985,815 (inclusive of interest), including:

- increase in floor area from 1,200 to 5,600sqm
- introduction of public access to Internet, personal computers and sound equipment
- enlarged reference area, seating and study areas and workrooms

- provision of areas for specialised services, e.g. multicultural and Aboriginal resources
- provision of a lift and disabled access
- provision of additional public toilets
- increase in storage area, and shelving to allow for future expansion of collections
- provision of public art component
- provision of six community meeting rooms, two with kitchen access

The following table provides a summary of the costs of central library and community meeting room works. The estimated costs of these two components of the facility have been separately identified to allow for the relevant apportionment of the cost of the central library to users from outside the Local Government area. A review of the proportion of outside users in 2008 showed that 9% of users were from outside Liverpool LGA. The community meeting rooms are provided for the benefit of existing and proposed residents of Liverpool LGA, therefore the estimated full cost of this component of the facility is included in the contribution calculation.

Table 5.1 Central Library Works Schedule

Item	Cost
1993-1997	
Central library upgrade including consultants fees, building contractors, materials, furniture & fittings, artists fees and interest on loan funds	$12,174,202
Less 9% for users living outside of Liverpool LGA	($1,095,678)
Community meeting rooms including consultants fees, building contractors, materials, furniture & fittings, artists fees and interest on loan funds	$811,613
Total	**$11,890,137**

Note: Whilst actual figures are not available on the costs of meeting rooms in relation to the library upgrade, a proportional estimate has been made based on the relative floor area of the community rooms to the total area of the library building (350sqm / 5,600sqm).

Contributing Area: All of Liverpool LGA except Edmondson Park and Liverpool City Centre.

Casula Powerhouse Arts Centre

Background

The Liverpool community profile is characterised by diversity of cultures with a high proportion of local residents from non-English speaking backgrounds. The 2001 census data indicates that 38.1% of the population of Liverpool were born outside Australia and 43.7% of the population speak a language other than English at home.

In 1992 Council committed to the redevelopment of the Casula Powerhouse into an Arts Centre of local and regional significance. The purpose of the redevelopment was to provide a contemporary community-focused cultural and recreational facility. The Casula Powerhouse is available to all residents of the Liverpool LGA having between 75,000 and 100,000 visitors per year. Further improvements to the centre will be required progressively to cater for additional population growth.

A four stage re-development and plan was developed by Tonkin Zulaikha Architects for the Casula Powerhouse Arts Centre:

Stage 1 Construction - completed October 1994

- Multi-purpose exhibition spaces in Turbine Hall, Boiler house and Foyer.
- Shell of theatre/function centre.
- Art studios.

- Electrical and fire services.

Stage 2 Construction - completed October 1994

Complete work to Boiler house with permanent tenant and retail facilities for:

- Reverse Garbage (non-profit co-operative, which collects and sells unused industrial off cuts used by many community groups).
- Dance/Theatre studio.
- Powerhouse Design Studio.
- Centre Administration and tenant offices.

Stage 3 Construction - completed May 1997

- External works including car parks, roadway and landscaping.
- Signage.
- Auxiliary works.

Stage 4 Construction – completed 2008

- 250 seat theatre for performing arts (less grant funding).
- Riverbank development involving re-establishing access to the Georges River and developing links to Leacocks Regional Park, the Georges River Cultural Leisure Corridor and Casula Railway Station, including an outdoor amphitheatre.

Cost of Facilities

Analysis of visitor records indicates that 80% of visitors to the Powerhouse are from within the Liverpool LGA and 20% are from outside areas. The contribution calculation addresses the proportional cost of the centre attributable to the LGA population.

Table 5.2 Casula Powerhouse Works Schedule

Item	Cost
Theatre Space	$3,100,000
Recreational Landscape Development	$480,000
Collection Storage Facilities	$400,000
Education Workshop Areas	$500,000
Administrative Areas	$330,000
Lift	$250,000
Office Space for Cultural Organisations	$525,000
Gallery Spaces	$380,000
Production Area	$400,000
Air Conditioning	$305,000
Sub Total	**$6,670,000**
Less grant funding	($1,700,000)
Sub Total	**$4,970,000**
20% Discount for proportion of non Liverpool users	($994,000)
Total	**$3,976,000**

Contributing Area: All of Liverpool LGA except Edmondson Park and Liverpool City Centre.

5.2 Recreation Facilities

Nexus

New residential development, which leads to an increase in the number of residents, will also increase the demand for citywide public open space and recreation facilities. The existing recreation facilities do not have adequate capacity to accommodate the increased demand, which will arise with the growth of Liverpool.

Council plans to augment existing recreation facilities to more adequately serve the citywide needs. Contributions will be used to provide additional capacity in response to the increase in demand arising from new development. Contributions will not reduce any existing shortfalls in the amount of provision. Shortfalls are to be addressed through other means (e.g. general revenue, grants and so on).

City Wide facilities are major open space and recreational opportunities intended to service the needs of all residents within the Liverpool Local Government Area irrespective of geographic location. City Wide open space/recreational facilities provide a higher tier of recreational opportunity that local or district facilities.

Whitlam Centre Extensions

Background

The Whitlam Centre is a major indoor recreational facility incorporating a heated pool, gymnasium and multi purpose hall. The centre provides a broad range of recreational opportunities specifically incorporating facilities not generally available at, or of a higher standard / capacity than, local and district recreation centres.

In anticipation of future population growth Liverpool City Council undertook major extensions to the Whitlam Centre in 1994 to 1996. The works undertaken sought to increase the capacity of the centre from a district to citywide facility. The diversity and standard of recreational opportunities of the Whitlam Centre are generally superior to those provided at a local or district level and accordingly the facility service a greater catchment. In effect, the completed extensions to the Whitlam Centre will provide a higher tier of recreation opportunities to all residents of Liverpool (both existing and future).

The cost of works to Council (and therefore the community) to 1996 was spent to cater for the existing population and in anticipation of future development, thereby ensuring that required facilities were "on the ground" to satisfy the requirements of future population growth. The contribution levied under this plan seeks to recoup part of the expenditure of Council making allowance for existing and future population likely to be served by the facility excluding non Liverpool patronage and Stage II release areas.

Table 4.3 Whitlam Centre Works Schedule

Item	Cost
Cost (inclusive of interest) of 1994 - 96 extensions comprising a 50 m outdoor heated pool, 25 m indoor heated pool, family leisure indoor heated pool, pool plant (heating, circulation, etc), fitness facility, aerobics room, kiosk, office complex and reception area	$9,700,907
Less grant funding	-$1,481,942
Total	**$8,218,965**

Contributing Area: All of Liverpool LGA except Edmondson Park and Liverpool City Centre.

5.3 Contribution Formulae

Residential Development

The following formulae are used to calculate the contribution for City Wide Facilities.

Contribution Rate = (per dwelling / lot) $\frac{\text{C x O R x N}}{\text{228,500}}$

where	**C =**	Cost of capital works of each facility
	O R =	Estimated occupancy rate for the development type and location
	N =	Number of additional lots / dwellings
	228,500 =	Estimated population of Liverpool LGA at 2021

For Occupancy Rate refer to Table 4.3

Note that this formula makes allowance for existing population. New development will only contribute its proportion of demand for facilities. It will not make up for any funding attributable to existing residential development. Contributions will not recover the full cost of the City Wide Facilities.

5.4 Staging of Facilities

Council has constructed these facilities and will now recoup the funds expended.

6. Established Areas

Important note: for development lodged after 12 December 2018, refer to Liverpool Contribution Plan 2018 – Established Area.

6.1 ~~Development Trends~~

~~It is expected that redevelopment will continue to occur in the Established Areas of Liverpool for the foreseeable future. An analysis of the redevelopment potential undertaken by Council indicates that there is scope for redevelopment to continue at a sustainable rate to 2021 and beyond.~~

~~**Additional Dwellings and Allotments**~~

~~Between 2006 and 2021 it is estimated that there will be an additional 6,500 dwellings.~~

~~**Additional Population**~~

~~Between 2006 and 2021 it is estimated that there will be an additional 16,200 people. This figure takes into account the decreasing occupancy rate in the Established Areas. That is, the occupancy rate of new dwellings will be higher than the division of the additional people by the additional dwellings.~~

~~6.2 Community Facilities~~

~~**Nexus**~~

~~Residential redevelopment in the established areas will increase the demand for community facilities. Council has reviewed the capacity of existing facilities to determine if any augmentation of facilities is required to meet the demands of the increase in population as a result of residential redevelopment.~~

~~**District Community Facilities**~~

~~Current normative standards for community facilities are 1 centre per 6,500 residents (Department of Planning), 1 medium sized centre per 5,000 - 10,000 residents (Department of Community Services) and one local facility per 10,000 residents (Liverpool City Council). It is considered that the existing local facilities will provide an adequate level of service for the anticipated population growth. Accordingly contributions for local community facilities will not be levied under this plan.~~

~~District Community Centres have the capacity to accommodate a range of community activities across a number of neighbourhood areas. The multi-purpose design of these facilities ensures an efficient use of space. The design may include the provision of a large hall, kitchen, library, office space, and meeting rooms, which can be easily re-configured for meetings and activities subject to the requirements of the user.~~

~~The multi-purpose layout enables a range of functions to be provided simultaneously. This flexibility ensures that the facility has the capacity to easily respond to changing community needs thus ensuring ongoing viability and utilisation. There is need for such space in established residential areas judging by regular requests from community organisations for permanent and sessional office accommodation with associated meeting spaces.~~

~~The Liverpool City Council nominative indicator for space per resident is 0.022sqm for district level community facilities with an average size of 800sqm. Future residents within the established residential areas will require the provision of appropriate district level community facilities. In order to maximise the use of existing resources it is proposed to upgrade 2 local community centres to a district level.~~

~~The modifications, which are required to local level facilities, might include refurbishment, library resources and modification to fittings and floor plan re-configuration (e.g. the installation of openable walls). The specific local community facilities to be upgraded from local to district status within the~~

~~Established areas of Liverpool LGA have not been finally determined.~~

Libraries

There are already libraries servicing the established areas at Casula, Green Valley, Miller, Liverpool and Moorebank. However additional residential development in the established areas will increase the demand for lending of books from the library system.

Council levies residential development in its release areas for the provision of library items (items include books, audio-visual, multi-media and periodicals in conjunction with the construction of libraries. Council has been levying at the rate of approximately 1 book per person.

Redevelopment in the established areas will increase the demand for book lending in the library system. Books may take the form of hard copies or digital form. Accordingly new development in the established areas should contribute to the increase in the supply of books in the library system. It is a one-off capital cost. Council will bear the cost of replacement stock.

Works Schedule and Catchment Area

A final development potential of the Established Areas is unlikely to be reached at any time before 2021. Accordingly the scope of works is based on rate per additional dwelling. Nevertheless the scope of works is in the vicinity of $1M based on the estimated additional dwellings. There are two catchments for District Community Facilities within the Established Areas although contributions for each will be the same. For the catchment areas information is provided on:

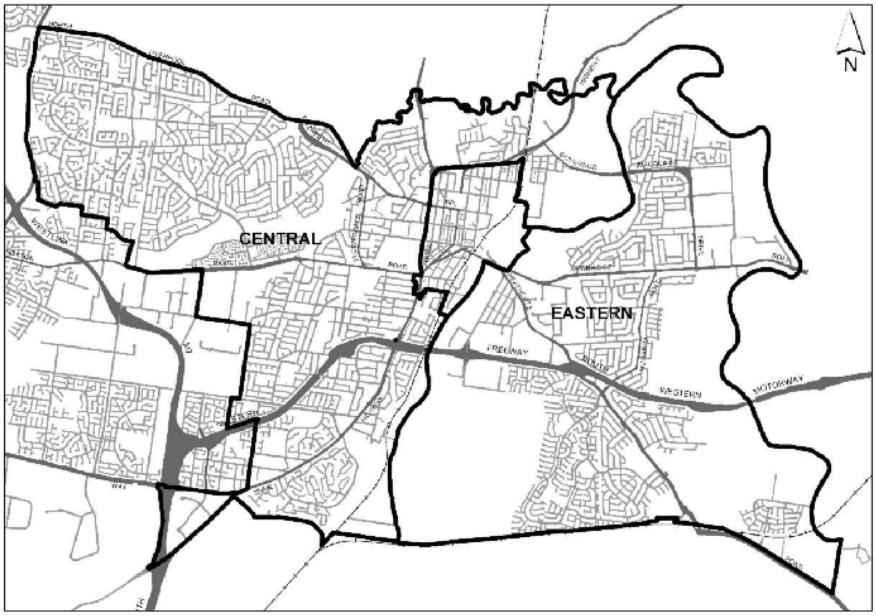
- Works schedule cost per dwelling
- The area from which contributions would be received is shown on Figure 6.1. It excludes the Liverpool City Centre, which is subject to *Liverpool Contributions Plan 2007 (Liverpool City Centre)*.

Works Schedule

The cost of upgrading existing community centres / meeting spaces to a district level function is based upon a review of construction and refurbishment costs undertaken in May 1998 by Roy Parkinson of Burgess & Partners.

Table 6.1 Works Schedule

Community Centres	-
Additional floor space per person per sqm	0.022
Additional people per dwelling (taking into account changing occupancy rates in Established Areas)	2.49
Additional floor space per dwelling per sqm	0.055
Unit cost of floor space per sqm	$1,240
Cost of additional floor space per dwelling	$68
Library Books	
Unit cost of library books / CD per person	$46
Additional people per dwelling	2.49
Cost of additional book / CD per dwelling	$114
Total	**$181**



~~Figure 6.1 Catchment Areas~~

~~6.3 Recreation Facilities~~

~~Nexus~~

~~New development that leads to an increase in the number of residents will increase the demand for public open space and recreational opportunities. Although there are already open space and recreation facilities within the established of Liverpool infill development will increase the demand on the existing facilities. Council plans to augment existing recreation facilities. Contributions will be used to provide additional capacity in response to the increase in demand arising from redevelopment. Contributions will not reduce any existing shortfalls in the current level of embellishment.~~

~~Open Space Land Needs~~

~~The established areas of Liverpool currently have about 606ha of open space. Much of this is along the river corridors and which is flood liable. It is considered that there is generally sufficient local open space land within the established areas.~~

~~Council has in recent years commissioned surveys to assess the needs of residents for open space facilities. These form the basis of additional facilities in open space. It must be emphasised that these facilities are not being used to reduce any shortfalls.~~

~~Recreation Facilities and Embellishment~~

~~The lists of facilities at the beginning of Section 6 may to some extent reflect concerns about existing standards. Accordingly they need to be properly interpreted so that the schedule of works in a contribution plan does not simply make up for existing shortfalls in service provision.~~

~~Nevertheless the findings provide a basis for determining needs for the future residents in the established areas. It is proposed that works in the established areas consist of comprehensive projects~~

rather than minor upgrades in order to avoid works that are replacement or maintenance works. It is also proposed that the scope of works be limited to particular types so as to avoid replacement or maintenance works. These restrictions are considered necessary as the plan provides flexibility on the location and content in the works schedule for the reasons stated in hereunder.

A park embellishment will involve a generic list of facilities that are not considered to be replacement or maintenance works. The list of works proposed for each park will of course vary depending on the circumstances of the locality. Accordingly each park embellishment will not be required to include all of the facilities. The following is the list of facilities for each type of park.

Embellishment of active recreation facilities

The following is a list of facilities that would allow increased use of an active park either by allowing more intensive use or by extending the time period that it can be used.

- Amenities buildings
- Seating
- Mounding
- Flood lighting

Embellishment of passive recreation facilities

The following is a list of facilities that would allow increased use of an active park either by allowing more intensive use or by extending the time period that it can be used.

- Additional and widened paths
- Bicycle paths
- BBQ facilities
- Playgrounds
- Seating, benches and shelters
- Lighting
- Fencing
- Planting to screen, beautify, control circulation paths, and provide shade
- Earthworks: creating more useable areas by levelling / mounding and associated retaining walls or embankments

Basis of contributions

The basis of contributions is as follows. The provision of local open space is based on the cost of embellishment of a standard open space. The area of the open space is based on the rate of about 2.83 ha of additional population. A further contribution is to be provided for district recreation facilities in the same proportion to local recreation as in the release areas.

The estimate of additional dwellings and additional population provides a theoretical occupancy rate that takes into account declining occupancy rates in the established areas. This gives an occupancy rate of 2.49 persons per dwelling for the purpose of levying contributions.

Location Criteria for Recreation Facilities

The location criteria for augmenting recreation facilities are based on where development is estimated to take place. An estimate has been made as to the amount of development that will take place in various suburbs. This is considered the lowest order of detail that such forecasts can take place.

Unlike the release areas the location of redevelopment in the established areas is not as predictable. Accordingly the plan does not in many cases identify particular sites for recreation facilities. Instead it identifies the number of parks within each suburb based on likely development trends where

recreation facilities could be upgraded. The particular parks will be determined as development takes place. The rate at which the proposed number of parks is embellished will depend on the rate of development. If redevelopment is slower than forecast, the rate of provision of parks will also be slower. Likewise where redevelopment is faster than forecast, the rate of provision of parks will also be faster.

The location of an embellishment work may take place in the adjoining suburb depending on the circumstances. In some situations boundary between suburbs is not a barrier between the location of new dwellings and the location of facilities to serve the new dwellings. The intent of the boundaries is to ensure that contributions received from development are spent in a location to adequately serve the occupiers of that development.

District Recreation Facilities

The scope is limited to the following facilities.

Active recreation facilities (including tennis, netball, basketball, pools and sports fields)

- Amenities buildings
- Seating
- Mounding
- Flood lighting

Passive recreation facilities

- District Playgrounds

Apportionment

The contributions only fund the additional demand created by additional development, taking into account changes in occupancy rates.

Works Schedule and Catchment Area

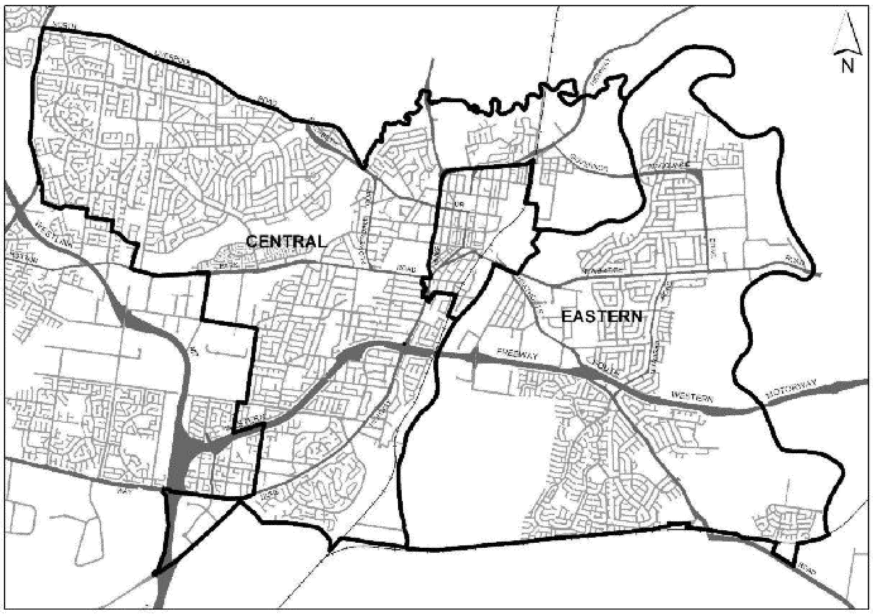
A final development potential of the Established Areas is unlikely to be reached at any time before 2021. Accordingly the scope of works is based on rate per additional dwelling. There are two catchments for district recreation facilities within the Established Areas. For the catchment area information is provided on:

- Works Schedule per dwelling
- The area from which contributions would be received is shown on Figure 6.2. It excludes the Liverpool City Centre, which is subject to *Liverpool Contributions Plan 2007 (Liverpool City Centre)*.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by *Rider Hunt*.

Table 6.2 Works Schedule

Item	Unit Costs	Cost			
Treatment A. Children's Play Area	$57,426	$57,426	-	-	-
Treatment D. Consolidated Passive Area	$312,830	$625,661	per 2 ha of consolidated passive area		
Treatment E. Sports field - Dry Site	$806,431	$669,338	per .83 ha of sports fields		
Total Cost	-	$1,352,424	per	1,000	people
Cost	-	$3,364	per	2.49	people
Cost	-	$3,364	per	dwelling	-
-	-	-	-	-	-
District Component	-	$673	per	dwelling	-
Local Component	-	$2,691	per	dwelling	-



~~Figure 6.2 Catchment Areas~~

~~Local Recreation Facilities~~

~~The scope of Embellishment is limited to the following facilities.~~

~~Active recreation facilities~~

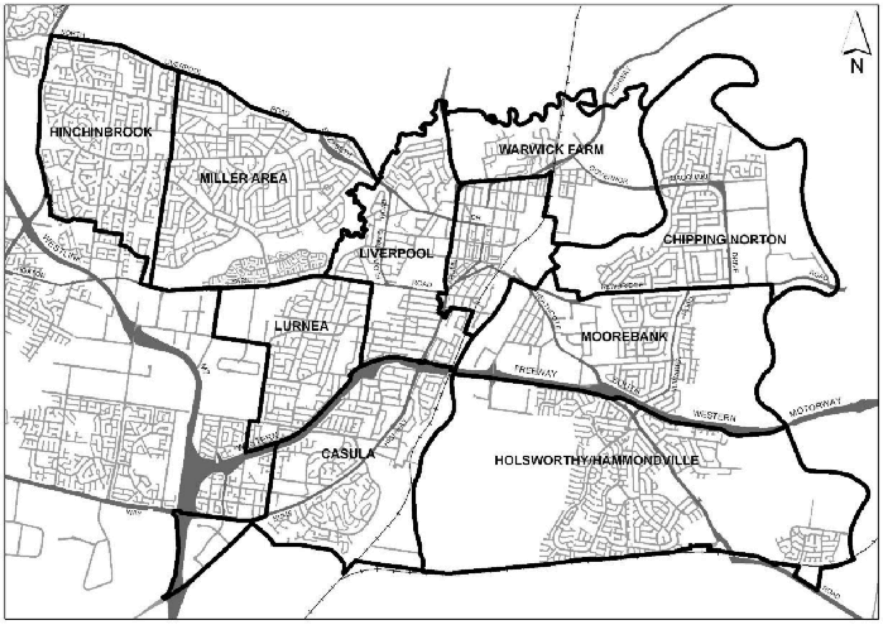
- ~~Amenities buildings~~
- ~~Seating~~
- ~~Mounding~~
- ~~Flood lighting~~

~~Passive recreation facilities~~

- ~~Additional and widened paths~~
- ~~Bicycle paths~~
- ~~BBQ facilities~~
- ~~Playgrounds~~
- ~~Seating, benches and shelters~~
- ~~Lighting~~
- ~~Fencing~~
- ~~Planting to screen, beautify, control circulation paths, and provide shade;~~
- ~~Earthworks: creating more useable areas by levelling/mounding and associated retaining walls or embankments~~

~~Catchment Area~~

- ~~There are multiple catchments for local recreation facilities within the Established Areas as shown on Map 6.3. It excludes the Liverpool City Centre, which is subject to *Liverpool Contributions Plan 2007 (Liverpool City Centre).*~~



~~Figure 6.3 Catchment Areas~~

~~6.4 Administration Costs~~

~~Nexus~~

~~There are significant costs associated with administering funds of this magnitude. Both the plan preparation / review and implementation aspects of contributions are administered staff within Council. A core team of employees are engaged to provide support in co-ordinating such a process, as well as prepare status reports, review and relevant data, liaise with Council staff and external agencies.~~

~~In accordance with the directive of the Department of Planning, the administration costs are comprised of those expenses relative only to those personnel directly responsible for the formulation and / or administration of a Contributions Plan. The cost per lot per year has been averaged across all of the Contribution Plan areas.~~

~~6.5 Contribution Formulae~~

~~The following formulae are used to calculate contributions community and recreation facilities in Established Areas.~~

~~Community and Recreation Facilities~~

~~**Residential Development**~~

~~**Contribution Rate = (per dwelling / lot)** $\frac{C}{N} \times \frac{O\ R}{3.1}$~~

~~**where** **C =** Cost of capital works identified for the catchment area~~

~~**N =** Number of equivalent lots in the catchment area~~

~~**O R =** Estimated occupancy rate for lot size or dwelling type~~

~~**Aged and Disabled Persons Housing**~~

~~**Contribution for total development =** $\frac{\text{Conventional Lot Contribution} \times R \times P}{3.1}$~~

~~**where** **3.1 =** Estimated occupancy rate for a small lot~~

~~**P =** The proportion of facilities excluding child care and youth centre~~

~~**R =** Number of residents~~

~~For Occupancy Rate refer to Table 4.3~~

~~Administration~~

~~The cost of administering contributions plans over the coming years has been estimated at 1.2% of the value of contributions.~~

~~6.6 Staging of Facilities~~

~~Council will construct Community and Recreation Facilities as the population threshold for their augmentation is reached unless a developer provides these. These will be provided, as funds become available.~~

7. Pleasure Point

7.1 Development Trends

The Pleasure Point area was rezoned to allow residential development in conjunction with *Liverpool LEP 2008*. The LEP provides controls on minimum lot sizes and thus is the basis for the estimated development potential for the area.

Catchment Area

There is a single catchment for all local facilities in Pleasure Point. The catchment is shown on Figure 7.1.

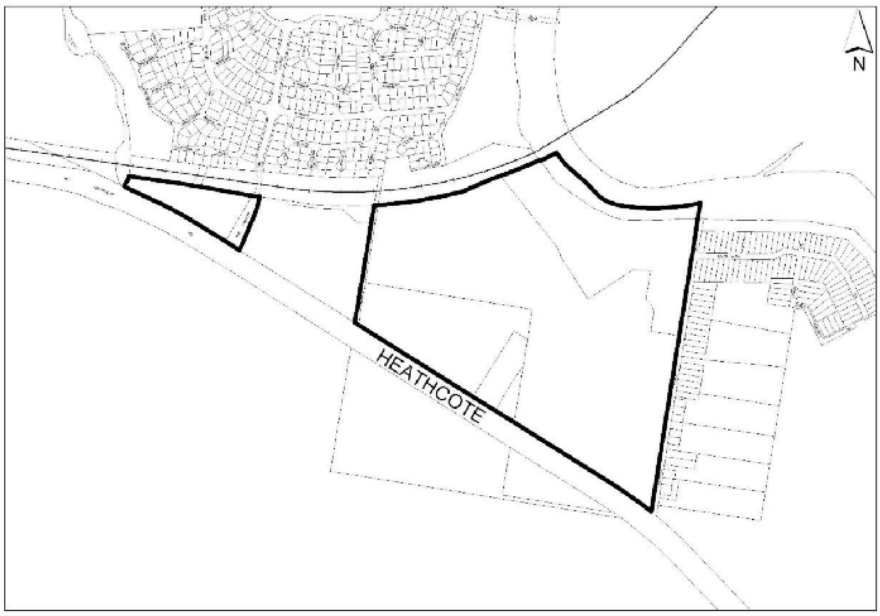


Figure 7.1 Catchment Area

7.2 Community Facilities

It is considered that the area is not of sufficient size to warrant a new community centre. Accordingly it is considered reasonable to include this area in the Established Areas Eastern Catchment as the additional population will increase the usage of community facilities in the nearby areas.

7.3 Recreation Facilities

The extent of open space in Pleasure Point would on a population basis be less than in other release areas of Liverpool. However the location of passive open space along the Georges River and Williams Creek foreshore has the most potential for best use by residents of the area. Further these areas connect to the open space network in the surrounding area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

440 dwellings/lots (no of dwellings or equivalent that are expected to contribute to local recreation facilities)

The area from which contributions would be received is shown on Figure 7.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 20 for the location of each item in Table 7.1.

It is envisaged that the land identified for open space will be dedicated to Council in conjunction with the development of the land in lieu of payment of a monetary contribution.

Works and Land Acquisition Schedule

The range of Works for local recreation facilities is shown in Table 7.1.

The cost of facilities is based a review of costs in 2008 by *Rider Hunt*.

Table 7.1 Works and Land Acquisition Schedule

No.	Items	Land Unit Cost $ / sqm	Works Unit Cost $ / ha or item	Area ha ha	Total Land $	Total Works $
OS1	Williams Creek Foreshore	$25.51	$175,065	0.4820	$122,958	$84,381
OS2	Georges River Foreshore	$25.51	$312,830	1.9600	$499,996	$613,148
Sub Totals						
Project Management 10%						
Contingency 10%						
Totals				2.4420	**$622,954**	**$837,035**

7.4 Transport Facilities

Scope of facilities

The facilities costed are based on a masterplan for this area identified in *Liverpool DCP 2008*.

Apportionment

No apportionment is allowed for as there were no existing local transport facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

440 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local community facilities)

The area from which contributions would be received is shown on Figure 7.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 20 for the location of each item in Table 7.2.

Works and Land Acquisition Schedule

The range of Works for local transport facilities is shown in Table 7.2.

The cost of facilities is based a review of costs in 2008 by *Rider Hunt*.

Table 7.2 Works and Land Acquisition Schedule

No.	Items	Length / No of items m	Pavement width m	Land width m	Land Unit Cost $ / sqm	Works Unit Cost inc K&G $ / m	Total Land $	Total Works $
R1	Roundabout - Pleasure Point Rd & Link Rd					$157,678		$157,678
R2	Collector Street Link - E3 zone to Pleasure Point Rd	300	4.8	4.8	$210	$494	$302,400	$148,344
R3	Collector Street Link - West of E3 zone	520	4.8	4.8	$210	$494	$524,160	$257,129
R4	Collector Street Link across E3 zone	30	20		$210	$1,027		$615,951
B1	Collector Street Link Culvert	90		20	$210	$1,265	$378,000	$113,840
APZ1	Asset Protection Road	456	5.7	21	$210	$572	$2,010,960	$261,050
APZ2	Asset Protection Road	118	5.7	21	$210	$572	$520,380	$67,552
APZ3	Asset Protection Road	180	5.7	21	$210	$572	$793,800	$103,046
R5	Local Access Street adjacent to Georges River Foreshore	50	1.7	2.2	$210	$245	$23,100	$12,225
R6	Pedestrian Access Georges River Foreshore	50	2.5	10	$210	$100	$105,000	$5,000
	Bus shelter	4				$14,270		$57,080
Sub Total								
	Project Management 10%							$179,889
	Contingency 10%							$179,889
Totals							**$4,657,800**	**$2,158,674**

7.5 Contribution Formulae

Recreation Facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings and Multi dwelling housing

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{OR}{3.7}$$

where C = Cost of capital works or land identified for the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot)} = \frac{A}{N} \times \frac{OR}{3.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

For Occupancy Rate refer to Table 4.3

Aged and Disabled Persons Housing

$$\text{Contribution for total development} = \frac{\text{Conventional Lot Contribution} \times R}{3.7}$$

where 3.7 = Estimated occupancy rate for a conventional lot

R = Number of residents

Transport facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings and Multi dwelling housing

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{V}{6.7}$$

where C = Cost of capital works and land identified for the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot / non residential development)} = \frac{A}{N} \times \frac{V}{6.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type (refer to Table 6.4)

Table 6.4 Vehicle Trips per day per dwelling

Dwelling Type or Lot Size	Vehicle Trips per day
Residential Subdivision Lots 450 sqm or larger	6.7
Residential Subdivision Lots smaller than 450 sqm	6.0
Semi-detached dwellings, Multi dwelling housing & Residential Flat Buildings (where permitted)	
3 or more bedrooms	6.0
2 bedrooms	4.0
1 bedroom	3.3
Aged and Disabled Persons Housing (total development)	Total vehicle trips per day

Administration Fees

All Development

The cost of administering contributions plans over the coming years has been estimated at 1.2% of the value of contributions.

7.6 Staging of Facilities

It is expected that facilities will be provided by the developer, including dedication of land, in conjunction with the development. The timing of this will depend on the timing of the development.

It is envisaged that infrastructure will be provided in conjunction with the development of the land, as the land is in only two lots.

8. Pleasure Point East

8.1 Development Trends

There are 65 existing lots, which can be developed. No subdivision potential is expected.

8.2 Transport Facilities

Council appreciates the need to carefully balance the management of traffic in order to achieve a safer local road system with appropriate residential amenity within this rural context and to provide for the efficient transfer of people, goods and services.

In adopting this strategy some cost savings on the construction of the local residential streets is advocated in the plan. These benefits are improved safety and amenity in residential areas as well as savings in local development construction costs.

The existing local street network is built to a rural standard and can accommodate the traffic volumes associated with the existing dwellings situated on the northern side of Riverview Road. The development of the subject 65 allotments will generate traffic volumes beyond the rural road threshold. The development potential necessitates the upgrading of Pleasure Point Road, Riverview Road and Green Street.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

There are three catchments for local transport facilities in Pleasure Point East. For each catchment area, information is provided on:

- Contributing Development (number of dwellings or equivalent that are expected to contribute to recreation facilities)
- Works and Land Acquisition Schedule
- The area from which contributions would be received is shown on Figure 8.1.

River Heights Road

Contributing Development: 7 dwellings

Table 8.1

Item	Cost
Establishment	$3,475
Roadway Construction	$100,000
Total	**$103,475**

River View Road

Contributing Development: 32 dwellings

Table 8.2

Item	Cost
Establishment	$3,475
Kerb & Pavement	$84,095
Footway	$17,167
Total	**$104,737**

Green Street

Contributing Development: 9 dwellings

Table 8.3

Item	Cost
Pavement at Intersection	**$24,464**

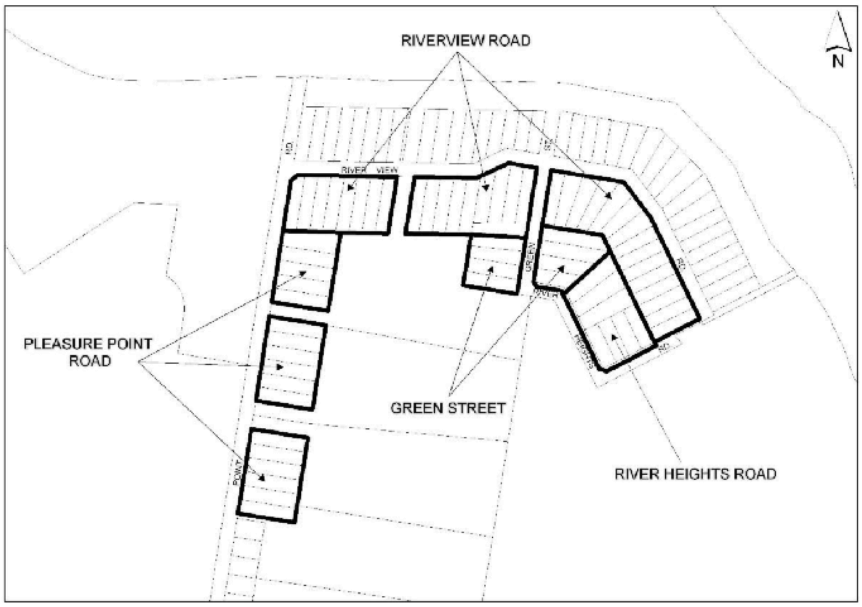


Figure 8.1

8.3 Drainage

Almost all allotments within the plan area require some form of inter-allotment drainage for the removal of concentrated stormwater from the individual sites. The DCP allows for the creation of easements where necessary but does not specify the location or width of these easements. It will be a condition of consent that such easements are dedicated across the property affected. The actual construction of the inter-allotment drains will be covered by this plan.

The cost of drainage works to service the area is $133,823.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

There is one catchment for local drainage facilities in Pleasure Point East. For the catchment area information is provided on:

- Contributing Development (number of dwellings or equivalent that are expected to contribute to recreation facilities)
- Works and Land Acquisition Schedule
- The area from which contributions would be received is shown on Figure 8.2.

Contributing Development: 65 dwellings

Table 8.4

Item	Cost
Easements	$938
Inter - Allotment lines	$170,491
Total	$171,430

Figure 8.2

8.4 Administration Costs

There are significant costs associated with administering funds of this magnitude. Both the plan preparation / review and implementation aspects of developer contributions are administered staff within Council. A core team of employees are engaged to provide support in co-ordinating such a process, as well as prepare status reports, review and relevant data, liaise with Council staff and external agencies.

In accordance with the directive of the Department of Planning, the administration costs are comprised of those expenses relative only to those personnel directly responsible for the formulation and / or administration of a Contributions Plan. The cost per lot per year has been averaged across all of the Contribution Plan areas.

8.5 Professional Fees

The cost of independent land valuations and legal documents are clearly part of the costs of administering this plan. In relation to land acquisition, Council will be required to acquire land for roads and incur the associated conveyancing costs.

It is recognised that the costs associated with land acquisition could be added to the cost of individual facilities; however the cost of professional fees attributable to any one facility is completely unpredictable. It is therefore more appropriate that a pool of contribution funds is available to meet

these costs as they arise. The contribution rate will be reviewed in light of income and expenditure when this plan is reviewed in accordance with section 2.8.

The contribution rate is the same regardless of the size of the lot or form of development. In arriving at this rate the following factors were taken into account:

- The cost of independent valuations is anticipated to vary from $500 - $2,000 depending on individual sites and whether the valuation is general or specific;
- Valuations will be required at least annually for reviewing this contribution plan and more frequently depending on movements in the property market;
- Stamp duty and estimated costs of vendor's solicitor in land acquisition.

8.6 Plan Establishment

The preparation of a contributions plan requires the development of options for the scope of works and the corresponding contributions. The formulation of the contribution plan has required extensive discussion on a range of facilities from full urban infrastructure to rural standards. Preliminary designs for many of these options and costing have also been required.

This contributions plan and all future plans developed will be required to fund the establishment costs of the plan itself. The costs of establishing each plan will vary dependent upon the magnitude of development potential. The establishment costs of this plan have been estimated at $20,000 in total a portion of which has already been spent by Council.

Contributing Development: 65 dwellings

Table 8.5

Item	Cost
Administration	$64
Professional & Legal Fees	$228
Plan Establishment Costs	$392
Total	**$684**

8.7 Contribution Formulae

Drainage, Land Acquisition, Professional Fees and Plan Establishment

Contribution Rate = (per dwelling) $\frac{\mathbf{C}}{\mathbf{65}}$

where **C =** Cost of fees, capital works or land identified for the catchment area

65 = Number of existing lots

Road works

Contribution Rate = (per dwelling) $\frac{\mathbf{C}}{\mathbf{N}}$

where **C =** Cost of capital works or land identified for the particular street

N = Number of existing lots in the street catchment

Administration

The cost of administering contributions plans over the coming years has been estimated at 1.2% of the value of contributions.

8.8 Staging

The works will be provided by Council following the receipt of contributions.

9. Hoxton Park Stage 2 Release Areas District Facilities

(Includes Cecil Hills, Hoxton Park, Carnes Hill, Prestons, Middleton Grange, Elizabeth Hills and Prestons Industrial)

9.1 Background

Facilities in the Hoxton Park Stage 2 Residential Release Area are provided on a district wide basis and local basis. This is because they involve facilities, which by their nature have a larger catchment and are provided more efficiently on a district scale. It should be noted that the Hoxton Park Stage 2 District catchment area previously included Edmondson Park. It was excluded following discussions with the Department of Planning.

9.2 Community Facilities

Nexus

The Liverpool Stage 2 Release Area Human Services Strategy Study provides the basis for the nexus for the community facilities. The study was completed in November 1992, and endorsed by Council in December 1992 as the strategy for human services planning in Stage 2 release areas. This study is the primary technical tool, which underpins the provision of community facilities.

Since 1992 Council has annually held a number of community consultations under the Western Sydney Area Assistance Scheme (WSAAS). These consultations have reinforced the issues highlighted in the original study with regard to community needs in new release areas. The range of facilities for which contributions are levied include the following.

District community centre

District community centres are important as they provide a base for a number of needed community services. These include community development, neighbourhood centres, family support agencies, outreach programs, geriatric services, etc.

District centres can accommodate larger meetings and functions, as well as an additional range of activities. District centres act as important civic buildings, helping to define a sense of community and a sense of social space in an emerging urban area. The district centres also have larger spaces, which can generate a substantial hire income to subsidise the centre's ongoing costs or the costs of smaller community facilities.

Branch libraries

The State Library of NSW publication *The planning and design of public library buildings* (1990) provides guidelines for calculating branch library floor space. The plan adopts the guideline of 42 sqm per 1,000 residents. A branch library is proposed for Stage 2 release areas. Large branches are preferable, as more resources are concentrated in one location, with lower recurrent costs.

Scope of facilities

A review of the range of local community facilities was undertaken in 2008. It was decided that only a district multipurpose community centre and Library would be provided.

Apportionment

No apportionment is allowed for as there were no existing district community facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

15,840 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to district community facilities)

The area from which contributions would be received is shown on Figure 9.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 8 for the location of each item in Table 9.1.

Works and Land Acquisition Schedule

The range of Works for local community facilities is shown in Table 9.1.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by *Rider Hunt*.

Table 9.1 Works and Land Acquisition Schedule

Ref	Item	Floor space sqm	Land Area sqm	Land Unit Cost $ / sqm	Total Land Cost $	Total Works Cost $
DC	Multi purpose Community Centre (2,000 sqm)	1,200				$5,237,988
DC	Library	2,300				$11,655,961
DC	Youth Space					$500,000
	Land acquisition		12,000	$140	$1,680,000	
	Total				**$1,680,000**	**$17,393,949**

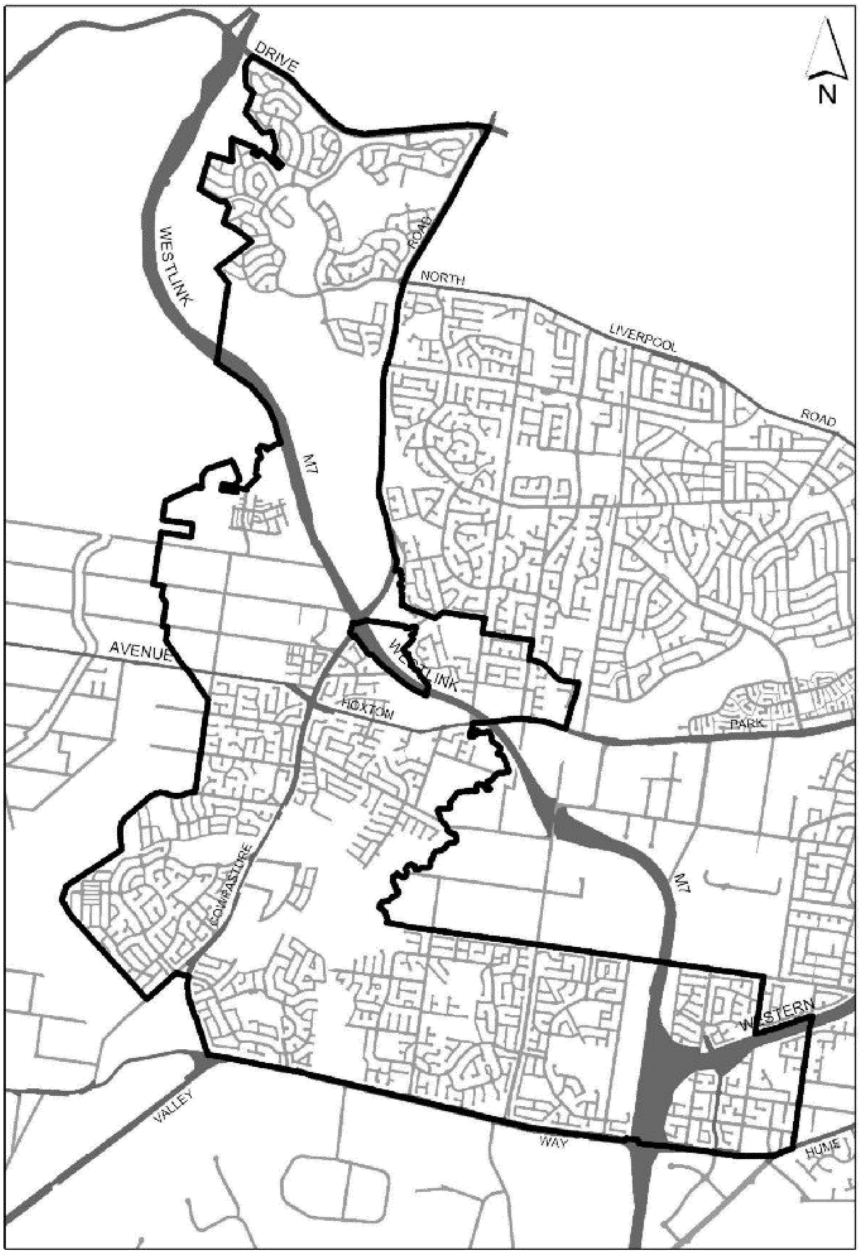


Figure 9.1 Catchment Area

9.3 Recreation Facility

Nexus

As part of it's planning for the Hoxton Park Stage 2 Release Areas, Council commissioned an Open Space Strategy Report by Manidis Roberts Pty Ltd, in 1990. Frank Small & Associates also undertook market research into the Leisure Requirements for the Residents of Liverpool, a Leisure Needs Analysis for the Liverpool Community and a report on Sporting Organisations in 1994. The contents of these reports and their recommendations also form the basis for open space provision.

The 1990 report identifies the following specific District Recreation Facilities for the Hoxton Park Stage 2 Release Areas:

- District swimming pool/indoor leisure complex of 8 ha.
- District sporting area of 10 ha, with a minimum of 4 quality fields.
- District Netball Complex of 4 ha, located within a larger recreation area.
- District children playground of 2 ha, located within a larger recreation area.
- Cycleways providing links throughout the release areas (provided under local facilities)

Scope of facilities

A review of the range of district recreation facilities was undertaken in 2008. It was decided that the district recreation facility should consist of the following items:

- Tennis courts
- Indoor Recreation Centre
- Playground / Civic Park
- Playing Fields

The changes arise in part due to the impact of the M7 on the proposed open space, street and drainage networks and the *Liverpool City Wide Recreation Strategy 2020* in 2003.

Apportionment

No apportionment is allowed for as there were no existing major recreation facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

15,840 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to district recreation facilities)

The area from which contributions would be received is shown on Figure 9.2.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 8 for the location of each item in Table 9.2.

Works and Land Acquisition Schedule

The range of Works for local community facilities is shown in Table 9.2.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by *Rider Hunt*.

Table 9.2 Works and Land Acquisition Schedule

No	Item	No / Area sqm	Area sqm	Land Unit Cost $ / sqm	Total Land Costs $	Total Works Cost $
DR	Tennis courts	6				$675,000
DR	Indoor Recreation Centre					$7,860,000
DR	Playground / Civic Park	20,000				$1,129,000
DR	Playing Fields	93,000				$4,250,000
	Sub Total					**$13,914,000**
	Project Management allowance 8%					$1,113,120
	Contingency Sum 10%					$1,391,400
			11,000	$25	$275,000	
		12.2378	34,790	$140	$4,870,600	
		112,000	77,210	$175	$13,511,750	
	Total				**$18,657,350**	**$16,418,520**

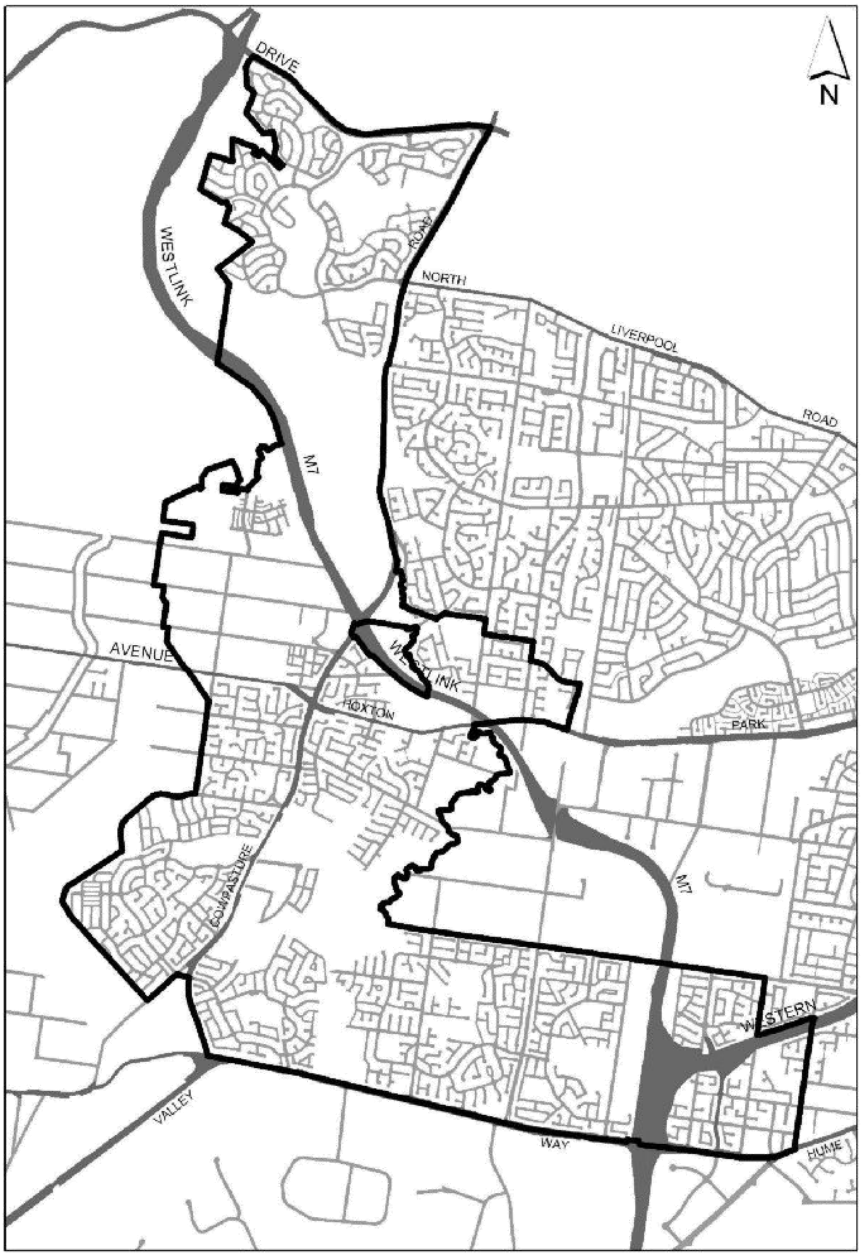


Figure 9.2 Catchment Area

9.4 Transport Facilities

Nexus

Council appreciates the need to carefully balance the management of traffic in order to achieve a safer local street system with appropriate residential amenity and to provide the efficient transfer of people, goods and services in a wider urban structure. In recognition of these objectives the road network in the Hoxton Park, Carnes Hill and Prestons areas are designed according to the principles of the *Australian Model Code for Residential Development 1990*. The Code develops a concept of "residential streets" and "transport roads". The characteristics of the "residential streets" effectively discourage major traffic intrusion into residential areas. "Transport roads" facilitate traffic efficiency and direct movement.

In adopting this strategy some cost savings on the construction of the local residential "streets" is advocated in the Code. The trade off to these benefits, that is improved safety and amenity in residential areas as well as savings in local development construction costs, is that an appropriate level of monetary contribution to the development of roads dedicated to transport is deemed appropriate.

Consequently contributions for Transport Facilities are divided into two categories:

- District Transport Facilities
- Local Transport Facilities (schemes as identified by local catchments)

Hoxton Park Stage 2 Release Areas Traffic Study

Council undertook a detailed study of the future road requirements to service the area, assuming the Hoxton Park Stage 2 Release Areas and the Prestons Industrial area have been developed by the year 2011. This study has developed a detailed computer model (T Model II software) of the land use and transport system at the present and in the future.

It is important to recognise that the future road network will be significantly congested and it has been necessary to accept a level of service of E for the design network performance. This level of service is characterised by unstable traffic flow, congestion and intolerable delays. In some instances, especially regarding access to Liverpool City Centre areas east of the Hume Highway, it has not been practical to achieve this and peak hour forced flow appear to be unavoidable.

The cost of the future road network has been estimated for the sub arterial and arterial roads in the area and proportional funding allocation has been developed based on the relative influences of various sources of traffic generation.

The Traffic Study (October 1992) developed a hypothetical apportionment on the basis of the levels of traffic, from different areas of traffic generation, which are identified as occurring on various road links or at various intersections. This apportionment took into account the local arterial and sub arterial road costs (but not including the Cumberland Highway or South Western Freeway corridors). The total cost of these works (not including land acquisition) was in the order of $99,000,000, at 1992 costs.

This would be apportioned as follows:

Prestons Industrial Area	11%
Stage 2 Residential Release Areas	46%
Roads and Traffic Authority Through Traffic	37%
Council Existing Traffic	6%

After excluding the amount for the Roads and Traffic Authority, the proportions would be as follows:

Prestons Industrial Area	18%
Stage 2 Residential Release Areas	72%
Council Existing Traffic	10%

The emphasis in devising the works schedule has been to:

- Maintain opportunity for long term expansion of transport corridors; and
- Provide a safer road system by ensuring major roads is flood free and major intersections are appropriately controlled (signals, seagulls or roundabouts).

Scope of facilities

A review of the range of district transport facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area. The changes arise in part due to the impact of the M7, the addition of land north of Hoxton Park Rd, changes to the land use adjacent to the Carnes Hill Centre on the proposed open space, street and drainage networks. The Cowpasture Road deviation was originally included in order to provide access to the Horningsea Park area. The scope of works did not include the full extent of road works that now exists.

Apportionment

The original traffic study estimated that 10% of the district transport works were attributable to existing traffic.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

18,310 dwellings/lots (incorporating residential and equivalents from industrial development in Prestons)

The area from which contributions would be received is shown on Figure 9.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 2 - 17 for the location of each item in Table 9.3.

Works and Land Acquisition Schedule

The range of Works for local community facilities is shown in Table 9.3.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by Council.

Table 9.3 Works and Land Acquisition Schedule

No	Item	Land Unit Cost $ / sqm	Works Unit Cost $ / m	Length m	Width m	Area sqm	Total Land Cost $	Total Works Cost $
Corridors								
RD1	Beech Rd Deviation							
	Road reserve	$175		930	24	22,320	$3,906,000	
	2 lane undivided carriageway		$788	930				$732,999
RD2	Beech Rd Widening							
	Road reserve	$175		470	4	1,880	$329,000	
	Structural Overlay existing central pavement		$52	420	5.1	2,142		$21,794
	Widen existing pavement to form 4 lane undivided urban road		$175	420	1.9	798		$139,893
	Lyn Parade Extension							
RD3.1	Road reserve over special use land	$175		560	11	6,160	$1,078,000	
RD3.2	Rosd reserve over special use land	$48		560	1	560	$26,880	
RD3.3	Road reserve over industrial land	$175		690	2	1,380	$241,500	
RD3.4	Environmental studies for Lyn Parade ext						$98,900	
RD3.5	Pavement over special use land		$1,540	560				$862,400
RD3.6	Pavement over industrial land		$50	690				$34,500
RD3.7	Re-instate fence along frontage to Transmission Tower		$133	560				$74,610
	Kurrajong Rd							
RD4.1	Road reserve: Cowpasture Rd to Marketplace	$175		300	24	7,200	$1,260,000	$175
RD4.2	Road reserve: Marketplace to Cabramatta Ck	$175		900	20	18,000	$3,150,000	$175
RD4.3	Road reserve: Intersection widening - Future Road	$175		240	15	3,600	$630,000	$175
RD4.4	Road reserve: Intersection widening - Mowbray Road	$175		240	3	720	$126,000	$175
RD4.5	Road reserve: Intersection widening - Bernera Road	$175		160	6	960	$168,000	$175
RD4.6	Road reserve: Intersection widening - San Marino Drive	$175		80	5	400	$70,000	$175
RD4.7	Road reserve: Crossing of Cabramatta Creek on east side					3,783	$1,214,500	
		$100				3,000	$300,000	$100
RD4.8	4 lane urban road with median: Cowpasture Road to Marketplace		$2,411	300				$723,238

No	Item	Land Unit Cost $ / sqm	Works Unit Cost $ / m	Length m	Width m	Area sqm	Total Land Cost $	Total Works Cost $
RD4.9	4 lane urban road: Marketplace to Cabramatta Ck			900				$5,200,000
RD4.10	Bridge over Cabramatta Ck							
	Twin bridges with 2 x 14m spans x 9.5 wide					532		$5,000,000
RD4.11	Re-instate fence along frontage to Transmission Tower		$133	560				$74,610
	15% Contingency for Civil Works							$1,638,486
RD4.12	4 lane urban Road upgrade		$788	3,930				$3,097,511
	Structural Overlay existing central pavement		$49	3,930	7	27,510		$7,350,338
	15% Contingency for Civil Works							$1,567,177
RD5	Cowpasture Rd Deviation							
	Road Reserve	$175				13,700	$2,397,500	
	Two lane undivided carriageway with unsealed shoulders and table drains		$788	800				$630,537
RD6	Provision for bus priority facilities							
	Bus filter							$73,290
	1 bridge over Cabramatta Ck at Bumberra St							
	2 x 14m spans x 5m wide							$291,707
	Bernera Rd							
	Road reserve: Kurrajong Rd to Camden Valley Way	$175		1,400	7	9,800	$1,715,000	
RD7.1	Kurrajong Rd to Camden Valley Way							$7,700,000
	Structural Overlay existing central pavement		$49	1,400	7	9,800		$68,720
RD7.2	South of Yarrawa Rd (half road width)	west side	$920	150	6.5	Pre-existing street		$137,925
RD7.3	Around Yarrunga St (full road width)		$1,839	240	13	Pre-existing street		$441,360
RD7.4	South of Yarrunga St (half road width)	west side	$920	320	6.5	Pre-existing street		$294,240
	15% Contingency for Civil Works							$1,296,337
	Sub Totals						**$16,711,280**	**$37,451,671**
	Intersections							
RD8.1	Signalised intersection Camden Valley Way and Beech Rd Deviation (incl all RTA Fees)							$175,897
	Turn / Slip lane, State Rd T intersection							$304,887

No	Item	Land Unit Cost $ / sqm	Works Unit Cost $ / m	Length m	Width m	Area sqm	Total Land Cost $	Total Works Cost $
RD8.2	Signalised intersection Camden Valley Way & Cowpasture Rd Deviation (incl all RTA Fees)							$175,897
	Turn / Slip lane, State Rd T intersection							$304,887
RD8.3	Signalised intersection Cowpasture Rd & Joshua Moore Drive (incl all RTA Fees)							$175,897
	Turn / Slip lane, State Rd T intersection							$304,887
RD8.4	Seagull intersection at Kurrajong Rd deviation							$175,897
RD8.5	Seagull intersection at Kurrajong Rd deviation & un-made Rd							$175,897
RD8.6	Roundabout at intersection Kurrajong Rd deviation & un-made Rd							$175,897
RD8.7	Roundabout at intersection Kurrajong Rd & Mowbray Rd							$175,897
RD8.8	Signalised intersection at Bernera & Kurrajong Rds Signals Cost (incl all RTA Fees)							$175,897
	Turn / Slip lane, Sub Arterial X intersection							$304,887
RD8.9	Roundabout at intersection Kurrajong & San Marino Drive							$175,897
RD8.10	Signalised intersection Bernera Rd, Wroxham St & Bomaderry Drive (incl all RTA Fees)							$175,897
	Turn / Slip lane, Sub Arterial X intersection							$304,887
RD8.11	Roundabout at intersection Kurrajong & Beech Rds							$175,897
RD8.12	Roundabout at intersection of Kurrajong & Cedar Rds							$175,897
RD8.13	Roundabout at intersection of Kurrajong & Wonga Rds							$175,897
RD8.14	Roundabout or Seagull intersection at Kurrajong & Napier Rds							$76,223
RD8.15	Roundabout at Beech Rd & Barcelona Drive							$175,897
RD8.16	Roundabout at Beech Rd deviation & Pine Rd extension							$175,897
RD8.17	Signalised intersection at Lyn Parade & Jedda Rd (incl all RTA Fees)							$304,887
	Various signalised intersections							$2,500,000
RD8.19	Signalised intersection at Hoxton Park & Banks Rd (incl all RTA Fees)							
RD8.20a	Camden Valley Way & Ash Rd (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20b	Camden Valley Way & Bernera Rd (incl all RTA Fees)							
	Turn / Slip lane, State Rd X intersection							
RD8.20c	Camden Valley Way & Corfield Rd (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20d	Camden Valley Way & Rynan Avenue (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20e	Camden Valley Way & Horningsea Park Drive (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20f	Cowpasture Rd & Chapman Rd (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20g	Cowpasture Rd & Kurrajong Rd extension (incl all RTA Fees)							
	Turn / Slip lane, State Rd X intersection							
RD8.20h	Cowpasture Rd & Twelfth Avenue (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20i	Hoxton Park Rd & either Webster or Calabro Rds (incl all RTA Fees)							
RD8.20j	Cartwright Avenue & Hoxton Park Rd (incl all RTA Fees)							
RD8.20k	Hoxton Park Rd & Lyn Pde (incl all RTA Fees)							
RD8.20l	Hoxton Park Rd & Ash Rd (incl all RTA Fees)							
	Turn / Slip lane, Sub Arterial T intersection							
RD8.20m	Hoxton Park, Whitford & Illaroo Rds (incl all RTA Fees)							
	Turn / Slip lane, Sub Arterial X intersection							
RD8.20n	Hoxton Park Rd & First Avenue (incl all RTA Fees)							

No	Item	Land Unit Cost $ / sqm	Works Unit Cost $ / m	Length m	Width m	Area sqm	Total Land Cost $	Total Works Cost $
	Turn / Slip lane, Sub Arterial T intersection							
RD8.20o	Hoxton Park Rd & un-named Rd (incl all RTA Fees)							
	Turn / Slip lane, Sub Arterial T intersection							
RD8.20p	Hoxton Park & Cowpasture Rd (incl all RTA Fees)							
RD8.20q	Cowpasture Rd & Mannow Rd (incl all RTA Fees)							
	Turn / Slip lane, State Rd X intersection							
RD8.20r	Cowpasture Rd & Sixteenth Avenue (incl all RTA Fees)							
	Turn / Slip lane, State Rd X intersection							
RD8.20s	Cowpasture Rd & Seventeenth Avenue (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20t	Cowpasture Rd & Green Valley Rd (incl all RTA Fees)							
	Turn / Slip lane, State Rd T intersection							
RD8.20u	Cowpasture Rd & North Liverpool Rd (incl all RTA Fees)							
	Turn / Slip lane, State Rd X intersection							
	Sub Total							**$7,043,998**
	Total						**$16,711,280**	**$44,495,669**

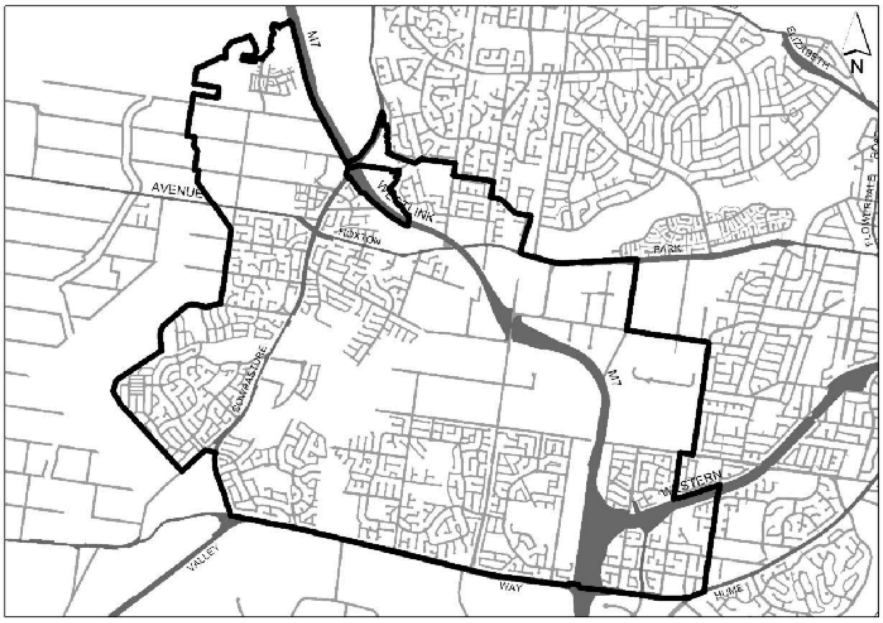


Figure 9.3 Catchment Area

9.5 Drainage Facilities

Nexus

The factors outlined at the beginning of Section 8 mean that the development of new areas may cause or exacerbate flooding problems in areas remote from the development areas themselves. Council has identified a strategic trunk drainage scheme to offset the impacts of the development in the Hoxton Park Stage 2 Release Areas and taking into account development in the Hoxton Park Stage 1 Release Areas. This scheme, known as Option A3 in the Trunk Drainage Study carried out on Council's behalf by Kinhill Engineers, involves a system of wet and dry detention basins. The scheme relies on the principle of controlling differential catchment response rates to optimise the required basin storage capacities. This is a cost effective solution and in practice means that some tributary creeks are retarded with extra basin storage compared to other tributary creeks. This is reflected in the placement of more basins on Hinchinbrook Creek.

The scheme is an effective, integrated strategy to offset the impacts of development on stormwater runoff both on the major creek tributaries within the release areas and downstream of the release areas. Consequently, the entire release area contributes as a collective whole to the implementation of the Option A3.

The drainage systems identified for developer contributions in the Hoxton Park Stage 2 Release Areas fall into two basic categories:

- The Major Trunk Drainage System of detention basins and water quality ponds system as identified in the selected Option A3 in the Kinhill's Report.
- Various local catchment pipe and channel systems as identified in the local catchment schedules by Council.

Contributions are levied on all development for both of these categories. The contribution for major drainage basins is constant throughout the whole stormwater catchment, while that for local trunk drainage varies according to the appropriate local catchment. Within the various local drainage catchments, individual developers are required to directly bear the cost of all pipelines up to 825mm diameter within or past their own land. The cost difference between any larger pipe size or drainage swale/channel is funded by developer contributions.

Background study

Capital costs for basins are based on the Kinhill Study. The land acquisition cost involves all of the basins, including those that were previously part of the Open Space Strategy.

The NSW Dams Safety Committee (DSC) has a statutory role to oversee dam owners where public safety, property and the environment could be at risk. As part of this role, the Committee prescribes (i.e. legally registers) those basins, which pose a potential threat to downstream communities with a view to ensuring the basins meet adequate safety standards. This means that these basins are treated as prescribed dams and must meet the standards set by the committee at all stages of the development and operation of the basins, including regular surveillance inspections to ensure their continuing safety.

In particular the Committee requires that these basins are designed such that during extreme floods, rather than the design flood (Probable Maximum Flood etc) the basins will behave in a manner such as not to threaten lives or cause major property/environmental damage downstream. That is, the basins are "fail safe" or designed to fail at an acceptable level and rate.

In NSW, prescribed basins owned by local government authorities also come under the oversight of the NSW Public Works under the requirements of the Local Government Act 1993.

1992 Hoxton Park Stage 2 Release Area Total Catchment Management Study – Kinhill only considered 1:100 year flood for basins and did not consider floods larger than 1:100 year. Hence no cost was allowed for in design or construction requirements of extreme floods.

Scope of facilities

A review of the range of district drainage transport facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008* and decisions following the masterplanning of Middleton Grange, the preparation of the contributions plan for Edmondson Park, a review of the trunk drainage strategy by *Bewsher Consulting* and the impact of the M7.

Apportionment

No apportionment is allowed for as there were no existing district drainage facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

15,450 dwellings/lots (incorporating residential, business and equivalents from industrial development in Prestons)

The area from which contributions would be received is shown on Figure 9.4.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 2 - 17 for the location of each item in Table 9.4.

Works and Land Acquisition Schedule

The range of Works for local community facilities is shown in Table 9.4.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by Council.

This area incorporates the development potential of residential lots (including the Business zones) in Hoxton Park, Carnes Hill, Prestons, Cecil Hills and the equivalent lots for Prestons Industrial Area.

There are other drainage detention facilities to be provided which contribute to the overall trunk drainage strategy in Cabramatta Creek. These are provided either by local developer contributions in Middleton Grange and Edmondson Park or by a Voluntary Planning Agreement in the future Elizabeth Hills and the former Hoxton Park Aerodrome.

Table 9.4 Works and Land Acquisition Schedule

No	Items	Area	Land Unit Cost	Land	Works
DD 3A	Basin 3A	30,380		Existing	$1,948,235
DD 3B	Basin 3B	70,000		Within Corridor	1,024,745
DD 4	Basin 4	100,000		Existing	$806,691
DD 6	Basin 6	55,000	$175	$5,725,000	
DD 10	Basin 10	133,100	$101	$13,469,720	$4,718,383
DD 11	Basin 11				$745,809
		87,434	$116	$12,135,349	
		16,606		$1,639,577	
Totals				**$32,969,646**	**$9,243,862**

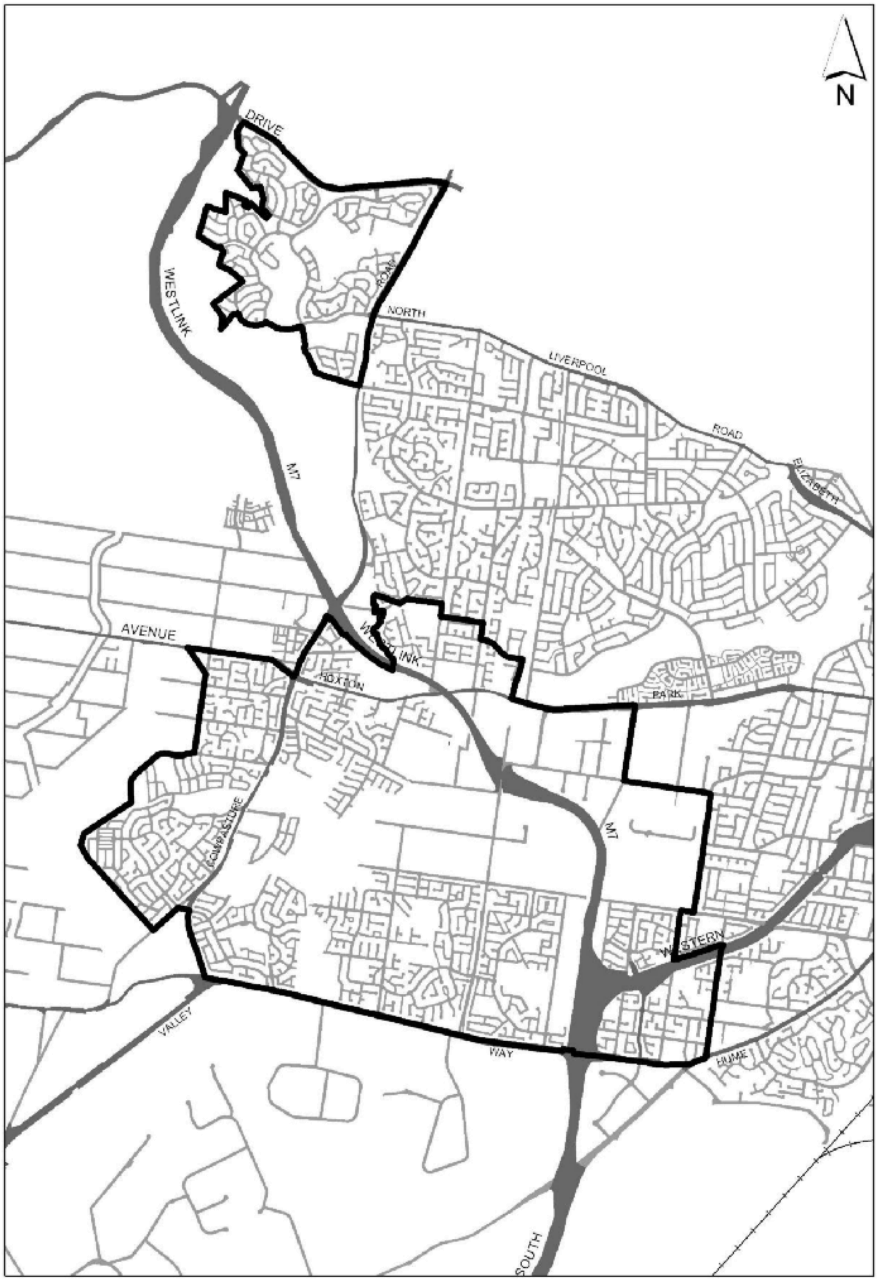


Figure 9.4 Catchment Area

9.6 Contribution Formulae

Community and Recreation Facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing and Residential Flat Buildings

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{OR}{3.7}$$

where C = Cost of capital works or land identified for the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot)} = \frac{A}{N} \times \frac{OR}{3.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

For Occupancy Rate refer to Table 4.3

Aged and Disabled Persons Housing

$$\text{Contribution for total development} = \frac{\text{Conventional Lot Contribution} \times R}{3.7}$$

where 3.7 = Estimated occupancy rate for a conventional lot

R = Number of residents

Transport facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing, Residential Flat Buildings and other development

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{V}{6.7}$$

where C = Cost of capital works and land identified for the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot / non residential development)} = \frac{A}{N} \times \frac{V}{6.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type (refer to Table 8.5.

Table 8.5 Vehicle Trips per day per dwelling

Dwelling Type or Lot Size	Vehicle Trips per day
Residential Subdivision Lots 450 sqm or larger	6.7
Residential Subdivision Lots smaller than 450 sqm	6.0
Semi-detached dwellings, Multi dwelling housing & Residential Flat Buildings (where permitted)	
3 or more bedrooms	6.0
2 bedrooms	4.0
1 bedroom	3.3
Aged and Disabled Persons Housing (total development)	Total vehicle trips per day

Drainage Facilities

Conventional Lot Residential Subdivision

Contribution by cash

$$\text{Contribution Rate (per sqm of lots)} = \frac{C}{N \times 450}$$

where C = Cost of capital works or land identified for the catchment area

N = Number of equivalent lots / dwellings in the catchment area

Contribution by land dedication

$$\text{Area of land to be dedicated (per conventional lot)} = \frac{A}{N}$$

where A = Total area to be acquired

N = Number of equivalent lots / dwellings in the catchment area

Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing, Residential Flat Buildings, Aged and Disabled Persons Housing and Non Residential Development

Contribution by cash

$$\text{Contribution (per sqm of site area)} = \frac{\text{Conventional Lot Contribution} \times CR \times \text{Site Area}}{0.65}$$

Where C R = Runoff coefficient for the specific development type as specified in the Table 9.

Contribution by land dedication

$$\text{Area of land to be dedicated (total development)} = \frac{A}{N} \times \frac{C\,R}{0.65} \times \text{Site Area}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots / dwellings in the catchment area

C R = Runoff coefficient for the specific development type as specified in Table 8.6

The relative impacts of different types of land development on any drainage system can be estimated by comparing the peak discharge rates of runoff that the different types of development would produce. The rational formula estimates the peak discharge rates by use of runoff coefficients that are directly related to the proportion of a site that is impervious to rainfall infiltration. The following table gives the relative impacts of alternate types of land development on runoff generation.

Table 9.6 Co efficient of Runoff for development types

Development Type	Co efficient of Runoff
Conventional residential lots and schools	0.65
Semi-detached dwellings, villa houses, small lot subdivision and Aged and Disabled Persons Housing	0.75
Town houses	0.80
Shopping Centre & other non-residential	0.95

9.7 Staging of Facilities

Council will build most facilities as the population threshold for their construction is usually much larger than individual developments. These will be provided as funds become available and as land can be acquired.

10. Hoxton Park, Carnes Hill and Prestons Release Areas

10.1 Background

Development in the Cecil Hills, Hoxton Park, Carnes Hill and Prestons Residential Release Areas has now reached an advanced stage of development.

Catchment Areas

There is a single catchment for Community, Recreation Facilities and Streetscape works. There are a number of separate sub catchments for transport and drainage facilities.

10.2 Community Facilities

Background

New development, which leads to an increase in the number of residents, will also increase the demand for community facilities including multi-purpose community centres, libraries and cultural facilities.

It is intended that contributions will be levied on aged or disabled housing development (as defined under *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*.

One of the key criteria, which allow development under the SEPP, is the local availability of support services.

Contributions are levied for aged and disabled housing development on the following grounds:

- The standard nexus between the new population and the demand for additional services.
- Older and disabled people will be future users of multi-purpose community centres and the branch library.
- Service providers in Liverpool generally will use these facilities to provide local services for the anticipated population.
- Aged or disabled housing will not provide additional facility capability to people other than residents of the development.
- Not all residents' requirements can be met from services provided on site.
- The criteria within the SEPP for availability of local support services cannot be met without Council facilities in the locality.

Nexus

Local level multi-purpose community centres provide a locally based facility. Poor public transport, inadequate human services infrastructure, distance and therefore poor access to centrally located services are key obstacles facing new residents. As a focal point for residents, community centres provide flexible space for a broad range of community activities. Some of the functions and activities that can occur in these centres include:

- Meeting space for community groups and organisations.
- An informal meeting place and information centre.
- Multi-purpose working space for a range of activities such as play groups, educational classes, cultural and leisure activities (arts and crafts classes, cultural projects, workshops, etc).
- Sessional space for visiting and specialist services such as community nurses, health services, family support services, etc.

- Office accommodation, interview rooms and generally an administrative base for community workers and local Neighbourhood Centre services.
- Spaces for private functions such as weddings, celebrations, formal meetings, cultural events, etc.

Elected committees comprising local residents and users usually manage such centres.

Council proposes a standard for such facilities, a 600sqm building for a population of approximately 8,000 - 10,000 residents. This standard is proposed based on experience of facilities in other Liverpool release areas. In areas with a projected population over 10,000 but less that 20,000, it is proposed to build centres that are proportionately based on this standard. This will be incorporated into the floor-space ratio adopted in this Plan for community facilities.

Scope of facilities

A review of the range of local community facilities was undertaken in 2008. It was decided that a local multipurpose community centre for each suburb would be provided. An analysis of local community centres in areas adjacent release areas showed that bookings for these centres were at full capacity.

Apportionment

No apportionment is allowed for as there were no existing local community facilities in existence at the commencement of the development of the area.

Contributing Development, Works Schedule and Catchment Area

Contributing Development

10,540 dwellings/lots (number of dwellings or equivalent that are expected to contribute to local community facilities)

The area from which contributions would be received is shown on Figure 10.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 7, 8 & 13 for the location of each item in Table 10.1.

Works and Land Acquisition Schedule

The range of Works for local community facilities is shown in Table 10.1.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by *Rider Hunt*.

Table 10.1 Works Schedule

No.	Item	Works Cost $
C1	Multi-Purpose Community Centre (600 sqm)	$2,269,150
C2	Multi-Purpose Community Centre (600 sqm)	$2,269,150
C3	Multi-Purpose Community Centre (600 sqm)	$2,269,150
Total		**$6,807,450**

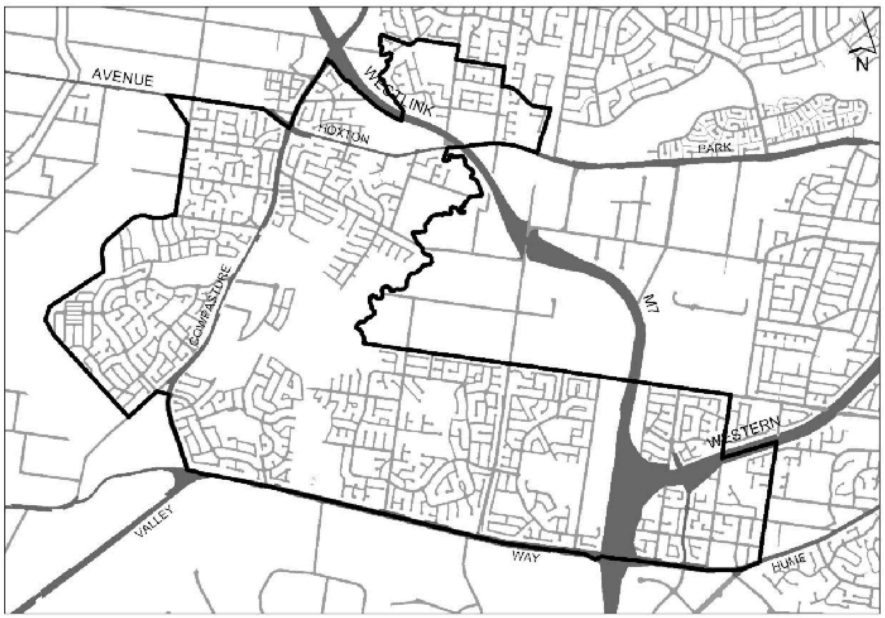


Figure 10.1 Catchment Area

10.3 Recreation Facilities

Nexus

The link between residential development, the recreational needs of the incoming population and the provision and subsequent embellishment of open space is based upon:

- Demographics of projected incoming population
- Needs of major target groups
- Market research
- Location/design constraints and requirements

As part of it's planning for the Hoxton Park Stage 2 Release Areas, Council commissioned an Open Space Strategy Report by Manidis Roberts Pty Ltd, in 1990. Frank Small & Associates also undertook market research into the Leisure Requirements for the Residents of Liverpool, a Leisure Needs Analysis for the Liverpool Community and a report on Sporting Organisations in 1994. The contents of these reports and their recommendations also form the basis for open space provision.

Heather Nesbitt Planning with CD Recreation Services and Parkland Environmental Planners completed a review in March 2003.

Needs of Major Target Groups

The major target age groups from a recreational viewpoint in new release areas are children 0-14 years and adults 20-34 years. The recreational activities and open space needs for these specific age groups mainly comprise:

- Small parks within walking distance of all residences with play equipment
- Formal playing fields

- Areas for informal sporting facilities
- Corridors linking open space features
- Large natural and parkland areas

More specific desired recreational activities for these groups are.

0 - 14 years	20 - 34 years
Cricket/football	Cricket/football
Bicycle paths	Tennis
Walking for pleasure	Walking for pleasure
Parks/playgrounds	Picnic/barbeques
Picnic/barbeques	Jogging
Swimming	Swimming
Visiting friends	Squash
Going to movies	Visiting friends
Going to beach	Going to clubs
	Going to movies
	Dancing / disco

The need for open space and its embellishment also exists for age groups other than those discussed above to provide a total community environment. Local parklands, walking, bicycle paths, tennis courts and hard court areas will provide such recreational opportunities.

Location and Design

The market research stresses easy access to all facilities, which emphasises the need for good transport facilities and increased community awareness of recreational opportunities. The final location and design of facilities is however influenced by a number of factors including population thresholds, existing site conditions, transport networks, easements, and open space policy objectives. The distribution and use of Open Space is based on the hierarchy of open space as outlined in the *Open Space Strategy Report (1990).*

The following tables outline the proposed hierarchy of open space provision within the broader Hoxton Park Stage 2 Release Area and the Department of Planning recommended quality goals for open space.

Open Space Quality Goals

Goal	Rationale
Minimum open space size of 0.5ha for new release areas.	Increased maintenance cost and reduced useability for areas smaller than this. The pocket park concept has been shown to be largely a failure and many councils are attempting to dispose of many of these sites.
Each area of greater than 10ha be linked to at least one other area.	To encourage linkages between open spaces. Footpaths and street narrowing can be used in some circumstances.
Each household should be within 500m of open space of at least 0.5ha.	Equity of distribution and to reduce car dependence.
Diversity of settings is encouraged.	Diversity of settings will more likely cater for a greater range of recreation need. In new release areas this can be facilitated through flexible design modules.
Sports fields should primarily be playable.	Sports fields should be designed to ensure that playing surfaces are in use for the maximum period possible, particularly if designed within detention basins.
Terrain should provide an alternative to that prevailing in the area.	More appeal and interest will be generated with mounding, creek lines and ridge tops
Linear open space should have capacity for good pedestrian and bicycle movements and have houses 'facing' and side-on.	Increase useability and decreased vandalism.

Source: *NSW Dept of Planning - Outdoor Recreation & Open Space (1992)*

Background to Open Space Design and Location

A number of constraints have influenced where and how the above mentioned open space requirements have been allocated within the precinct areas.

- Flooding/Drainage - the concept of dual use of open space for drainage functions includes the retention of natural creek lines to control flooding and the use of dry basins as sporting fields.
- Electricity Easements - the presence of large easements, some of which have been, incorporated within larger open space areas.
- Existing Dwellings - where possible locating major open spaces & collector streets away from existing development so as not to impede initial development. Due to the rate of development a number of smaller pocket parks have already been provided prior to the review of this plan.
- Street Network - where major impact on access to recreational facilities occurs, open space provisions may be either under or over desired levels.
- Landform & Vegetation - where open space has been allocated to retain natural features or where natural barriers such as creeks occur, some areas may contain smaller open space areas in close proximity.

The final layout of open space areas has also been influenced by the following open space objectives.

- District facilities are centrally located adjacent to the District Retail Centre and are easily accessible by public and private transport.
- Provision of open space links radiating from the District Retail / Recreational Centre to the surrounding precincts, to the Special Uses Corridor in the west, and along Hinchinbrook, Cabramatta and Cowpasture Creeks.
- Retention of local features such as bushland, creek lines, natural high points and vistas.

The report identifies the following specific recreation facilities for the Hoxton Park, Carnes Hill and

Prestons areas:

- District park/bushland of which a minimum 10ha is to be provided along Hinchinbrook & Cabramatta Creeks and 10ha to be provided along Hinchinbrook Ck within Precinct 3 (Middleton Grange).
- Cycleways providing links throughout
- Local Sports fields - total 20 playing fields with this number inclusive of the 4 quality fields allocated for the district sporting area.
- Precinct Park - total 8.
- Children's playgrounds - total of 10ha.

The required open space provision is 114.73ha of which 102.5ha local open space plus a proportion of district open space of 12.23ha.

Scope of facilities

A review of the range of local recreation facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area. The changes arise in part due to the impact of the M7 on the proposed open space, street and drainage networks and the *Liverpool City Wide Recreation Strategy 2020* in 2003.

Apportionment

No apportionment is allowed for as there were no excess local recreation facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

10,540 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local recreation facilities)

The area from which contributions would be received is shown on Figure 10.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 3 – 5, 7 – 9, 11 – 14, 16 & 17 for the location of each item in Table 10.2.

Works and Land Acquisition Schedule

The range of Works for local community facilities is shown in Table 10.2.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by *Rider Hunt*.

Table 10.2 Works and Land Acquisition Schedule

No.	Items	Works Unit Cost	Land Unit Cost	Area	Works Cost	Land Cost
		$ per item	$ / sqm	ha	$	$
Major Parks						
1	Peter Miller Park (Cedar Road)		$175	5.6634		$9,910,950
	Children's Play Area			0.04	$57,426	
	Sportsfield	$806,431		3.0000	$2,419,293	
	Consolidated Passive Area	$312,830		2.4299	$760,147	
	Existing public street			0.1935		
2	Ash Road Sports Ground		$50	10.2713		$5,135,650
	Children's Play Area				$57,426	
	Amenities building				$1,100,000	
3	Macleod Park & Harvard Park (Braidwood Dr)		$175	13.482		$23,593,500
	Children's Play Area			0.04	$57,426	
	Sportsfield	$806,431		7.842	$6,324,032	
	Consolidated Passive Area	$312,830		5.6	$1,751,851	
4	Schoeffel Park (Basin 11) (Strzlecki Dr)			8.584		(Dist Drainage)
	Children's Play Area			0.04	$57,426	
	Sportsfield	$806,431		1.81	$1,459,640	
	Consolidated Passive Area	$312,830		6.734	$2,106,600	
5	Edmund Barton Park					
6	Basin 10			13.27		(Dist Drainage)
	Children's Play Area			0.04	$57,426	
	Sportsfield	$2,426,751			$4,853,503	
7	Brownes Farm Reserve (First Ave)		$50	9.447		$4,723,500
	Children's Play Area			0.04	$57,426	
	Sportsfield	$806,431		3.75	$3,024,116	
	Consolidated Passive Area	$312,830		2.1	$656,944	
	Bushland / Natural Areas	$175,065		3.017	$528,170	
	Community Facilities			0.54		
8	Cabramatta Creek Corridor		$17	0.157		$27,268
			$50	7.647		$3,823,500
	Bushland / Natural Areas	$175,065			$1,338,719	
9	Hinchinbrook Creek Corridor		$17	2.225		$386,447
	Bushland / Natural Areas	$175,065			$389,519	
10	Bears Creek Corridor		$17	1.5		$260,526
			$25	0.7		$175,000
			$50	1.422		$711,000
	Bushland / Natural Areas	$175,065			$248,942	
11	Bushland (Adjacent Maxwell's Creek)		$50	2.144		$1,072,000
	Bushland / Natural Areas	$175,065			$375,339	
12	Bert Burrows Park (Warialda Way)		$175	0.6411		$1,121,925
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$200,556	
13	Wendy Paramor Park (12th and Mannow Ave)		$175	0.8		$1,400,000
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$250,264	
14	Link (Cowpasture / Muller / 2nd Ave)		$175	3.767		$6,592,250
	Linear Passive area	$381,239			$1,436,129	

No.	Items	Works Unit Cost	Land Unit Cost	Area	Works Cost	Land Cost
		$ per item	$ / sqm	ha	$	$
15	Link (Basin 10 - Special Uses Corridor)		$17	1.32		$229,263
	Linear Passive area	$381,239			$503,236	
16	Knoll (west Cowpasture Road)		$175	1.4469		$2,532,075
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$452,634	
17	Precinct Park (adjacent Horningsea Park)		$175	0.416		$728,000
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$130,137	
18	Precinct Park (within District Retail Centre)		$175	0.2		$350,000
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
19	Precinct Park (Bumbera Road)		$175	0.7859		$1,375,325
	Bushland / Natural Areas	$175,065			$137,583	
20	Link (across Kookaburra Road)		$175	1.724		$3,017,000
	Linear Passive area	$381,239			$657,257	
21	Rettalack Park (adj. Prestons Shops)		$175	0.487		$852,250
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830		0.307	$96,039	
	Community Facilities			0.18		
22	Dalmeny Reserve (east of Bernera Road)		$175	1		$1,750,000
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$312,830	
23	Precinct Park (Maple Road)		$175	0.49		$857,500
	Children's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$153,287	
26	Link (Maxwells Creek - Kurrajong Rd)		$175	0.2		$350,000
	Linear Passive area	$381,239			$76,248	
27	Land at junction of Hinchinbrook / Cabramatta Creeks		$50	1.677		$838,500
Sub Totals				**90.7676**	**$32,609,542**	**$71,813,430**
Playground Parks						
PP1	Pavo Park		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP2	Aston Reserve		$175	0.2		$350,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP3	Joe D'quino Park (Pacific Palms Cct)		$175	0.2		$350,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP4	Alex Grimson Reserve		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP5	A E Reay Park		$175	0.2		$350,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP6	Off Pacific Palms Circuit		$175	0.2		$350,000

No.	Items	Works Unit Cost	Land Unit Cost	Area	Works Cost	Land Cost
		$ per item	$ / sqm	ha	$	$
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP7	Off Coffs Harbour Ave		$50	0.4		$200,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$125,132	
PP8	Walter Baldery Park		$175	0.6		$1,050,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$107,570	
PP9	Glendevie Park		$175	0.2		$350,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP10	Gatto Place		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP11	Ayshford Reserve		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP12	Riddell Park		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP13	Dryander Ave		$175	0.2		$350,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP14	Prout St/Cobble Circuit		$175	0.2		$350,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP15	Wingate Ave		$175	0.2		$350,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP16	Solander Ave		$175	0.4		$700,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$71,714	
PP17	Watling Ave		$175	0.4		$700,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$71,714	
PP19	Yalwal Court		$150	0.2		$300,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$62,566	
PP20	Trash & Treasure		$150	0.8		$1,200,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$250,264	
PP21	Abbeville Cl		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP22	Taralga Street		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP23	Fortunato Park		$175	0.2		$350,000

No.	Items	Works Unit Cost	Land Unit Cost	Area	Works Cost	Land Cost
		$ per item	$ / sqm	ha	$	$
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP24	Linkage between Dalmeny Drive & Ash Road		$175	0.5		$875,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$156,415	
PP25	Sid Neville Reserve		$175	0.4		$700,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$71,714	
PP26	Henry Kitchen Park (Barcelona Dr)		$175	0.6		$1,050,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$107,570	
PP27	Pavisi Park (Corner Calabria & Venezia Streets)		$175	0.4		$700,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$71,714	
PP29	Morris Park at Thirroul Circuit		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
PP30	Fintray Park		$175	0.4		$700,000
	Children 's Play Area				$57,426	
	Consolidated Passive Area	$312,830			$125,132	
PP31	East of Dalmeny Drive		$175	0.4		$700,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$71,714	
PP32	Varley Park at Corfield Rd		$175	0.2		$350,000
	Children 's Play Area				$36,744	
	Consolidated Passive Area	$179,284			$35,857	
Sub Totals				9.1	**$3,523,489**	**$15,175,000**
Cycleways						
Cycleways through open space linkages and along creeks					**$2,439,877**	
Sub Total					**$38,572,908**	
Project Management 10%					$3,857,291	
Contingency 10%					$3,857,291	
Totals				99.9	**$46,287,490**	**$86,988,430**

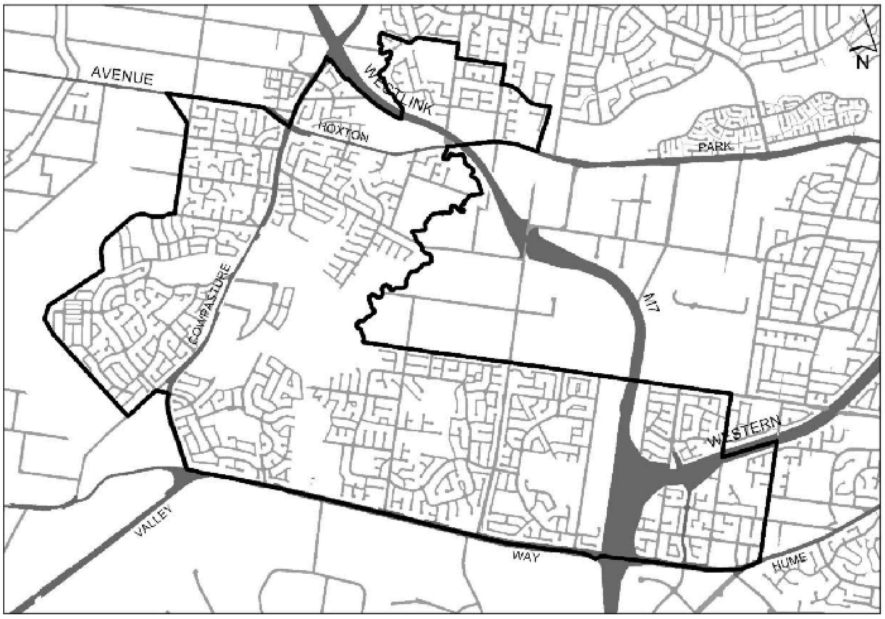


Figure 10.2 Catchment Area

10.4 Transport Facilities

Nexus

Collector Streets

In the Hoxton Park, Carnes Hill and Prestons Residential Release Areas, the Local Access Street was adopted as the benchmark to assess developer contributions. Council has adopted the philosophy that within each neighbourhood, all streets of higher standard than collector streets are necessary to provide access for everyone in that neighbourhood. Therefore there is a contribution toward the difference in cost between a local access street and each street of higher standard. This applies to the additional width, pavement depth and land value (in excess of 18m width).

Within the Council's road hierarchy are the following:

- Access places and cul-de-sac: cater for up to 300 vehicles per day (vpd) and not more than 100m long
- Local access streets: cater for up to 1,000 vpd with provision for up to 2000vpd with wider pavements
- Collector streets: cater for up to 3,000vpd
- Trunk collector streets: cater for up to 6,000 vpd and usually provide a link between the internal collector road system of a residential precinct and the major road system
- Sub arterial roads: cater for up to 15,000 vpd and are the principal traffic carriers within an urban neighbourhood

Streets adjacent to public schools, open space and drainage corridors

Streets which front public facilities such as public schools, open space and drainage corridors are not directly the responsibility of any one developer and are, therefore, levied for under this Plan. For any street which a developer has one frontage to and the other side of the road is fronted by a public facility such as public schools, open space and drainage corridors, the developer is required to provide the following:

- 9 m street reserve or half street reserve, which ever is greater
- The cost of constructing half of a street with a minimum 5.5m street pavement width, or half the designated street width, whichever is greater

The remainder of the full width street dedication and construction is funded by contributions.

Upgrading existing public roads

Where an existing road is identified within the contributions plan as requiring an upgrade, Council has made an assessment of the remaining life of the pavement and deducted this from the cost of construction of a new pavement. Where the road is identified as access denied on the relevant chapter of *Liverpool DCP 2008*, the work is costed for the construction of full width pavement. If future residential lots have access directly to the road, the contributions plan funds central pavement only.

Roundabouts

Roundabouts serve the whole street system within each neighbourhood and consequently serve each property. The cost is determined by the difference in cost between an intersection with a roundabout and a normal intersection.

Other Traffic Facilities

The other facilities include:

- Trunk Collector Streets
- Local Streets fronting open space, drainage, schools etc and within heritage precinct
- Roundabouts
- School Bus Bays
- Structural upgrading and overlay of pavements on existing streets
- Bus shelters
- Wombat crossings
- Closure of some existing streets
- Miscellaneous works

Scope of facilities

A review of the range of local transport facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area. The changes arise in part due to the impact of the M7, the addition of land north of Hoxton Park Rd, changes to the land use adjacent to the Carnes Hill Centre on the proposed open space, street and drainage networks.

Apportionment

No apportionment is allowed for as there were no existing local transport facilities in existence at the commencement of the development of the area.

Composition of the works and land component

The composition of the works and land component for streets fronting a public facility identified in the following tables is as follows:

Table 10.3 Composition of works and land component

Item	Land component	Works component
Collector street frontage to school	(18 - 9) = 9.0m	(7.5 - 5.5) = 2.0m
Local Street frontage to school	(14.5 - 9) = 5.5m	(6.5 - 5.5) = 1.0m
Local street fronting open space or drainage res	(14.5 - 9) = 5.5m	(6.5 - 5.5) = 1.0m
Collector Street fronting Open Space or Drainage Res	(18 - 9) = 9.0m	(7.5 - 5.5) = 2.0m
Collector Street through Open Space or Drainage Res	18m	7.5m
Local Street fronting Cabramatta Creek / Drain	(10.5 - 9) = 1.5m	(6.5 - 5.5) = 1.0m

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

There are several local transport sub catchments within the Hoxton Park, Carnes Hill and Prestons Release Areas. These are shown on Figure 10.3.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by Council.

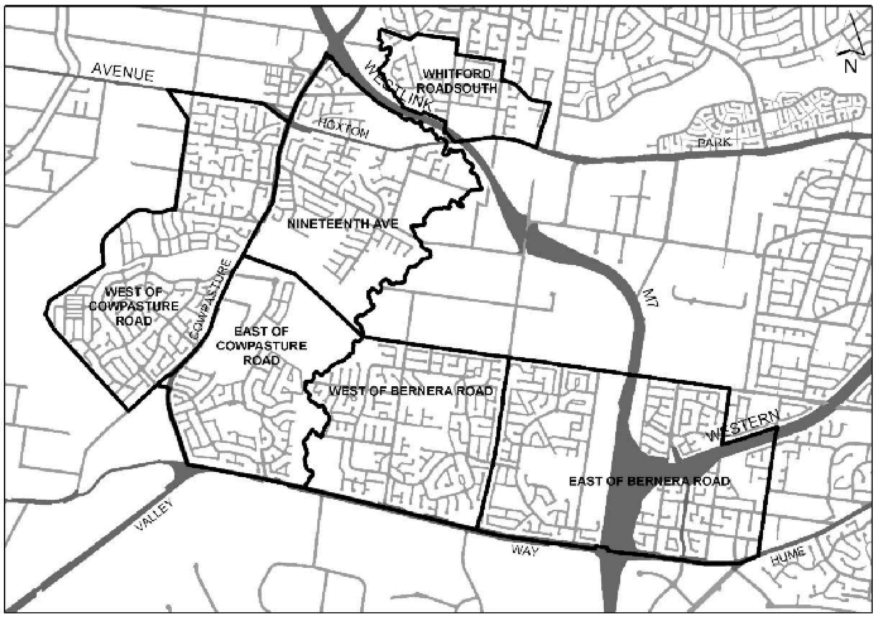


Figure 10.3 Catchment Area

East of Bernera Road Sub Catchment

Contributing Development

2,250 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 13, 14, 16 & 17 for the location of each item in Table 10.4.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.4.

Table 10.4 Works and Land Acquisition Schedule

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
	Minor Roundabout							
1.1	Pine Rd & Maple Rd							$44,118
1.2	Pine Rd & Cedar Rd							$44,118
1.4	Myall, Box, & un-named Roads							$44,118
1.5	Bottlebrush Av & Maple Rd							$44,118
1.6	Wattle Rd & Cedar Rd							$44,118
1.8	San Marino Dr/Sicillian Av/Venega Av							$44,118
1.9	Dalmeny Dr & Bombaderry Rd							$44,118
1.10	San Marino Dr & Dalmeny Dr							$44,118
1.11	Ash Rd & Dalmeny Dr 120m north of Camden Valley Way							$44,118
1.12	Cedar Rd/Acacia Av/Barcelona Rd							$44,118
1.15	Dalmeny Dr & Venezia St							$44,118
	Collector Street Frontage to School site							
2	Dalmeny Dr	225		9	$175	$372	$354,375	$83,620
	Local Street Frontage to School site							
3	Umbria St	30		5.5	$175	$292	$28,875	$8,751
4	**School Bus Bay**	1				$51,471		$51,471
	Local Street Fronting Open Space or Drainage Res							
5.1	Maple Rd	145		Pre-existing street				$150,000
5.2	Paperbark Cct	70		5.5	$175	$266	$67,375	$18,632
5.3	Geraldton St	60		5.5	$175	$266	$57,750	$15,971
5.4	Strathyre Dr	100		5.5	$175	$266	$96,250	$26,618
5.7	Toscana St	220		5.5	$175	$266	$211,750	$58,559
5.8	Flametree St	105		5.5	$175	$266	$101,063	$27,949
5.9	Off Ash Rd	150		5.5	$150	$266	$123,750	$39,926
5.10	Stansmore Av	80		5.5	$175	$266	$77,000	$21,294
5.11	William Mahoney St	80		5.5	$175	$266	$77,000	$21,294
5.12	Rowan Pl	80		5.5	$175	$266	$77,000	$21,294
5.13	Ash Rd	150		Pre-existing street		$266		$39,926
5.14	Dee Cl	25		5.5	$175	$266	$24,063	$6,654
5.15	Witchhazel Pl	20		5.5	$175	$266	$19,250	$5,324

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
5.16	extension of Barcelona Dr	80		5.5	$175	$266	$77,000	$21,294
	Local Street through Open Space or Drainage Res							
6	Stansmore Av	60						
	Collector Street fronting Open Space or Drainage Res							
7.1	Dalmeny Dr at Bomaderry Dr	110		9	$175	$390	$173,250	$42,868
7.2	Dalmeny Dr at Stansmore Av	80		9	$175	$390	$126,000	$31,176
7.3	Ash Rd	450		Pre-existing street		$390		$175,368
7.4	Ash Rd	95		Pre-existing street		$390		$37,022
7.5	Ash Rd	90		Pre-existing street		$390		$35,074
7.6	Barcelona Dr	100		9	$175	$390	$157,500	$38,971
	Trunk Collector Street							
8.1	Bomaderry Dr	180		20	$175	$1,637	$630,000	$294,596
8.2	San Marino Dr	255		20	$175	$1,637	$892,500	$417,345
8.3	Ash Rd	120		Pre-existing street		$1,637		$196,398
8.4	Barcelona Dr	190		20	$175	$1,637	$665,000	$310,963
	Collector Street through Open Space or Drainage Res							
9.1	Dalmeny Dr at Bomaderry Dr	30		18	$175	$1,028	$94,500	$30,840
9.2	Dalmeny Dr at Stansmore Av	25		18	$158	$1,028	$71,100	$25,700
9.3	Ash Rd	35		Pre-existing street		$1,028		$35,980
	Culvert on Ash Rd	25		14.5		$1,027		$372,137
9.4	Ash Rd	165		Pre-existing street		$1,028		$169,618
	Culvert on Ash Rd	20		14.5		$1,027		$297,710
	Collector Street upgrade							
10	Pine Rd (south side)	200		Pre-existing street				$250,000
11	**Wombat Crossings**	2				$11,765		$23,529
12	**Bus Shelters**	12				$8,824		$105,882
13	**Road Closures**							
	Beech	1				$14,706		$14,706
	Cedar	1				$14,706		$14,706
Sub Total								**$4,024,458**
15% Contingency for Works								$603,669
Total							**$4,202,350**	**$4,628,127**

West of Bernera Road Sub Catchment

Contributing Development

2,140 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 12 & 13 for the location of each item in Table 10.5.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.5.

Table 10.5 Works and Land Acquisition Schedule

No.	Items	Length / No of items	Pavement width	Land width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
1	**Minor Roundabout**							
1.1	Wroxham St/Minnamurra Cct/Braidwood Dr.							$44,118
1.2	Minnamurra Cct/Kydra Cl/Yerona Cl							$44,118
1.4	Minnamurra Cct and Braidwood Dr.							$44,118
1.5	Braidwood Dr and Corfield Rd							$44,118
1.6	Braidwood Dr and Bumbera St							$44,118
1.7	Braidwood Dr and Bugong St							$44,118
1.8	Bugong St / Yalwal Ct/ Berry Rd							$44,118
1.9	Bugong St / Milton Ct / Taralga St							$44,118
1.10	Bugong St and Kookaburra Rd							$44,118
1.11	Braidwood Dr/Abbeville Cl/Batehaven Cl							$44,118
1.12	Braidwood Dr and Mowbray St							$44,118
1.13	Braidwood Dr/ Michelago Cct/Ulladulla St							$44,118
1.3	Michelago Cct/Mollymook St/ Culburra St							$44,118
	Trunk Collector Street							
4.1	Mowbray St	200	10	20	$175	$1,637	$700,000	$327,329
4.2	Wroxham St	200	10	20	$175	$1,637	$700,000	$327,329
4.3	Corifield Rd	220		Pre-existing street		$1,637		$360,062
5	**Local Street fronting Open Space or Drainage Res**							
5.1	Kiora / Yalwal Ct	40	1	5.5	$175	$266	$38,500	$10,647
5.2	Galba Cl / Bombo Cl	40	1	5.5	$175	$266	$38,500	$10,647
5.3	Quaama Cl	80	1	5.5	$175	$266	$77,000	$21,294
5.4	Richlands Pl	25	1	5.5	$175	$266	$24,063	$6,654
5.5	Thirroul Ct	80	1	5.5	$175	$266	$77,000	$21,294
5.6	Fortunato St	210	1	5.5	$175	$266	$202,125	$55,897
5.7	South of Bumbera St	180	1	5.5	$175	$266	$173,250	$47,912
5.8	Bundanoon Rd	50	1	5.5	$175	$266	$48,125	$13,309
5.9	Gerroa Cl / future st	50	1	5.5	$175	$266	$48,125	$13,309
5.10	Dapto / Greenwell	50	1	5.5	$175	$266	$48,125	$13,309
5.11	Ulladulla Dr	140	1	5.5	$175	$266	$134,750	$37,265
5.12	Tulich Av	25	1	5.5	$175	$266	$24,063	$6,654
5.13	Abbeville Cl	25	1	Pre-existing street		$266		$6,654

No.	Items	Length / No of items	Pavement width	Land width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
5.14	Bumbera St	180	1	Pre-existing street		$266		$47,912
5.15	Minnamurra Ct	35	1	5.5	$175	$266	$33,688	$9,316
6	**Collector Street fronting Open Space or Drainage Res**							
6.1	Braidwood Dr at Minerva	180	2	9	$175	$372	$283,500	$66,896
6.2	Braidwood Dr at Ulladulla	320	2	9	$175	$372	$504,000	$118,927
6.3	Braidwood Dr at Bumbera St	40	2	9	$175	$372	$63,000	$14,866
6.4	Braidwood Dr at Minnamurra	160	2	9	$175	$372	$252,000	$59,463
6.5	Braidwood Dr at Minnamurra	80	2	9	$175	$372	$126,000	$29,732
7	**Collector Street through Open Space or Drainage Res**							
	Braidwood Dr	50	7.5	18	$175	$1,028	$157,500	$51,399
8	**Local Street fronting Cabramatta Creek / Drain**							
8.1	Marulan Wy	205	1	1.5	$175	$266	$53,813	$54,566
8.2	Nerriga Ct	80	1	1.5	$175	$266	$21,000	$21,294
8.3	Taralga St	30	1	1.5	$175	$266	$7,875	$7,985
8.4	Bateman Cl	190	1	1.5	$175	$266	$49,875	$50,574
8.5	Wagga Wagga St	340	1	1.5	$175	$266	$89,250	$90,500
8.6	Bugong St	75	1	1.5	$175	$266	$19,688	$19,963
10	**Overlay existing Central Pavement (sqm)**							
	Bumberra Road open space frontage							
	560 x 6.3 (exist width)	1,008				$70		$70,683
11	**Wombat Crossings**	1				$11,765		$11,765
12	**Bus Shelters**	10				$8,824		$88,235
Sub Total								**$2,667,172**
15% Contingency for Works								$400,076
Total							**$3,994,813**	**$3,067,248**

East of Cowpasture Road Sub Catchment

Contributing Development

2,720 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 7, 8, 11 & 12 for the location of each item in Table 10.6.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.6.

Table 10.6 Works and Land Acquisition Schedule

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
	Minor Roundabout							
1.1	Joshua Moore Dr /Horningsea Park Dr /Brindabella Dr							$44,118
1.2	Horningsea Park Dr /Bunya Way / Gungarlin Dr							$44,118
1.3	Horningsea Park Dr and Strzlecki Dr							$44,118
1.4	Horningsea Park Dr & Joshua Moore Dr (east)							$44,118
1.5	Joshua Moore Dr / Bimberi St / Wellumba St							$44,118
1.6	Joshua Moore Dr /Kearns Place /Sarah Hollands Dr							$44,118
1.7	Sarah Hollands Dr & Packard Pl							$44,118
1.8	Brindella Dr & Carruthers Dr							$44,118
1.9	Street along west side of Cabramatta Ck							$44,118
1.10	Street extension of Wingham Rd south of Kurrajong Rd							$44,118
2	**Collector Street Frontage to School site**							
	Horningsea Park Dr	350	2	9	$175	$390	$551,250	$136,397
3	**Local Street Frontage to School site**							
	Toolong Pl	105	1	5.5	$175	$266	$101,063	$27,949
4	**School Bus Bay**					$51,471		$51,471
	Trunk Collector Street							
5.1	Horningsea Park Dr	75	10	20	$175	$1,637	$262,500	$122,748
5.2	Joshua Moore Dr	180	10	20	$175	$1,637	$630,000	$294,596
5.3	Sarah Hollands Dr	170	10	20	$175	$1,637	$595,000	$278,230
5.4	south off Kurrajong Rd	100	10	20	$175	$1,637	$350,000	$163,665
	Local Street fronting open space or drainage Res							
6.1	Wheat Pl	200	1	5.5	$175	$266	$192,500	$53,235
6.2	North side of creek and Cabramatta Ck	950	1	5.5	$175	$266	$914,375	$252,868
	Collector Street Fronting Open Space or Drainage Res							
7.1	Sarah Hollands Dr	750	2	9.0	$175	$372	$1,181,250	$278,735
7.2	Strezlecki Dr	380	2	9.0	$175	$372	$598,500	$141,226
7.3	Strezlecki Dr	170	2	9.0	$175	$372	$267,750	$63,180
	Collector Street Through Open Space or Drainage Res							

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
8.1	Extension of Bumbera St	110						
8.2	Strezlecki Dr	30	7.5	18	$158	$1,028	$85,320	$30,840
	Culverts	25		14.5		$1,027		$372,137
14	**Wombat Crossings**	1				$11,765		$11,765
15	**Bus Shelters**	10				$8,824		$88,235
Sub Total								**$2,808,452**
15% Contingency for Works								$421,268
Total							**$5,729,508**	**$3,229,720**

West of Cowpasture Road Sub Catchment

Contributing Development

2,370 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 3, 4, 7, 8 & 11 for the location of each item in Table 10.7.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.7.

Table 10.7 Works and Land Acquisition Schedule

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
1	**Minor Roundabout**							
1.1	Mannow Ave and Mathinna Cct (west)							$44,118
1.2	Twelfth Ave / Hoskins Ave / Gatto Pl							$44,118
1.3	Carmichael Dr / Latrobe Rd							$44,118
1.4	Greenway Dr and Wyattville Dr. (north)							$44,118
1.5	Greenway Dr and Carmichael Dr							$44,118
1.6	Greenway Dr /Wingate Ave /Mitchell Dr.							$44,118
1.7	Greenway Dr / Hume Dr /Mitchell Dr							$44,118
1.8	Greenway Dr / Addison Wy / Wyattville Dr							$44,118
1.9	Muller Ave/Scottsdale Cct/Beaconsfield Cct							$44,118
1.10	Muller Ave/Scottsdale Cct/Ringarooma Cct							$44,118
1.11	Mannow Ave and Carmichael Dr							$44,118
1.13	Carmichael Dr and Riddell St							$44,118
1.14	Second Ave and Dunally St.							$44,118
1.15	Wyattville Dr and Chapman St							$44,118
1.16	Poole St and Chapman St							$44,118
2	**Collector Street frontage to School**							
	Wyattville Dr	200	2	9	$175	$372	$315,000	$74,329
3	**School Bus Bay**	1				$51,471		$51,471

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
4	**Trunk Collector Street**							
4.1	Greenway Dr South	160	10	20.0	$175	$1,637	$560,000	$261,863
4.2	Chapman St	135	10	20.0	$175	$1,637	$472,500	$220,947
4.3	Greenway Dr North	360	10	20.0	$175	$1,637	$1,260,000	$589,193
4.4	Latrobe Rd	80	10	20.0	$175	$1,637	$280,000	$130,932
4.5	Second Av	300	10	Pre-existing street		$1,637		$490,994
4.6	Mannow Av	120	10	Pre-existing street		$1,637		$196,398
5	**Local Street fronting open space or drainage Res**							
5.1	Lennox Pl	20	1	5.5	$175	$266	$19,250	$5,324
5.2	Poole St	180	1	5.5	$175	$266	$173,250	$47,912
5.3	Woodside Av	180	1	5.5	$175	$266	$173,250	$47,912
5.4	Cranbrook Cl	120	1	5.5	$175	$266	$115,500	$31,941
5.5	Riddel & Gladstone	110	1	5.5	$175	$266	$105,875	$29,279
5.6	St Helens Cl	115	1	5.5	$175	$266	$110,688	$30,610
5.7	Bridport Cl	20	1	5.5	$175	$266	$19,250	$5,324
5.8	Winnaleah St	80	1	5.5	$175	$266	$77,000	$21,294
5.9	Tunnack St	120	1	5.5	$175	$266	$115,500	$31,941
5.10	Glendevie St	95	1	5.5	$175	$266	$91,438	$25,287
5.11	Ringarooma Ct	75	1	5.5	$175	$266	$72,188	$19,963
5.12	Meander Cl	150	1	5.5	$175	$266	$144,375	$39,926
5.13	Mathina Ct	160	1	5.5	$175	$266	$154,000	$42,588
5.14	Watling Av / Hallen Pl	50	1	5.5	$175	$266	$48,125	$13,309
5.15	Erith Cl / Gretna Cl	50	1	5.5	$175	$266	$48,125	$13,309
5.16	Bicheno Cl	105	1	5.5	$175	$266	$101,063	$27,949
5.17	Swansea Pl	240	1	5.5	$175	$266	$231,000	$63,882
5.18	Bellerive Cl	25	1	5.5	$175	$266	$24,063	$6,654
5.19	Larmar Pl	80	1	5.5	$175	$266	$77,000	$21,294
5.20	Scottsdale / Cascades	200	1	5.5	$175	$266	$192,500	$53,235
5.21	Second Av	220	1	5.5	$175	$266	$211,750	$58,559
5.22	Gerraro Cr	75	1	5.5	$175	$266	$72,188	$19,963
5.23	Forcett Cl	45	1	5.5	$175	$266	$43,313	$11,978
6	**Collector Street Fronting Open Space or Drainage Res**							
6.1	Carmichael Dr	140	2	9.0	$175	$372	$220,500	$52,030
6.2	Greenway Dr	140	2	9.0	$175	$372	$220,500	$52,030
6.3	Carmichael Dr	60	2	9.0	$175	$372	$94,500	$22,299
6.4	Carmichael Dr	60	2	9.0	$175	$372	$94,500	$22,299
6.5		75	2	9.0	$175	$372	$118,125	$27,873
6.6		60	2	9.0	$175	$372	$94,500	$22,299
6.7		30	2	9.0	$175	$372	$47,250	$11,149
6.8		95	2	Pre-existing street		$372		$35,306
6.9		170	2	Pre-existing street		$372		$63,180
6.10		135	2	Pre-existing street		$372		$50,172

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
7	**Local Street Through Open Space or Drainage Res**							
	Haraden Dr	40	6.5	14.5	$175	$767		$30,685
	Meander Cl	50	6.5	14.5	$175	$767		$38,357
8	**Collector Street Through Open Space or Drainage Res**							
8.1	Carmichael Dr North	20	7.5	Pre-existing street		$1,028		$170,817
	Culverts	20		14.5		$1,027		$297,710
8.2	Second Av	20	7.5	Pre-existing street		$1,028		$170,817
	Culverts	20		14.5		$1,027		$297,710
8.3	Carmichael Dr South	25	7.5	18	$50	$1,028	$22,500	$170,817
	Culverts	25		14.5		$1,027		$372,137
9	**Wombat Crossings**	1				$11,765		$11,765
10	**Bus Shelters**	10				$8,824		$88,235
11	**Road Closures**							
	Second Ave	1				$14,024		$14,024
Sub Total								**$5,369,038**
15% Contingency for Civil Works								$805,356
Total							**$6,220,563**	**$6,174,394**

Nineteenth Avenue Sub Catchment

Contributing Development

1,890 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 4, 5 & 8 for the location of each item in Table 10.8.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.8.

Table 10.8 Works and Land Acquisition Schedule

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
1	**Minor Roundabout**							
1.1	Government Rd & Collarenebri Rd							$44,118
1.2	Glen Innes Rd / Pacific Palms Cct / Byron Bay Cl.							$44,118
1.3	Nineteenth Ave (east) & Pacific Palms Cct							$44,118
1.4	Nineteenth Ave (west) & Pacific Palms Cct							$44,118
1.5	Tibooburra Rd & Pacific Palms Cct.							$44,118
1.6	First Ave & Twentieth Ave							$44,118
1.7	Pacific Palms Cct & Wingham St							$44,118
1.9	Pacific Palms Cct. 150 m east of School							$44,118

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
1.10	Wingham Rd, south of Pacific Palms Crt							$44,118
2	**Collector Street frontage to School**							
		120	2	9	$175	$372	$189,000	$44,598
3	**Local street frontage to School**							
		210	1	5.5	$175	$292	$202,125	$61,259
4	**School Bus Bay**	1				$51,303		$51,303
5	**Trunk Collector Street**							
5.1		100	10	20.0	$175	1,637	$350,000	$163,665
5.2		100	10	20.0	$175	1,637	$350,000	$163,665
7	**Local Street fronting Open Space or Drainage Res**							
7.1	Belata Pl	100	1	5.5	$175	$266	$96,250	$26,618
7.2	Walgett Cl	180	1	5.5	$158	$266	$156,420	$47,912
7.3	Warialda Wy	460	1	5.5	$158	$266	$399,740	$122,441
7.4	Armidale Av	40	1	5.5	$175	$266	$38,500	$10,647
7.5	Merriwa Av	25	1	5.5	$175	$266	$24,063	$6,654
7.6	Wilcannia Wy	90	1	5.5	$175	$266	$86,625	$23,956
7.7	Baradine Wy	140	1	5.5	$175	$266	$134,750	$37,265
7.8	street along creek north of Pacific Palms Cct	185	1	5.5	$175	$266	$178,063	$49,243
7.9	Nymboida / Woolgoolga Av	25	1	5.5	$175	$266	$24,063	$6,654
7.10	Baradine Wy / Merriwa Av	100	1	5.5	$175	$266	$96,250	$26,618
7.11	Wollombi Wy	215	1	5.5	$175	$266	$206,938	$57,228
7.12	Bay Cl	20	1	5.5	$175	$266	$19,250	$5,324
7.13	Dorrigo Av	25	1	5.5	$175	$266	$24,063	$6,654
7.14	Coonabarabran Cr	80	1	5.5	$175	$266	$77,000	$21,294
7.15	Coffs Harbour Av	220	1	5.5	$158	$266	$191,180	$58,559
7.16	Bellingen Wy	190	1	5.5	$175	$266	$182,875	$50,574
7.17	street north side of channel	220	1	5.5	$174	$266	$210,540	$58,559
7.18	Warialda Wy extension	190	1	1.5	$174	$266	$49,590	$50,574
7.19	adjacent to park off Inverell Av	130	1	5.5	$174	$266	$124,410	$34,603
8	**Collector Street fronting Open Space or Drainage Res**							
8.1	Pacific Palms Cct	60	2	9.0	$175	$372	$94,500	$22,299
8.2	Link from Kurrajong Rd to Pacific Palms Cct	200	2	9.0	$175	$372	$315,000	$74,329
8.3	Link fro Kurrajong Rd to Pacific Palms Cct	240	2	9.0	$175	$372	$378,000	$89,195
8.4	Pacific Palms Cct	40	2	9.0	$175	$372	$63,000	$14,866

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
9	**Collector Street through Open Space or Drainage Res**							
9.1	Pacific Palms Cct at creek	40		18		$1,028		$41,120
	Culvert	30		14.5		$1,027		$446,565
9.2	Pacific Palms Cct at creek	45		18	$175	$1,028	$141,750	$46,259
	Culvert	30		14.5		$1,027		$446,565
9.3	Pacific Palms Cct at Tibooburra Rd	40		18	$175	$1,028	$126,000	$41,120
9.4	Pacific Palms Cct at school	200		18	$175	$1,028	$630,000	$205,598
9.5	Link from Kurrajong Rd to Pacific Palms Cct	60		18	$175	$1,028		$61,679
9.6	Wingham Rd	60		18	$175	$1,028	$189,000	$61,679
10	**Local Street fronting Cabramatta Ck**							
		975	1	1.5	$158	$266	$231,075	$259,522
11	**Overlay existing Central Pavement (sqm)**							
	Nineteenth Av (open space frontage)							
	570m x 5.3m (exist width)	212				$52		$11,001
	First Avenue (open space frontage)							
	460m x 4.7m (exist width)	188				$52		$9,755
12	**Wombat Crossings**	1				$11,765		$11,765
13	**Bus Shelters**	8				$8,824		$70,588
14	**Road Closures**							
	Nineteenth Ave at Cowpasture Ck & restore					$140,244		$140,244
	Nineteenth Ave at Cowpasture Rd					$14,024		$14,024
15	**Culvert Upgrading in First Ave**							$200,000
16	**Culvert across channel south of Government Rd**							$250,000
Sub Total								**$4,101,094**
15% Contingency for Works								$615,164
Total							**$5,580,018**	**$4,716,258**

Whitford Road South Sub Catchment

Contributing Development

550 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 5 for the location of each item in Table 10.10.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.10.

Table 10.10 Works and Land Acquisition Schedule

No.	Items	Length / No of items	Street / Pavement width	Frontage width	Land Unit Cost	Works Unit Cost	Total Land	Total Works
		m	m	m	$ / sqm	$ / m	$	$
	Four Major Roundabouts (costs include $10,000 for landscaping)							
1.1	Topnot Ave/Wilson Rd/Rossini Dr							$44,118
1.2	Topnot Ave/Whitford Rd/Draco Rd							$44,118
1.3	Whitford Rd/Centaurus Dr/Frigate Bird Av							$44,118
1.4	Wilson Rd & Frigate Bird Av							$44,118
2	**Collector street fronting open space**							
		375		5.5	$175	$371	$360,938	$0
3	**90 degree parking bay**							
		200				$227		$45,400
4	**Minor road frontage to open space**							
		40	4.5		$175	$265	$31,500	$10,602
5	**Local street frontage to floodplain Hinchinbrook Creek**							
		350	2		$158	$265	$110,600	$92,771
7	**Minor Road frontage to High School**							
		150	9		$175	$458	$236,250	$68,700
8	**Sub-arterial with Median**							
		500	4		$175	$576	$350,000	$287,851
Sub Total								**$681,795**
15% Contingency for Works								$102,269
Total							**$1,089,288**	**$784,064**

10.5 Drainage

Drainage Easements

In order to achieve an economical local drainage system it was required to drain stormwater runoff through the lowest possible path. This path was in some cases required to traverse privately owned properties, which creates the need for drainage easements or drainage reserve.

A drainage easement is the area of land dedicated to construct and maintain an enclosed drainage conduit (usually a pipe or box culvert).

The drainage easement can serve a number of privately owned properties in which case it is described to be an "inter-allotment drainage easement". The width of an inter-allotment drainage easement will be indicated by the formula given below. This will be not less than 1.2m for residential lots or 2.5 m for industrial lots.

Easement Width = (1.5 x depth of trench) + Pipe Diameter (or Culvert Width)

The area of land required for inter-allotment drainage easement shall be dedicated for that purpose and shall belong to those properties benefiting from the drainage system within the easement. The owners the properties will be responsible for the maintenance and functioning of the drainage system.

Drainage Reserves

A drainage reserve is known as the area of land dedicated to open drainage. The drainage reserve can serve a number of privately owned properties, public land (such as road drainage, parks, etc.) or a combination of these. The area of land required for drainage reserve shall be dedicated to Council for that purpose and Council shall be responsible for the maintenance and functioning of the drainage system. The area of land dedicated to drainage reserve has been included in the contribution rate as

"cost of land acquisition" for each local drainage catchment.

Minimum size pipes

The Local Trunk Drainage is costed on the basis of drainage infrastructure requirements of the local catchment. Each of the local catchments is costed down to 900mm diameter pipe only. The individual developers are required to directly bear the cost of all pipelines up to 825mm diameter within or past their own land. The cost difference between any larger pipe size and open drainage is funded by Developer contributions.

Where it is anticipated that the developer will carry out the works as part of a development, the cost of supply, lay and backfilling of 825mm diameter is deducted from the cost of works to get the contribution. These works, when carried out by the developer, means that the developer will receive the credits of the difference between the total cost of works and the cost of 825mm diameter pipe (to be borne by the developer). Should the developer default from undertaking the works identified in this plan as the developer's responsibility, then the developer shall pay for the cost of 825mm diameter pipe for the reach of drainage works for which they are responsible to provide as part of their development.

Where the work is costed in full without deducting the cost of 825mm diameter, it is anticipated that Council will undertake these works from contributions. Where a developer undertakes these works as part of their development, they shall receive full credits for the work as shown in this plan.

Gross pollutant traps

Gross pollutant traps have also been costed as source control for litter at the end of each network.

Scope of facilities

A review of the range of local transport facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area. The changes arise in part due to the impact of the M7, the addition of land north of Hoxton Park Rd, changes to the land use adjacent to the Carnes Hill Centre on the proposed open space, street and drainage networks.

Apportionment

No apportionment is allowed for as there were no existing local transport facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

There are several local transport sub catchments within the Hoxton Park, Carnes Hill and Prestons Release Areas. These are shown on Figure 10.3.

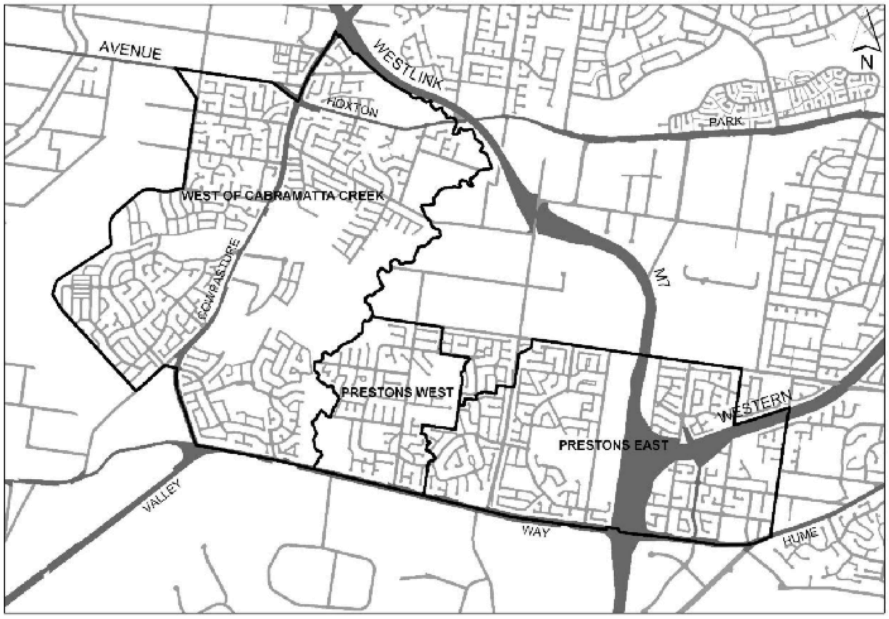


Figure 10.4

Prestons East Sub Catchment

Contributing Development

2,960 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.4.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 13, 14, 16 & 17 for the location of each item in Table 10.11. The location of drainage lines as shown on the maps are in the original "in principle" locations and may be constructed in a slightly different locations to match the eventual street layout.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.11.

Table 10.11 Works and Land Acquisition Schedule

Works

From	To	Pipe Dia	Length	Unit Cost	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
109.04	109.03	900	35	$582	$20,370	$12,250	$8,120
109.02	109.01	1,050	120	$722	$86,671	$42,000	$44,671
109.01	101.1	1,200	44	$826	$36,346	$15,400	$20,946
103.04	103.03	900	20	$582	$11,640	$7,000	$4,640
103.03	103.02	1,050	90	$722	$65,003	$31,500	$33,503

From	To	Pipe Dia	Length	Unit Cost	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
103.02	103.01	1,200	175	$826	$144,556	$61,250	$83,306
103.01	102.03	1,200	125	$826	$103,255	$43,750	$59,505
102.03	102.02	1,500	125	$1,248	$156,021	$43,750	$112,271
102.02	102.01	1,500	85	$1,248	$106,095	$29,750	$76,345
102.01	101.04	1,650	115	$1,445	$166,119	$40,250	$125,869
101.1	101.09		90		$31,500	$31,500	
116.01	73				$158,365		$97,168
95.05	95.04	900	110	$582	$64,021	$38,500	$25,521
95.04	95.03	1,050	90	$722	$65,003	$31,500	$33,503
95.03	95.02	1,350	220	$1,052	$231,402	$77,000	$154,402
77.01	73.06	900	20	$582	$11,640	$7,000	$4,640
75.02	75.01	1,050	100	$722	$72,226	$35,000	$37,226
75.01	73.04	1,200	60	$826	$49,562	$21,000	$28,562
73.07	73.06	900	70	$582	$40,741	$24,500	$16,241
73.06	73	1,500	50	$1,248	$62,409	$17,500	$44,909
Swale (Maxwells Creek east to South Western Freeway)							
73	73.05		170		$120,039	$59,500	$60,539
73.05	73.04		125		$138,342	$43,750	$94,592
73.04	73.03		140		$147,375	$49,000	$98,375
68.01	63.07	1,050	130	$722	$93,893	$45,500	$48,393
65.01	63.04	1,050	110	$722	$79,448	$38,500	$40,948
63.15	63.14	1,050	60	$722	$43,335		$43,335
63.14	63.13	1,200	20	$826	$16,521		$16,521
63.13	63.12	1,200	70	$826	$57,823		$57,823
63.12	63.11	1,350	60	$1,052	$63,110		$63,110
63.11	63.1	1,500	100	$1,248	$124,817		$124,817
63.1	63.09	1,500	100	$1,248	$124,817		$124,817
63.09	63.08	1,500	100	$1,248	$124,817		$124,817
63.08	63.07	1,650	120	$1,445	$173,341		$173,341
Swale (Maxwells Creek east to Beech Road)							
63.07	63.06				$16,187		$16,187
63.06	63.05				$53,958		$53,958
63.05	63.04				$64,750		$64,750
63.04	63.03				$70,146		$70,146

From	To	Pipe Dia	Length	Unit Cost	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
47.02	47.01	1,050	205	$722	$148,063	$71,750	$76,313
47.01	23.02	1,200	25	$826	$20,651	$8,750	$11,901
37.03	37.02	1,200	150	$826	$123,905	$52,500	$71,405
37.02	37.01	1,200	80	$826	$66,083	$28,000	$38,083
37.01	19.14	1,200	80	$826	$66,083	$28,000	$38,083
31.03	31.02	900	120	$582	$69,841	$42,000	$27,841
31.02	31.01	1,050	140	$722	$101,116	$49,000	$52,116
31.01	19.09	1,050	20	$722	$14,445	$7,000	$7,445
Swale (Maxwells Creek south west to Camden Valley Way)							
23.09	23.08		295		$241,573	$103,250	$138,323
23.08	23.07		50		$40,553	$17,500	$23,053
23.07	23.06		150		$110,135	$52,500	$57,635
23.06	23.05		80		$69,497	$28,000	$41,497
23.05	23.04		155		$139,549	$54,250	$85,299
23.04	23.03		135		$91,052	$47,250	$43,802
23.03	23.02		105		$75,943	$36,750	$39,193
23.02	23.01		55		$83,800	$19,250	$64,550
19.18	19.17	900	70	$582	$40,741	$24,500	$16,241
19.17	19.16	1,050	30	$722	$21,668	$10,500	$11,168
19.16	19.15	1,350	120	$1,052	$126,220	$42,000	$84,220
19.15	19.14	1,500	45	$1,248	$56,168	$15,750	$40,418
Swale (Maxwells Creek west to Bernera Road)							
19.14	19.13		60		$67,959	$21,000	$46,959
19.13	19.12		25		$40,055	$8,750	$31,305
19.12	19.11		65		$95,796	$22,750	$73,046
19.11	19.1		60		$109,700	$21,000	$88,700
19.1	19.09		95		$111,515	$33,250	$78,265
19.09	19.08		30		$104,417	$10,500	$93,917
19.08	19.07		100		$139,351	$35,000	$104,351
19.07	19.06		80		$111,482	$28,000	$83,482
19.06	19.05		125		$127,232	$43,750	$83,482
19.05	19.04		85		$81,926	$29,750	$52,176
19.04	19.03		190		$228,246	$66,500	$161,746
13.02	13.01	1,050	150	$722	$108,338	$52,500	$55,838
13.01	12.03	1,200	20	$826	$16,521	$7,000	$9,521
12.04	12.03	1,050	75	$722	$54,169	$26,250	$27,919
12.03	12.02	1,500	130	$1,248	$162,262	$45,500	$116,762
12.02	12.01	1,500	25	$1,557	$38,918	$8,750	$30,168
4.12	4.11	1,050	30	$722	$21,668	$10,500	$11,168

From	To	Pipe Dia	Length	Unit Cost	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
4.11	4.1	1,050	60	$722	$43,335	$21,000	$22,335
4.1	4.09	1,050	120	$722	$86,671	$42,000	$44,671
4.09	4.08	1,200	50	$826	$41,302	$17,500	$23,802
4.08	4.07	1,200	120	$826	$99,124	$42,000	$57,124
4.07	4.06	1,350	120	$1,052	$126,220	$42,000	$84,220
4.06	4.05	1,650	70	$1,445	$101,116	$24,500	$76,616
4.05	4.04	1,650	25	$1,445	$36,113	$8,750	$27,363
4.04	4.03	1,650	90	$1,445	$130,006	$31,500	$98,506
4.03	4.02	1,650	40	$1,445	$57,780	$14,000	$43,780
3.02	3.01	900	45	$582	$26,191	$15,750	$10,441
3.01	1.04	900	20	$582	$11,640	$7,000	$4,640
Sub Total					**$7,281,802**		**$4,898,705**
Add 15% Contingencies							$734,806
Total							**$5,633,511**

Item No	Items	Land	Land Unit Cost	Total Land Cost
		sqm	$ / sqm	$
PED 1	Swale (Maxwells Creek east to South Western Freeway)	13,715	$50	$685,750
PED 2	Swale (Maxwells Creek east to Beech Road)	4,150	$50	$207,500
PED 3	Dudley Creek (Maxwells Creek south west to Camden Valley Way)	13,350	$50	$667,500
PED 4	Swale (Maxwells Creek west to Bernera Road)	11,410	$50	$570,500
PED 5	Maxwells Creek	26,421	$50	$1,321,050
				$3,452,300

Prestons West Sub Catchment

Contributing Development

1,200 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.4.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 12, 13 & 16 for the location of each item in Table 10.12. The location of drainage lines as shown on the maps are in the original "in principle" locations and may be constructed in a slightly different locations to match the eventual street layout.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.12.

Table 10.12 Works and Land Acquisition Schedule

Works

From	To	Pipe Dia	Length	Rate	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
M5	M4	1,200	90	$826	$74,343	$31,500	$42,843
M4	M3	1,200	130	$826	$107,385	$45,500	$61,885
M3	M2	1,650	65	$1,445	$93,893	$22,750	$71,143
M2	M1	2X1200	150	$1,625	$243,814	$52,500	$191,314
M1.7	M1.6	900	90	$582	$52,381	$31,500	$20,881
M1.6	M1.5	1,050	90	$722	$65,003	$31,500	$33,503
M1.5	M1.4	1,050	70	$722	$50,558	$24,500	$26,058
M1.4	M1.3	1,050	70	$722	$50,558	$24,500	$26,058
M1.3	M1.2	1,200	80	$826	$66,083	$28,000	$38,083
M1.2	M1.1	1,200	70	$826	$57,823	$24,500	$33,323
M1.1	M1	1,200	80	$826	$66,083	$28,000	$38,083
M1	M0	2X1650	110	$2,791	$306,994	$38,500	$268,494
N6	N5	1,050	110	$722	$79,448	$38,500	$40,948
N5.11	N5	1,050	230	$722	$166,119	$80,500	$85,619
N5	N4	1,500	90	$1,248	$112,335	$31,500	$80,835
N4	N3	1,500	70	$1,248	$87,372	$24,500	$62,872
N3	N2	1,800	50	$1,697	$84,848	$17,500	$67,348
N2	N1	2X1500	80	$2,314	$185,122	$28,000	$157,122
N1	N0	2 x 1.8 x 0.9 BC	160	$3,035	$485,524		$485,524
Structures					$84,146		$84,146
Sub Total					**$2,519,832**		**$1,916,082**
Add 15% Contingencies							$287,412
Total							**$2,203,495**

Item No	Items	Land	Land Unit Cost	Total Land Cost
		sqm	$ / sqm	$
CCD	Cabramatta Creek (from Kurrajong Road to Camden Valley Way)	17,000	$50	$850,000
Total				**$850,000**

West of Cabramatta Creek Sub Catchment

Contributing Development

5,680 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.4.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 3 - 5, 7 - 9, 11 & 12 for the location of each item in Table 10.13.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.13. The location of drainage lines as shown on the maps are in the original "in principle" locations and may be constructed in a slightly different locations to match the eventual street layout.

Table 10.13 Works and Land Acquisition Schedule

Works

From	To	Pipe Dia	Length	Rate	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
CW 1.1	CW 1.0	900	60	$582	$34,921	$21,000	$13,921
CW 1.2	CW 1.1	900	60	$582	$34,921	$21,000	$13,921
Structures					$4,000		$4,000
CW 2.1	CW 2.0	1,050	100	$722	$72,226	$35,000	$37,226
Structures					$4,000		$4,000
CW 3.1	CW 3.0	1,050	70	$722	$50,558	$24,500	$26,058
CW 3.2	CW 3.1	900	70	$582	$40,741	$24,500	$16,241
Structures					$7,012		$7,012
Swale (Basin 10 to Open Space Corridor)							
Excavation					$277,683		$277,683
Surface Treatment					$385,671		$385,671
Secondary (Northern) Channel							
Excavation					$36,463		$36,463
Surface Treatment					$134,634		$134,634
F6	F5	1,050	100	$722	$72,226	$35,000	$37,226
F5	F4	1,050	110	$722	$79,448	$38,500	$40,948
F4	F3	1,050	40	$722	$28,890	$14,000	$14,890
F3.1	F3	900	130	$582	$75,662	$45,500	$30,162
F3	F2	1,650	30	$1,445	$43,335	$10,500	$32,835
F2	F1	1,650	60	$1,445	$86,671	$21,000	$65,671
F1	F0	1,800	190	$1,662	$315,759	$66,500	$249,259
Structures					$22,439		$22,439
K10	K9	1,200	140	$826	$115,645	$49,000	$66,645
K9	K8	1,350	50	$1,052	$52,591	$17,500	$35,091
K8	K7	1,650	100	$1,445	$144,451	$35,000	$109,451
K7	K6	1,800	60	$1,662	$99,713	$21,000	$78,713
K6	K5	1,800	80	$1,662	$132,951	$28,000	$104,951
K5	K4	1,800	50	$1,662	$83,095	$17,500	$65,595
K4	K3	2X1350	135	$2,034	$274,527	$47,250	$227,277
K3	K2	2X1350	60	$2,034	$122,012	$21,000	$101,012
K2	K1	2X1350	60	$2,034	$122,012	$21,000	$101,012
K1	K0	2X1350	130	$2,034	$264,360	$45,500	$218,860
Structures					$70,122		$70,122
Flood Channel WCD4							
Excavation					$267,866		$267,866
Surface Treatment					$478,232		$478,232
H4	H3	900	200	$582	$116,402	70000	$46,402
H3	H2	1,200	170	$826	$140,426	$59,500	$80,926
H2	H1	1,500	260	$1,248	$324,524	$91,000	$233,524
H1	H0		130	Swale	$133,933		$133,933

From	To	Pipe Dia	Length	Rate	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
Structures					$9,817		$9,817
J7	J6	900	80	$582	$46,561	$28,000	$18,561
J6	J5	1,050	140	$722	$101,116	$49,000	$52,116
J5	J4	1,050	60	$722	$43,335	$21,000	$22,335
J4	J3	1,200	100	$826	$82,604	$35,000	$47,604
J3	J2	1,350	70	$1,052	$73,628	$24,500	$49,128
J2	J1	1,500	70	$1,248	$87,372	$24,500	$62,872
J1	J0	1,500	60	$1,248	$74,890	$21,000	$53,890
Structures					$16,829		$16,829
Cabramatta Creek (Kiora Ct to Camden Valley Way)							
G9	G8	900	110	$582	$64,021	$38,500	$25,521
G8	G7	1050	80	$722	$57,780	$28,000	$29,780
G7	G6	1050	40	$722	$28,890	$14,000	$14,890
G6	G5	1200	60	$826	$49,562	$21,000	$28,562
G5	G4	2x900	90	$1,136	$102,238	$31,500	$70,738
G4	G3	2x1050	80	$1,416	$113,317	$28,000	$85,317
G3	G2	2.4x0.9 RCBC	70	$2,030	$142,102	$24,500	$117,602
G2	G1	3.3x0.9 RCBC	90	$2,577	$231,928		$231,928
G1	G0	3.3x0.9 RCBC	55	$2,577	$141,734		$141,734
Pits and Headwalls					$35,061		$35,061
L6	L5	900	170	$582	$98,942	$59,500	$39,442
L5	L4	1,050	150	$722	$108,338	$52,500	$55,838
L4	L3	1,200	80	$826	$66,083	$28,000	$38,083
L3	L2	1,500	80	$1,248	$99,854	$28,000	$71,854
L2	L0	1,650	290	$1,445	$418,909	$101,500	$317,409
Pits and Headwalls					$28,049		$28,049
Minor GPT					$142,348		$142,348
Cabramatta Creek (Kiora Ct to Lot 53 DP 2475)							
E6	E5	1,050	120	$722	$86,671	$42,000	$44,671
E5	E4	1,050	60	$722	$43,335	$21,000	$22,335
E4.2	E4.1	900	80	$582	$46,561	$28,000	$18,561
E4.1	E4	1,050	100	$722	$72,226	$35,000	$37,226
E4	E3	2x1200	90	$1,625	$146,288	$31,500	$114,788
E3	E2	2x1200	100	$1,625	$162,543	$35,000	$127,543
E2	E1	3x1050	80	$2,104	$168,293	$28,000	$140,293
E1	E0	3x1050	30	$2,104	$63,110	$10,500	$52,610
Pits & Headwall					$36,463		$36,463
8 Minor Gross Pollutant Traps					$113,878		$113,878
2 Bridges / Culverts 14m long 18m wide on Pacific Palms Ct							$846,170
A1	A0	900	70	$582	$29,050	$24,500	$4,550
Channel - Second Ave to Cowpasture Road					$554,644		$554,644

From	To	Pipe Dia	Length	Rate	Cost of Works	Cost of 825 dia Pipe	Total Works Cost after Credits
		mm	m	$ / m	$	$	$
Channel - Cowpasture Road to Hinchinbrook Ck					$493,946		$493,946
				Area	Depth	Unit Cost	
				sqm	m	$ / m³	
Drainage compensatory works				3,000	2	$50	$300,000
Drainage compensatory works				1,650	2	$50	$165,000
Sub Total							**$8,749,859**
Add 15% Contingencies							$1,312,479
Totals							**$10,062,338**

Item No	Items	Land	Land Unit Cost	Total Land Cost
		sqm	$ / sqm	$
WCD 1	Swale (Basin 10 to Open Space Corridor)	30,800	$50	$1,540,000
WCD 2	Swale (Cabramatta Creek to Cowpasture Rd)	15,280	$50	$764,000
		10,800	$25	$270,000
		16,600	$17	$288,316
WCD 3	Swale (Cabramatta Creek to Horningsea Pk)	3,200	$50	$160,000
CCD	Cabramatta Creek (Kiora Ct to Camden Valley Way)	7,000	$50	$350,000
CCD	Cabramatta Creek (Kiora Ct to Lot 53 DP 2475)	2,000	$50	$100,000
WCD 4	Swale (Cowpasture Road to Cabramatta Creek)	5,600	$50	$280,000
		11,000	$17	$191,053
CCD	Cabramatta Creek (Lot 53 DP 2475 to Twentieth Ave)	4,000	$50	$200,000
WCD 5	Hopkins Creek (Second Ave and Cowpasture Rd)	18,100	$17	$314,368
WCD 6	Hopkins Creek (down stream from Cowpasture Road)	19,600	$17	$340,421
WCD 7	Hinchinbrook Creek (M7 to Hoxton Park Rd)	2,400	$50	$120,000
WCD 8	Drainage compensatory works	3,000	$50	$150,000
WCD 9	Drainage compensatory works	1,650	$50	$82,500
WCD 10	Swale (Pentecost St to Hinchinbrook Ck)	4,230	$50	$211,500
				$5,362,158

10.6 Streetscape

Nexus

Council is committed to ensuring that the urban release areas are developed to the best standard possible. Part of this involves ensuring an attractive landscape setting. This involves not only the establishment of parkland but also development of the streetscape. The major roads around and within residential areas are the most visually prominent in that most residents and visitors travel them each day either as drivers, passengers or pedestrians.

Landscaping will be carried out adjacent to the arterial roads on land to be dedicated to Council for landscaping, not on the public road but as part of the visual road reserve. The responsibility for the construction of arterial roads rests with the Roads and Traffic Authority.

Landscaping will similarly be carried out on along sub-arterial roads controlled by the Council. Landscaping on other streets will be carried out in conjunction with the construction of the streets. Much of the landscaping will be carried out in conjunction with traffic facilities within the roadway designed to regulate traffic speed.

Scope of facilities

A review of the range of streetscape facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area. The changes arise in part due to the impact of the M7, the works undertaken on arterial roads by the Roads and Traffic Authority and the changes to the land use adjacent to the Carnes Hill Centre on the proposed open space, street and drainage networks.

Apportionment

No apportionment is allowed for as there were no existing local transport facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

Contributing Development

10,540 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 10.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 3 – 5, 7 – 9, 11 – 14, 16 & 17 for the location of each item in Table 10.14. The location of drainage lines as shown on the maps are in the original "in principle" locations and may be constructed in a slightly different locations to match the eventual street layout.

Works and Land Acquisition Schedule

The range of Works and land acquisition for local transport facilities is shown in Table 10.14.

Table 9.14 Works and Land Acquisition Schedule

Mulched Garden Beds on Trunk Collector Streets

No	Length	Width	Area	Land Unit Cost	Works Unit Cost	Total Land Cost	Total Works Cost
	m	m	sqm	$ / sqm	$ / sqm	$	$
S14.1	120	3	360		$47		$16,970
S15.1	320	3	960	$175	$47	$168,000	$45,253
S15.2	260	3	780	$175	$47	$136,500	$36,768
S15.3	260	3	780	$175	$47	$136,500	$36,768
S15.4	80	3	240	$175	$47	$42,000	$11,313
S15.5	200	3	600		$47		$28,283
S15.6	420	3	1,260	$175	$47	$220,500	$59,394
S16.1	340	3	1,020	$175	$47	$178,500	$48,081
S16.2	400	3	1,200	$175	$47	$210,000	$56,566
S16.3	140	3	420	$175	$47	$73,500	$19,798
S16.4	320	3	960	$175	$47	$168,000	$45,253
S16.5	180	3	540	$175	$47	$94,500	$25,455
S16.6	100	3	300	$175	$47	$52,500	$14,141
S17.1	400	3	1,200	$175	$47	$210,000	$56,566
S17.2	380	3	1,140	$175	$47	$199,500	$53,737
S17.3	200	3	600	$175	$47	$105,000	$28,283
S17.4	420	3	1,260	$175	$47	$220,500	$59,394

S17.5	200	3	600	$175	$47	$105,000	$28,283
S17.6	400	3	1,200	$175	$47	$210,000	$56,566
S17.7	200	3	600	$175	$47	$105,000	$28,283
Sub Total							$755,153
Plus 5% contingency sum							$37,758
Sub Total							**$792,910**
Street trees at 20 m intervals on Sub Arterial Roads and Trunk Collector Streets							
			Length	**No of trees**	**$ per tree**		
Sub-arterial roads			9,040	452	$420		$190,030
Trunk collector streets			10,680	534	$420		$224,505
Sub Total							**$414,535**
Plus 5% contingency sum							$20,727
Sub Total							**$435,262**
Totals						**$2,635,500**	**$1,228,172**

10.7 Professional Fees

Nexus

The cost of independent land valuations and legal documents are clearly part of the costs of administering this plan. In relation to land acquisition, Council will be required to acquire land for car parking and roads and incur the associated conveyancing costs.

It is recognised that the costs associated with land acquisition could be added to the cost of individual facilities. However the cost of professional fees attributable to any one facility is completely unpredictable. It is therefore more appropriate that a pool of contribution funds is available to meet these costs as they arise.

The contribution rate is based on the following costs.

- The cost of independent valuations is anticipated to vary from $500 - $2,000 depending on individual sites and whether the valuation is general or specific;
- Valuations will be required at least annually for reviewing this contribution plan, and more frequently depending on movements in the property market;
- Stamp duty and estimated costs of vendor's solicitor in land acquisition.

10.8 Administration Costs

Nexus

There are significant costs associated with administering funds of this magnitude. Both the plan preparation / review and implementation aspects of Developer contributions are administered staff within Council. A core team of employees are engaged to provide support in co-ordinating such a process, as well as prepare status reports, review and relevant data, liaise with Council staff and external agencies.

In accordance with the directive of the Department of Planning, the administration costs are comprised of those expenses relative only to those personnel directly responsible for the formulation and / or administration of a Contributions Plan. The cost per lot per year has been averaged across all of the Contribution Plan areas.

10.9 Contribution Formulae

Community and Recreation Facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing and Residential Flat Buildings

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{O\,R}{3.7}$$

where C = Cost of capital works or land identified for the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot)} = \frac{A}{N} \times \frac{O\,R}{3.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

For Occupancy Rate refer to Table43.3

Aged and Disabled Persons Housing

$$\text{Contribution for total development} = \frac{\text{Conventional Lot Contribution} \times R}{3.7}$$

where 3.7 = Estimated occupancy rate for a conventional lot

R = Number of residents

Transport facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing and Residential Flat Buildings

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{V}{6.7}$$

where C = Cost of capital works and land identified for the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot / non residential development)} = \frac{A}{N} \times \frac{V}{6.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type (refer to Table

Table 9.15 Vehicle Trips per day per dwelling

Dwelling Type or Lot Size	Vehicle Trips per day
Residential Subdivision Lots 450 sqm or larger	6.7
Residential Subdivision Lots smaller than 450 sqm	6.0
Semi-detached dwellings, Multi dwelling housing & Residential Flat Buildings (where permitted)	
3 or more bedrooms	6.0
2 bedrooms	4.0
1 bedroom	3.3
Aged and Disabled Persons Housing (total development)	Total vehicle trips per day

Drainage Facilities

Conventional Lot Residential Subdivision

Contribution by cash

$$\text{Contribution Rate (per sqm of lots)} = \frac{C}{N \times 450}$$

where C = Cost of capital works or land identified for the catchment area

N = Number of equivalent lots / dwellings in the catchment area

Contribution by land dedication

$$\text{Area of land to be dedicated (per conventional lot)} = \frac{A}{N}$$

where A = Total area to be acquired

N = Number of equivalent lots / dwellings in the catchment area

Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing, Residential Flat Buildings, Aged and Disabled Persons Housing and Non Residential Development

Contribution by cash

$$\text{Contribution (total development)} = \frac{\text{Conventional Lot Contribution} \times CR \times \text{Site Area}}{0.65}$$

Where C R = Runoff coefficient for the specific development type as specified in the Table 9.

Contribution by land dedication

$$\text{Area of land to be dedicated (total development)} = \frac{A}{N} \times \frac{C\,R}{0.65} \times \frac{\text{Site Area}}{450}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots / dwellings in the catchment area

C R = Runoff coefficient for the specific development type as specified in Table 9.16

The relative impacts of different types of land development on any drainage system can be estimated by comparing the peak discharge rates of runoff that the different types of development would produce. The rational formula estimates the peak discharge rates by use of runoff coefficients that are directly related to the proportion of a site that is impervious to rainfall infiltration. The following table gives the relative impacts of alternate types of land development on runoff generation.

Table 9.16 Co efficient of Runoff for development types

Development Type	Co efficient of Runoff

Conventional residential lots and schools	0.65
Semi-detached dwellings, villa houses, small lot subdivision and Aged and Disabled Persons Housing	0.75
Town houses	0.80
Shopping Centre & other non-residential	0.95

Streetscape

The following formulae are use to calculate contributions.

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing and Residential Flat Buildings

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{O\,R}{3.7}$$

where C = Cost of capital works and / or land identified for the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

For Occupancy Rate refer to Table 4.3

Aged and Disabled Persons Housing

$$\text{Contribution for total development} = \frac{\text{Conventional Lot Contribution} \times R}{3.7}$$

where 3.7 = Estimated occupancy rate for a conventional lot

R = Number of residents

Other Development

$$\text{Contribution for total development} = \frac{\text{Conventional Lot Contribution} \times C}{450}$$

where C = Area of site area of development

450 = Minimum area of standard lot

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot)} = \frac{A}{N} \times \frac{O\,R}{3.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

Professional Fees

Residential Development

$$\text{Contribution Rate (per dwelling/ lot)} = \frac{PF}{N}$$

Where PF = total estimated cost of professional fees

N = Number of equivalent lots / dwellings in the catchment area

All other development

$$\text{Contribution Rate} = \frac{\text{Residential Contribution} \times A}{450}$$

Where A = Site area

450 = area of conventional lot

Administration Fees

All Development

The cost of administering contributions plans over the coming years has been estimated at 1.2% of the value of contributions.

10.10 Staging of Facilities

Council will build most Community Facilities, as the population threshold for their construction is usually much larger than individual developments. These will be provided as funds become available and as land can be acquired from existing owners.

Some small parks and recreation facilities are likely to be provided as works in kind by developers and as such are provided at the beginning of a development. Council will build larger recreation facilities such as playing fields as the population threshold for their construction is usually much larger than individual developments. These will be provided as funds become available and as land can be acquired from existing owners.

11. Prestons Industrial Release Area

11.1 Background

A substantial part of the Prestons Industrial Area was rezoned in the early 1990's. Development has subsequently taken place over a substantial portion of this area. Since this time the M7 has been constructed which cut through this area resulting in some changes to the drainage and road network. Hoxton Park Road was also upgraded by the Roads and Traffic Authority with the provision of a service road along the southern side of Hoxton Park Road. This included drainage works in conjunction with road works.

Subsequently the area west of the Prestons Industrial Area was rezoned for industrial development. This took place after the M7 was constructed. This has necessitated changes to the range of infrastructure in the portion of the Prestons Industrial Area rezoned in the early 1990's. The planning of infrastructure in the area to the west of the M7 has taken into account the presence of the M7 and the works carried out in its construction.

11.2 Transport

Nexus

The development of the Prestons area for industrial purposes will generate a significant volume of heavy traffic. The impact of this traffic generation may be considered in terms of road network traffic capacity and road pavement bearing capacity. With regard to the first consideration, the required contribution towards the District Transport Facilities provides for the appropriate contribution from a traffic management point of view.

There are, however, a number of existing local roads that will be subjected to heavy traffic loading that they were never designed to bear. The central pavement of these roads will require reconstruction to a standard suitable to accommodate the increased volume of heavy vehicular traffic. Consequently a contribution for the upgrade of the central pavement of these existing sub-standard pavements is considered appropriate.

It may not always be appropriate for Council to require the developer to wholly reconstruct the central pavement of the roads adjoining the subject property at the time of development. It is a component only, representing the difference between a normal standard road and the upgrading required for industrial usage, for which Council levies developer contributions.

Council considers that the most efficient and equitable way of providing for Local Transport Facilities in an area characterised by fragmented ownership is via developer contributions. This approach does not preclude Council considering a proposal for works-in-kind by a group of developers or owners.

The areas west of the M7 were rural roads prior to any industrial development taking place. Any new development of land in this area will be required as a condition of consent to reconstruct the half of the road that immediately fronts the land. This work will not be funded by developer contributions.

To allow several sites to be developed in the Prestons Industrial Release Area, several new roads will be constructed.

To adequately handle the increased traffic on the site the intersection of Bernera Road / Yarrunga Street will be upgraded. This upgrade will include the installation of traffic signals. The cost of these works will be proportioned across the West of M7 Catchment.

Scope of facilities

A review of the range of local transport facilities was undertaken in 2008. This was undertaken in conjunction with the rezoning of land west and south of the area rezoned in the early 1990s.

Apportionment

No apportionment is allowed for as there were no existing local transport facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Areas

There are several local transport catchments within the Prestons Industrial Release Area. These are shown on Figure 11.1.

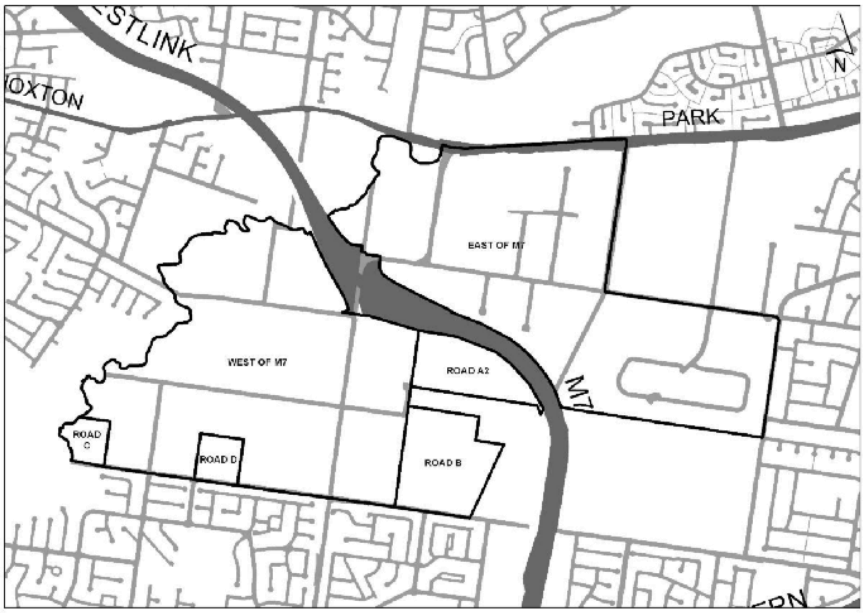


Figure 11.1 Catchment Areas

East of M7 Catchment Area

This is largely the area that was rezoned in the early 1990's. The scope of facilities and the developable area has changed following the construction of the M7.

Contributing Development

123ha (area of land that is expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure11.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 5, 6, 8, 9 & 13 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.1.

Table 11.1 Works and Land Acquisition Schedule

No	Item	Unit Cost $/m	Length m	Works $
R1	Ash Rd - half central pavement 3m width	$402	700	$281,357
R2	Jedda Rd - half central pavement 3m (from Ash Rd to Wonga Rd)	$402	800	$321,551
R3	Jedda Rd - central pavement 6m width (from Bernera Rd to Ash Rd)	$710	810	$575,485
Total				**$1,178,394**

West of M7 Catchment Area

New industrial development in this area will generate the need for the provision of traffic signals at Yarrunga Street and Bernera Road.

Some of the area east of Bernera Road was rezoned along with the area east of the M7 in the early 1990's. It would have had frontage to Ash Road and have been required to reconstruct the half road frontage to Ash Road as well as contribute to local transport facilities. This area was cut off from Ash Road when the M7 was constructed. It was left land locked with no viable alternate road access. There is a need to provide access to Bernera Road by acquiring private land and constructing a road.

Some lots which have frontage to Kurrajong Road are required under the provisions of *Liverpool DCP 2008* to provide access other than to Kurrajong Road for industrial traffic. This is provided by new road construction off Bernera and Kookaburra Roads. There is also a need to provide pedestrian links across Cabramatta Creek to Hoxton Park

Contributing Development

137.5ha (area of land that is expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 11.2.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 6, 9, 10 & 14 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.2.

Table 11.2 Works and Land Acquisition Schedule

No	Item	Unit Cost $/sqm	Length m	Width m	Area sqm	Land $	Works $
A1	Eastern extension of Yarrunga St	$200	295	20	5,900	$1,180,000	
							$587,564
R4	Pedestrian paths to creek crossings	$111	350	2.5	875		$97,004
R5	Traffic Signals at Bernera Rd & Yarrunga St						$221,722
R6	Pedestrian crossing of Cabramatta Ck at Yarrawa Rd						$33,258
R7	Pedestrian crossing of Cabramatta Ck at Illaroo Rd						$33,258
R8	Pedestrian crossing of Hinchinbrook Ck at Twentieth Av						$33,258
Totals						**$1,180,000**	**$1,006,065**

Road A2 East of Bernera Road Catchment Area (additional to West of M7)

This area was rezoned along with the area east of the M7 in the early 1990's. It would have had frontage to Ash Road and have been required to reconstruct the half road frontage to Ash Road as well as contribute to local transport facilities. This area was cut off from Ash Road when the M7 was constructed. It was left land locked with no viable alternate road access. There is a need to provide access to Bernera Road by acquiring private land and constructing a road. The cost of Road A2 is fully attributable to the catchment.

Contributing Development

10.57ha (area of land that is expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure11.3.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 9 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.3.

This area also contributes to the other facilities in the "West of M7" catchment.

Table 11.3 Works and Land Acquisition Schedule

No	Item	Unit Cost	Length	Width	Area	Land	Works
		$/sqm	m	m	sqm	$	$
A2	Road north from A1	$200	141	20	2,820	$564,000	
							$306,812
Totals						**$564,000**	**$306,812**

Road B East of Bernera Road Catchment Area (additional to West of M7)

This area having frontage to Kurrajong Road is required under the provisions of *Liverpool DCP 2008* to provide access other than to Kurrajong Road for industrial traffic. This is provided by Road B. There is a need to provide access to Bernera Road by acquiring private land and constructing a road. The cost of Road B is fully attributable to the catchment.

Contributing Development

17.73ha (area of land that is expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure11.4.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 9 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.4.

This area also contributes to the other facilities in the "West of M7" catchment.

Table 11.4 Works and Land Acquisition Schedule

No	Item	Unit Cost	Length	Width	Area	Land	Works
		$/sqm	m	m	sqm	$	$
B	Road east from A1	$200	141	20	2,820	$564,000	
							$310,411
Totals						**$564,000**	**$310,411**

Road C West of Kookaburra Road Catchment Area (additional to West of M7)

This area having frontage to Kurrajong Road is required under the provisions of *Liverpool DCP 2008* to provide access other than to Kurrajong Road for industrial traffic. This is provided by Road C. There is a need to provide access to Kookaburra Road by acquiring private land and constructing a road. The cost of Road C is fully attributable to the catchment.

Contributing Development

2.33ha (area of land that is expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure11.5.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 8 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.5.

This area also contributes to the other facilities in the "West of M7" catchment.

If alternate road access is provided in a form acceptable to Council this contribution will not levied.

Table 11.5 Works and Land Acquisition Schedule

No	Item	Unit Cost	Length	Width	Area	Land	Works
		$/sqm	m	m	sqm	$	$
C	Road west from Kookaburra Rd	$200	200	20	4,000	$800,000	
							$454,740
Totals						**$800,000**	**$454,740**

Road D East of Kookaburra Road Catchment Area (additional to West of M7)

This area having frontage to Kurrajong Road is required under the provisions of *Liverpool DCP 2008* to provide access other than to Kurrajong Road for industrial traffic. This is provided by Road D. There is a need to provide access to Kookaburra Road by acquiring private land and constructing a road. The cost of Road D is fully attributable to the catchment.

Contributing Development

3.83ha (area of land that is expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 11.6.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 8 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.6.

This area also contributes to the other facilities in the "West of M7" catchment.

If alternate road access is provided in a form acceptable to Council this contribution will not levied.

Table 11.6 Works and Land Acquisition Schedule

No	Item	Unit Cost	Length	Width	Area	Land	Works
		$/sqm	m	m	sqm	$	$
D	Road east from Kookaburra Rd	$200	320	20	6,400	$1,280,000	
							$604,193
Totals						**$1,280,000**	**$604,193**

11.3 Drainage

Nexus

Drainage Easements

In order to achieve an economical local drainage system it is necessary to drain stormwater runoff through the lowest possible path. This path was in some cases required to traverse privately owned properties which creates the need for drainage easements or drainage reserve.

A drainage easement is known as the area of land dedicated to construct and maintain an enclosed drainage conduit (usually a pipe or box culvert). The drainage easement can serve a number of privately owned properties in which case it is described to be an "inter-allotment drainage easement". The area of land required for inter-allotment drainage easement would be dedicated for that purpose and would belong to those properties benefiting from the drainage system within the easement. The owners the properties will be responsible for the maintenance and functioning of the drainage system.

In some cases it is proposed to have an easement in favour of Council to drain water from properties and streets. This is where a drainage reserve is not considered to be practical. The cost of the construction of the drainage works will be funded by contributions. Affected lands will be required as a condition of consent to dedicate an easement in favour of Council to drain upstream land.

Drainage Reserves

A drainage reserve is the area of land dedicated to construct and maintain an open drainage conduit (usually a formed earth or concrete channel). The drainage reserve can serve a number of privately owned properties, public land (such as road drainage, parks, etc.) or a combination of these.

The area of land required for drainage reserve will be required to be dedicated to Council for that purpose and Council will be responsible for the maintenance and functioning of the drainage system. The area of land dedicated to drainage reserve has been included in the contribution rate as "cost of land acquisition" for each local drainage catchment.

Minimum size pipes

The Local Trunk Drainage is costed on the basis of drainage infrastructure requirements of the local catchment. Each of the local catchments is costed down to 900mm diameter pipe only. The individual developers are required to directly bear the cost of all pipelines up to 825mm diameter within or past their own land. The cost difference between any larger pipe size or drainage swale/channel is funded by Developer contributions.

Where it is anticipated that the developer will carry out the works as part of a development, the cost of supply, lay and backfilling of 825mm diameter is deducted from the cost of works to get the contribution. These works, when carried out by the developer, means that the developer will receive the credits of the difference between the total cost of works and the cost of 825mm diameter pipe (to be borne by the developer). Should the developer default from undertaking the works identified in this plan as the developer's responsibility, then the developer shall pay for the cost of 825mm diameter pipe for the reach of drainage works for which they are responsible to provide as part of their development.

Where the work is costed in full without deducting the cost of 825mm diameter, it is anticipated that Council will undertake these works from contributions. Where a developer undertakes these works as part of their development, they shall receive full credits for the work as shown in this plan.

Gross pollutant traps

Gross pollutant traps have also been costed as source control for litter at the end of each network.

Scope of facilities

A review of the range of local transport facilities was undertaken in 2008. This was undertaken in conjunction with the rezoning of land west and south of the area rezoned in the early 1990s.

Apportionment

No apportionment is allowed for as there were no existing local drainage facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule and Catchment Area

There are several local drainage catchments within the Prestons Industrial Release Area. These are shown on Figure 11.2.

Figure 11.2 Catchment Areas

East of M7 Catchment Area

Contributing Development

88.05ha (area of land that is expected to contribute to local drainage facilities)

The area from which contributions would be received is shown on Figure 11.7.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 9 & 10 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.7.

Table 11.7 Works and Land Acquisition Schedule

Works

From	To	Pipe Diameter	Length	Unit Cost	Other	Cost of Works	Cost of 825 dia Pipe	Contribtn/ Credits
		mm	m	$/m		$	$	$
0.02	0.03	900	48	$582		$27,937	$16,800	$11,137
0.03	0.06	1,050	82	$722		$59,225	$28,700	$30,525
0.05	0.06	900	19	$582		$11,058	$6,650	$4,408
0.06	0.07	1,200	17	$826		$14,043	$5,950	$8,093
0.07	0.09	1,350	72	$1,052		$75,732	$25,200	$50,532
0.09	0.11	1.5x1.2 RCBC	99	$1,430		$141,618	$34,650	$106,968
0.11	0.13	2.1x1.2 RCBC	90	$1,778		$159,983	$31,500	$128,483
0.13	0.15	2.1x1.2 RCBC	70	$1,778		$124,431	$24,500	$99,931
0.15	0.17	2.1x1.2 RCBC	80	$1,778		$142,207	$28,000	$114,207
0.17	0.19	2.4x1.2 RCBC	74	$2,041		$151,001	$25,900	$125,101
0.19	.24A	2.7x1.2 RCBC	91	$2,304		$209,619	$31,850	$177,769
0.2	0.21	900	88	$582		$51,217	$30,800	$20,417
Structures						$36,000		$36,000
1.18	1.17	900	70	$582		$40,741	$24,500	$16,241
1.17	1.16	1,050	70	$722		$50,558	$24,500	$26,058
1.16	1.14	1,200	142	$826		$117,297	$49,700	$67,597
1.14	1.13	1.5x1.2 RCBC	78	$1,430		$111,578	$27,300	$84,278
1.13	1.10	1.8x1.2 RCBC	140	$1,672		$234,137	$49,000	$185,137
1.10	1.7	2.1x1.2 RCBC	118	$1,778		$209,756		$209,756
1.7	1.6	3.0x1.2 RCBC	30	$2,588		$77,625		$77,625
1.6	1.5	3.6x1.2 RCBC	42	$3,397		$142,691		$142,691
1.5	1.1	4.2x1.2 RCBC	74	$3,545		$262,305		$262,305
13.4	13.1	1,050	168	$722		$121,339	$58,800	$62,539
13.1	1.14	1,200	15	$826		$12,391	$5,250	$7,141
3.4	3.3	900	78	$582		$45,397	$27,300	$18,097
3.3	1.5	1,050	110	$722		$79,448	$38,500	$40,948
Structures						$44,000		$44,000
1.05	1.04	1,200	80	$826		$66,083	$28,000	$38,083
1.03	1.01	1,350	100	$1,052		$105,183	$35,000	$70,183
Structures						$8,000		$8,000
14.13	14.11	1,050	110	$722		$79,448	$38,500	$40,948
14.11	14.9	1,200	128	$826		$105,733	$44,800	$60,933
14.9	14.8	1.2x1.2 RCBC	66	$1,315		$86,776	$23,100	$63,676
14.8	14.5	1.5x1.2 RCBC	140	$1,430		$200,268	$49,000	$151,268
14.5	14.1	1.8x1.2 RCBC	30	$1,672		$50,172	$10,500	$39,672
14.12	14.11	1,050	30	$722		$21,668	$10,500	$11,168
15.01	11.09	900	30	$582		$17,460	$10,500	$6,960
11.09	11.08	1,050	160	$722		$115,561	$56,000	$59,561
11.08	11.07	1,200	20	$826		$16,521	$7,000	$9,521

From	To	Pipe Diameter	Length	Unit Cost	Other	Cost of Works	Cost of 825 dia Pipe	Contribtn/ Credits
		mm	m	$/m		$	$	$
11.07	11.06	1,500	240	$1,248		$299,561	$84,000	$215,561
11.06	11.05	1,650	40	$1,445		$57,780	$14,000	$43,780
11.05	11.01		315		Channel	$446,817		$446,817
	11.01				Energy Dissipater	$77,134		$77,134
13.05	13.04	1,500	70	$1,248		$87,372	$24,500	
13.04	13.03	1,650	60	$1,445		$86,671	$21,000	$65,671
13.03	13.01	1,800	150	$1,697		$254,543	$52,500	$202,043
21.01	11.05	900	35	$582		$20,370	$12,250	
22.01	13.05	1,050	100	$722		$72,226	$35,000	$37,226
Structures						$46,000		$46,000
Jedda Road Culverts				$1,012,192				$1,012,192
Sub Total								**$4,864,381**
Add 15% Contingencies								$729,657
Total								**$5,594,038**
Land								
Item		**Total Area**	**Proportion**			**Area sqm**	**Unit cost**	**Cost**
Maxwells Creek Channel		23,000	60%			23,000	$100	$1,380,000
Total								**$1,380,000**

West of M7 Catchment Area

Contributing Development

137.5ha (area of land that is expected to contribute to local drainage facilities)

The area from which contributions would be received is shown on Figure 11.8.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 8, 9 & 13 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.8.

Table 11.8 Works and Land Acquisition Schedule

Works

Item	From	To	Pipe Diameter	Length	Unit Cost	Cost of Works	Rate of 825mm Dia Conduit	Cost of 825 Dia Conduit	Contribution Credits
			mm	m	$/m	$	$	$	$
	(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	(7)	(8)=(3)x(9)	(9)=(6)-(8)
Catchment A									
Pits						$11,655	$1,217	$0	$11,655
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$34,500	$1,217	$0	$34,500
Outlet Treatment						$44,000	$1,217	$0	$44,000
Catchment B									

Item	From	To	Pipe Diameter	Length	Unit Cost	Cost of Works	Rate of 825mm Dia Conduit	Cost of 825 Dia Conduit	Contribution Credits
			mm	m	$/m	$	$	$	$
Box Section	B0	B2	-	190	$2,966	$563,540	$1,217	$231,230	$332,310
Pipe	B2	B3	1,350	130	$1,911	$248,393	$1,217	$158,210	$90,183
	B8	B2	1,050	40	$1,911	$248,393	$1,217	$48,680	$199,713
Pipe	B3	B4	900	100	$1,408	$140,846	$1,217	$121,700	$19,146
Pits						$41,625	$1,217	$0	$41,625
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$34,500	$1,217	$0	$34,500
Outlet Treatment						$70,000	$1,217	$0	$70,000
Catchment C									
Pipe	C0	C1	1,050	65	$1,911	$124,196	$1,217	$79,105	$45,091
Pits						$9,990	$1,217	$0	$9,990
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$34,500	$1,217	$0	$34,500
Outlet Treatment						$50,000	$1,217	$0	$50,000
Catchment D									
Pipe	D0	D1	1,050	30	$1,911	$57,321	$1,217	$36,510	$20,811
Pipe	D1	D2	900	152	$1,408	$214,085	$1,217	$184,984	$29,101
Pits						$11,655	$1,217	$0	$11,655
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$0	$1,217	$0	$0
Outlet Treatment						$59,000	$1,217	$0	$59,000
Catchment E									
Pipe	E0	E1	1,200	99	$2,018	$199,744	$1,217	$120,483	$79,261
Pipe	E1	E2	1,050	200	$1,911	$382,143	$1,217	$243,400	$138,743
Pits						$24,975	$1,217	$0	$24,975
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$34,500	$1,217	$0	$34,500
Outlet Treatment						$0	$1,217	$0	$0
Catchment F									
Open Channel	F0	F1		475	$1,548	$735,356	$1,217	$578,075	$157,281
Box Section	F1	F7	2.4x1.2 (2Nos)	425	$8,168	$1,735,765	$1,217	$517,225	$1,218,540
Box Section	F7	F9	3.0x1.2	475	$2,966	$1,408,691	$1,217	$578,075	$830,616
Pits						$41,625	$1,217	$0	$41,625
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$69,000	$1,217	$0	$69,000
Outlet Treatment						$75,000	$1,217	$0	$75,000
Catchment G									
Open Channel	G00	G0		408	$1,548	$631,632	$1,217	$496,536	$135,096
Box Section	G0	G1	2.4x1.5	30	$2,600	$1,245,579	$1,217	$36,510	$1,209,069
	G1	G2	1,500	70	$2,720	$726,340	$1,217	$85,190	$641,150
Pipe	G2	G3	1,350	150	$2,380	$726,340	$1,217	$182,550	$543,790
Pipe	G3	G5	1,200	200	$2,018	$726,340	$1,217	$243,400	$482,940
Pits						$39,960	$1,217	$0	$39,960

Item	From	To	Pipe Diameter	Length	Unit Cost	Cost of Works	Rate of 825mm Dia Conduit	Cost of 825 Dia Conduit	Contribution Credits
			mm	m	$/m	$	$	$	$
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$34,500	$1,217	$0	$34,500
Outlet Treatment						$75,000	$1,217	$0	$75,000
Catchment H									
Pipe	H00	H0	1,200	176	$2,018	$355,100	$1,217	$214,192	$140,908
Pipe	H00	H1	1,050	95	$1,911	$181,518	$1,217	$115,615	$65,903
Pipe	H1	H2	900	195	$1,408	$274,649	$1,217	$237,315	$37,334
Pits						$24,975	$1,217	$0	$24,975
Headwalls						$4,450	$1,217	$0	$4,450
GPT						$34,500	$1,217	$0	$34,500
Outlet Treatment						$59,000	$1,217	$0	$59,000
Jedda Road Culverts						$1,012,192	40%	of catchment	$407,790
Sub Total									**$7,774,836**
Contingencies plus contract administration					8%				$621,987
Design					4%				$310,993
Total									**$8,707,816**

Land

Item	From	To	Length	Width	Area	Unit Cost	Cost
			m	m	sqm	$/sqm	$
Cabramatta Ck	Kurrajong Rd	Hinchinbrook Ck	2,230	10	22,300	$50	$1,115,000
Cabramatta Ck	Hinchinbrook Ck	M7	340	10	3,400	$50	$170,000
Cabramatta Ck	M7	Lot 2 DP 1051510	380	10	3,800	$50	$190,000
Cabramatta Ck	Lot 2 DP 1051510	Hoxton Park Rd	520	10	5,200	$50	$260,000
		Total Area	**Proportion**				
Maxwells Ck Channel		23,000	40%		9,266	$100	$926,619
Total							**$2,661,619**

North of M7

Contributing Development

2.85ha (area of land that is expected to contribute to local drainage facilities)

The area from which contributions would be received is shown on Figure 11.9.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 5 & 9 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 11.9.

Table 11.9 Works and Land Acquisition Schedule

Item	From	To	Length	Width	Area	Unit Cost	Cost

Cabramatta Ck	Hinchinbrook Ck	Hoxton Park Rd	520	10	5,200	$50	$260,000
Total							**$260,000**

11.4 Landscaped Buffer Areas

Wonga Road Frontage

The development of the Prestons Industrial Area has the potential for conflict with the adjoining residential area over noise generation, air pollution, security lighting, operational hours and traffic generation. Accordingly a 10 m wide landscaped buffer is to be provided along the frontage to Wonga Road.

The buffer area is essential between any industrial area and an adjoining residential area to protect the amenity of the residential area without resorting to unreasonable restrictions on business hours of operation, noise and lighting in the industrial area.

The contributing area is the area east of the M7 with an area of 123 ha. This is on the basis that the works border this release area where it adjoins the residential areas. It does not include the former Liverpool Showground, as this will provide its own buffer to the adjoining residential area to the south.

Contributing Development

123ha (area of land that is expected to contribute to Landscaped Buffer Areas)

The area from which contributions would be received is shown on Figure 10.10.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 10 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for Landscaped Buffer Areas is shown in Table 11.10.

Table 11.10 Works and Land Acquisition Schedule

No	Item	Length	Area	Cost	Land Unit Cost	Cost of Land	Cost of Works
		m	sqm	$/m	$/sqm	$	$
	Wonga Road Frontage						
S1	Landscaping		5,600		$200	$1,120,000	
	Landscaping	560		$250			$92,810
	Totals					**$1,120,000**	**$92,810**

11.5 Professional Fees

Nexus

The cost of independent land valuations and legal documents are clearly part of the costs of administering this plan. In relation to land acquisition, Council will be required to acquire land for car parking and roads and incur the associated conveyancing costs.

It is recognised that the costs associated with land acquisition could be added to the cost of individual facilities. However the cost of professional fees attributable to any one facility is completely unpredictable. It is therefore more appropriate that a pool of contribution funds is available to meet these costs as they arise.

The contribution rate is based on the following costs.

- The cost of independent valuations is anticipated to vary from $500 - $2,000 depending on individual sites and whether the valuation is general or specific;
- Valuations will be required at least annually for reviewing this contribution plan, and more frequently depending on movements in the property market;
- Stamp duty and estimated costs of vendor's solicitor in land acquisition.

11.6 Administration Costs

Nexus

There are significant costs associated with administering funds of this magnitude. Both the plan preparation/review and implementation aspects of Developer contributions are administered staff within Council. A core team of employees are engaged to provide support in co-ordinating such a process, as well as prepare status reports, review and relevant data, liaise with Council staff and external agencies.

In accordance with the directive of the Department of Planning, the administration costs are comprised of those expenses relative only to those personnel directly responsible for the formulation and / or administration of a Contributions Plan. The cost per lot per year has been averaged across all of the Contribution Plan areas and is calculated as follows.

11.7 Contribution Formulae

Transport and Drainage Facilities

$$\textbf{Contribution (per sqm)} = \frac{C}{N}$$

where **C =** Cost of capital works and land identified for the catchment area

N = Area of land in the catchment area

$$\textbf{Area of land to be dedicated (per sqm)} = \frac{A}{N}$$

where **A =** Total area to be acquired

N = Area of land in the catchment area

Landscaped Buffer Areas

$$\text{Contribution (per sqm)} = \frac{C}{N}$$

where C = Cost of capital works and land identified for the catchment area

N = Area of land in the catchment area

$$\text{Area of land to be dedicated (per sqm)} = \frac{A}{N}$$

where A = Total area to be acquired

N = Area of land in the catchment area

Professional Fees

$$\text{Contribution Rate (per sqm)} = \frac{\text{Residential Contribution* x A}}{450}$$

Where * Residential Contribution in Hoxton Park, Carnes Hill and Prestons

A = Site area

450 = area of conventional lot

Administration Fees

All Development

The cost of administering contributions plans over the coming years has been estimated at 1.2% of the value of contributions.

11.8 Staging of Facilities

The timing of construction of specific facilities depends largely on where and when development occurs. It is the intention of Council to provide facilities at the earliest opportunity. This intention is constrained by the funding limitations, which occur due to cash flows directly linked to the rate of development. Council must accumulate sufficient contributions to meet the funding commitment to any particular facility, which is required. In this regard, facilities will be constructed as funds received allow and in response to the priority needs of the developing community.

12. Middleton Grange Release Area

12.1 Background

Liverpool City Council adopted on 24 June 2002 a masterplan for the development of Middleton Grange Release Area. The masterplan makes provision for 152ha of mostly residential development and forecasts the creation of 2,580 dwellings. This will result in an additional population of approximately 9,000 in the area. Due to this anticipated development, the current absence of public amenities and services available in the area, and the expected characteristics of the new population, it will be necessary to undertake works detailed in this Contributions Plan.

Relationship to other plans

The masterplan is supported by a set of technical Background Reports and by further background information in the draft Master Plan - December 2001. Council prepared *Liverpool DCP No 48* based on the masterplan. This DCP was subsequently incorporated into *Liverpool DCP 2008*.

Staging of all facilities and services

The timing of construction and provision of all facilities and services will depend largely on where and when development occurs. It is the intention of Council to provide facilities, services and infrastructure at the earliest opportunity in order to provide for the access, amenity and liveability of the residents of Middleton Grange. This intention will be constrained by the funding limitations of cash flows directly linked to the pace of development and by Council's ability to acquire land from existing owners.

Council must accumulate adequate funds through contributions to meet the costs of any facility. Therefore construction will occur as funds allow and in response to the priority needs of the developing community. It is intended, however that, water management facilities will be constructed for each section or water catchment of Middleton Grange as it develops.

Planning principles

Council seeks to achieve the following in Middleton Grange.

- **Accessibility** – A community that ensures the safe, convenient and appropriate movement of people and goods.
- **Social benefits** – A balanced community that provides a full and diverse range of social, community and recreational resources.
- **Environmental benefits** – A community with quality urban design and high environmental standards that values and enhances its natural and built environment.
- **Economic benefits** – A community that provides a full range of employment and training opportunities for its inhabitants.

The contributions levied by this Plan for infrastructure, facilities and services will be directed at achieving outcomes in line with these visionary elements.

The Middleton Grange originally consisted of 1.2ha rural-residential lots, the majority in separate ownership and some with dwellings; a grid of streets consisting of one north-south road and three east west roads; a private school; a church and a small club. The area to the north of the central environmental corridor along McIver Avenue is used for low intensity grazing of cattle. Three small waterways traverse the area. Given its history as a rural residential area, Middleton Grange has no facilities for recreation, community services and water cycle management or a road network to support a new resident population.

The area is envisioned to have a high quality public domain of parks, playing fields, streets, footpaths, cycle ways and open space. A network of connected roads will traverse the area and encourage walking and cycling, while transport nodes will provide access and links to public transport, both locally

and regionally. The neighbourhood centre will be the focus of the new area and include a community centre. Water quality, run-off and drainage will be incorporated into the existing watercourses and have high aesthetic appeal. The principles of ecologically sustainable development will govern the provision of all facilities.

While residential development is to be the main form of development in the Middleton Grange Release Area, there will also be some development for commercial uses as well as for church and private education purposes. These developments and uses will place demands on the road and water management system. Accordingly, they will be levied for these two forms of infrastructure for the stormwater water run-off that they generate.

Development trends

The number of additional dwellings/lots is therefore forecast to be 2,580. For the purposes of this plan, dwelling occupancy rates per lot are those adopted for the new release areas, i.e.:

- Lots 450 sqm or larger = 3.7 persons per dwelling
- Lots smaller than 450 sqm = 3.3 persons per dwelling.

Assuming an average of 3.5 persons per dwelling, the future additional resident population of Middleton Grange at the full extent of development is estimated to be approximately 9,000 persons.

Catchment Area

There is a single catchment for all local facilities in Middleton Grange. The catchment is shown on Figure 12.1.

Figure 12.1 Catchment Area and location of works and land acquisition

12.2 Community Facilities

Background

The provision of appropriate and useable community facilities is a key requirement for developing socially sustainable communities. In new development areas, residents will demand and require community facilities such as multi-purpose community centres, children's facilities, libraries and cultural facilities to meet their needs.

Middleton Grange is expected to accommodate an estimated 9,000 residents based on the development of 2,580 dwellings. As the release area will allow for both multi unit housing and separate detached dwellings, anticipated occupancy rates are likely to range from 3.3 persons per dwelling to 3.7 persons per dwelling based rates adopted for other release areas in Liverpool.

Analysis of the demographic profile of other recent release areas in Liverpool suggests that Middleton Grange may have the following characteristics:

- Large number of children aged 0-4 years
- Large number of children aged under 15 years
- Increasing number of youth aged 10-19 years living in the release area particularly as the development matures
- High proportion of adults of child-bearing age groups, i.e. 20-34 years old
- Low proportion of older residents compared to the Liverpool LGA
- High level of cultural diversity with a significant number of residents likely to be from non-English speaking background.

These characteristics together with the lack of existing community infrastructure within the immediate area require that a range of appropriate community facilities be provided to meet the need of new residents.

Nexus

As outlined in the Background Reports, this release area has no existing local neighbourhood facilities except for a non-government school and private church/club facilities. Council community facilities in the surrounding suburbs are at full capacity with direct access to these facilities difficult. Therefore given the socio-demographic profile of new residents outlined earlier, local facilities required by new residents in this community are a local multipurpose community centre and facilities for families and children. Neighbourhood level facilities and services are those, which can be accessed within the immediate area and are typically provided for communities of 8,000-10,000 residents.

Facilities

Local level multi-purpose community centres provide a locally based facility. Poor public transport, inadequate human services infrastructure, distance and therefore poor access to centrally located services are key obstacles facing new residents. As a focal point for residents, community centres provide flexible space for a broad range of community activities. Some of the functions and activities that can occur in these centres include:

- Meeting space for community groups and organisations.
- An informal meeting place and information centre.
- Multi-purpose working space for a range of activities such as play groups, educational classes, cultural and leisure activities (arts and crafts classes, cultural projects, workshops, etc).
- Sessional space for visiting and specialist services such as community nurses, health services, family support services, etc.

- Office accommodation, interview rooms and generally an administrative base for community workers and local Neighbourhood Centre services.
- Spaces for private functions such as weddings, celebrations, formal meetings, cultural events, etc.

Elected committees comprising local residents and users usually manage such centres.

Council proposes a standard for such facilities, a 400sqm building for a population of approximately 8,000 residents. This standard is proposed based on experience of facilities in other Liverpool release areas. In areas with a projected population over 10,000 but less that 20,000, it is proposed to build centres that are proportionately based on this standard. This will be incorporated into the floor-space ratio adopted in this Plan for community facilities.

Scope of facilities

A review of the range of local community facilities was undertaken in 2008. It was decided that a local multipurpose community centre would be provided. An analysis of local community centres in adjacent release areas showed that bookings for these centres were at full capacity.

Apportionment

No apportionment is allowed for as there were no existing local community facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule

Contributing Development

2,580 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local community facilities)

The area from which contributions would be received is shown on Figure 12.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 4 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local community facilities is shown in Table 12.1.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by *Rider Hunt*.

Table 12.1

No.	Item	Land Area	Land Unit Cost	Total Land Cost	Total Works Cost
		sqm	$/sqm	$	$
C1	Multi-Purpose Community Centre 400 sqm)	800	$155	$124,000	$1,816,435
	Total			**$124,000**	**$1,816,435**

12.3 Recreation Facilities

Background

A sustainable community requires access to quality open space and recreation facilities. As a result of new development, natural areas also need to be maintained and enhanced to preserve the environmental quality and bio-diversity of the area. Open spaces provide increased residential amenity; a resource for flora and fauna; consolidation of diminishing natural areas as well as a place for sports, recreation, play and outdoor activities.

This plan and the *Background Reports* to the masterplan provide a detailed assessment of the size and demographic characteristics of the expected population of Middleton Grange Release Area. They highlight the need for open space and recreation facilities, which meet the needs of new residents while also recognising the existing significant environmental features of the release.

Nexus

As presented in the Background Reports, Middleton Grange has some strong natural features such as existing creek lines, remnant bushland and scenic views. It is proposed to use these environmental qualities to develop useable, high quality open space areas with specific recreational facilities to meet the needs of residents. The population characteristics outlined in this chapter have strongly influenced the type of facilities to be provided together with information on community demands in adjoining release areas (see Background Reports). Many of the open spaces are also part of the water cycle management system and will be jointly developed for both purposes.

All residential development will contribute for the following facilities.

Facilities

Based on this information, the following open space and recreation areas are required:

Small parks

Small parks increase residential amenity by providing a focus for local residents and encouraging a "sense of place". Embellishments such as children's playgrounds, seating, lighting, planting, fencing, footpaths and shade are key requirements in this type of park.

Large neighbourhood parks

Large neighbourhood parks are larger multipurpose open spaces providing for a range of activities and age groups. As Middleton Grange will house primarily families, these parks will provide space where all age groups can recreate together. Embellishments such as children's playgrounds, seating, BBQs, shade pavilion, plantings, pathways, bicycle parking, irrigation and public art are key requirements of this type of park. Given the large number of youth aged 10-19 years expected to be living in this release, neighbourhood parks will also provide recreational facilities appropriate for youth such as a skateboard ramp, hard courts or multipurpose cycle/rollerblade paths. Only large parks of suitable size can accommodate this diversity of activities.

Bushland parks

Bushland parks are open spaces with identified high environmental values such as existing large tree stands and creeks. Where the parks are primarily bushland/environmental protection, embellishment will include bush regeneration works, soil stabilisation, fencing, site furniture, environmentally sensitive pathways and interpretative shelters.

Sportsgrounds

Sportsgrounds are active recreation areas, which provide local residents with opportunities to participate in organised and unorganised sports such as soccer, cricket, football etc. This open space will be of high quality and multipurpose with the minimum configuration of a sportsground being one oval comprising of two playing fields. Embellishments will include major site works, automatic irrigation, turfing and top soil, amenities block, cricket wicket/nets, goal posts, car parking, spectator seating, shade pavilion, basic lighting planting and playground facilities for children/youth.

There are a total of 14.7 ha of recreation and open space excluding those areas set-aside specifically for water cycle management and environmental protection. This gives a rate of 1.63ha of open space per 1,000 residents based on an anticipated population of approximately 9,000. This is less than the Department of Planning standard of 2.3 Ha per 1,000 residents and other comparable new release areas (see *Background Reports*).

The approach used, however, focuses on ensuring high quality open space, recreation facilities and bushland with careful attention to developing sites, which have appropriate levels of embellishment

to meet community needs. Residents will also have the benefits of the adjoining proposed Western Sydney Regional Parklands and land primarily set aside for water cycle management.

Scope of facilities

A review of the range of local recreation facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area.

Apportionment

No apportionment is allowed for as there were no excess local recreation facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule

Contributing Development

2,580 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local recreation facilities)

The area from which contributions would be received is shown on Figure 12.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 1 - 4 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local recreation facilities is shown in Table 12.2.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by *Rider Hunt*.

Table 12.2

No.	Item	Park Area	Park Type	Land Unit Cost	Works Unit Cost	Total Land Cost	Total Works Cost
		sqm		$ / sqm	$	$	$
OS01	Stante Reserve (Southern Oval)	23,355	Sportsfield		$80.64		$1,883,457
	Serbian club	4,496		$155		$696,880	
	257/2475	9,434		$218		$2,056,612	
	1/778319	9,425		$203		$1,913,370	
OS02	Stante Reserve (Northern Oval)	31,670	Sportsfield		$80.64		$2,553,935
	B/381267	4,195		$221		$925,212	
	35/1044841	3,278		$95		$311,410	
	36/1044841	367		$95		$34,827	
	189/2475	12,140		$270		$3,277,800	
	37/1044841	11,690		$201		$2,349,690	
OS04	Southern Woodland Area	10,450	Env. Protection	$190	$17.51	$1,985,500	$182,943
OS06	Park on 16th Ave	2,870	Small Park	$110	$31.28	$315,700	$89,782
OS07	Park west of 2nd Ave, south of 16th Ave.	5,641	Small Park	$155	$31.28	$874,355	$176,468
OS09	Park on Collector Street 3	1,820	Small Park	$155	$31.28	$282,100	$56,935
OS11	Park west of 2nd Ave, south of McIver Ave	5,799	Small Park	$155	$31.28	$898,845	$181,410
OS12	Park in northern area - eastern side	3,431	Small Park	$155	$31.28	$531,805	$107,332
OS13	Park in northern area - western side	7,312	Large Park	$155	$31.28	$1,133,360	$228,742
Sub Total							
	Plus 5% Contingency						$273,050
Totals		**147,373**				**$17,587,466**	**$5,734,054**

12.4 Transport Facilities

Background

The cost of provision of streets, access and transport facilities in conjunction with a subdivision will be borne by individual developers. However, various traffic facilities and frontages to public land uses such as parks will be funded through developer contributions. As all residents use these cost should not fall on developers of individual land uses but rather should be shared across the whole precinct.

Nexus

The existing street network in Middleton Grange consists of a grid of one north-south road and three east-west roads, and connections to Fifteenth Avenue and Cowpasture Road. These are adequate for the existing population and land uses, but overall is not in good condition. The street network is not appropriate for, nor has the capacity to service, a new incoming resident population and a public transport system.

The masterplan for Middleton Grange provides a new street layout with the objective of creating a highly accessible suburb. The network is designed to enhance the internal accessibility of the area and provide external access to arterial roads and the M7. In particular it facilitates bus circulation and the use of public transport.

The design utilises existing roads in the new layout, which will need to be upgraded. In addition it provides for new collector streets, frontages to public open space, intersections with Cowpasture Road and Fifteenth Ave and various road treatments. Pedestrian safety and cyclist amenity is accommodated. Existing streets will be upgraded during the development of Middleton Grange and new facilities and infrastructure built.

While timing and staging will be dependent on available funding as a result of this plan and the location of new development, it is the intention of Council and accordingly this Contributions Plan, that access is provided to new residents as they take up residence. Staging will also accord with the provision of other infrastructure that would be built in conjunction with streets.

All residents, commercial/retail businesses, private schools, churches and other developments, will use and benefit from the new access and transport facilities.

Facilities

Collector streets

In previous release areas within the Hoxton Park Stage 2 Release Area, the local access street was adopted as the benchmark to assess developer contributions. Council has adopted the philosophy that within each neighbourhood, all streets of higher standard than local access streets (i.e. collector streets) are necessary to provide access for everyone in that neighbourhood. Accordingly there is a contribution toward the difference in cost between a local access street and a collector street. This applies to additional width, pavement depth and land value and is normally funded by the developer of land having frontage to the collector street.

Within the Council's road hierarchy are the following:

- Access streets and rear service lanes – which cater for up to 300 vehicles per day (vpd) and are not more than 100m long.
- Local access streets – which cater for up to 1,000vpd with provision for up to 2,000vpd with wider pavements.
- Neighbourhood collector streets – which cater for up to 6,000vpd and usually provide a link between the internal collector street system of a residential precinct and the major road system.
- Sub-arterial roads – which cater for up to 15,000vpd and are the principal traffic carriers within an urban neighbourhood.

In Middleton Grange additional collector streets have been added to the existing street structure to enhance accessibility of the precinct and handle the predicted traffic demand created by the new land release. The new streets are diagonal to the existing rectilinear street layout and focus on the neighbourhood centre while linking the southern and northern sections. A bridge will be built over the environment protection zone and central creek and connect the two parts of the precinct.

Streets adjacent to public reserves or public schools

Streets which front public facilities such as public schools and open space are not directly the responsibility of any one developer and are, therefore, levied for under this Plan. For any street, which a developer has one frontage to and the other side of the road is fronted by a public facility such as public schools and open space, the developer is required to provide the following:

- 9m street reserve or half street reserve, which ever is greater.
- The cost of constructing half of a street with a minimum 5.5m street pavement width, or half the designated street width, whichever is greater.

The remainder of the full width street dedication and construction is funded by developer contributions.

Upgrading existing public roads

Where an existing road is identified within this chapter requiring an upgrade, Council has made an assessment of the remaining life of the pavement and deducted this from the cost of construction of a new pavement. If future residential lots have access directly to the road, the Contributions Plan funds the central pavement only. A specific allowance has been included for the pavement upgrade to Second Avenue.

Traffic lights

New traffic lights have been included at the junction of Fifteenth and Kingsford Smith Avenues and at Flynn and Kingsford Smith Avenues.

Roundabouts

Roundabouts serve the whole street system within each neighbourhood and consequently serve each property. The cost is determined by the difference in cost between an intersection with a roundabout and a normal intersection.

Other traffic facilities

The other access and traffic facilities are detailed and summarised in the following tables. These include the provision of bridges/culverts over the water cycle management channels, additional landscaping to the collector roads, share ways, bus shelters and associated works. The costs included in this chapter have been determined by the difference in cost of a local access street and the extra cost of the additional access or traffic facilities required by *Liverpool DCP 2008*.

Scope of facilities

A review of the range of local transport facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area. The changes arise in part due to the impact of the M7, the addition of land north of Hoxton Park Rd, changes to the land use adjacent to the Carnes Hill Centre on the proposed open space, street and drainage networks.

Apportionment

No apportionment is allowed for as there were no existing local transport facilities in existence at the commencement of the development of the area.

Table 12.3

Item	Land component	Works component
Collector street frontage to school	(18 - 9) = 9.0m	(7.5 - 5.5) = 2.0m
Local Street frontage to school	(14.5 - 9) = 5.5m	(6.5 - 5.5) = 1.0m
Local street fronting open space or drainage res	(14.5 - 9) = 5.5m	(6.5 - 5.5) = 1.0m
Collector Street fronting Open Space or Drainage Res	(18 - 9) = 9.0m	(7.5 - 5.5) = 2.0m
Collector Street through Open Space or Drainage Res	18m	7.5m
Local Street fronting Cabramatta Creek / Drain	(10.5 - 9) = 1.5m	(6.5 - 5.5) = 1.0m

Contributing Development, Works and Land Acquisition Schedule

Contributing Development

2,580 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local transport facilities)

The area from which contributions would be received is shown on Figure 12.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 1 - 4 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local transport facilities is shown in Table 12.4.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by Council.

Table 12.4 Works and Land Acquisition Schedule

No.	Item	Length / No of items	Pavement width	Land width	Land Unit Cost	Works Unit Cost	Total Land Cost	Total Works Cost
		m	m	m	$ / sqm	$ / m	$	$
R1	Collector Centre Street Park frontage (one side) (Qantas Boulevard)	466	9.7	17.2	$155	$1,315	$1,242,356	$612,611
R2	Local Street Type 2 (drainage frontage both sides) (Hall Cct between WM 1 & WM2)	122	9.4	17.4	$149	$981	included in drainage	$119,678
C1	Bridge – Creek Crossing between water management facilities on Hall Ct							$204,000
R3	Local Street Type 1 Drainage frontage (both sides) (Bravo Ave between Qantas & Globe)	47	7.2	15.2	$149	$801	included in drainage	$37,627
R4	Local Street Type 1 Community frontage (one side) (Bravo Ave between Globe & Beard)	67	1.7	5.7	$155	$245	$59,195	$16,382
C2	Bridge – Neighbourhood Centre Bravo Av							$205,000
R5	Collector Centre Street including over culvert Drainage frontage (one side)	22	9.7	17.2	$130	$1,315	$49,192	$28,922

No.	Item	Length / No of items m	Pavement width m	Land width m	Land Unit Cost $ / sqm	Works Unit Cost $ / m	Total Land Cost $	Total Works Cost $
	(Middleton Dr between Qantas & Globe)							
R6	Collector Centre Street over Culvert Drainage frontage (both sides) (Middleton Dr near Globe)	18	15.2	26.7	$149	$1,986	included in drainage	$35,754
C3	Bridge – Middleton Dr	18						$205,000
R7	Local Street Type 2 over culvert eastern side (both sides) (Hall Circuit at Swoffer Ave)	18	9.4	17.4	$149	$981	included in drainage	$17,657
R8	Local Street Type 2 including over culvert western side (one side) (Hall Circuit near Swoffer St)	14	3.9	7.9	$130	$425	$14,378	$5,948
C4	Culvert – Eastern end of WM4	32						$205,000
R9	Collector Centre Street over culvert northern side (both sides) (Flynn Boulevard at Swoffer St)	29	15.2	Pre-existing street		$1,986		$57,603
R10	Collector Centre Street drainage frontage including culvert on southern side (one side) (Flynn Blvd nr Swoffer)	46	8	Pre-existing street		$1,034		$47,581
C5	Culvert – Southern end of WM5	29						$205,000
R11	Collector Centre Street frontage to drainage over Culvert (both sides) (Kingsford Smith @ Irvine)	77	15.2	Pre-existing street		$1,986		$152,947
C6	Second Av Creek Crossing south of Sixteenth Av			Pre-existing street				$208,000
R12	Water management median street (drainage frontage) (Afflick and Irvine Gdns)	23	5.5	10	$155	$820	$35,650	$18,858
R13	Local Street Type 1 over culvert western side (one side) (Afflick and Percival Ave)	25	1.7	5.7	$155	$245	$22,088	$6,113
R14	Local Street Type 1 drainage frontage including over culvert (both sides) (Afflick and Percival)	17	7.2	15.2	$155	$801	included in drainage	$13,610
C7	Culvert – Western end of OS07	42						$265,000
R15	Parkland edge street over culvert (both sides) (Garrett St)	19	5.5	10	$155	$612	included in drainage	$11,620

No.	Item	Length / No of items m	Pavement width m	Land width m	Land Unit Cost $ / sqm	Works Unit Cost $ / m	Total Land Cost $	Total Works Cost $
C8	Culvert – Garret St western end of Southern Creek	18						$205,000
R16	Local Street Type 1 Parkland frontage (one side) (McGuinness Ave adjacent to park)	67	1.7	5.7	$155	$245	$59,195	$16,382
R17	Local Street Type 1 (one side) (Hall Circuit adjacent to park)	67	1.7	Pre-existing street		$245		$16,382
R18	Oval edge street frontage to parkland (one side) (Hall Circuit adjacent to OS 1)	151	8.5	12.5	$221	$981	$416,290	$148,095
R19	Water Management Stante Cl (both sides)	146	14	Pre-existing street		$1,547		$225,913
R20	Oval edge street frontage to parkland (one side) (Hall CCT nr Stante Cl)	133	8.5	Pre-existing street		$981		$130,441
R21	Oval edge street frontage to parkland (one side) (Bird Walton)	345	8.5	12.5	$221	$981	$951,126	$338,362
R22	Local Street Type 1 drainage frontage (one side) (Bird Walton)	510	1.7	Pre-existing street		$245		$124,698
R23	Bridge and approaches across central creek	197		22.6		$1,611	$0	$317,419
C9	Culvert Middleton Dr							$205,000
B1	Bridge – Environmental Corridor							$2,200,000
R24	Local Street Type 1 parkland frontage (one side) (McIver Ave)	80	1.7	Pre-existing street		$245		$19,561
C10	Culvert - McIver Av							$200,000
R25	Local Street Type 1 parkland frontage (one side) (Kingsford Smith)	51	1.7	Pre-existing street		$245		$12,470
R26	Local Street Type 1 over culvert (both sides) (Kingsford Smith)	17	7.2	Pre-existing street		$801		$13,610
C11	Culvert - Second Av							$208,000
R27	Local Street Type 1 over culvert (both sides) (Hugh Terrace nr Windsock)	30	7.2	15.2	$155	$801	$70,680	$24,018
R28	Local Street Type 1 drainage frontage including culvert (western side) (Hugh Terrace Nr Windsock)	17	1.7	5.7	$155	$245	$15,020	$4,157
C12	Culvert							$265,000

No.	Item	Length / No of items m	Pavement width m	Land width m	Land Unit Cost $ / sqm	Works Unit Cost $ / m	Total Land Cost $	Total Works Cost $
R29	Local Street Type 1 parkland frontage (Kelsey Ave @ Hugh)	47	7.2	15.2	$155	$801	$110,732	$37,627
R30	Northern Collector Street (one side only)	120	8.1	12.6	$155	$940	$234,360	$112,746
R31	Local Street Type 1 (one side) (Love Road adjacent to park)	30	1.7	5.7	$155	$245	$26,505	$7,335
R32	Local Street Type 1 (one side) (Monoplane Ave adjacent to park)	87	1.7	5.7	$155	$245	$76,865	$21,272
R33	McIver St (both sides)							
R34	Intersection Upgrade - 15th & Kingsford Smith Aves.							$400,000
R35	Roundabout							$120,000
R36	Link under M7			Under M7				$400,000
	Traffic Calming Measure and Pedestrian Crossing Points							$200,000
	Bus Shelters	10				$14,270		$112,500
T1	Traffic Lights - 15th & Kingsford Smith Ave's							$150,000
T2	Traffic Lights – Flynn & Kingsford Smith Ave's							$300,000
Sub Total								$9,215,898
Plus 5% Contingency								$460,795
Total							**$3,383,630**	**$9,676,693**

12.5 Water Cycle Management

Background

Community standards require that stormwater be conveyed through urban areas in a manner that emphasises the cost-effective achievement of safety and amenity. This requirement leads to a development standard where drainage is managed on a catchment wide basis in a system of pipes, channels, culverts and basins. The responsibility to contribute, or nexus, is a combination of the characteristics of land development that:

- Increases stormwater runoff volumes and flow rates so that a system of pipes and channels and/or stormwater detention basins is required to offset these impacts downstream; and
- Increases population levels in the vicinity of potentially hazardous, uncontrolled rural standard drainage systems so that improvements, particularly large pipes and channel systems, are required to minimise and clearly demark the area of hazard potential.

The development of new release areas generally leads to a significant change in the stormwater runoff characteristics of drainage catchments. This change partially results from an increase in the ratio of runoff volumes to rainfall volumes due to a reduction in previous areas to absorb rainfall into the ground. It is also influenced by the reduction in catchment response times, where the impact of piping and channelising more efficiently conveys concentrated runoff to the catchment outlets. It may also be influenced by a reduction in flood plain storage of runoff volumes due to developments that incorporate landfill.

Nexus

An overall Water Cycle Management strategy has been established for the Middleton Grange area and is detailed in the Background Reports. This strategy supports the following objectives:

- Management of drainage and the flood plain contribute positively to the area
- Water quality and pollution management is to be of a high standard
- Quality of the natural environment is to be maintained and enhanced

The water cycle management strategy utilises detention basins, wetlands, natural channels, swales, gross pollution traps and other facilities to ensure that the outflow from the precinct after its development is no worse than in the pre-development situation. At the same time it returns the creeks and waterways to a more natural state. The creeks and associated riparian zone have been enhanced to provide flood mitigation and water quality improvement as well as public opens space amenity. This plan has allocated the costs for management of the water cycle and for open space areas across both sets of facilities as equitably as possible. All land uses are beneficiaries of the system and the enhanced amenity of the area.

Developers will be responsible for the costs of transporting stormwater from their land to the trunk drainage system. However, the cost of the trunk drainage system will be shared over the whole precinct. As background, it is seen by Council that every property that has stormwater drainage passing through it in a pre-development state has an obligation to provide proportionally for the runoff. In addition, all upstream properties will have an obligation to contribute to the cost of downstream drainage in proportion to the increase in runoff produced by their development.

In order to achieve an economical local drainage system it is required to drain stormwater runoff through the southern most water channel. This channel in some cases traverses privately owned land.

The area of land acquired, as drainage reserves shall be dedicated to the Council for that purpose and the Council will be responsible for the maintenance and functioning of the trunk drainage system.

Facilities

The Water Cycle Management infrastructure includes the following:

- Detention basins
- Water treatment zones and wetlands
- Aquatic and riparian vegetation rehabilitation
- Drainage channels
- Swales
- Pools and riffles
- Drainage culverts
- Gross pollutant traps.

Contribution credits for works in kind will not be accepted for temporary work required to fulfil developments on individual sites. All stormwater works are to be in accordance with Council requirements.

Scope of facilities

A review of the range of local drainage facilities was undertaken in 2008. This was undertaken in conjunction with the preparation of *Liverpool DCP 2008*. This plan included amongst other items a review of the masterplan for this area.

Apportionment

No apportionment is allowed for as there were no existing local transport facilities in existence at the commencement of the development of the area.

Contributing Development, Works and Land Acquisition Schedule

Contributing Development

2,580 dwellings/lots (Number of dwellings or equivalent that are expected to contribute to local drainage facilities)

The area from which contributions would be received is shown on Figure 12.1.

Map of Works and Land Acquisition

Refer to Infrastructure Map No 1 - 4 for the location of each item.

Works and Land Acquisition Schedule

The range of Works and Land Acquisition for local drainage facilities is shown in Table 12.5.

The cost of facilities not yet built was reviewed in 2008 following a review of unit costs by Council.

Table 12.4 Works and Land Acquisition Schedule

No.	Item	Area	Land Unit Cost	Total Land Cost	Total Works Cost
		sqm	$ / sqm	$	$
WM1	Entry Parklands				$898,384
	100/813874	12,140	$174	$2,112,360	
	10/1043937	14,180	$207	$2,935,260	
	Pt 260/2475	2,350	$206	$484,100	
WM2	Wetlands				$445,893
	Pt 102/1128111	6,826	$149	$1,014,763	
	Pt 260/2475	4,674	$206	$962,844	
WM3	Water Cycle area in Village Centre	2,790	$149	$414,765	$127,812
WM4	Water cycle area on southern creek west of village centre				$237,731
	Pt 102/1128111	2,335	$149	$361,925	
		4,969	$130	$770,195	
WM5	Water cycle area between Monkton and Bonython Aves	3,185	$155	$493,675	$147,843
WM6	Water cycle area on Irving Gardens east of Pentland	1,800	$155	$279,000	$98,478
WM7	Water cycle area west of Kingsford Smith	895	$155	$138,725	$93,910
WM8	Water cycle area west of Percival Ave	1,725	$155	$267,375	$127,218
WM9	Water cycle area between Hugh and Kingsford Smith				$133,085
	Pt 172/2475	1,250	$155	$193,750	
	Pt 173/2475	901	$85	$76,568	
WM10	Water cycle area between Kingsford and McIver	3,540	$107	$378,780	$190,046
WM11	Water cycle area on either side of bridge	9,203	Corridor		$607,539
WM12	Water cycle area north of playing fields, east of Bird Walton	16,707			$667,621
	B/381267	4,195	$221	$925,212	
	2/1115645	10,200	$95	$969,000	
	3/11115645	2,159	$95	$205,105	
WM13	Water cycle area adjacent to Hemsworth Ave	3,209	$155	$497,395	$319,058
WM14	Water cycle area adjacent to Hemsworth and Bridge	6,472	Corridor		$496,618
WM15	Water cycle area adjacent to Bonney Flight Cct	2,005	Corridor		$106,918
WM16	Water cycle area adjacent to Robey Ave	881	$155	$136,555	$122,051
EC1			Corridor		$494,826
EC2			Corridor		$637,313

WM17	Water cycle area adjacent to Dragonfly Cct	7,687	$155	$1,191,485	$392,915
WM18	Water cycle area adjacent to Ivor Cct	4,226	$130	$549,380	$373,958
WM19	Water cycle area adjacent to Truscott Ave	2,366	$155	$366,730	$476,335
Sub Total					**$7,195,551**
Plus 5% Contingency					$359,778
Totals				**$15,724,947**	**$7,555,328**

12.6 Administration, Professional Services and Implementation

Nexus

Implementation of this plan will require ongoing administration. A contribution is required for the costs associated with administration, professional services and implementation such as:

- Preparing this Plan;
- Ongoing monitoring, review and administration of the Plan.
- Independent reviews for the purposes of adjusting contribution rates.
- Executing legal documents for works-in-kind agreements.
- Land valuations and acquisition.
- Ongoing land valuations, to review this contribution plan, at least annually and more frequently depending on movements in the property market.
- Specialist technical studies.
- Research and investigation to amend or modify parts of this Plan.
- The up front implementation of the Plan.

Administration

The administration of contributions funds carries significant associated costs. Professional officers within Council are required to prepare, review and implement the Plan throughout its life. They are assisted by a team which provides support in coordinating the process, preparing status reports, reviewing relevant data, and liaising with other Council staff, external consultants and other external authorities.

In accordance with the requirements of the Department of Planning, the administration costs contributed under this Plan consist only of the expenses for personnel directly involved in the preparation and administration of this Plan. It is considered appropriate that a pool of funds be available to meet these costs.

Professional services

There are a number of costs associated with professional services for implementing the Middleton Grange release – such as studies in relation to Aboriginal archaeology and contamination of land identified for public open space. In addition, there are also costs for independent land valuations, legal assistance and management of the land acquisition process. In relation to land acquisition, Council will be required to acquire land for roads, public open space, community facilities and water cycle management and incur the associated conveyancing costs.

It is recognised that the costs associated with land acquisition could be added to the cost of individual facilities. However, because it is difficult to predict the cost of professional fees attributable to any one facility, it is considered more appropriate that a pool of funds be available to meet these costs as they arise.

Implementation

It is an objective of the Middleton Grange release that certain infrastructure and facilities will be in

place when residents first move into the area, requiring that key roads and water management infrastructure be provided early in the development process. As a result in the early years of the development expenditure will exceed income from contributions.

Because of the fragmented ownership situation in Middleton Grange, it will be necessary for Council to borrow funds to front fund land acquisition and construction of these road and water management facilities, and then to recoup the cost through contributions.

The plan also makes provision for costs associated with front funding the purchase of land. In acquiring parts of certain parcels there are likely to be additional costs for existing dwellings, disturbance and severance that would not be incurred if the land were to be provided as works in kind in lieu payment of contributions. It will also be necessary for Council to recover this cost in the contribution rate.

Costing

The estimated costs associated with administering and implementing this contributions plan and for professional service fees are shown in the following tables.

Given that **administration costs and professional service fees** for the Plan are likely to be the same for all residential lots, all will be levied equally regardless of sizes. However, in relation to **implementation** – where costs are linked to the value and size of land to be acquired – the contribution will be levied differentially. All residential lots will be levied equally, but non-residential uses, including housing for aged and disabled people, will be levied on the basis of an equivalent 450sqm lot. Therefore, for example, a development of 4,500sqm will contribute 10 times the standard contribution rate.

Table 12.5 Administration

Item	Cost
Preparation, review and monitoring of MG component of Contributions Plan	$160,000
Project management and administration	$270,000
Total	**$430,000**

Table 12.6 Professional services

Item	Cost
Contamination study	$35,000
Aboriginal archaeology	$50,000
Land valuations and reviews	$136,000
Project management of land acquisition	$87,500
Total	**$308,500**

Table 12.7 Implementation costs

Item	Cost
Up front land acquisition costs	$1,644,000
Valuation fees	$140,000
Legal fees	$56,000
Transfer costs	$56,000
Court costs	$350,000
Advertising/issues of acquisition notices	$70,000
Studies for flooding, environment	$70,000
Relocation and disturbance	$280,000
Stamp duty	$440,000
Total	**$3,106,000**

12.7 Contribution Formulae

Community and Recreation Facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing and Residential Flat Buildings

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{OR}{3.7}$$

where C = Cost of capital works or land identified for the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot)} = \frac{A}{N} \times \frac{OR}{3.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots / dwellings in the catchment area

O R = Estimated occupancy rate for lot size or dwelling type

Transport Facilities

Conventional Lot Residential Subdivision, Small Lot Subdivision, Semi-detached dwellings, Multi dwelling housing and Residential Flat Buildings

Contribution by cash

$$\text{Contribution Rate (per dwelling / lot)} = \frac{C}{N} \times \frac{V}{6.7}$$

where C = Cost of capital works and land identified for the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type

Contribution by land dedication

$$\text{Area of land to be dedicated (per dwelling / lot / non residential development)} = \frac{A}{N} \times \frac{V}{6.7}$$

where A = Total area to be acquired in the catchment area

N = Number of equivalent lots in the catchment area

V = Vehicle trips per day for lot size or dwelling type (refer to Table 12.8)

Table 12.8 Vehicle Trips per day per dwelling

Dwelling Type or Lot Size	Vehicle Trips per day
Residential Subdivision Lots 450 sqm or larger	6.7
Residential Subdivision Lots smaller than 450 sqm	6.0
Semi-detached dwellings, Multi dwelling housing & Residential Flat Buildings (where permitted)	
3 or more bedrooms	6.0
2 bedrooms	4.0
1 bedroom	3.3
Aged and Disabled Persons Housing (total development)	Total vehicle trips per day

Drainage Facilities

Contributions for drainage are calculated as follows:

$$\text{Contribution rate (per sqm)} = \frac{C \times \text{Proportion of total Runoff of the respective dwelling density group}}{\text{Area in sqm of the respective dwelling density group}}$$

or where land is required to be dedicated in lieu of payment of a contributions for land acquisition

$$\text{Area of land to be dedicated (sqm)} = \frac{A \times \text{Proportion of total Runoff of the respective dwelling density group}}{\text{Area in sqm of the respective dwelling density group}}$$

Where:

C = Cost of works or land identified in the contributions plan.

A = Total area of land identified to be acquired in the contributions plan.

Area in sqm of the respective dwelling density group includes the full width of proposed streets within a proposed subdivision. This includes the full width of streets adjacent to open space or drainage land.

Dwelling density group means the minimum dwelling density as specified by *Liverpool LEP 2008*.

Table 12.9 gives the relative impacts of alternative types of development on runoff generation.

Table 12.9 Development Details

Dwellings/ha	Total	Dwelling Yield	Run-off Coeffs	% of Runoff
15 Dwellings / ha	106.51	1,598	0.65	63.78%
23 Dwellings / ha	24.50	563	0.95	21.44%
30 Dwellings / ha	16.89	507	0.95	14.78%
Totals	**147.89**	**2,668**		**100.00%**

Administration

The cost per lot per year has been averaged across all of the sub catchment and is calculated as follows:

$$\mathbf{CR} = \frac{\mathbf{A}}{\mathbf{N}}$$

Where:

CR = the contribution rate for administration per lot.

A = the total cost of administration.

N = the total estimated number of additional lots at the full extent of development in Middleton Grange.

The administration cost for the District and City Wide component is estimated as $87 per lot.

Professional services

The cost per lot per year has been averaged across all of the catchment area and is calculated as follows:

$$CR = \frac{PS}{N}$$

Where:

CR = the contribution rate for professional services per lot.

PS = the total cost of professional services.

N = the total estimated number of additional lots.

The Contribution Rate for non-residential lots/uses will be based on the following formula:

$$\textbf{CR (non-residential) = CR for residential lot x area of } \frac{\textbf{non-residential development}}{\textbf{450}}$$

Implementation

Residential Development

$$CR = \frac{I}{N}$$

Where:

CR = the contribution rate for implementation per residential lot.

I = the total cost of implementation.

N = the total estimated number of additional lots.

The Contribution Rate for non-residential lots/uses will be based on the following formula:

$$\textbf{CR (non-residential) = CR for residential lot x area of } \frac{\textbf{non-residential development}}{\textbf{450}}$$

12.8 Staging of Facilities

While timing and staging will be dependent on available funding as a result of this plan and the location of new development, it is the intention of Council and accordingly this Contributions Plan, that necessary infrastructure is in place as soon as possible. Staging will also accord with the provision of other infrastructure that would be built in conjunction with the water management facilities, such as parks and roads.

13. Elizabeth Hills/Cecil Hills

13.1 Background

That portion of Elizabeth Hills that was part of the former Hoxton Park Aerodrome is already zoned for residential development. The other portion west of Cecil Hills has not yet been zoned for residential development. It is anticipated that facilities in Elizabeth Hills not contained in this contributions plan will be provided by way of a Voluntary Planning Agreement.

Elizabeth Hills and Cecil Hills form part of the Hoxton Park Stage 2 Release Areas.

13.2 Local Community Facilities in Elizabeth Hills

Background

There will be additional development at Elizabeth Hills. As this area will not be of sufficient size to require a new Multi-Purpose Community Centre, it is proposed to augment the existing community centre at Cecil Hills. The rate per dwelling is the same as for dwellings in Hoxton Park, Carnes Hill and Prestons Release Areas.

Contributing Development and Catchment Area

900 dwellings/lots (Number of dwellings or equivalent that is expected to contribute to local community facilities).

The area from which contributions would be received is shown on Figure 13.1.

Figure 13.1

13.3 Local Community and Recreation Facilities in Cecil Hills

The Cecil Hills Release Area is generally complete. Local community and recreation facilities have been provided. It is considered that any further development or more intense redevelopment should contribute at the same rate as the Established Areas catchment area. Any such development will also contribute to the relevant District Facilities in the Hoxton Park Stage 2 Release Areas.

Catchment Areas

There is a single catchment in Cecil Hills. The area from which contributions would be received is shown on Figure 13.2.

Figure 13.2

Planning Proposal

Amend Schedule 1 of the Liverpool Local Environmental Plan 2008 to allow car parks as a land use permitted with consent at Collimore Park, Liverpool

30 June 2020

LIVERPOOL CITY COUNCIL

LIVERPOOL THE GREAT SOUTH WEST

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Introduction

The planning proposal relates to a parcel of land known as Collimore Park that is located on the western edge of the Liverpool City Centre. The majority of the site is zoned RE1 – Public Recreation, with the south-eastern corner (Lot 1 DP 1089398) zoned SP2 – Infrastructure (Electricity Transmission). The proposal seeks an additional permitted use for the site specifically to allow for *'car parks'* as permitted with consent under the Liverpool Local Environmental Plan 2008 (LLEP 2008).

The impetus for the planning proposal is to allow for a future multi-storey car parking development on the site despite the RE1 – Public Recreation and SP2 – Infrastructure (Electricity Transmission) zoning that applies. This future multi-storey car park is to be placed on the existing car park area, and retain the valuable recreational facilities on the site. It is noted that the RE1 – Public Recreation portions of the site are classified as community land.

Site description

Figure 1: Location of subject site outlined in red (Nearmap 2019)

The subject site is located on the western edge of the Liverpool CBD area. The total area of the subject site is approximately 38,500m^2. The site consists of the following lots, and are owned as follows:

- Lot 1 DP 1089398 (Privately owned, Liverpool City Council currently lease this land);

- Lot 2 DP 1089398 (Liverpool City Council);
- Lot 400 DP 1185131 (Liverpool City Council);
- Lot 7009 DP 1027995 (NSW land); and
- The previous creek corridor that traverses through the centre of the site (Crown Land).

The site is bound by Elizabeth Drive to the north, Collimore Avenue to the east, Moore Street to the south, and Brickmakers Creek to the west. The site currently contains the following:

- Outdoor Futsal Soccer field;
- Basketball courts;
- Children's play equipment;
- At-grade public carpark;
- Public, outdoor gym equipment; and
- Brickmakers Creek running along the western edge of the site.

Adjoining the site to the north is Elizabeth Drive and Waddell Brothers Park, with some low density residential dwelling located to the north-east. To the east of Collimore Avenue are a variety of low and medium density residential developments ranging from single storey dwellings to three storey residential flat buildings. A larger residential area is located to the south of Moore Street consisting of a variety of 3-4 storey residential flat buildings. Finally, Brickmakers Creek runs along the western edge of the site, with further low and medium density residential developments located to the west ranging between one and two storeys in height.

Figure 2: Zoning Map from LLEP 2008 (Subject site outlined in black)

Figure 3 Looking at the subject site in a north-westerly direction from the corner of Moore St and Collimore Ave

Figure 4 Looking down the site in a northerly direction from the basketball courts

Figure 5 Looking at the subject site from Collimore Ave in a westerly direction

Background

In 2011, Collimore Park was redeveloped by Council where previous netball courts were converted into an at-grade public car park to provide additional car parking capacity for workers accessing the Liverpool City Centre. This development was completed under State Environmental Planning Policy (Infrastructure) 2007 which allows for the development of single storey car parks on a public reserve as exempt development. Since the completion of this work, additional recreational facilities have been provided in the form of sporting courts, children's play equipment, and outdoor gym equipment.

Following the preparation of the Liverpool City Centre Traffic Study 2017, Council resolved at the 26 July 2017 meeting to receive a further report on implementation plans of the recommended car parking strategies. This draft scoping and implementation plan was then considered at the December Council meeting that year (13 December 2017). Within this study, a recommended improvement identified was to provide additional commuter car parking spaces outside the city centre at the Collimore Car Park. Furthermore, a short-term (0-5 years) project was recommended for scoping, options and design investigation of a multi-storey car park at Collimore Car Park. Council resolved to allocate funding for design investigation for a multi-deck car park at the existing Collimore Car Park, and to move the construction of Collimore Park parking station to the 0-5 year category.

In satisfying these Council decisions and preparing for the future development of a multi-storey car park at Collimore Park, Council has prepared this planning proposal to permit such works in the future under the Liverpool Local Environmental Plan 2008.

Draft Concept Plan

A draft Concept Plan has been prepared to provide some guidance as to what kind of development will be facilitated by this planning proposal. This draft Concept Plan has informed the specific application of the additional permitted use. This ensures that the scale and impact of a future carpark is controlled appropriately. It is noted that a future carpark design may differ from the draft Concept Plan prepared. This draft is to simply inform the planning proposal, and its specific application within Collimore Park.

Figure 6 Draft Concept Plan for Collimore Carpark (Site and Location Plan)

Figure 7 Draft Concept Plan for Collimore Carpark (Perspective View from Corner of Moore St and Collimore Ave)

Part 1 – Objectives

The objective of this planning proposal is to amend the LLEP 2008 to permit the development of a multi-storey car park at Collimore Park with consent. This objective applies to the subject site only.

Part 2 – Explanation of provisions

The objective of the planning proposal will be achieved through an amendment to Schedule 1 of the LLEP 2008 to allow "car parks" as a land use permitted with development consent at Collimore Park, which is legally defined as follows:

- Lot 1 DP 1089398 (Privately owned, Liverpool City Council currently lease this land) (**Whole**);
- Lot 2 DP 1089398 (Liverpool City Council) (**Part**);
- Lot 400 DP 1185131 (Liverpool City Council) (**Part**);
- Lot 7009 DP 1027995 (NSW land) (**Part**); and
- The previous creek corridor that traverses through the centre of the site (Crown Land) (**Part**).

This amendment to Schedule 1 would require an additional clause that applies specifically to the subject site (Clause 27).

To facilitate the above changes, the following LLEP maps will be amended:

Key Sites

- 4900_COM_KYS_010_020_20170606; and
- 4900_COM_KYS_011_005_20180730.

The area of application for the proposed additional permitted use is defined within the mapping provided in Part 4 of this report.

Part 3 – Justification

Section A – Need for the planning proposal

3.1 Is the planning proposal a result of an endorsed local strategic planning statement, strategic study or report?

No, the planning proposal is not the result of an endorsed local strategic planning statement, strategic study or report. However, it is the result of the Transport Strategy for Liverpool City Centre prepared for Council by GTA Consultants. This report was considered and noted by Council at the 26 July 2017 Council meeting. Additionally, the Liverpool City Centre Traffic Study 2017 – Draft Implementation Plan that was prepared by Council and reported to the Council meeting on 13 December 2017.

Whist the study and plan have not been formally endorsed, they have been considered and noted by Council and informed the decisions made in regard to the future development of car parking at Collimore Park. Both the study and the plan have demonstrated the need for additional car parking provision within the Liverpool CBD and both identify the expansion of Collimore Car Park as a recommended improvement.

3.2 Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes. The alternative to the schedule 1 amendment proposed is a rezoning of the site to a zone that permits 'car parks' with consent. It is recognised that this would achieve the intended outcome of enabling the development of a multi-storey car park on the subject site. However, this would also permit additional uses on the site that are not desired, or appropriate given the nature and use of Collimore Park.

The schedule 1 amendment proposed will allow for car parking on the site whilst avoiding any risk of losing the existing recreational uses on the site or introducing inappropriate or incompatible uses.

Section B – Relationship to strategic planning framework.

3.3 Will the planning proposal give effect to the objectives and actions of the applicable regional, or district plan or strategy (including any exhibited draft plans or strategies)?

A Metropolis of Three Cities

The proposed amendment to schedule 1 of the LLEP 2008 facilitating 'car parks' as a permitted use with development consent will contribute to the function and growth of Liverpool CBD as a Metropolitan Cluster as well as a Health and Education Precinct.

The planning proposal is consistent with the following objectives of the Greater Sydney Region Plan 2018, *A Metropolis of Three Cities*:

- **Objective 12**: Great places that bring people together
    - **Strategy 12.2**: In Collaboration Areas, Planned Precincts and planning for centres:
        - Investigate opportunities for precinct-based provision of adaptable car parking and infrastructure in lieu of private provision of car parking;
        - Ensure parking availability takes into account the level of access by public transport;
        - Consider the capacity for places to change and evolve, and accommodate diverse activities over time; and

- Incorporate facilities to encourage the use of car sharing, electric and hybrid vehicles including charging stations.

To this point, the planning proposal will facilitate the provision of public car parking infrastructure in a strategic location close to the Liverpool CBD and surrounding road network. Collimore Park has the following merits regarding future expansion for public car parking, as identified within the Transport Strategy for Liverpool City Centre:

- The site is located with convenient access to the arterial road network, however separated from the core CBD area.
- The site has convenient pedestrian access to the core CBD area. While walking distance exceeds that typically accepted by long stay users, pedestrian access is available for drivers not seeking to make use of the proposed shuttle service.
- The use of the site for car parking is consistent with its current use, being an at-grade car park. As such the development of a multi-level car park on the site would not be expected to significantly impact on the urban fabric and surrounds. Indeed, a quality car park structure may improve the urban design of the site.

A future design for a multi-level car park as facilitated by this planning proposal should consider and include adaptability in its design and sustainable vehicle infrastructure such as charging stations and car sharing spaces.

- **Objective 22** Investment and business activity in centres
    - **Strategy 22.1** Provide access centres by:
        - Designing parking that can be adapted to future uses.

A future design for a multi-level car park as facilitated by this planning proposal that is outside the core CBD area will reduce the need for parking within the CBD core. This has the potential to free up space for a more sustainable, safe, and human-scale public domain.

Western City District Plan

The planning proposal is also consistent with the following priority and action of the Western City District Plan:

- **Planning Priority W9 Growing and strengthening the metropolitan cluster**
    - **Action 42. In addition to the Collaboration Area process outlined above, carry out the following:**
        - protect and develop the commercial core
        - improve and coordinate transport and other infrastructure to support jobs growth
        - improve public domain including tree-lined, comfortable open spaces and outdoor dining
        - improve connectivity and links to the Georges River and prioritise pedestrian, cycle and public transport facilities

Collimore Park provides an accessible and well-serviced site that adjoins the CBD of Liverpool. Car parking on this site ensures that parking infrastructure is reduced within the commercial core of Liverpool, improves the coordinated transport of the CBD at a precinct level and contributes to an improved public domain within the CBD due to the reduction in car parking infrastructure.

3.4 Will the planning proposal give effect to a council's endorsed local strategic planning statement, or another endorsed local strategy or strategic plan?

Liverpool Community Strategic Plan – Our Home, Liverpool 2027

The proposal to enable 'car parks' on the site aligns with Liverpool's Community Strategic Plan (CSP) – Our Home, Liverpool 2027, which states:

- Direction 3: Generating Opportunity
    - Council will: Advocate for, and develop, transport networks to create an accessible city.

Liverpool Local Environmental Plan 2008

The planning proposal addresses one of the aims of the LLEP 2008, being:

> *(a) to encourage a range of housing, employment, recreation and services to meet the needs of existing and future residents of Liverpool,*
>
> *(d) to strengthen the regional position of the Liverpool city centre as the service and employment centre for Sydney's south west region,*
>
> *(f) to promote the efficient and equitable provision of public services, infrastructure and amenities.*

The zoning is to remain as existing for the subject site. The objectives of the RE1 – Public Recreation zone are as follows:

- *To enable land to be used for public open space or recreational purposes.*
- *To provide a range of recreational settings and activities and compatible land uses.*
- *To protect and enhance the natural environment for recreational purposes.*
- *To provide sufficient and equitable distribution of public open space to meet the needs of residents.*
- *To ensure the suitable preservation and maintenance of environmentally significant or environmentally sensitive land.*

The objectives of the SP2 – Infrastructure zone are as follows:

- *To provide for infrastructure and related uses.*
- *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*
- *To reserve land for the provision of infrastructure.*

The proposal aims to enable 'car parks' as a permissible use with consent within these existing zones. A future multi-level car park will help to improve and consolidate the existing car parking infrastructure on the site, whilst respecting the public recreation infrastructure and the Brickmakers Creek corridor.

3.5 Is the planning proposal consistent with applicable State Environmental Planning Policies?

Table 1 SEPP Consistency

State Environmental Planning Policy	**Consistency**
State Environmental Planning Policy No 55—Remediation of Land	Yes – given the site is currently developed as a public car park, and recreational park and has been used for recreational purposes historically, no contamination impacts are anticipated.
State Environmental Planning Policy (Infrastructure) 2007	Yes
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017	Yes
Greater Metropolitan Regional Environmental Plan No 2—Georges River Catchment	Yes

3.6 Is the planning proposal consistent with applicable Ministerial Directions (Section 9.1 directions)?

Table 2 Section 9.1 Directions Consistency

Section 9.1 Direction	**Complies**	**Justification**
Environment and Heritage		
2.1 Environment Protection Zones	Yes	The Brickmakers Creek riparian corridor that traverses the western border of the site is identified as Environmentally Sensitive Land. The proposed amendments will not reduce the environmental protection standards that apply to the land. The protection of this riparian corridor will be further ensured by provisions within the *Water Management Act 2000* that controls and limits development within 40m of the bank of the creek.
Housing, Infrastructure and Urban Development		
3.4 Integrating Land Use and Transport	Yes	The proposal seeks to facilitate a public car park development within the subject site. The site is serviced by public transport in the form of a bus route to enable access to the Liverpool city centre as well as other surrounding suburbs.
Hazard and Risk		
4.3 Flood Prone Land	No	The subject site is identified as within the flood planning area and having medium to low flood risk. The location of the

		existing car park area is identified as low flood risk, and this is considered acceptable for a public car park development. It is deemed that this inconsistency is of minor significance. Furthermore, additional flood investigations will be undertaken if a Gateway determination is issued for the proposal. Council will ensure that the future development of the land is consistent with the principles of the Floodplain Development Manual 2005 and the relevant provisions of the LLEP 2008 and LDCP 2008.
Regional Planning		
5.10 Implementation of Regional Plans	Yes	Consistency with *A Metropolis of Three Cities* is outlined in section 2 above.
Local Plan Making		
6.1 Approval and Referral Requirements	Yes	The planning proposal does not contain provisions which require concurrence, consultation or referral to any minister or public authority and does not identify development as designated development.
6.3 Site Specific Provisions	Yes	The proposal seeks to allow the car parking use to be carried out in the existing RE1 – Public Recreation and SP2 – Infrastructure zones applying to the site through a site specific schedule 1 amendment. No drawings or details are provided within this planning proposal detailing a possible future development proposal.
Metropolitan Planning		
7.1 Implementation of A Plan for Growing Sydney	Yes	The proposal seeks to facilitate car parking on the subject site and is therefore consistent with *Direction 1.4: Transform the productivity of Western Sydney through growth and investment*, *Direction 1.9: Support priority economic sectors*, and *Direction 1.10: Plan for education and health services to meet Sydney's growing needs*.

Section C – Environmental, social, and economic impact

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

The planning proposal will not impact critical habitat or threatened species, populations or ecological communities, or their habitats due to an absence of such environmental constraints within the site and in close proximity to the site.

3.8 Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

The Brickmakers Creek corridor along the western edge of the site is identified as Environmentally Significant Land. It is deemed that the flooding constraints impacting this portion of the site will prevent any

inappropriate development from being located within or in close proximity to this Environmentally Significant Land.

No other likely environmental effects are identified. Where environmental impacts do exist, are deemed to be of minor significance.

3.9 Has the planning proposal adequately addressed any social and economic effects?

The subject site is currently utilised as an at-grade public car park by the community, and this proposed amendment seeks to enable the future development of further public parking in the form of a multi-storey car park. It is deemed that the increase in the intensity of this car park landuse is acceptable given the nature of the existing use and the location of the site. The proposed amendment will help to sustain the function of the Liverpool CBD as a Metropolitan Cluster that provides crucial employment opportunities.

The planning proposal will not create adverse social or economic impacts.

Section D – State and Commonwealth interests

3.10 Is there adequate public infrastructure for the planning proposal?

The planning proposal is of local significance and will itself enable additional public infrastructure provision in the form of a future multi-level public car park. It is noted that the site is currently occupied by a large at-grade public car park that is well serviced by public transport and has excellent access to the surrounding road network.

3.11 What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

The views of state and Commonwealth public authorities will be considered following Gateway determination. The following government agencies should be considered:

- Roads and Maritime Services;
- Sydney Water;
- Office of Environment and Heritage;
- Department of Lands and Industry; and
- State Emergency Services.

Part 4 – Mapping

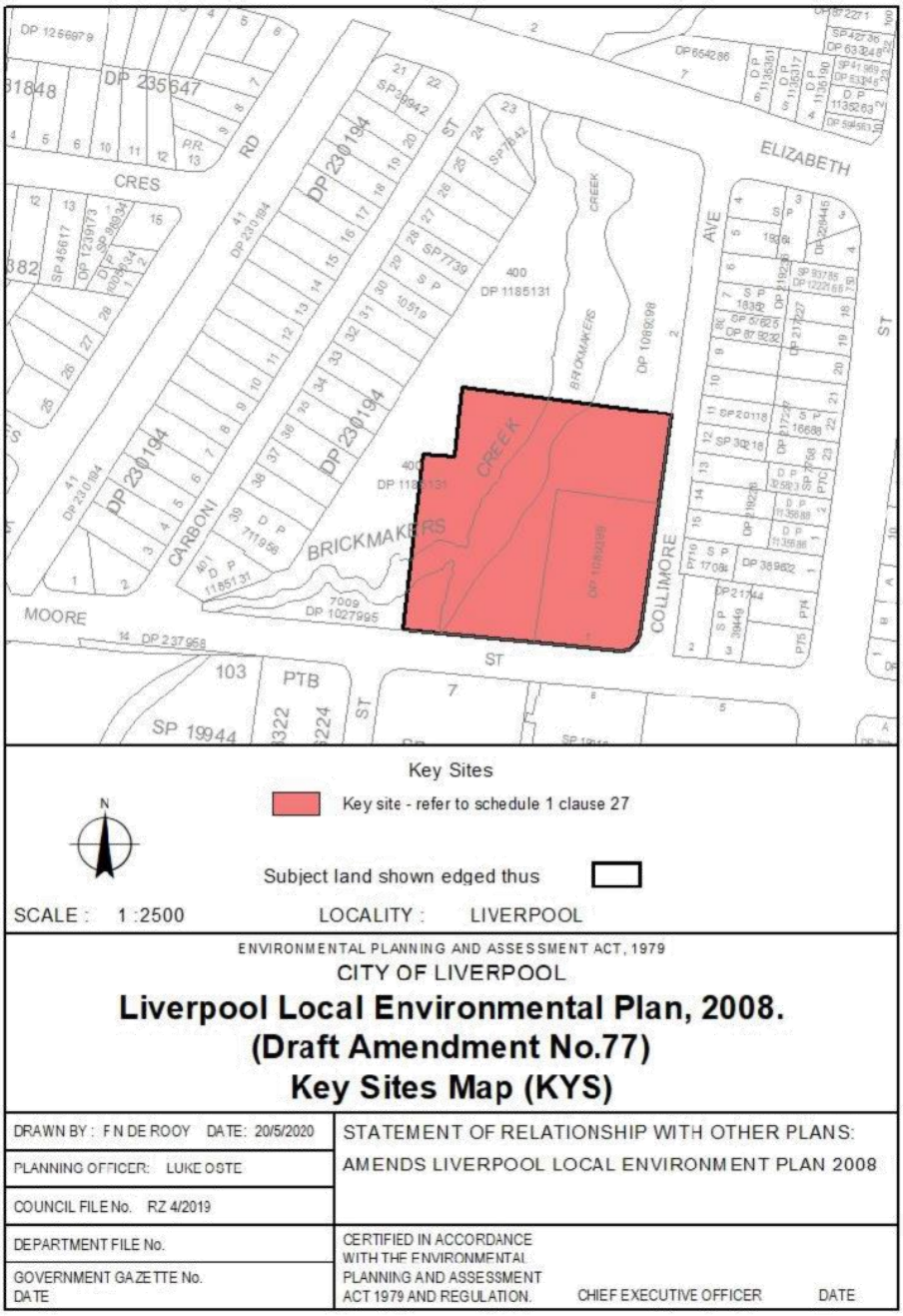


Figure 8: Proposed Key Sites Map

Part 5 – Community Consultation

Community consultation will be undertaken in accordance with the Gateway determination. It is anticipated that the proposal will be exhibited for 14 days through:

- Notification on Liverpool City Council's planning portal and Liverpool Listens website; and
- Letters to the adjoining landowners.

Additionally, a draft Concept Plan for Collimore Park and a future multi-storey car park will be prepared and exhibited concurrently with the planning proposal. This will help to provide clarity to the public in depicting the kind of redevelopment of Collimore Park that will be enabled by the proposed amendment to the LLEP 2008.

Part 6 – Project Timeline

An anticipated project timeline is shown in Table 3.

Table 3: Anticipated project timeline

Timeframe	Action
May 2019	Presented at the Local Planning Panel meeting
Jun 2019	Presented to Liverpool City Council
Jul 2019	Submission of Planning Proposal to DP&E
Feb 2020	Gateway Determination issued
Jul 2020 – Aug 2020	State agency consultation
Jul 2020 – Aug 2020	Community consultation
Sep 2020 – Oct 2020	Consideration of submissions and proposal post-exhibition
Oct 2020	Post-exhibition report to Council
Nov 2020	Legal drafting and making of the plan

Planning, Industry & Environment

Gateway Determination

***Planning proposal (Department Ref: PP_2019_LPOOL_004_00)**: To amend Liverpool Local Environmental Plan Schedule 1 Additional Permitted uses for Collimore Park, Liverpool.*

I, the Acting Director Western, Central River City and Western Parkland City, at the Department of Planning, Industry and Environment, as delegate of the Minister for Planning and Public Spaces, have determined under section 3.34(2) of the *Environmental Planning and Assessment Act 1979* (the Act) that an amendment to the Liverpool Local Environmental Plan (LEP) 2008 to Amend Schedule 1 Additional permitted uses to allow for 'car parks' to be an additional permitted use at Collimore Park, Liverpool should proceed subject to the following conditions:

1. Prior to community consultation Council is to:

   (a) finalise the draft concept plan for Collimore Park and ensure the concept plan addresses traffic issues and includes methods to ameliorate any impacts resulting from the proposed development upon the surrounding residential area;
   (b) update the planning proposal to reflect the draft concept plan and apply the additional permitted use clause to the confines of the existing at-grade car park area;
   (c) exhibit the draft concept plan concurrently with the planning proposal; and
   (d) amend Part 6 – Project Timeline to reflect a timeframe of nine months

   The revised planning proposal is to be forwarded to the Department for review and endorsement prior to public exhibition.

2. Public exhibition is required under section 3.34(2)(c) and schedule 1 clause 4 of the Act as follows:

   (a) the planning proposal is classified as low impact as described in *A guide to preparing local environmental plans* (Department of Planning, Industry and Environment 2016) and must be made publicly available for a minimum of **14 days**; and
   (b) the planning proposal authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 6.5.2 of *A guide to preparing local environmental plans* (Department of Planning, Industry and Environment 2016).

1. Consultation is required with the following public authorities/organisations under section 3.34(2)(d) of the Act and/or to comply with the requirements of relevant section 9.1 Directions:

   - Endeavour Energy
   - Transport for NSW (TfNSW)
   - Roads and Maritime Services (RMS)

   The public authorities/organisations are to be provided with a copy of the planning proposal and any relevant supporting material, and given at least 21 days to comment on the proposal.

3. A public hearing is not required to be held into the matter by any person or body under section 3.34(2)(e) of the Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

4. The planning proposal authority is authorised as the local plan-making authority to exercise the functions under section 3.36(2) of the Act subject to the following:
   (a) the planning proposal authority has satisfied all the conditions of the Gateway determination;
   (b) the planning proposal is consistent with section 9.1 Directions or the Secretary has agreed that any inconsistencies are justified; and
   (c) there are no outstanding written objections from public authorities.

5. The time frame for completing the LEP is to be **9 months** following the date of the Gateway determination.

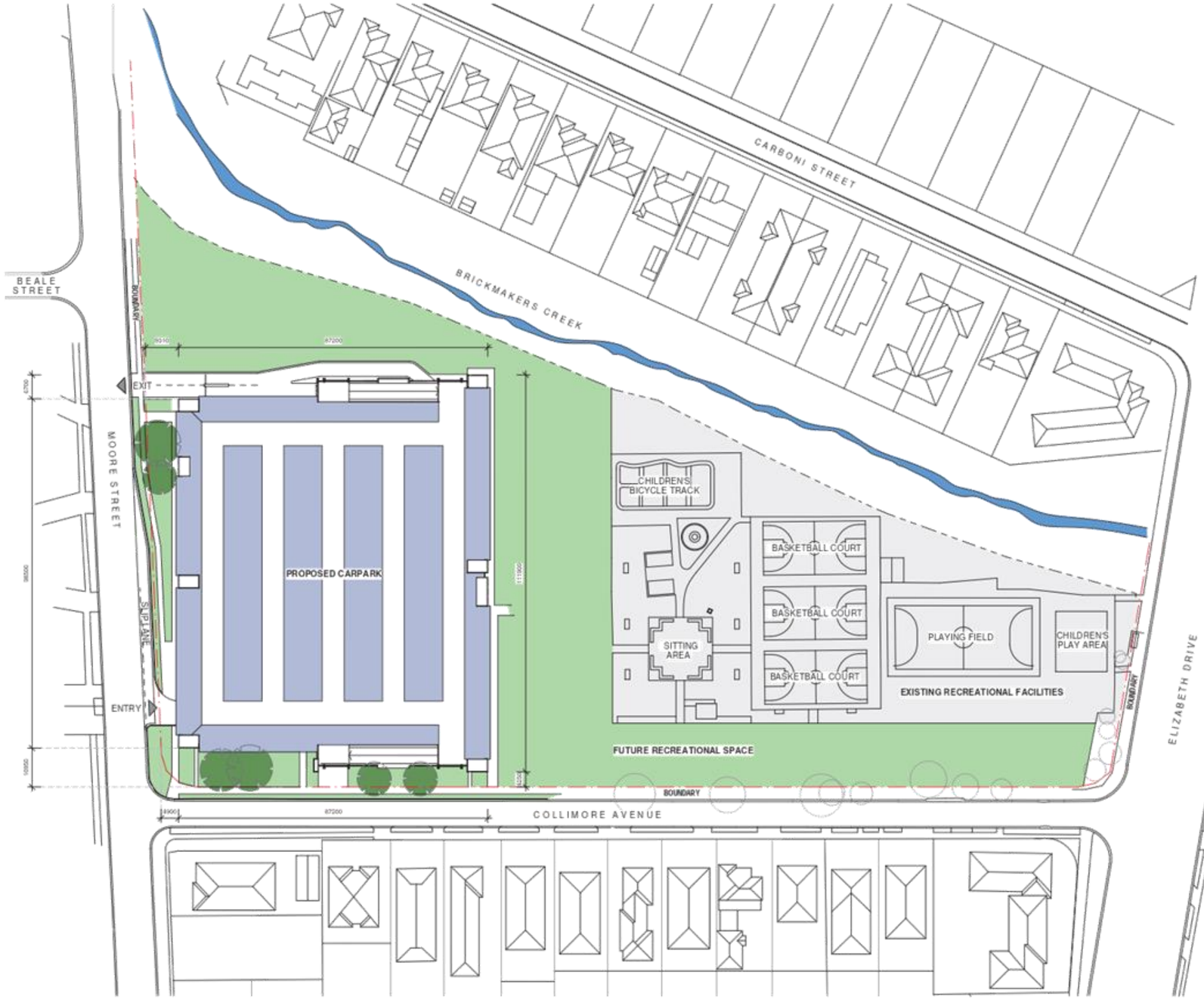
Dated 13th day of February 2020.

Eleanor Robertson
Acting Director Western, Central River City and Western Parkland City
Greater Sydney, Place and Infrastructure
Department of Planning, Industry and Environment

Delegate of the Minister for Planning and Public Spaces


DREW DICKSON ARCHITECTS
PROPOSED
CARPARK
COLLIMORE PARK
LIVERPOOL
Proposed Collimore Park Carpark
Planning Proposal
Collimore Avenue, Liverpool NSW 2170
May 2020

CONTENTS PAGE



1 SITE PLAN
1 : 500

SITE LOCATION PLAN

DEVELOPMENT SUMMARY TABLE

	CAR SPACES	MOTORBIKES	BICYCLES
LEVEL 1 (GROUND FLOOR)	220	102	220
LEVEL 2	309	-	-
LEVEL 3	309	-	-
LEVEL 4	312	-	-
TOTAL:	1150	102	220

SITE PLAN LEGEND:

- SITE BOUNDARY
- EXISTING RECREATIONAL FACILITIES
- ZONE FOR FUTURE RECREATIONAL SPACE, FACILITIES AND SETBACK LANDSCAPING
- EXISTING TREES
- NEW STREET TREES

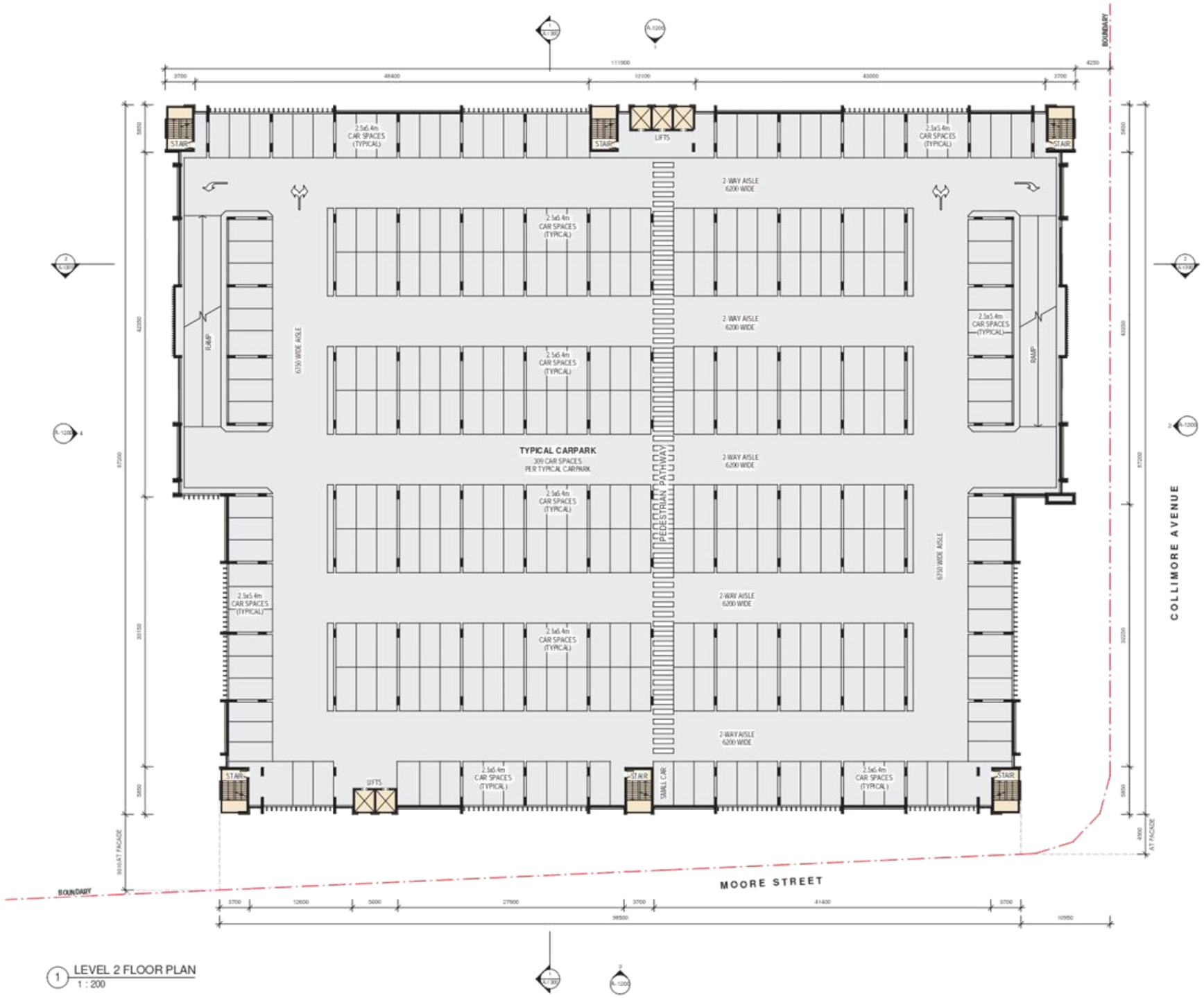
ISSUE	DATE	DESCRIPTION	DRAWN BY
A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS

Architects: DREW DICKSON ARCHITECTS
Client: LIVERPOOL CITY COUNCIL
Job No: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL, NSW 2170
Drawing No: SITE PLAN
Drawing Scale: As indicated
Date: APRIL 2020
Drawn By: MS
Drawing Status: PLANNING PROPOSAL
Project / Job No: 20033
Drawing No: A-0003
Revision: A

1 LEVEL 1 (GROUND) FLOOR PLAN
1 : 200

ISSUE	DATE	DESCRIPTION	DRAWN BY
A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS

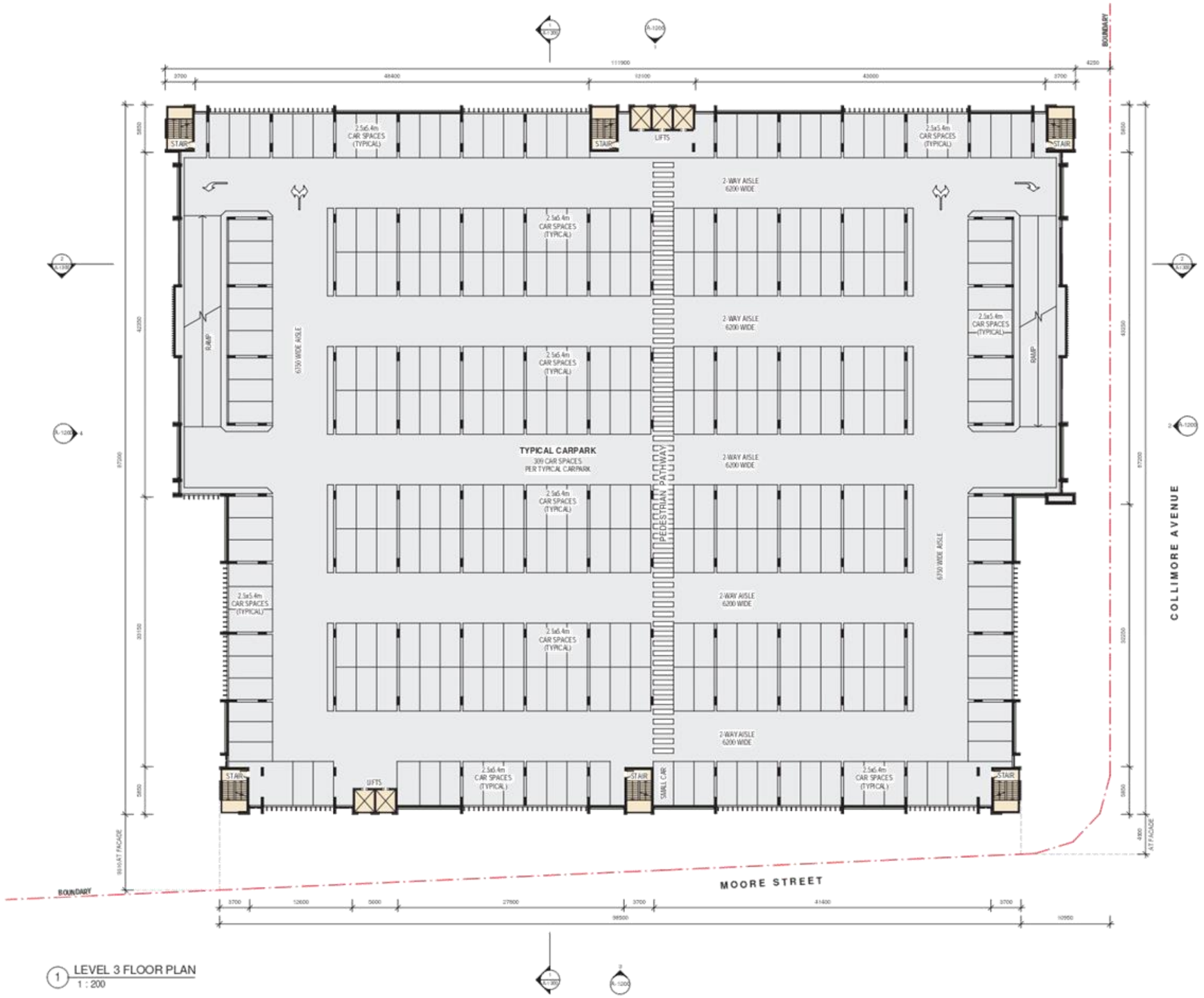
Architects: DREW DICKSON ARCHITECTS
Client: LIVERPOOL CITY COUNCIL
Job Title: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL NSW 2170
Drawing Title: LEVEL 1 (GROUND) FLOOR PLAN
Drawing Scale @ A1: 1 : 200
Date: APRIL 2020
Drawn by: MS
Drawing Status: PLANNING PROPOSAL
Project / Job No: 20033
Drawing No: A-1000
Revision: A



1 LEVEL 2 FLOOR PLAN
1 : 200

ISSUE	DATE	DESCRIPTION	DRAWN BY
A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS

Architects: DREW DICKSON ARCHITECTS
Client: LIVERPOOL CITY COUNCIL
Job Title: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL NSW 2170
Drawing Title: LEVEL 2 FLOOR PLAN
Drawing Scale at A1: 1 : 200
Date: APRIL 2020
Drawn by: MS
Drawing Status: PLANNING PROPOSAL
Project / Job No: 20033
Drawing No: A-1101
Revision: A



1 LEVEL 3 FLOOR PLAN
1 : 200

A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS
ISSUE	DATE	DESCRIPTION	ISSUED BY

DREW DICKSON ARCHITECTS

Client: LIVERPOOL CITY COUNCIL
SHOP/1 33 MOORE STREET LIVERPOOL NSW 2170

Job Title: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL NSW 2170

Drawing Title: LEVEL 3 FLOOR PLAN

Drawing Scale at A1: 1 : 200
Date: APRIL 2020
Drawn by: MS
Drawing Status: PLANNING PROPOSAL
Project / Job No.: 20033
Drawing No.: A-1102
Revision: A

1 LEVEL 4 FLOOR PLAN
1 : 200

A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS
ISSUE	DATE	DESCRIPTION	ISSUED BY

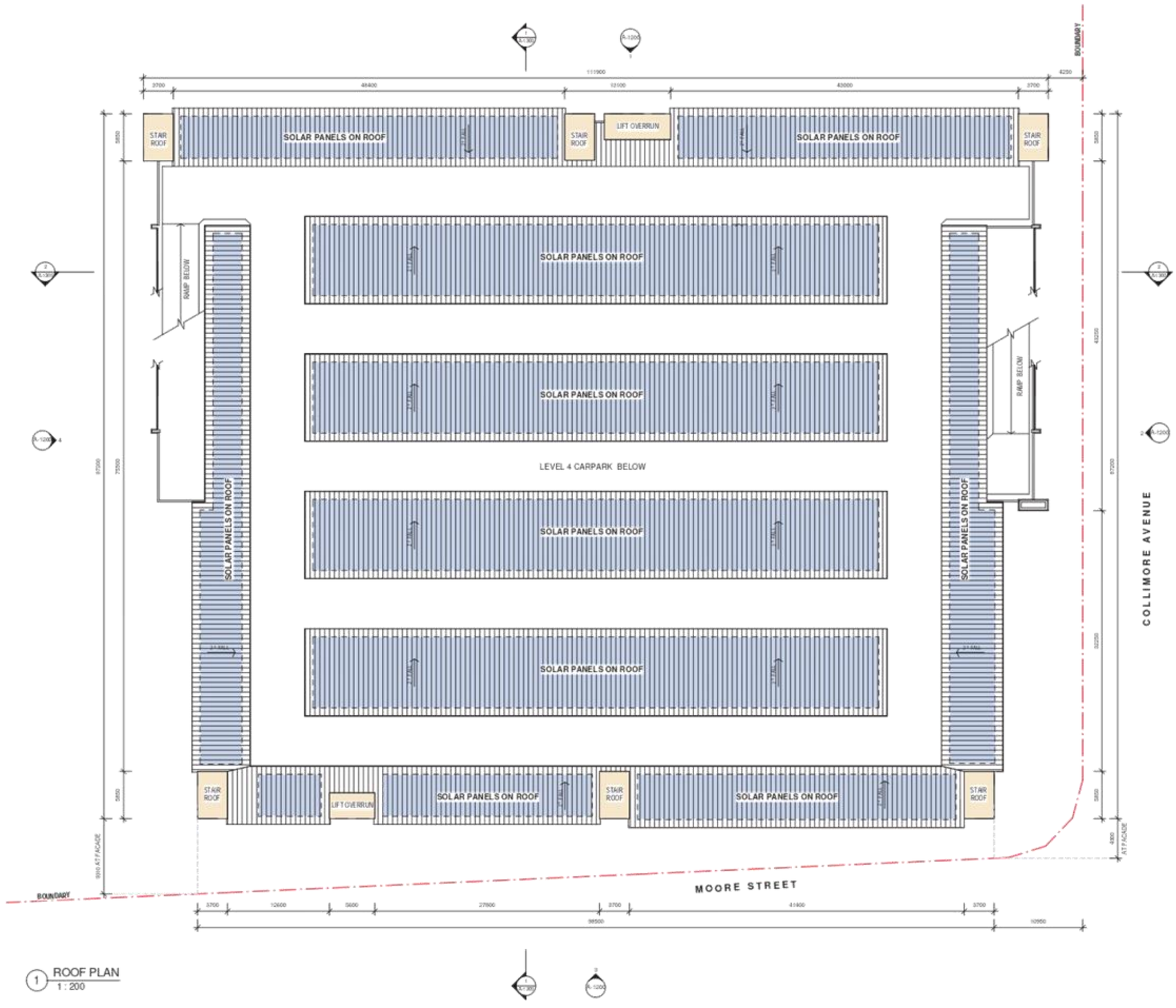
DREW DICKSON ARCHITECTS

Client: LIVERPOOL CITY COUNCIL
SHOP/1 33 MOORE STREET LIVERPOOL NSW 2170

Job Title: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL NSW 2170

Drawing Title: LEVEL 4 FLOOR PLAN

Drawing Scale at A1: 1 : 200
Date: APRIL 2020
Drawn by: MS
Drawing Status: PLANNING PROPOSAL
Project / Job No.: 20033
Drawing No.: A-1103
Revision: A



1 ROOF PLAN
1 : 200

DREW DICKSON ARCHITECTS

LIVERPOOL CITY COUNCIL

PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL, NSW 2170

ROOF PLAN

1 : 200 | APRIL 2020 | MS

PLANNING PROPOSAL

20033 | A-1104 | A

1 NORTH ELEVATION
1 : 200

2 EAST ELEVATION
1 : 200

3 SOUTH ELEVATION
1 : 200

4 WEST ELEVATION
1 : 200

SCHEDULE OF FINISHES

TC - TERRACADE CLADDING TO STAIRS, LIFTS AND COLUMNS

FCC - FC CLADDING TO CAR RAMPS AND WALLS

GW - GREEN WALLS

TB - FIXED 'TIMBER LOOK' ALUMINIUM BATTENS

AW - ALUMINIUM FRAMED WINDOWS

VL - FIXED VENTILATION LOUVRES

S - CAR PARK SIGNAGE

SF - SECURITY FENCING

ISSUE	DATE	DESCRIPTION	ISSUED BY
A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS

DREW DICKSON ARCHITECTS

Client: LIVERPOOL CITY COUNCIL
SHOP R1 33 MOORE STREET LIVERPOOL NSW 2170

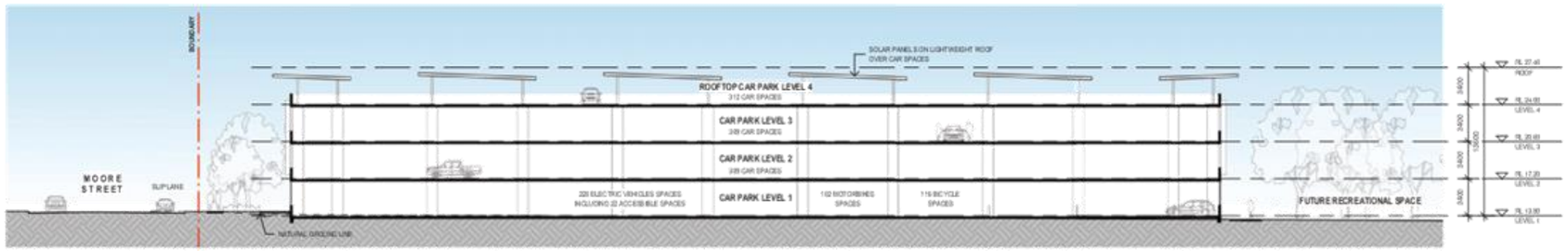
Job Title: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE LIVERPOOL NSW 2170

Drawing Title: ELEVATIONS

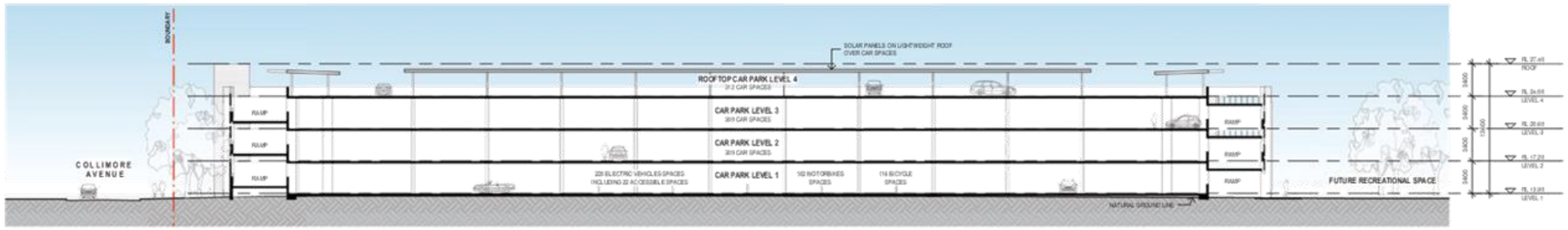
Drawing Scale @ A1	Date	Drawn by
1 : 200	APRIL 2020	MS

Drawing Status: PLANNING PROPOSAL

Project / Job No	Drawing No	Revision
20033	A-1200	A



1 SECTION 1
1 : 200



2 SECTION 2
1 : 200

ISSUE	DATE	DESCRIPTION	ISSUED BY
A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS

Architects
DREW DICKSON ARCHITECTS

Client
LIVERPOOL CITY COUNCIL
SHOP R1 33 MOORE STREET LIVERPOOL NSW 2170

Job Title
PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL NSW 2170

Drawing Title
SECTIONS

Drawing Scale @ A1	Date	Drawn by
1 : 200	APRIL 2020	MS

Drawing Status
PLANNING PROPOSAL

Project / Job No	Drawing No	Revision
20033	A-1300	A

ACCESSIBLE SPACES CLEARLY IDENTIFIED AND IN ACCORDANCE WITH AS1428.1

ILLUMINATED SPACE WITH CLEAR WAY-FINDING / NAVIGATION SYSTEMS, PEDESTRIAN ZONES CLEARLY IDENTIFIED FOR SAFETY

COLOURED PARKING LEVELS FOR USERS' EASE OF REFERENCE

ELECTRIC CAR CHARGING STATIONS

BICYCLE PARKING

SOLAR PANELS TO LEVEL 4 CARPARK ROOFS

A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS
ISSUE	DATE	DESCRIPTION	ISSUED BY

Architects: DREW DICKSON ARCHITECTS
Client: LIVERPOOL CITY COUNCIL
SHOP 1 33 MOORE STREET LIVERPOOL NSW 2170
Job Title: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL NSW 2170
Drawing Title: PRECEDENT IMAGES CARPARK
Drawing Scale at A1:
Date: APRIL 2020
Drawing: MS
Drawing Status: PLANNING PROPOSAL
Project / Job No.: 20033
Drawing No.: A-1500
Revision: A

RECREATIONAL FACILITIES

BASKETBALL COURT

CHILDRENS' PLAYGROUNDS

TENNIS COURTS

FARMERS' MARKET

FUTSAL FIELD

ISSUE	DATE	DESCRIPTION	DRAWN BY
A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS

Architects: DREW DICKSON ARCHITECTS
Client: LIVERPOOL CITY COUNCIL
SHOP 1 33 MOORE STREET LIVERPOOL NSW 2170
Job Title: PROPOSED COLLIMORE PARK CARPARK
COLLIMORE AVENUE, LIVERPOOL NSW 2170
Drawing Title: PRECEDENT IMAGES RECREATIONAL SPACE
Drawing Scale @ A1: NTS
Date: APRIL 2020
Drawn by: MS
Drawing Status: PLANNING PROPOSAL
Project / Job No.: 20003
Drawing No.: A-1501
Revision: A

PERSPECTIVE VIEW FROM CORNER OF MOORE STREET AND COLLIMORE AVENUE

ISSUE	DATE	DESCRIPTION	ISSUED BY
A	28/04/2020	ISSUED FOR PLANNING PROPOSAL	MS

Architects: DREW DICKSON ARCHITECTS
Client: LIVERPOOL CITY COUNCIL, 34 MOORE STREET LIVERPOOL NSW 2170
Job Title: PROPOSED COLLIMORE PARK CARPARK, COLLIMORE AVENUE, LIVERPOOL NSW 2170
Drawing Title: PERSPECTIVE VIEW
Drawing Scale @ A1: —
Date: APRIL 2020
Drawn by: MF
Drawing Status: PLANNING PROPOSAL
Project Job No: 20033
Drawing No: A-1799
Revision: A

DREW DICKSON **ARCHITECTS**

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DREW DICKSON ARCHITECTS
ARCHITECT'S STATEMENT
PROPOSED COLLIMORE PARK CARPARK
Collimore Avenue, Liverpool NSW 2170
May 2020
Drew Dickson Architects Pty Ltd
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ARCHITECT'S STATEMENT

DESIGN PROPOSAL
NEW CARPARK
COLLIMORE PARK, LIVERPOOL

1. Location:
The site is located in Collimore Park Liverpool. Bounded by Elizabeth Drive to the north, Collimore Avenue to the east, Moore Street to the south and Brickmakers Creek to the west, the southern half of the site is occupied by an existing open Council carpark, with the northern half of the site occupied predominantly by community facilities including playgrounds and sports courts. There is a single aisle strip of parking for the full length of Collimore Avenue.

LOCATION PLAN

2. Design Brief

The present car park at Collimore park provides a total of 496 car space including nine (9) accessible parking spaces. The proposed multi-storey carpark shall have a total capacity of approximately 1100-1200 including the allowable number of accessible car spaces.

The proposed carpark is to provide all-day parking for the city centre employees and university students, in addition to providing timed parking for motorist who attend appointments in the medical precinct.

The existing recreational facilities are to be retained and that the design is to investigate whether the footprint of the existing carpark can be reduced to allow additional recreational space.

The strategic concept and architectural drawings are included as part of the submission to the Department of Planning to complete their assessment of the planning proposal.

3. Existing Traffic Conditions:

The current carpark for 496 vehicles has one entry/exit point on Moore Street and one entry/exit point on Collimore Avenue.

Collimore Avenue is a narrow residential street with unrestricted parking along the eastern side. On this side of Collimore Avenue, there is "NO STOPPING" for a length of approximately 75 metres from the corner of Moore Street. There is "NO PARKING" permitted on the western side of Collimore Avenue. There is left and right turn access into Collimore Avenue from Moore Street and into Moore Street from Collimore Avenue. There is left turn only into Collimore Avenue from Elizabeth Drive from the east, and left turn only from Collimore Avenue to Elizabeth Drive heading west.

Moore Street is a secondary street with unrestricted parking along the northern side. There is "NO STOPPING" for a length of approximately 100 metres from the corner of Collimore Avenue. There is "NO PARKING" permitted on the southern side of Moore Street. A regular government bus route 853 runs between Carnes Hill and Liverpool CBD with a stop in front of the site in Moore Street.

Approximately 50m east of the Collimore Avenue intersection, Moore Street connects with the Hume Highway, a major arterial road. At this intersection, the lane heading east splits into two lanes, with the right-hand lane becoming a bus lane and the left lane becoming a cars lane. There is no right turn from Moore Street to the Hume Highway for either cars or buses. Buses must continue directly across the Hume Highway heading east and cars must turn left into the Hume Highway heading north.

4. Proposed Traffic Movements To and From the Carpark

The below summary is based on a preliminary assessment of surrounding traffic patterns by the architect. No traffic study has been undertaken in the preparation of this application. A

Development Application following this Planning Proposal will require a comprehensive Traffic Study to be undertaken by a qualified Traffic Engineer. Subject to this Traffic Study, we do not believe the additional carpark numbers will create significant traffic issues in the surrounding streets.

As Collimore Avenue is a narrow residential street, the proposal provides one entry point off Moore Street at the eastern end of the site and one egress point to Moore Street at the western end of the site in order to provide safe access and egress and minimise impacts on the residents of Collimore Avenue.

The entry to the carpark off Moore Street will permit all turning movements and be proceeded by a slip lane from the west. The driveway off Collimore Avenue will also permit all turning movements. Detailed design of the access arrangement will be carried out at the next stage of the proposed carpark.

5. Traffic Distribution to the Carpark

5.1 From the North-East: Via Hume Highway, right onto Elizabeth Drive, left onto Park Road, left onto Moore Street, left into carpark.

5.2 From the North-West: Via Elizabeth Drive, right onto Flowerdale Road, left onto Moore Street, left into carpark.

5.3 From the West: Via Hoxton Park Road, left onto Memorial Avenue, left onto Flowerdale Road, right onto Moore Street, left into carpark.

5.4 From the South-West: Via Cowpasture Road, right onto Hoxton Park Road, left onto Memorial Avenue, left onto Flowerdale Road, right onto Moore Street, left into carpark.

5.5 From the South: Via M7, exit onto Jedda Road, right onto Hoxton Park Road, left onto Memorial Avenue, left onto Flowerdale Road, right onto Moore Street, left into carpark.

5.6 From the South-East: Via Heathcote Road, left onto Newbridge Road, on to Terminus Street, across Hume Highway onto Hoxton Park Road, right onto Flowerdale Road, right onto Moore Street, left into carpark. Alternatively, via Heathcote Road, left onto Newbridge Road, left onto Speed Street, left onto Bigge Street, left onto Elizabeth Drive, left onto Park Road, left onto Moore Street, left into carpark.

5.7 From the East: Via Newbridge Road, on to Terminus Street across Hume Highway onto Hoxton Park Road, right onto Flowerdale Road, right onto Moore Street, left into carpark.

6. Traffic Distribution from the Carpark

6.1 To the North-East: Left from carpark onto Moore Street, left onto Hume Highway.

6.2 To the North-West: Left from carpark onto Moore Street, left onto Collimore Avenue, left onto Elizabeth Drive. Alternatively, right onto Moore Street, right onto Flowerdale Avenue, left onto Elizabeth Drive.

6.3 To the West: Right from carpark onto Moore Street, left onto Flowerdale Avenue, right onto Memorial Avenue, right onto Hoxton Park Road.

6.4 To the South-West: Right from carpark onto Moore Street, left onto Flowerdale Avenue, right onto Memorial Avenue, right onto Hoxton Park Road, left onto Cowpasture Road.

6.5 To the South: Right from carpark onto Moore Street, left onto Flowerdale Road, right onto Memorial Avenue, right onto Hoxton Park Road, left onto Jedda Road, onto M7.

6.6 To the South-East: Right from carpark onto Moore Street, left onto Flowerdale Road, left onto Hoxton Park Road, right onto Hume Highway, left onto M5. Alternatively, right from carpark onto Moore Street, left onto Flowerdale Road, left onto Hoxton Park Road, across Hume Highway onto Terminus Street, on to Newbridge Road, right onto Heathcote Road.

6.7 To the East: Right from carpark onto Moore Street, left onto Flowerdale Road, left onto Hoxton Park Road, across Hume Highway onto Terminus Street, on to Newbridge Road.

7. Impacts on Surrounding Dwellings:

The proposed development will have minimal impact on the surrounding residential properties.

7.1 Collimore Avenue

7.11 Streetscape
Collimore Avenue is characterised predominantly by 2-4 storey residential flat buildings ranging in height from 8.0 – 14.0 metres and some single residential dwellings. All buildings are located along the eastern side of Collimore Avenue and are set back in the order of 6 metres from the street boundary. On this side of the street there is a formed concrete footpath and some low-scale street trees approximately 3-4 metres tall. There are also some larger trees within the front setbacks of some of the existing properties.

The western side of Collimore Avenue is unmade for most of its length. There are a number of significant street trees. It is not proposed to remove any of these trees in this proposal. The existing streetscape will be enhanced by the removal of the existing bitumen carpark along the north-eastern edge of the site and its replacement with new recreational space and landscaping. As a result, the residential amenity for residents of Collimore Avenue will be enhanced.

7.12 Traffic
The entry/exit point to the existing 496 space carpark off Collimore Avenue will be removed, which should reduce potential traffic conflicts between the cars of residents living in Collimore Avenue and the cars accessing the carpark. All carpark movements occur off Moore Street via a new slip lane.

In morning peak periods, there should be few if any carpark users travelling via Collimore Avenue as there is no right turn access into the carpark from Moore Street.

In afternoon peak periods, there will be some traffic movements from the carpark along Collimore Avenue for vehicles travelling to the north-west (see Item 6.2 above). As there is an alternative route to the north-west, an option may be to introduce a restriction on left turns from Collimore Avenue into Elizabeth Drive between 3.00pm and 7.00pm, Monday – Friday. A traffic engineer will be able to assess existing and potential traffic movements along Collimore Avenue and advise if any traffic management solutions need to be adopted to minimise traffic impacts.

7.13 Overshadowing
There is no overshadowing of any of the buildings in Collimore Avenue between 9.00am and 3.00pm mid-winter.

7.14 Privacy
The new carpark will be in excess of 30m from the nearest residential property in Collimore Avenue and there will be no overlooking from the carpark into private open spaces.

7.15 Built Form Analysis
The proposed carpark will be compatible with the residential character of the surrounding area. It will be 4 storeys and approximately 13.6m high, which is similar in height to many of the surrounding residential flat buildings in Collimore Avenue. The façade is well articulated horizontally and vertically with solid panels of Terracade cladding to stairs and lifts and large panels of Green Walls. 50% of the façade will be open to allow for natural ventilation. Solar panels on the roof will generate electricity for solar charging stations and general area power and lighting.

7.2 Moore Street

7.21 Streetscape
Moore Street is characterised predominantly by 4 storey residential flat buildings between the Hume Highway and Beale Street, ranging in height from 12.0 – 14.0 metres. There are some two-storey town houses west of Beale Street. All buildings are located along the southern side of Moore Street and are set back in the order of 6 metres from the street boundary. On this side of the street there is a formed concrete footpath and two low-scale street trees approximately 3-4 metres tall. There are also a number of significant larger trees within the front setbacks of most of the existing properties.

The northern side of Moore Street has a formed concrete footpath for its entire length. There are no street trees. Within the boundary on the northern side of Moore Street are located some immature street trees which will be removed for the construction of the new slip road at the entry to the carpark. New landscaping is proposed for the setback areas along Moore Street.

7.22 Traffic
The carpark entry and exit points are well separated. A high proportion of vehicle movements during the morning peak period will be vehicles entering the carpark. Few cars will be exiting the carpark during the morning peak period. A high proportion of vehicle movements during the afternoon peak period will be vehicles exiting the carpark. Few cars will be entering the carpark during the peak period. It is therefore unlikely that there will be any significant conflict between cars entering and exiting the carpark during the day, resulting in minimal impact on the local residents.

7.23 Overshadowing
There is no overshadowing of any of the buildings in Moore Street between 9.00am and 3.00pm mid-winter.

7.24 Privacy
The new carpark will be in excess of 30m from the nearest residential property in Moore Street and there will be no overlooking from the carpark into private open spaces.

7.25 Built Form Analysis
The proposed carpark will be compatible with the residential character of the surrounding area. It will be 4 storeys and approximately 13.6m high, which is similar in height to all of the surrounding residential flat buildings in Moore Street. The façade is well articulated horizontally and vertically with solid panels of Terracade cladding to stairs and lifts and large panels of Green Walls. 50% of the façade will be open to allow for natural ventilation. Solar panels on the roof will generate electricity for solar charging stations and general area power and lighting.

8. Summary
8.1 Public Benefit
The proposed development will provide an additional 650 carparking spaces, motor bike parking spaces and bicycle spaces to the capacity of the existing Collimore Park carpark as well as additional community and recreation spaces.

8.2 Traffic Impacts
The additional parking will not create any significant traffic issues in the vicinity.

8.3 Residential Amenity
The additional community and recreation spaces will improve the residential amenity of the area.

8.4 Overshadowing
No existing dwellings will be overshadowed by the development and there will be no loss of privacy.

8.5 Built Form Analysis
The proposed new building will be similar in height to the existing surrounding residential flat buildings and well-articulated to reduce the bulk and scale. The use of green walls in the façade detailing and substantial site landscaping will also help to reduce the visual impact.

Drew Dickson
Director
DREW DICKSON **ARCHITECTS** PTY LIMITED

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Chief Executive Officer
Liverpool City Council

ATTENTION: Luke Oste, Executive Planner

Dear Sir or Madam

I refer to Council's below email of 30 July 2020 regarding Planning Proposal RZ-4/2019 to amend the to amend Liverpool Local Environmental Plan - Schedule 1 to permit car parking with consent on the site. at Collimore Park Carboni Street Liverpool NSW 2170 (Lots 1 & 2 DP 1089398, Lot 400 DP 1185131, Lot 7009 DP 1027995). Submissions need to be made to Council by 20 August 2020.

As shown in the below site plan from Endeavour Energy's G/Net master facility model (and extracts from Google Maps Street View) there are:

- No easements benefitting Endeavour Energy (active easements are indicated by red hatching).
- Low voltage overhead power lines to the Elizabeth Drive road verge / roadway for streetlighting.
- Low voltage overhead power lines coming from the opposite side of Collimore Avenue to a pole on the road verge from where there is a low voltage overhead service conductor going to the customer connection point for the site.
- The site includes Endeavour Energy's proposed Collimore Park Zone Substation site being Lot 1 DP 1089398 which is currently licensed to Council for the existing open carpark.

Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. In addition it must be recognised that the electricity network is constantly extended, augmented and modified and there is a delay from the completion and commissioning of these works until their capture in the model. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed and where there are multiple lines / cables only the higher voltage may be shown). This plan only shows the Endeavour Energy network and does not show electricity infrastructure belonging to other authorities or customers owned electrical equipment beyond the customer connection point / point of supply to the property. This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the *Electricity Supply Act 1995* (NSW).

As a property owner, further to the meeting of 11 May 2020 held with Council officers, Endeavour Energy has no objection to the Planning Proposal. As indicated in the Architect's Statement Proposed Collimore Park Carpark the design concept is based on the retention of the existing recreational facilities and that the design is to investigate whether the footprint of the existing carpark can be reduced to allow additional recreational space. This will require Council to reach agreement with Endeavour Energy on the alternative arrangements for the electricity distribution network which the proposed Collimore Park Zone Substation site is intended to fulfil. This will require a review of the requirements for this site by Endeavour Energy's Asset Planning and Performance Branch as well as consideration of the various property tenure options. Endeavour Energy looks forward to continue working with Council on their proposed plans in respect to potential use of its site at Collimore Park balanced with the growing demands for electricity within the local area.

In regard to Endeavour Energy's role as an electricity supply authority, subject to the following recommendations and comments

- Network Capacity / Connection

The availability of electricity supply to a site is based on a wide range of factors eg. the age and design of the network; other development in the locality utilising previously spare capacity within the local network; the progress of nearby / surrounding sites including electricity infrastructure works eg. a smaller and isolated development that may not of its own accord require a substation may require a substation to facilitate the development and from which the spare capacity is made available to subsequent nearby development. Older / above ground areas of the network utilising pole mounted substations (indicated by the symbol on the site plan from Endeavour Energy's G/Net master facility model) have comparatively limited capacity of 25 kilovolt amperes (kVA) up to a maximum of 400 kVA. Newer padmount substations (indicated by the symbol on the site plan from Endeavour Energy's G/Net master facility model) can accommodate loads from 315 kVA up to 1,500 kVA (typically 500 kVA) ie. there is a significant variation in the number and type of premises able to be connected to a substation.

As well as the capacity of distribution substations, other factors such as the size and rating / load on the conductors and voltage drop (which can affect the quality of supply particularly with long conductor runs) etc. need to be assessed. An extension and/or augmentation of the existing local network may be required but this will not be determined until the final load assessment is completed. Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise as further development of areas continues to occur.

In due course the applicant for the proposed development of the site will need to submit an application for connection of load via Endeavour Energy's Network Connections Branch to carry out the final load assessment and the method of supply will be determined. Depending on the outcome of the assessment, any required padmount substation will need to be located within the property (in a suitable and accessible location) and be protected (including any associated cabling) by an easement and associated restrictions benefiting and gifted to Endeavour Energy. Please refer to the attached copy of Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'. Further details are available by contacting Endeavour Energy's Network Connections Branch via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 9am - 4:30pm or on Endeavour Energy's website under 'Home > Residential and business > Connecting to our network' via the following link:

http://www.endeavourenergy.com.au/ .

Advice on the electricity infrastructure required to facilitate the proposed development can be obtained by submitting a Technical Review Request to Endeavour Energy's Network Connections Branch, the form for which FPJ6007 is attached and further details (including the applicable charges) are available from Endeavour Energy's website under 'Our connection services'. The response to these enquiries is based upon a desktop review of corporate information systems, and as such does not involve the engagement of various internal stakeholders in order to develop a 'Connection Offer'. It does provide details of preliminary connection requirements which can be considered by the applicant prior to lodging a formal application for connection of load.

Alternatively the applicant should engage an Accredited Service Provider (ASP) of an appropriate level and class of accreditation to assess the electricity load and the method of connection of the proposed development. The ASP scheme is administered by NSW Energy and details are available on their website via the following link or telephone 13 77 88:

https://energy.nsw.gov.au/government-and-regulation/legislative-and-regulatory-requirements/asp-scheme-and-contestable-works .

Endeavour Energy is urging applicants /customers to engage with an Electrical Consultant prior to finalising plans to in order to assess and incorporate any required electricity infrastructure. In so doing the consideration can also be given to its impact on the other aspects of the proposed development. This can assist in avoiding the making of amendments to the plan or possibly the need to later seek modification of an approved development application.

- Network Asset Design

Endeavour Energy's Company Policy 9.2.5 'Network Asset Design', includes the following requirements for electricity connections to new urban subdivision / development:

5.11 Reticulation policy

5.11.1 Distribution reticulation

In order to improve the reliability performance of and to reduce the operating expenditure on the network over the long term the company has adopted the strategy of requiring new lines to be either underground cables or where overhead is permitted, to be predominantly of covered or insulated construction. Notwithstanding this strategy, bare wire overhead construction is appropriate and permitted in some situations as detailed below.

In areas with the potential for significant overhanging foliage, CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown branches and debris than bare conductors. CCT must only be used in treed[2] areas as the probability of a direct lightning strike is low. In open areas where the line is not shielded from a direct lightning strike, bare conductors must generally be used for 11kV and 22kV reticulation.

Non-metallic Screened High Voltage Aerial Bundled Cable (NMSHVABC) must be used in areas which are heavily treed and where it is not practicable to maintain a tree clearing envelope around the conductors.

[2] A "treed" area is one with a substantial number of trees adjacent to the line, in each span. In these situations CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown

5.11.1.1 Urban areas

Reticulation of new residential subdivisions will be underground. In areas of low bushfire consequence, new lines within existing overhead areas can be overhead, unless underground lines are cost justified or required by either environmental or local council requirements.

Where underground reticulation is required on a feeder that supplies a mixture of industrial, commercial and/or residential loads, the standard of underground construction will apply to all types of load within that development.

Where ducting is used, adequate spare ducts and easements must be provided at the outset to cover the final load requirements of the entire development plan.

Extensions to the existing overhead 11kV/22kV network must generally be underground. Bare wire will be used for conductor replacements and augmentations except in treed areas where CCT or NMSHVABC must be used.
Extensions to the existing overhead LV network and augmentations must either be underground or ABC. Conductor replacements greater than 100m in route length must utilise aerial bundled cable.

- Flooding and Drainage

Endeavour Energy has noted that the Planning Proposal indicates that a site constraints analysis has been completed addressing issues such as flooding.

The electricity network required to service an area / development must be fit for purpose and meet the technical specifications, design, construction and commissioning standards based on Endeavour Energy's risk assessment associated with the implementation and use of the network connection / infrastructure for a flood prone site. Risk control has focused typically on avoiding the threat, but where this is not possible, reducing the negative effect or probability of flood damage to assets by implementing good design and maintenance practices.

Distribution substations should not be subject to flood inundation or stormwater runoff ie. the padmount substation cubicles are weatherproof not flood proof and the cable pits whilst designed to be self-draining should not be subject to excessive ingress of water. Section 7 'Substation and switching stations' of Endeavour Energy's Mains Construction Instruction MCI 0006 'Underground distribution construction standards manual' provides the following details of the requirements for flooding and drainage in new padmount substation locations.

7.1.6 Flooding and drainage

Substations are to be located such that the risk of flooding or stormwater damage is minimal.

As a minimum the level at the top of the transformer footing, HV and LV switchgear, shall not be lower than the 1:100 year flood level.

All drains within the substation site area or in the vicinity shall be properly maintained to avoid the possibility of water damage to Endeavour Energy's equipment.

In areas where, as determined by the Network Substation Manager, there is a high water table or a heightened risk of flooding, indoor substations will not be permitted.

All materials used in the construction below the substation (ground level) shall be capable of withstanding prolonged immersion in water without swelling or deterioration.

Figure 51 - Example substation raised above 1:100 flood level

- Streetlighting

With the likely increase in both vehicular and pedestrian traffic, although the existing streetlighting is designed for an urban environment, the streetlighting for the proposed development should be reviewed and if necessary upgraded to comply with the series of standards applying to the lighting of roads and public spaces set out in with Australian/New Zealand Standard AS/NZS 1158: 2010 'Lighting for roads and public spaces' as updated from time to time.

Whilst the determination of the appropriate lighting rests with the road controlling authority, Endeavour Energy as a Public Lighting Service Provider is responsible for operating and maintaining the streetlights on behalf of local councils, Roads and Maritime Services and other utilities in accordance with the NSW Public Lighting Code 2019 (Code) as updated from time to time. Endeavour Energy recognises that well designed, maintained and managed Public Lighting offers a safe, secure and attractive visual environment for pedestrians and drivers during times of inadequate natural light.

For any Code implementation and administration / technical matters please contact Endeavour Energy's Substation Mains Assets Section via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 9am - 4:30pm or email mainsenquiry@endeavourenergy.com.au .

- Earthing

The construction of any building or structure (including fencing, signage, flag poles, hoardings etc.) whether temporary or permanent that is connected to or in close proximity to Endeavour Energy's electrical network is required to comply with Australian/New Zealand Standard AS/NZS 3000:2018 'Electrical installations' as updated from time to time. This Standard sets out requirements for the design, construction and verification of electrical installations, including ensuring there is adequate connection to the earth. It applies to all electrical installations including temporary builder's supply / connections.

Inadequate connection to the earth to allow a leaking / fault current to flow into the grounding system and be properly dissipated places persons, equipment connected to the network and the electricity network itself at risk from electric shock, fire and physical injury. The earthing system is usually in the form of an earth electrode consisting of earth rods or mats buried in the ground. It should be designed by a suitably qualified electrical engineer / ASP following a site-specific risk assessment having regard to the potential number of people could be simultaneously exposed, ground resistivity etc.

For details of the ASP scheme please refer to the above point 'Network Capacity / Connection'.

- Vegetation Management

The planting of large trees near electricity infrastructure is not supported by Endeavour Energy. Particularly for overhead power lines, ongoing vegetation management / tree trimming is a significant network cost and falling trees and branches during storms are a major cause of power outages.

Suitable planting needs to be undertaken in proximity of electricity infrastructure (including any new electricity infrastructure required to facilitate the proposed development). Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) and even with underground cables, be installed with a root barrier around the root ball of the plant.

Landscaping that interferes with electricity infrastructure may become a potential safety risk, cause of bush fire, restrict access, reduce light levels from streetlights or result in the interruption of supply. Such landscaping may be subject to Endeavour Energy's Vegetation Management program and/or the provisions of the *Electricity Supply Act 1995* (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

Endeavour Energy's recommendation is that existing street trees or trees to front building setbacks which are of low ecological significance in proximity of overhead power lines be replaced and any proposed planting of new trees within in the proximity of overhead power lines be

replaced by an alternative smaller planting to ensure appropriate clearances are maintained whilst minimising the need for future pruning.

- Dial Before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the ***Dial Before You Dig*** **1100** service in accordance with the requirements of the *Electricity Supply Act 1995* (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical or other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- Removal of Electricity Supply

Approval for the permanent disconnection and removal of supply must be obtained from Endeavour Energy's Network Connections Branch (contact via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm) by Accredited Service Providers (ASP) with the relevant class of Authorisation for the type of work being carried out. The work could involve:

  - The disconnection and removal of an underground service cable or overhead service line,
  - Removal of metering equipment.

The written request must be submitted to Endeavour Energy using Form FPJ4603 ' Permission to Remove Service / Metering by Authorised Level 2 Accredited Service Provider' which must be accompanied by Notification of Service Works (NOSW) forms provided as a result of service work activity performed by a Level 2 ASP. The retailer must also provide written agreement for the permanent removal of supply.

The ASP scheme is administered by NSW Planning & Environment and details are available on their website via the above link in the section 'Network Capacity / Connection'.

- Demolition

Demolition work is to be carried out in accordance with Australian Standard AS 2601—2001: 'The demolition of structures' as updated from time to time. All electric cables or apparatus which are liable to be a source of danger, other than a cable or apparatus used for the demolition works shall be disconnected ie. the existing customer service lines will need to be isolated and/or removed during demolition. Appropriate care must be taken to not otherwise interfere with any electrical infrastructure on or in the vicinity of the site eg. streetlight columns, power poles, overhead power lines and underground cables etc.

- Asbestos

Endeavour Energy's G/Net master facility model indicates that the site is in an area identified or suspected of having asbestos or asbestos containing materials (ACM) present in the electricity network. Whilst Endeavour Energy's underground detail is not complete within G/Net in some areas, in older communities, cement piping was regularly used for the electricity distribution system and in some instances containing asbestos to strengthen the pipe; for insulation; lightness and cost saving.

When undertaking works on or in the vicinity of Endeavour Energy's electricity network, asbestos or ACM must be identified by a competent person employed by or contracted to the applicant and an asbestos management plan, including its proper disposal, is required whenever construction works has the potential to impact asbestos or ACM.

The company's potential locations of asbestos to which construction / electricity workers could be exposed include:

- o customer meter boards;
- o conduits in ground;
- o padmount substation culvert end panels; and
- o joint connection boxes and connection pits.

Further details are available by contacting Endeavour Energy's Health, Safety & Environment Assurance Section via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 9am - 4:30pm.

- Public Safety

As the proposed development will involve work near electricity infrastructure, workers run the risk of receiving an electric shock and causing substantial damage to plant and equipment. I have attached Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely. The public safety training resources are also available via Endeavour Energy's website via the following link:

http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/communitynav/safety/safety+brochures .

If the applicant has any concerns over the proposed works in proximity of the Endeavour Energy's electricity infrastructure within the road verge / roadway, as part of a public safety initiative Endeavour Energy has set up an email account that is accessible by a range of multiple stakeholders across the company in order to provide more effective lines of communication with the general public who may be undertaking construction activities in proximity of electricity infrastructure such as builders, construction industry workers etc. The email address is Construction.Works@endeavourenergy.com.au .

- Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days. Endeavour Energy's contact details should be included in the any risk or safety management plan.

I appreciate that not all the foregoing issues may be directly or immediately relevant or significant to the Planning Proposal eg. I a padmount substation is not required on the site. However, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise should development within closer proximity of the existing and/or required electricity infrastructure needed to facilitate the proposed development on or in the vicinity of the site occur.

Could you please pass on a copy of this submission and the attached resources to the applicant? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me

or the contacts identified above in relation to the various matters. Due to the high number of development application / planning proposal notifications submitted to Endeavour Energy, to ensure a response contact by email to property.development@endeavourenergy.com.au is preferred.

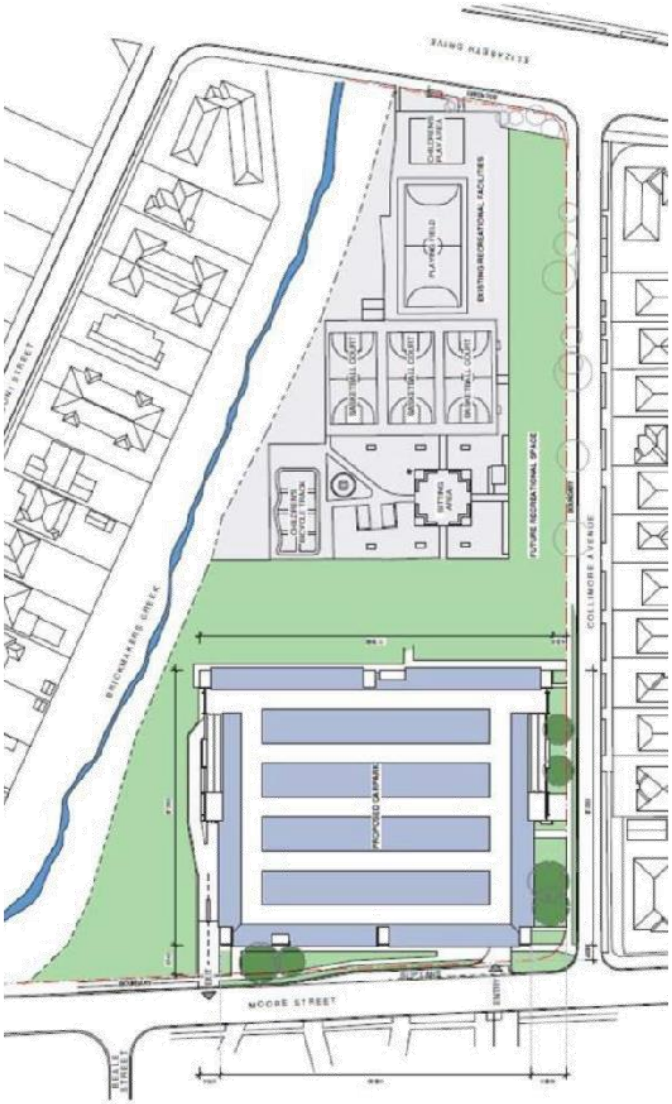
With the current COVID-19 health risk, as many as possible of Endeavour Energy staff are working from home. As a result there is only a small contingent located at the Huntingwood head office for essential operations. Although working from home, access to emails and other internal stakeholders is now somewhat limited and as a result it may take longer than usual to respond to enquiries. Thank you for your understanding during this time.

Yours faithfully

[redacted]

51 Huntingwood Drive, Huntingwood NSW 2148
www.endeavourenergy.com.au

Endeavour Energy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FUTURE RECREATIONAL SPACE
PROPOSED CARPARK


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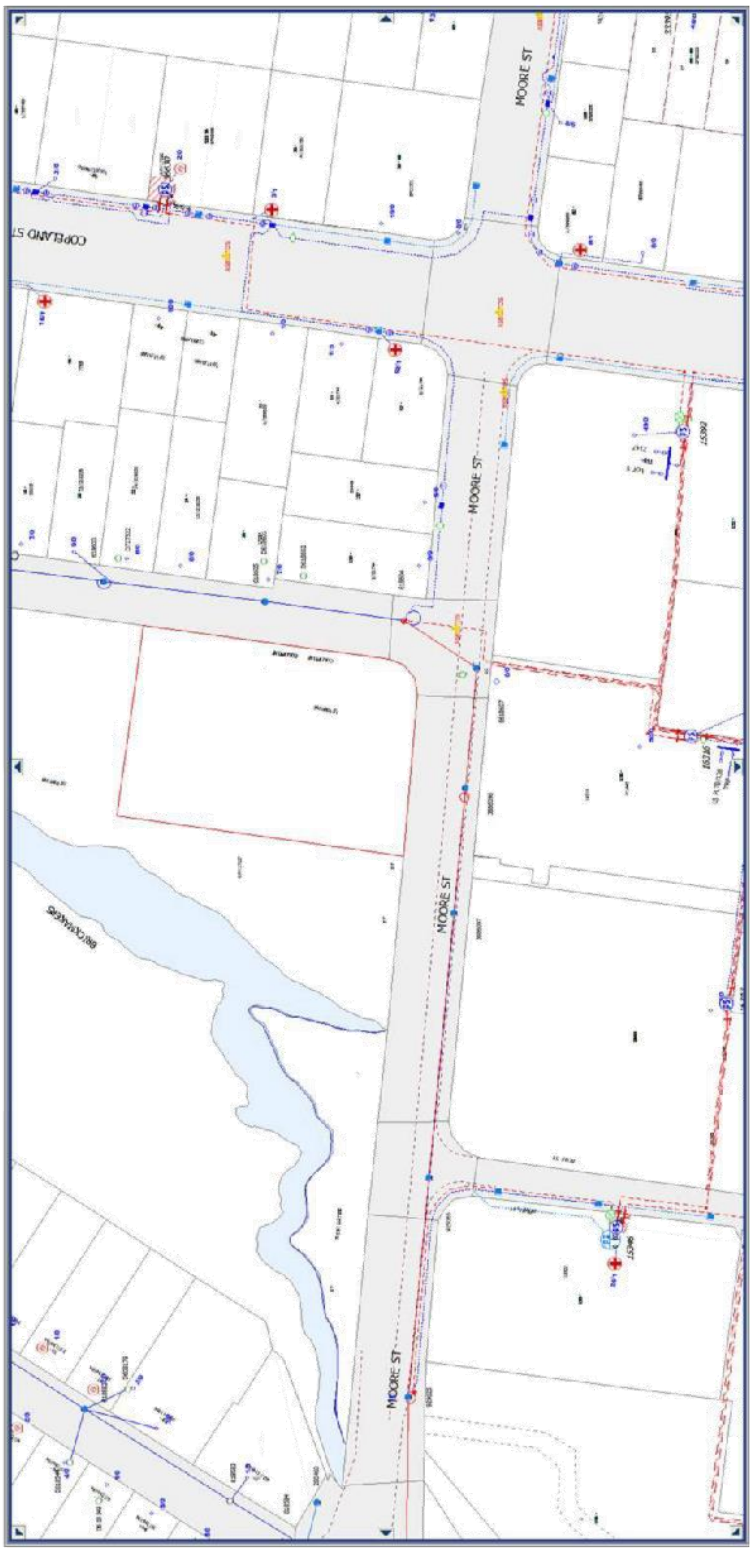
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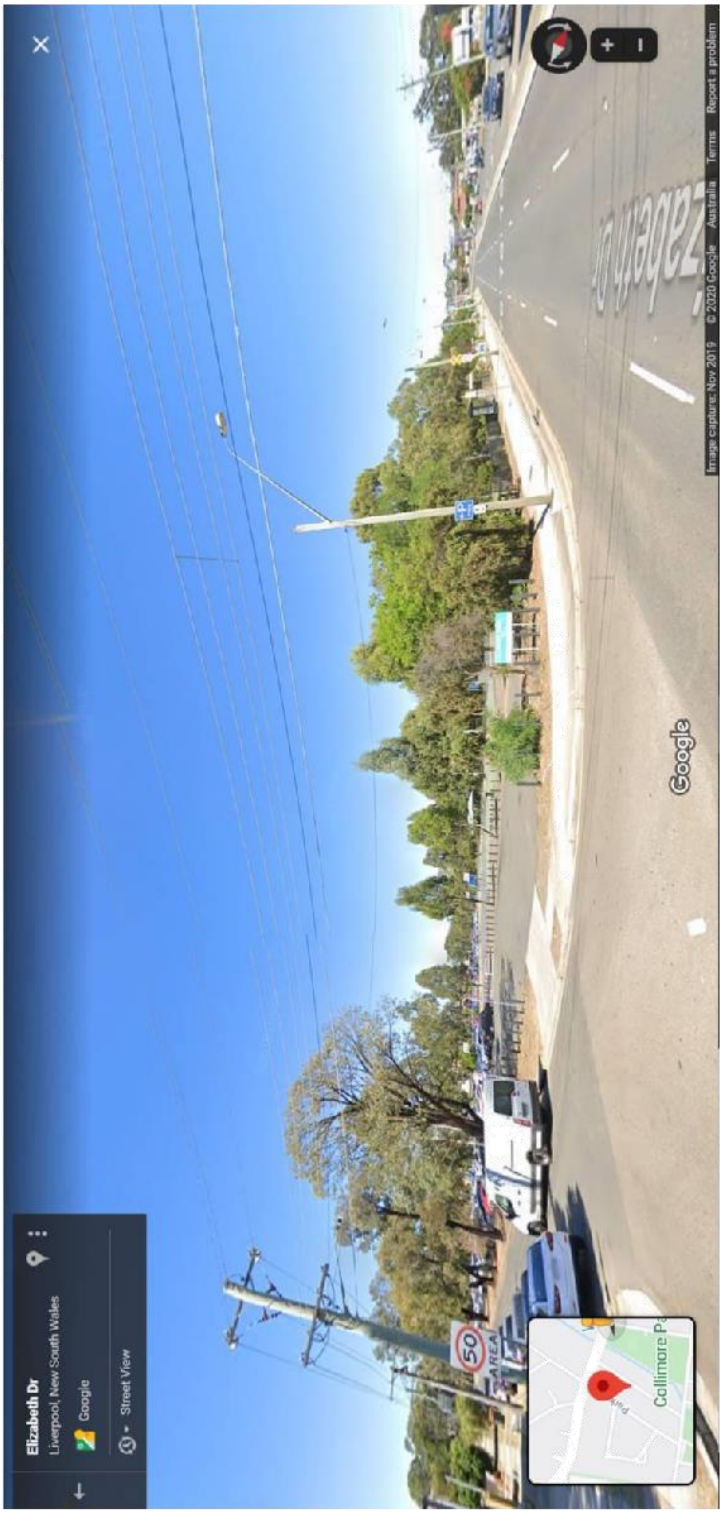
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Liverpool, New South Wales
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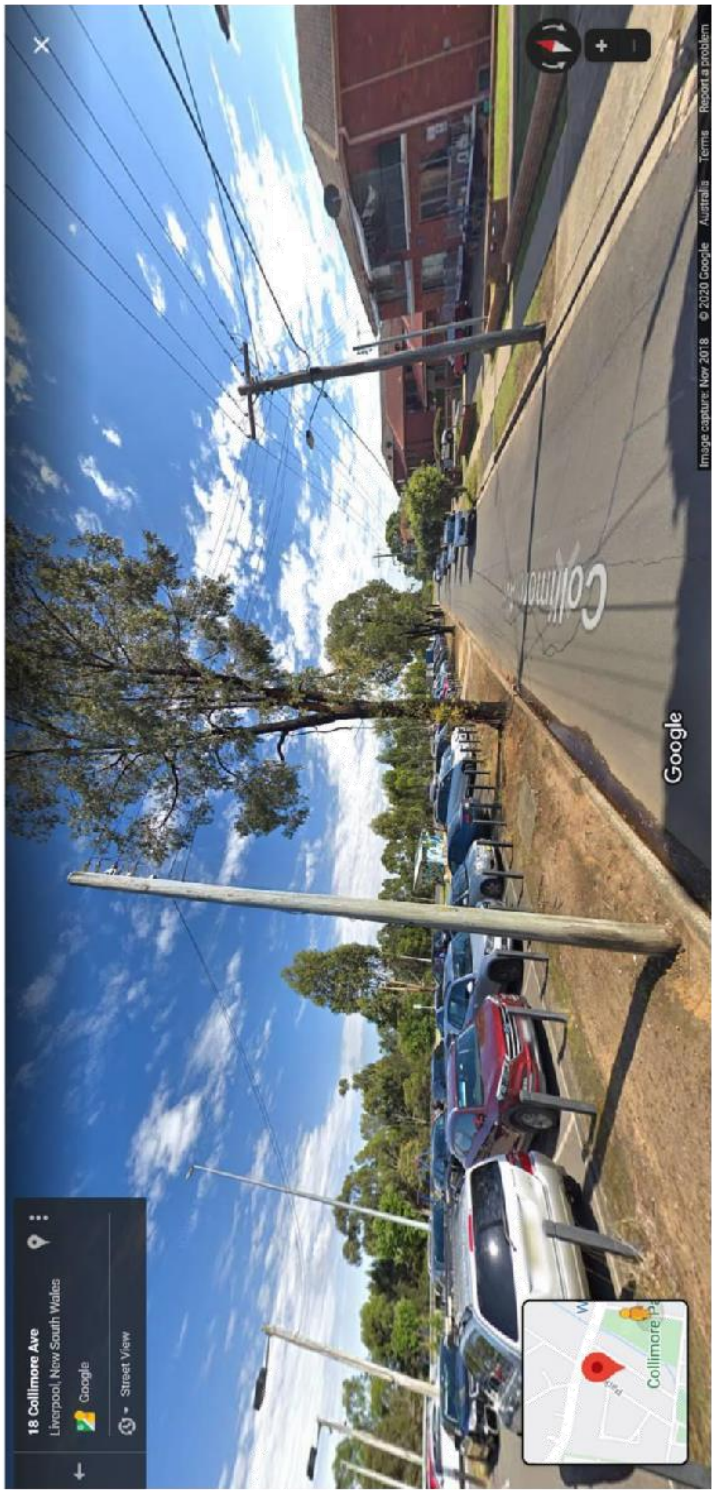
18 Collimore Ave
Liverpool, New South Wales
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Transport for NSW

17 September 2020

TfNSW Reference: SYD20/00852/01
Council Reference: RZ/4/2019

Dr Eddie Jackson
A/Chief Executive Officer
Liverpool City Council
Locked Bag 7064
Liverpool BC NSW 1871

Attention: Graham Matthews

Dear Dr Jackson,

PLANNING PROPOSAL AND LEP AMENDMENT (77) FOR A CAR PARK - ADDITIONAL USE OF CAR PARKS AT COLLIMORE PARK

Transport for NSW (TfNSW) advises that legislation to bring Roads and Maritime Services and TfNSW together as one organisation came into effect on 1 December 2019 so we can deliver more integrated transport services across modes and better outcomes to customers and communities across NSW.

We appreciate the opportunity to comment on the above proposal which Council referred to us by correspondence dated 23 July 2020, and advise that this letter represents the views of the new TfNSW organisation.

The planning proposal for Draft Liverpool Local Environmental Plan 2008 (LLEP 2008) (Amendment 77), seeks to amend Schedule 1 of LLEP 2008, to add an additional clause (Clause 27), which will allow "car parks" as a land use permitted with development consent at Collimore Park. The subject site is at an important location on the Parramatta-Liverpool Transitway network, being Moore Street (a classified road) and within close proximity to high order state roads being the Hume Highway and Elizabeth Drive.

Detailed comments on the proposal and indicative vehicular access arrangements are provided at **Attachment A** for consideration and should be addressed in the development of plans for the car park development.

Thank you for the opportunity to provide advice on the subject planning proposal. Should you have any questions or further enquiries in relation to this matter, [redacted]

[redacted]ly,

[redacted]

Transport for NSW
27-31 Argyle Street, Parramatta NSW 2150 | PO Box 973, Parramatta CBD NSW 2124
P 131782 | **W** transport.nsw.gov.au | ABN 18 804 239 602

Attachment A: Detailed Comments

TfNSW provides the following detailed comments on the proposal and recommends these matters be addressed prior to the finalisation of the planning proposal, or at a minimum, as part of any future Part 4 (or Part 5) proposal for the multi-storey car park development:

Vehicle Access Point

We note that the indicative access arrangement for the site proposes vehicular access points on Moore Street. This would require TfNSW concurrence in accordance with Section 138 of the *Roads Act, 1993* at the Part 4 stage, as Moore Street along the southern frontage of Collimore Park is part of the Parramatta-Liverpool Transitway. TfNSW has concerns with the proposed access and provides the following comments which should be addressed in the development of any plans for the multi-storey car park.

TfNSW advises that current practice is to limit the number of vehicular conflict points along the arterial road network to maintain network efficiency and road safety. This current practice is reflected in Section 6.2.1 of TfNSW publication of the Guide to Traffic Generating Developments, which states 'access across the boundary with a major road is to be avoided wherever possible'.

In this location Moore Street is a Transit Way and as such is a classified road, where transport efficiency of through traffic (particularly buses) is of great importance.

Further to the above, clause 101(2a) of *State Environmental Planning Policy (Infrastructure) 2007*, reads as follows:
"The consent authority must not grant consent to development on land that has frontage to a classified road unless it is satisfied that:

(a) where practicable, vehicular access to the land is provided by a road other than the classified road".

As the subject site has alternative vehicular access via the local road network being Collimore Avenue, TfNSW would not support vehicular access on Moore Street.

We note the Local Planning Panel has advised that a concept plan for Collimore Park should be prepared to give better understanding of the implications of the proposed parking. Finalisation of a draft Concept Plan prior to community consultation is included as a condition of the Gateway Determination. An amended Access Strategy and Concept Plan will be required to reflect the future carpark entry and carpark exit driveway on Collimore Avenue.

Traffic Impact Assessment

- A detailed Traffic Impact Assessment (TIA) report would be required for the future development, to assess the overall traffic impact on the surrounding road network.
- The TIA should include information of the total existing car parking in Collimore Park and also the total number after the multi-storey car park is constructed.
- The TIA should provide additional detail regarding how the access arrangement shall function. Currently there are no restrictions at the intersection of Collimore Avenue and Moore Street. Clarification is required regarding the intent of turn movements in this location and an investigation into the need for 'keep clear' arrangements should be carried out.
- The TIA supporting the proposed multi-storey car park will need to take into consideration the trip distribution based on the amended conceptual vehicular access arrangement. There might be localised impacts to nearby intersections

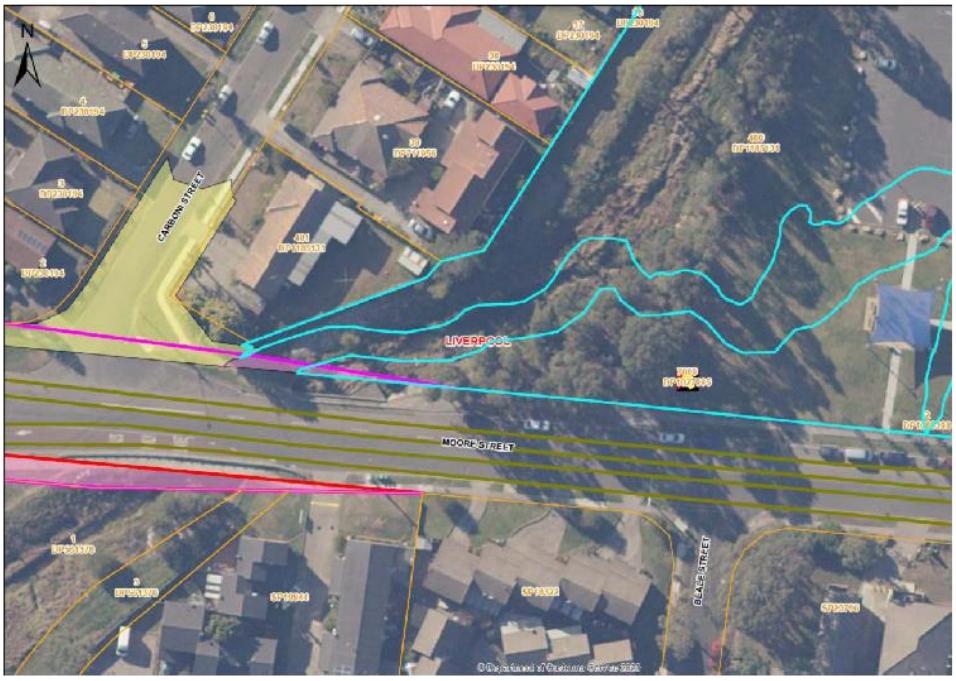
during peaks as a result of additional public/commuter parking i.e. Moore Street/Collimore Avenue, Collimore Avenue/Elizabeth Drive, Moore Street/Copeland Street-Hume Hwy, Carboni Street/Elizabeth Drive. The TIA should evaluate the implications on the Transitway as a result of additional trips on Moore Street and the impact on Moore Street and Hume Highway intersection. This will also need to consider the impacts of additional pedestrian demands at the intersection of Moore Street/Copeland Street-Hume Hwy.

- It appears there is unrestricted kerbside parking along the northern kerb of Moore Street. The need for on street parking restrictions may need to be considered with the redevelopment of the carpark at Collimore Park.
- Details regarding the pick up and drop off arrangements for any shuttle service for the car park are to be provided for assessment.

Property Comments

TfNSW requires that the existing reservation as shown by pink shading on the attached aerial images (Attachment B) retain the SP2 classified road zoning. The integrity of the existing reservation it to be maintained and no infrastructure that is integral to any redevelopment of the site is to be located in the existing reservation. Additionally, TfNSW note that Lot 7009 DP1027995 is subject to incomplete Aboriginal Land Claim(s).

Attachment B: Aerial Image of TfNSW reservations


N
CARLONG STREET
MOORE STREET
BLAXLAND STREET

From: [redacted]
Sent: Wednesday, 19 August 2020 3:25 PM
To: Luke Oste <OsteL@liverpool.nsw.gov.au>
Subject: RZ-4/2019.

Good Afternoon Luke,

In relation to the planning proposal of building a multi story parking facility at Collimore Park.

Will there be a cost that is incurred to use this parking lot?

As a owner of a unit in Moore street, if there is a cost to use the parking facility this will make unexceptional financial hardship.

Why cant it be left alone for the public to use for residential living and park use.

[redacted]

LIVERPOOL CITY COUNCIL

DRAFT
LIVERPOOL CONTRIBUTIONS PLAN 2008
EDMONDSON PARK
(Amendment No.2)

Adopted: 17 December 2007
Amended: ~~10 June 2020~~TBC

Content Manager: 109054.2010

LIVERPOOL THE GREAT SOUTH WEST

Contents

List of Tables

List of Figures

1. Introduction

Liverpool continues to experience significant new urban development, which creates a need for additional public amenities and services. In order that the existing residents are not burdened with the cost of providing these public services and amenities it is necessary for new urban development to provide these at no cost to existing residents.

Section 94 of the *Environmental Planning and Assessment Act, 1979* enables the Council to require new urban development to provide these public services and amenities at no cost to Council. In particular Section 94 enables the Council to require, as a condition of development consent, that land is dedicated or a cash contribution is made or both, for the provision of public services and amenities. Any such requirement must be in accordance with a contributions plan prepared by the Council.

The *Liverpool Contributions Plan 2006 (Edmondson Park)* provides information on the extent of anticipated new development, the extent of new public services and amenities needed to support the new development and the contributions that the new development must make to fund the public services and amenities.

Section 1 – Schedule of Rates

This provides the monetary contribution rates for development.

Section 2 - Administration of the Contributions Plan

This provides details on the, including a background on S94 of the Act, details on how development will be levied contributions and when the contributions plan was adopted and subsequently amended.

Section 3 – Planning Background and Implementation

This provides details on the background to the planning of Edmondson Park (Liverpool). It provides an outline on how this plan relates to *Liverpool Local Environment Plan 2008 and Liverpool Development Control Plan 2008*. It also outlines the Development Strategy for Edmondson Park and how this will affect the implementation of the contributions plan.

Sections 4 – 9

These provide details on the actual facilities that contributions will fund, the nexus between development and facilities to be funded by contributions, the formulae for determining the contributions and a general comment on the timing of facilities.

The range of public services and amenities that are funded by developer contributions includes:

- **Community Facilities -** including multi-purpose community centres;
- **Recreation Facilities** – including bushland reserves, outdoor passive and sporting facilities and bike paths;
- **Transport** – including various pedestrian and traffic facilities, public transport facilities, frontage to public land uses and sub arterial roads;
- **Drainage** – including natural creek corridors and basins.

2. Schedule of Rates

2.1 Value of Infrastructure

As a condition of development consent, Council will require payment of money and/or dedication of land as a contribution to the cost of the provision of infrastructure required to enable the development in Edmondson Park (Liverpool). The value of the contributions are based the formulae shown in the contributions plan using the cost of infrastructure and the extent of estimated development also shown in the contributions plan. Table 2.1 provides a summary of cost of infrastructure. The value of works and land is as at September 2006 Quarter.

Table 2.1: Summary of Total Infrastructure Costs (Works and Land Acquisition Costs)

Purpose	Total
Community Facilities - Land	$3,977,040
Community Facilities - Works	$11,218,834
Open Space and Recreation - Land	$48,061,100
Open Space and Recreation - Works	$27,682,885
Transport and Access - Land	$30,936,056
Transport and Access - Works	$28,650,777
Drainage - Land	$1,713,700
Drainage - Works	$11,554,210
Technical Study Fees Recoverable	$537,883
Professional Fees	$1,755,000
Total	**$166,087,485**

2.2 Contribution Rates

The value of the payment will be calculated based on the contributions rates shown in the Table 2.2. Contributions are determined on a "per hectare basis". The various densities shown are based on the Net Site Density Controls in *Liverpool LEP 2008*. These will be updated quarterly based on the adjustment to contributions rates as set out in 3.7.7.

Table 2.2: Contribution Rates

Purpose	Net Site Density Controls in Liverpool LEP 2008				
	38 Dwellings / Ha	28 Dwellings / Ha	21 Dwellings / Ha	17 Dwellings / Ha	14 Dwellings / Ha
	$ / Ha	$ / Ha	$ / Ha	$ / Ha	$ / Ha
Community Facilities - Land	$16,605	$12,235	$11,210	$8,976	$8,667
Community Facilities - Works	$46,841	$34,514	$31,622	$25,321	$24,448
Open Space and Recreation - Land	$200,665	$147,859	$135,468	$108,474	$104,733
Open Space and Recreation - Works	$115,582	$85,166	$78,029	$62,480	$60,326
Transport and Access - Land	$129,165	$95,174	$87,199	$69,823	$67,415
Transport and Access - Works	$119,623	$88,143	$80,757	$64,665	$62,435
Drainage - Land	$5,679	$5,679	$4,185	$4,185	$3,886
Drainage - Works	$38,292	$38,292	$28,215	$28,215	$26,200
Technical Study Fees Recoverable	$2,246	$1,655	$1,516	$1,214	$1,172
Professional Fees	$7,328	$5,399	$4,947	$3,961	$3,824
Total	**$682,026**	**$514,117**	**$463,148**	**$377,313**	**$363,106**

Purpose	2 Dwellings / Ha	Non Res in R1 & R3 zones	B6 zones	B2 zones	Non Res in B2 zones
	$ / Ha	$ / Ha	$ / Ha	$ / Ha	$ / Ha
Community Facilities - Land	$1,238	$9,104	$3,014	$24,302	
Community Facilities - Works	$3,493	$25,680	$8,503	$68,553	
Open Space and Recreation - Land	$14,962	$110,014	$36,428	$293,677	
Open Space and Recreation - Works	$8,618	$63,367	$20,983	$169,156	
Transport and Access - Land	$9,631	$70,814	$23,448	$189,035	
Transport and Access - Works	$8,919	$65,583	$21,716	$175,070	
Drainage - Land	$555	$4,783	$5,679	$5,679	$5,679
Drainage - Works	$3,743	$32,246	$38,292	$38,292	$38,292
Technical Study Fees Recoverable	$167	$1,231	$408	$3,287	
Professional Fees	$546	$4,017	$1,330	$10,724	
Total	**$51,872**	**$386,839**	**$159,803**	**$977,774**	**$43,972**

Current Contribution Rates

The monetary contribution rates shown in Table 2.2 will be adjusted in accordance with the provisions set out the contributions plan 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 the development consent.

The adjusted contribution rates will be shown on Council's Web Page and updated quarterly.

3. Administration of the Plan

3.1 Name of Plan

This plan is called *Liverpool Contributions Plan 2008 (Edmondson Park)*.

This Contributions Plan has been prepared in accordance with the provisions of Section 94 of the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*.

3.2 Applies to

This Contributions Plan applies to Edmondson Park within the Liverpool LGA, as illustrated below in Figure 3.1.

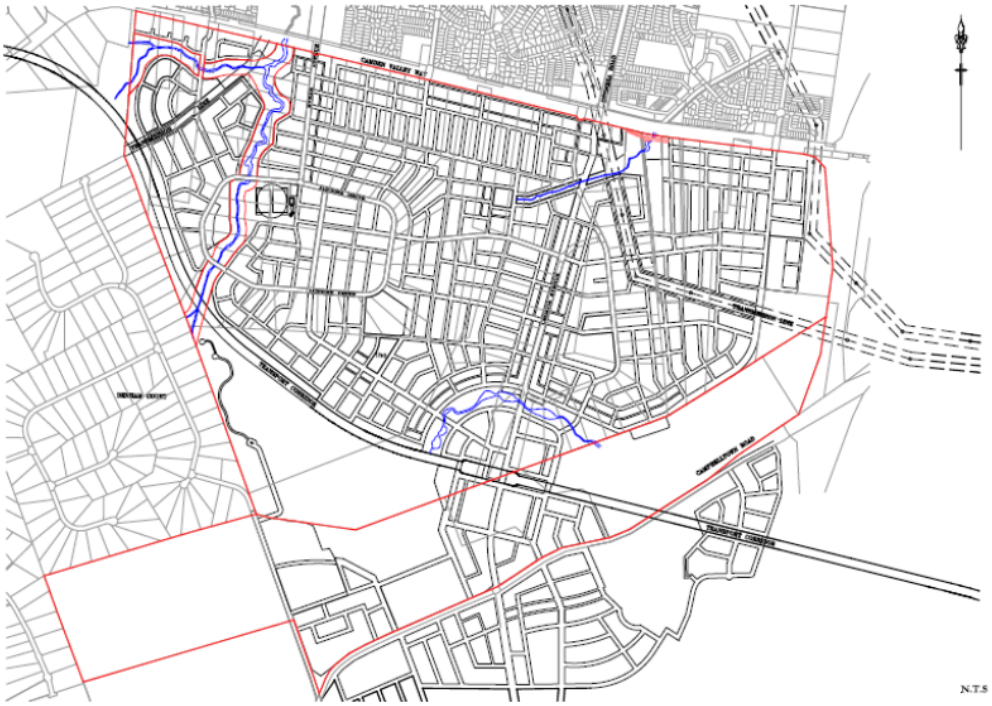


Figure 3.1: Edmondson Park

3.3 Purpose of Plan

The purpose of the Contributions Plan is to:

(a) Provide an administrative framework under which specific public facilities strategies may be implemented and coordinated,

(b) Ensure that adequate public facilities are provided for as part of any new development,

(c) To authorise the council to impose conditions under section 94 of the *Environmental Planning and Assessment Act 1979* when granting consent to development on land to which this plan applies,

(d) Provide a comprehensive strategy for the assessment, collection, expenditure accounting and review of development contributions on an equitable basis,

(e) Ensure that the existing community is not burdened by the provision of public amenities and public services required as a result of future development,

(f) Enable the council to be both publicly and financially accountable in its assessment and administration of the development contributions plan.

3.4 Adoption of Contributions Plan

The plan was adopted by Council on 17 December 2007. The plan originally came into force on 9 January 2008. The value of works and land is as at September 2006 Quarter. The CPI for this quarter was 156.1.

Amendments to Contributions Plan

Liverpool Contributions Plan 2008 has been amended as follows:

No	Adoption date	Amendment date	Description of Amendment
1	10 June 2020	10 June 2020	Enacted Council resolution of 29 April 2020 to implement Covid-19 response.
2	TBC	TBC	Update to include 21 dwellings/hectare.

3.5 Relationship to other Plans

Edmondson Park (Liverpool) is also subject to the following plans:

- *Liverpool Local Environmental Plan 2008,* herein referred to as the LEP;
- *Liverpool Development Control Plan 2008* herein referred to as the DCP.

3.6 Types of Development to be levied

Council will levy all development in the Edmondson Park (Liverpool), which generates the need for additional amenities, facilities and services, which the Council provides. Development includes subdivision, new dwellings and non-residential development, including development within the town centre.

Development approved pursuant to *State Environmental Planning Policy (Seniors Living) 2004* will be levied development contributions in accordance with the Contributions Plan. Self contained dwellings and In-fill care housing (as defined in the policy) will be levied.

3.7 Payment of Contributions

3.7.1 Levying of Contributions

Council will require, as a condition of development consent, the payment of a monetary contribution and/or the dedication of land for the provision of public facilities specified in this Contributions Plan, from development, which it considers will contribute to the need for those facilities. The Contributions Plan applies to development applications determined after the plan comes into force.

Contributions for subdivisions will be calculated according to the number of dwellings proposed on the allotment (with the exclusion of drainage and stormwater, which will be based on site area). Should the ultimate number of dwellings proposed on that allotment increase, post sub-division development consent, then contributions for additional dwellings must be paid to Council.

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 a Private 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 a Private 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 a Private 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.

Landcom

Landcom is not required to submit final subdivision plans to Council for certification. Rather, subdivision plans are deposited directly with the Land Titles Office. Contributions (monetary, material public benefits and land transfer) are therefore required to be paid by Landcom to Council prior to the registration of subdivision plans. Any dedication of land to Council, in lieu of monetary contribution, shall be shown on the plan of subdivision.

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 seek 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 include 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.

3.7.2 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; or
- In other circumstances, to be outlined in writing by the applicant and determined formally by Council on the merits of the case.

Deferred payments as outlined above are acceptable only where an unconditional bank guarantee is provided for the amount deferred. Bank guarantees will be accepted on the following conditions:

- The guarantee must carry specific wording, 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 section 3.7.3).
- 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. In merit cases, the period of deferral will be as approved by Council. The period of deferral may be extended subject to providing a renewed bank guarantee, which includes anticipated future interest.
- 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.

3.7.3 Formula for Bank Guarantee Amounts

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

Guarantee Amount = P + P (C I x 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).

3.7.4 Method of Payment

Contributions may be made by one or a combination of the methods described below. All contributions will be offset against the requirements of the schedule within this Plan.

Monetary Contribution

A monetary contribution is the most common method of payment of contributions. However, Council may consider the transfer of land to Council or providing works in kind, but only as detailed in the schedule of facilities in this Contributions Plan. If applicable, and only if acceptable to Council, such a transfer or works in kind may be an offset to the monetary contribution otherwise applicable to the development under this plan. Monetary contributions will be accepted in cash or by bank cheque only.

Transfer of Land

An applicant may transfer land to Council in part or in full satisfaction of a contribution. The land may be for open space, community facilities, drainage or roads and must be land, which is included in a schedule of facilities within this Contributions Plan. The estimated value of the land at the time of transfer, as

agreed by Council, will be offset against the contribution required for the same facility category at the time of transfer. Offsets against other facility categories will be by agreement only.

Where land, which is the subject of a development application contains land identified for acquisition under this Contributions 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 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 a schedule of facilities in this Contributions Plan. The value of works will be offset against the contribution required for the same facility category. The value of the offset will be as agreed with Council in accordance with the value of the works identified in the Contribution Plan. Applicants will be required to provide details of the works to be undertaken, financial guarantees, bank guarantees and administration.

Applicants may provide land or works in excess of that required for the development and offset this against contributions for other facilities.

Land Banking

Council will not approve land banking unless Council believes that the development is exceptional and merits the use of land banking. In these cases Council will only consider land banking subject to the requirements below:

- The rate per square metre to be used must be formally agreed between Council and the developer, and must be consistent with this Contributions Plan;
- Development applications against which the open space land bank will be offset are clearly identified in the agreement between Council and the developer;
- On entering the agreement between Council and the developer, the parcels of land subject to the land bank are to be clearly identified, and must be consistent with this Contributions Plan;
- Any agreement would be redeemable for cash at the rate listed in the agreement, subject to Council's cash flow capabilities;
- The full cost of land transfers shall be borne by the applicant;
- Land bank credits may be transferable to other parties with Council approval; and
- Land bank credits shall not be transferable outside the area of the Edmondson Park (Liverpool).

3.7.5 Credit for Land and Works in Kind

An applicant may only transfer land or undertake works in kind, in substitution for a monetary contribution, if the Council approves of it.

Where an applicant dedicates land to Council or provides facilities, which are included in the schedule of facilities in this Contributions Plan, and is in excess of the contribution required, the excess land or value of facilities will be held by Council as credit for future development. The value of the credit will be maintained with interest allocated by Council to the relevant Contributions Plan. The credit is expressed in terms of "number of lots" and will be offset against contributions for the same facility category in any future development by that applicant in the area to which this Contribution Plan applies. The offset will generally be made at the contribution rate at the time of the subsequent development.

If no future development is intended, and only if Council has agreed to such dedication or works in kind being undertaken, Council will reimburse the applicant for the excess land or works, to a value that does not exceed the value attributed to such land or works, as included in the schedule and consistent with the formulae for adjustment of contribution rates in Section 3.7.7. Alternatively, Council may offset the excess value against contributions required for other facility categories.

Applicants should note:

- No credit will be given for land or works, which are not included in this Contributions Plan unless a Planning Agreement is entered into with Council;
- Credit will only be given up to a maximum value of facilities (as listed or provided for in this Contributions Plan) in this Contributions Plan for development levied in accordance with this Contributions Plan; and
- Credits for development, which have been levied in accordance with a previous Contributions Plan for the area, will only be expressed in dollar terms and not in terms of number of lots.

3.7.6 Credit for Existing Development

When calculating contributions for a particular development, a contribution credit equivalent of one conventional allotment is given for each allotment, which exists prior to subdivision or development. The basis of this practice is that each existing lot has an existing dwelling (or potential to construct) and no opportunity exists to levy contributions retrospectively. This practice also applies when recently created residential lots are re-subdivided or developed to the same dwelling type. Where an existing dwelling is located over two or more lots, these will be considered as one conventional lot, for the purposes of calculating applicable contributions.

3.7.7 Adjustment to Contribution Rates

The monetary contribution rates shown in Section 2 - Schedule of Contributions, 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 the development consent.

The adjusted contribution rates will be shown on Council's Web Page and updated quarterly.

This is distinct from Section 3.8, which deals with future reviews of the contributions plan. Future reviews will not affect any consent granted in accordance with this contributions plan.

Works, Administration, Professional and Legal Fees

The works, administration, professional and legal fees components of the monetary contributions rates set out in this plan are adjusted in accordance with the formula below headed **"Contribution at time of development consent"** at the time of imposing a condition on a development consent requiring payment of the monetary contribution to reflect quarterly variations in the *Consumer Price Index (All Groups Index Number for Sydney)* since the quarter year period shown for each Area in Section 2 – Schedule of Contributions.

In addition to the above adjustment, the works, administration, professional and legal fees components of the monetary contributions set out in this plan are adjusted in accordance with the formula below headed "**Contribution at time of payment"** at the time that the monetary contribution is to be paid pursuant to the condition imposed on the development consent to reflect quarterly variations in the *Consumer Price Index (All Groups Index Number for Sydney)* since the date that the consent was granted.

In that regard a condition imposed upon a development consent requiring payment of a monetary contribution set out in this plan that includes a works, administration, professional or legal fees component, shall include a requirement for the amount of the relevant component in the condition to be adjusted at the time that the contribution is to be paid to reflect quarterly variations in the *Consumer Price Index (All Groups Index Number for Sydney)* since the date that the consent was granted in accordance with the formula below headed **"Contribution at time of payment"**.

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 =	Works, administration, professional and legal fees components of the contributions as shown in this contributions plan
C_2 =	Works, administration, professional and legal fees components of the contributions subject of the conditions imposed on the development consent
C_3 =	Works, administration, professional and legal fees components of the contributions at the time that the contribution is to be paid
CPI_1 =	Latest "Consumer Price Index: All Groups Index Number" for Sydney available from the Australian Bureau of Statistics shown in *Liverpool Contributions Plan 2008 (Edmondson Park)* in Section 2
CPI_2 =	Latest "Consumer Price Index: All Groups Index Number" for Sydney available from the Australian Bureau of Statistics as at the time of granting the relevant development consent
CPI_3 =	Latest "Consumer Price Index: All Groups Index Number" for Sydney available from the Australian Bureau of Statistics at time that the contribution is to be paid

Land

The land components of the monetary contributions rates set out in this plan are adjusted in accordance with the formula below headed **"Contribution at time of development consent"** at the time of imposing a condition on a development consent requiring payment of the monetary contribution to reflect quarterly variations in the **Average Estimated Land Acquisition Cost Per Square Metre** since the quarter year period shown for each Area in Section 2 – Schedule of Contributions.

In addition to the above adjustment, the land components of the monetary contributions set out in this plan are adjusted in accordance with the formula below headed **"Contribution at time of payment"** at the time that the monetary contribution is to be paid pursuant to the condition imposed on the development consent to reflect quarterly variations in the **Average Estimated Land Acquisition Cost Per Square Metre** since the date that the consent was granted.

In that regard a condition imposed upon a development consent requiring payment of a monetary contribution set out in this plan that includes a land component, shall include a requirement for the amount of the land component in the condition to be adjusted at the time that the contribution is to be paid to reflect quarterly variations in the **Average Estimated Land Acquisition Cost Per Square Metre** since the date that the consent was granted in accordance with the formula below headed **"Contribution at time of payment"** .

In this clause **"Average Estimated Land Acquisition Cost Per Square Metre"** means the index figure prepared and published by or on behalf of the Council that represents the total costs that would have been incurred by the Council in respect of all land acquired by Council during the previous quarter year period divided by the number of square metres of such land and the phrase **"land"** where used herein means land that is in an englobo state being regular in shape, good average level land with an area of 2 ha with services available in the area for connection, subject to the payment of necessary developer contributions rates and not yet developed.

Contribution at time of development consent

$$C_2 = \frac{C_1 \times L_2}{L_1}$$

Contribution at time of payment

$$C_3 = \frac{C_2 \times L_3}{L_2}$$

where:

C_1 =	Land component of contributions as shown in this contributions 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
L_1 =	The latest Average Estimated Land Acquisition Cost Per Square Metre shown in *Liverpool Contributions Plan 2008 (Edmondson Park)* in Section 2
L_2 =	The latest Average Estimated Land Acquisition Cost Per Square Metre published by the Council at the time of granting the relevant development consent
L_3 =	The latest Average Estimated Land Acquisition Cost Per Square Metre published by the Council at time that the contribution is to be paid

3.7.8 Goods and Services Tax

No Goods and Services Tax (GST) is applicable to the payment of contributions made under Section 94 of the *Environmental Planning and Assessment Act 1979*. This exemption applies to both cash contributions and land or works in lieu of contributions.

3.8 Review of Plan and Contributions Rates

Council will review the Contributions Plan on a regular basis. The review process will canvass, where data is available:

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

Any significant reviews of this Plan must be undertaken in accordance with the *EP&A Act* and *EP&A Regulation* and placed on public exhibition for a period of 28 days. The nature of the proposed changes and reasons for these changes would be clearly outlined as part of the exhibition.

Contributions will be adjusted, taking account of more recent information and, where relevant, the following:

- Consumer Price Index;
- annual changes in land values;
- actual costs of completed works;
- reviewed costs yet to be completed works and land acquisition;
- adjustment in projected project management and contingency costs associated with works; and

- Management and legal costs associated with land acquisition.

This section is distinct from Section 3.7.7 Adjustment to Contribution Rates, which deals with future adjustment of contributions granted in accordance with the contributions plan. Future reviews under Section 3.8 will not affect any consent granted under this contributions plan.

4. Planning Background & Implementation

4.1 Background

Edmondson Park is located in south-western Sydney and was identified in May 2000 as part of the 2,500 hectare Hoxton Park Release Area Corridor. The southern portion was added to the Metropolitan Development Program in December 2001. Edmondson Park straddles the Liverpool and Campbelltown Local Government Areas. Both Councils resolved early to undertake a joint planning process for Edmondson Park.

Edmondson Park has a total area of 796 hectares and is bounded by the M5 motorway to the south and east, Camden Valley Way to the north and Zouch Road to the west. The portion of Edmondson Park (referred to as Edmondson Park (Liverpool)) within the Liverpool Local Government Area (LGA) has a total area of 631 hectares. It is estimated that the area will contain an additional 6,706 dwellings and an additional population of approximately 21,843.

Development in Edmondson Park will generate a wide range of infrastructure needs required to support this new population. This will be required to be funded by the private developers. This contributions plan identifies the infrastructure required to ensure Edmondson Park becomes a healthy and vibrant community. The contributions plan will be applied to applications for development which will or are likely to require the provision of additional or upgraded public facilities or works in order to meet the additional demand brought about by the additional population.

This contributions plan applies to that portion Edmondson Park, which is within the Liverpool LGA.

Background Reports

The Contributions Plan draws upon the above plans and on various specialist reports produced to support the preparation of the LEP and DCP. These include:

Civitas partnership, 2004, Edmondson Park – Background Report.

MJ Davis Report, 2005

Civitas partnership, 2004, Edmondson Park – Background Report.

Clouston Associates, 2003, Edmondson Park – Revised Community Planning Study, Part 2 Open Space and Recreation.

Elton Consulting, 2003, Edmondson Park – Revised Community Planning Study Part 1 Social Infrastructure.

GHD, 2003, Edmondson Park – Master Planning Water Cycle Management: Stormwater.

Hill PDA, 2003, Edmondson Park - An Analysis of the Housing Market 2003.

Maunsell, 2003, Edmondson Park – Transport Study.

URS, 2003, Edmondson Park Infrastructure Planning.

Rider Hunt, 2006, Indicative Budget Estimate

J. Wyndham Prince 2007 Edmondson Park – Section 94 Background

Jackson Teece, 2007, Liverpool DCP 61 - Edmondson Park

The estimated costs of infrastructure construction and land acquisition in the Contributions Plan are based on the above specialist reports and Council's own detailed assessment.

4.2 Demographic Profile and Development Trends

In line with market trends identified in *Edmondson Park: An Analysis of the Housing Market 2003* it is proposed that Edmondson Park would have more sustainable densities than that which has been provided in other Liverpool release areas and a larger portion of medium and higher density residential development. It is also intended to provide for a range of dwelling types and sizes to provide housing choice and meet the diverse needs of the future community.

Dwelling Yield and Mix, Occupancy Rate and Population

A variety of housing densities are proposed for Edmondson Park (Liverpool). These range from lower density detached housing to small lot detached and semi-detached dwellings, to townhouses, terraces and apartments. This is based on the *Edmondson Park: An Analysis of the Housing Market 2003* report which concluded that despite the trend for detached housing (chiefly from family households with children), that there is a substantial and increasing acceptance in the community for other types of housing due to population growth, demographic change and social values. The report concludes that there is a substantial and increasing acceptance of medium density housing evidenced by the increasing amount of medium density housing in Liverpool LGA. There has also been an increase in the number of elderly households and single parent families.

The *Edmondson Park Community Planning Study* was undertaken at the beginning of the planning process for the Edmondson Park. Subsequent to this report refinements to the master plan for the precinct have resulted in a slight reduction in the expected dwelling yield. Council also undertook a re-assessment of the development potential. As part of this re-assessment an allowance was made for existing lots such that the estimated number of dwellings and population are "additional" figures. The Occupancy Rates adopted to arrive at an estimated population are based on the *Edmondson Park Community Planning Study*.

The likely dwelling mix and yield, occupancy rate and population across Edmondson Park (Liverpool) are illustrated below in Table 4.1. The proposed dwelling mix and yield was determined using the minimum densities under *Liverpool LEP 2008 with* an allowance for the provision of local streets and existing lots.

Table 4.1: Proposed Dwelling Mix and Yield for Edmondson Park (Liverpool)

Dwellings/ha	Ha	Lot Yield	Occupancy Rate	Total Pop
38	33.96	1,290	2.4	3,097
28	33.1	927	2.4	2,224
21	1.553	33	2.9	96
	127.167	2.162		6,269
17	~~128.72~~	~~2,188~~	2.9	~~6,346~~
14	162.93	2,281	3.4	7,755
2	9.61	19	3.4	65
				2,355*
		6,713		**21,862**
		~~6,706~~		**~~21,843~~**

* Additional dwellings in the business zones, including the town centre.

Source: *Jackson Teece 2007 Liverpool DCP 61 - Edmondson Park*

As outlined in the *Edmondson Park Community Planning Study,* it is expected that the development for Edmondson Park will occur over a 16-year period.

Age and Household Characteristics

As outlined in the *Edmondson Park Community Planning Study,* in the initial years of settlement Edmondson Park will experience a comparable proportion of families with children as experienced for new release areas in southwest Sydney. However, as outlined in the Community Planning Study, a greater

of range of family types in the more expensive detached dwellings, 'second', homebuyers and younger families/smaller families in the medium density dwellings are predicted. The high proportion of small lots and attached housing relative to detached dwellings is likely to skew the profile towards first home buyers and young renters compared with the 2001 southwest release areas profile resulting in slightly higher proportion of the population in the 0-4 and 25-34 cohorts.

The Community Planning Study anticipates that the proportions of young childless adults, empty nesters and older people will initially be similar to that usually experienced in new release areas. However given the differing housing stock, will rapidly increase to approximate those in the wider district, once services and public transport becomes established.

Over time, the peaks in age distribution associated with a predominance of young families will reduce and the population would become more diverse. The Community Planning Study forecasts that the proportion of adults with young children would decline as the population ages and the proportion of older children with older parents grows. The proportion of the population aged 55 plus will also increase as the area matures. As illustrated in the *Edmondson Park Community Planning Study* the forecast age distribution as a percentage of population over time is indicated in *Table 4.2.*

Table 4.2: Forecast Age Distribution as a Percentage of Population over time in Edmondson Park

Age Cohort	Within 5 Years of Initial Settlement (%)	10 Years After Settlement (%)	15 Years After Settlement (%)
0-4	12	9	7
5-9	9	10	7
10-14	7	8	9
15-19	6	7	8
20-24	7	7	8
25-34	24	18	15
35-44	18	19	17
45-54	10	10	12
55-64	4	6	8
65+	3	6	9

Source: Edmondson Park Community Planning Study

This demographic forecast and population assumptions have provided an important basis for predicting the public infrastructure provisions and services required to be provided in Edmondson Park.

5. Community Facilities

5.1 Background

The *Edmondson Park Background Report* and *Edmondson Park* Community *Planning Study* outlined the community facilities required is based on the demographic forecasts discussed in Section 4.

It is expected that a population of the size and nature as described in the last chapter would require a wide range of services and facilities in Edmondson Park. This Contributions Plan outlines the local public facilities to be provided.

5.2 Nexus

The provision of appropriate community facilities is an important requirement to ensuring Edmondson Park is developed appropriately. Liverpool and Campbelltown City Councils have provided a variety of community facilities in the areas surrounding Edmondson Park. These include local level facilities, such as, community centres and childcare and district facilities for services to specific target groups in the community. As outlined in the *Edmondson Park Background Report,* Edmondson Park has no existing local public community facilities.

The capacity of existing services and facilities in adjacent areas to meet some of the needs of the future Edmondson Park population was examined in the *Edmondson Park Community Planning Study*. It was concluded that facilities in the adjoining areas could not be extended to service Edmondson Park as they will be at full capacity and are there to service the eventual local community only.

The *Edmondson Park Community Planning Study* examines what community facilities at a local level would be required to service the new population of Edmondson Park (Liverpool). The Study referred to Liverpool City Council's policy of providing local neighbourhood level services for communities of 8-10,000 people. Based on the application of the Council's planning guidelines, and the expected population and demographics discussed in Chapter 4, Table 5.1 indicates the local public community facilities required to meet the needs of the population expected in Edmondson Park (Liverpool).

Table 5.1: Local Community Facilites

Facility Type	Standard	Number Required
Multi-purpose family and children's centre	1 per 8-10,000 people	1
Multi—purpose community centre	1 per 8-10,000 people	2
Childcare service	1 place per 20 children 0-4 years. This generally equates to a 60-place centre for a population of 8-10,000 people.	2

Source: Edmondson Park: Community Planning Study

A multi-purpose community centre would provide a focal point for the community and base for the community development activities, meeting spaces for community groups and space for community programs and events. These will be located within or adjacent to the main neighbourhood nodes.

A multi-purpose family and children's centre is a facility designed to meet the needs of the forthcoming large number of children and families. It would provide a multi-purpose centre accommodating government funded programs and family related services. The proposed centre would be designed for children's activities with appropriate indoor and outdoor play spaces.

The Childcare Service for children aged 0-4 years would be provided on a multi purpose basis to incorporate long day care or preschool or a mix of services depending on the needs of the population in the local area.

A Community Centre, Branch Library and Youth Centre located in the Edmondson Park Town Centre will serve the whole Edmondson Park area.

The location of the community facilities is based on the following:

- clustered or co-located on a single site to provide opportunities for shared and efficient use of resources;
- located in places where people already have cause to congregate rather than stand alone sites;
- located where there is a high level of safety and security;
- adjacent to open space to take advantage of potential outdoor community events; and
- accessible by public transport and have safe and adequate parking provision.

5.3 Apportionment

The local public community facilities will be required to service the additional population of Edmondson Park (Liverpool) and therefore contributions have been apportioned equally across all new development in Edmondson Park (Liverpool). As corresponding facilities are to be provided in the portion of Edmondson Park within the Campbelltown LGA, no apportionment is necessary for residential development south of Campbelltown Road.

5.4 Works Schedule and Costs

Map of Works and Land Acquisition

Refer to the Infrastructure Map No 15, 16 & 19 for the location of each item in Table 5.2.

Works and Land Acquisition Schedule

Table 5.2 identifies the type of facilities to be provided; estimated Works costs of building the facility and estimated land acquisition costs. The site and building specifications are consistent with the Middleton Grange Release Area. The specifications and costings are provided on the basis that the public facilities would be stand-alone facilities. However opportunities may arise for shared and co-located facilities.

Table 5.2: Community Facilities Works and Land Acquisition Costs

Items	Ref No on Fig 5.1	Site Area (sqm)	Built Area (sqm)	Land Cost	Works
Local Multi Purpose Community Centre and 60 space Child Care Facilities	CP1	2,000	1,300	$438,000	$2,258,880
Local Multi Purpose Community Centre and 60 space Child Care Facilities	CP2	2,000	1,300	$438,000	$2,258,880
Family and Children's Centre	CP3	3,000	1,500	$657,000	$2,293,814
Community Centre	CP4		800		$635,938
Branch Library	CP5		1,000		$1,821,429
Youth Centre	CP6	11,160	400	$2,444,040	$930,000
Sub Totals					**$10,198,940**
Contingency 10%					$1,019,894
Totals				**$3,977,040**	**$11,218,834**

Explanatory Notes

1. Site and Built area assumed to be as set out in Elton Consulting Report, Community Planning Study Social Infrastructure Oct 2003

2. Works costs as set out in Elton Report, and are noted as 2002 values, indexed to June 05 Quarter. Works costs based on LCC guidelines for construction.

3. Land acquisition costs based on MJ Davis Report, July 2005. All valuations are subject to quarterly review

5.5 Contributions Formulae

Contribution Formula

Contributions for community facilities are calculated as follows:

$$\text{Contribution rate per Ha} = \frac{C \times \text{Proportion of population the respective dwelling density group}}{\text{Area in hectares of dwelling density group}}$$

or where land is required to be dedicated in lieu of payment of a contribution for land acquisition

$$\text{Area of land to be dedicated} = \frac{A \times \text{Proportion of total Population of the respective dwelling density group}}{\text{Area in hectares of the respective dwelling density group}}$$

Where:

C = Cost of works or land identified in the contributions plan.

A = Total area of land identified to be acquired in the contributions plan.

Dwelling density group means the minimum dwelling density as specified by *Liverpool LEP 2008*.

Sample of contribution formula

Contribution for the works component of community facilities for land in the 14 dwellings per hectare minimum density = $\frac{\$11,218,834 \times 35.51\%}{162.93 \text{ Ha}}$ = $24,448 per ha

Table 5.3: Development Details

Dwellings/ha	Area (ha)	Lot Yield	Pop /dw	Total Pop	% of Pop
38 Dwellings / Ha	33.96	1,290	2.4	3,097	14.18%
28 Dwellings / Ha	33.1	927	2.4	2,224	10.18%
21 Dwellings/Ha	1.553	33	2.9	96	0.44%
	~~128.72~~	~~2,188~~		~~6,346~~	~~29.05%~~
17 Dwellings / Ha	127.167	2,162	2.9	6,269	28.61%
14 Dwellings / Ha	162.93	2,281	3.4	7,755	35.51%
2 Dwellings / Ha	9.61	19	3.4	65	0.30%
Non Res in R1 & R3 zones	0.1			5	0.02%
B6 zones	3.02			50	0.23%
B2 zones	17.232			2,300	10.53%
Non Res in B2 zones	7.078				
		6,713		21,862	
Totals	**395.75**	~~6,706~~		~~21,843~~	**100.00%**

5.6 Staging of Facilities

Council will build most Community Facilities, as the population threshold for their construction is usually much larger than individual developments. These will be provided as funds become available and as land can be acquired from existing owners.

6. Recreation Facilities

6.1 Background

The *Liverpool LEP 2008, Edmondson Park Open Space and Recreation Plan* and *Liverpool DCP 2008* outline the public open space and recreation facilities to be provided. These provisions are based on the demographic forecasts discussed previously and also the recommendations of the Liverpool and Campbelltown Open Space and Recreation Studies. The LEP specifically details the land acquisition requirements in order for these facilities to be provided.

It is expected that a population of the size and nature described previously in this plan would require a wide range of open spaces systems to cater for and support the forecast population.

This Contributions Plan outlines the local public open space and recreation facilities to be provided.

6.2 Nexus

The *Edmondson Park, Open Space and Recreation Plan,* forms the basis for the provision of public open space as specified in the *Liverpool DCP 2008*.

Edmondson Park is located immediately to the south of the suburbs of Prestons and Horningsea Park, of which both areas are undergoing significant residential development. Flowing from Edmondson Park to Prestons is Cabramatta Creek and its associated creek areas. Within Prestons this drainage corridor has also been utilised as open space.

A higher proportion of small lot and attached housing is anticipated, which is likely to attract first home buyers, young renters and elderly members of the community, hence a higher proportion of population in 0-4 years, 25-34 year age and an increase in the over 50s age group is predicted. Recreation requirements for the 0-4 year age group are predominately private garden area (which is familiar, safe and secure) or either communal open space or small parks close to the home. For the 25-34 year age and over 50s age group, involvement in organised sports becomes less important and there is a greater emphasis on family orientated activities and watching sports.

In determining the future open space needs of the community of Edmondson Park, the *Edmondson Park, Open Space and Recreation Plan* has taken account of the anticipated demographic population profile examined by the *Community Planning Study* and input from Council. The *Edmondson Park Open Space and Recreation Plan* identifies a number of key issues:

- there is considerable recreation demand in south-western Sydney particularly for active recreation facilities to cater to the needs of young residents;
- there is a need to ensure that the open space and recreation facilities are of a high quality;
- there is a need to provide a significant quantum of open space facilities across a range of passive and active recreation;
- small pocket parks require high maintenance and hence are not favoured by Council; and
- competition grade sporting fields should in general not be located on flood liable land.

The amount of open space required to cater to the needs of the population expected in Edmondson Park (Liverpool) was determined and presented in *Table 6.1*.

Table 6.1: Recreation requirements for Edmondson Park

Open Space Type	Level	Description of Open Space	Open Space (ha) in Edmondson Park (Liverpool & Campbelltown LGAs)
District Park	1	Centrally located and adjacent to the town centre. Incorporates recreation, community and conservation areas.	10
Active Recreation Park and Neighbourhood Park	2	Neighbourhood focus and includes active and passive recreational uses.	10
Passive Park	3	Locally focussed within the creek areas	83
Conservation Area		Significant remnant vegetation, which would be retained. To be owned and managed by National Parks and Wildlife Service.	56
Total			**159**

The *Edmondson Park, Open Space and Recreation Plan* recommended an amount of 103 ha of local open space to serve an estimated additional population of 26,350. This equated to 3.9 ha per 1,000 people. Following a refinement to the master plan and population estimates for Edmondson Park (Liverpool) an amount of 52.48 ha of open space for an additional population of 21,843 was determined. This equates to 2.4 ha per 1,000 people. Such a reduction is considered reasonable given the extent of bushland elsewhere in the precinct.

The *Edmondson Park, Open Space and Recreation Plan* recommends (indicated in *Table 6.1*) three levels of open space and a conservation zone to service the recreation and open space needs of the future community. These three levels of public open space are:

District Park Level 1

Level 1 is located adjacent to the town centre and would perform civic functions, while also including competition grade sports fields and gardens serving the local area and beyond. It would also contain areas for passive recreation.

Neighbourhood Park Level 2

Level 2 parks would be destination parks and would have a more neighbourhood focus, serving the local community. They may also include competition grade fields, walking paths and other passive recreational activities.

Passive Parks Level 3

Level 3 parks would be located within creek areas and asset protection zones adjacent to bushland. These areas would be used for passive recreation, such as picnics and walking and would have a local focus. They also provide a stormwater drainage function.

Conservation Areas

These areas have been determined to have significant remnant vegetation, which is to be retained. These areas are not the subjects of contributions. The provision of public open space will provide an environmental amenity that can be utilised to promote the increase residential densities and/or dwelling types.

6.3 Apportionment

The public open space and recreational facilities will be required to service the additional population of Edmondson Park (Liverpool) and therefore contributions have been apportioned equally across all new development in Edmondson Park (Liverpool). As corresponding facilities are to be provided in the portion

of Edmondson Park within the Campbelltown LGA, no apportionment is necessary for residential development south of Campbelltown Road.

6.4 Works Schedule and Costs

Map of Works and Land Acquisition

Refer to Infrastructure Map No 15, 17, 18, & 19 for the location of each item in Table 6.2.

Works and Land Acquisition Schedule

Table 6.2 identifies the proposed location of the pubic open space system, the Works cost of providing the open space, land acquisition costs and total costs. The site specifications and localities are consistent with the *Edmondson Park Open Space and Recreation Plan* and *Liverpool DCP 2008*. The required open space treatments are detailed in the *Liverpool DCP 2008*.

Table 6.2: Recreational Facilities Works and Land Acquisition Costs

	Land Cost / Sqm	$140	$113	$40				
		Land Areas in Ha						
	Items	Above 1% flood	Between 5% & 1% floods	Below 5% Flood	Area	Works Unit Cost (per Ha)	Land	Works
(1)	Cabramatta Creek west arm							
	Passive Area	0.5	0.19	2.58	3.27	$130,750	$1,946,700	$427,553
(2)	Cabramatta Creek							
	Passive Area	0.47	1.08	5.54	7.09	$130,750	$4,094,400	$927,018
	Children play area							$51,500
(3)	Cabramatta Creek							
	Passive Area	0.32	0.47	2.21	3.00	$130,750	$1,863,100	$392,250
(4)	Cabramatta Creek							
	Passive Area	0.12	0.04	0.91	1.07	$130,750	$577,200	$139,903
(5)	Cabramatta Creek							
	Passive Area	0.08	0.05	0.67	0.80	$130,750	$436,500	$104,600
(A)	Land under Road							
RCC1	Culvert	0.04	0.05	0.1	0.19		$152,500	
(B)	Land under Road							
RCC2	Culvert	0	0	0.16	0.16		$64,000	
	Basin Wall			0.36	0.36		$144,000	$1,300,000
	Additional Cost for Dam Safety							$1,800,000
(C)	Land under Road							
RCC3	Culvert	0	0	0.14	0.14		$56,000	
	Sub Total						**$9,334,400**	**$5,142,823**
(6)	Maxwells Creek							
	Passive Area	0.39	0.37	1.3	2.06	$280,550	$1,484,100	$577,933
	Children play area							$51,500
(7)	Maxwells Creek							
	Passive Area	0.07	0.2	1.71	1.98	$280,550	$1,008,000	$555,489
(8)	Maxwells Creek							
	Passive Area	0.87	0.26	1.91	3.04	$280,550	$2,275,800	$852,872
	Children play area							$51,500

	Land Cost / Sqm	$140	$113	$40				
		Land Areas in Ha						
	Items	Above 1% flood	Between 5% & 1% floods	Below 5% Flood	Area	Works Unit Cost (per Ha)	Land	Works
(9)	Maxwells Creek							
	Passive Area	0.22	0.04	1.1	1.36	$280,550	$793,200	$381,548
(E)	Land under Road							
RCC7	Culvert	0	0.08	0.16	0.24		$154,400	
(F)	Land under Road							
RCC5	Culvert	0.05	0	0.15	0.20		$130,000	
(G)	Land under Road							
RCC6	Culvert	0	0.05	0.19	0.24		$132,500	
	Sub Total						**$5,978,000**	**$2,470,842**
(10)	Maxwell Tributary North							
	Passive Area	0.99	0	0	0.99	$130,750	$1,386,000	$129,443
(11)	Maxwell Tributary North							
	Passive Area	1.39	0.12	2.98	4.49	$130,750	$3,273,600	$587,068
	Children play area x 2							$103,000
(D)	Land under Road							
RCC4	Culvert	0.02	0	0.1	0.12		$68,000	
	Sub Total						**$4,727,600**	**$819,510**
(OS1)	Open Space							
	Western side Playing Field/Active area	1.85	0.67	1.75	4.27	$723,217	$4,047,100	$3,088,135
	Children play area							$51,500
(OS2)	Open Space							
	Passive area	0.99	0	0	0.99	$280,550	$1,386,000	$277,745
	Children play area							$51,500
(OS3)	Open Space							
	Passive area	0.26	0	0.4	0.66	$280,550	$524,000	$185,163
	Children play area							$51,500
(OS4)	Open Space							
	Passive area	0.75	0	0	0.75	$280,550	$1,050,000	$210,413
	Children play area							$51,500
(OS5)	Open Space							
	Eastern side Playing Field/Active area	3.63	0	0	3.63	$723,217	$5,082,000	$2,625,277
	Children play area							$51,500
(OS6)	Open Space							
	Passive area	1.72	0	0	1.72	$280,550	$2,408,000	$482,546
(OS7)	Open Space							
	Active area	5.08	0	0	5.08	$723,217	$7,112,000	$3,673,941
	Children play area							$51,500
(OS8)	Open Space							

	Land Cost / Sqm	$140	$113	$40				
		Land Areas in Ha						
	Items	Above 1% flood	Between 5% & 1% floods	Below 5% Flood	Area	Works Unit Cost (per Ha)	Land	Works
	Active area	4.58	0	0	4.58	$723,217	$6,412,000	$3,312,332
	Sub Total						**$28,021,100**	**$14,164,551**
9%	Design Cost							$2,033,795
10%	Contingencies							$3,051,365
	Total				**52.48**		**$48,061,100**	**$27,682,885**

6.5 Contributions Formulae

Contribution formula

Contributions for recreation facilities are calculated as follows:

$$\text{Contribution rate per Ha} = \frac{C \times \text{Proportion of population in dwelling density group}}{\text{Area in hectares of dwelling density group}}$$

or where land is required to be dedicated in lieu of payment of a contribution for land acquisition

$$\text{Area of land to be dedicated} = \frac{A \times \text{Proportion of total Population of the respective dwelling density group}}{\text{Area in hectares of the respective dwelling density group}}$$

Where:

C = Cost of works or land identified in the contributions plan.

A = Total area of land identified to be acquired in the contributions plan.

Dwelling density group means the minimum dwelling density as specified by *Liverpool LEP 2008*.

Sample of contribution formula

Contribution for the works component of recreation facilities for land in the 14 dwellings per hectare minimum density =

$$\frac{\$27,682,885 \times 35.51\%}{162.93 \text{ Ha}} = 60,326 \text{ per ha}$$

Table 6.3: Development Details

Dwellings/ha	Total	Lot Yield	Pop /dw	Total Pop	% of Pop
38 Dwellings / Ha	33.96	1,290	2.4	3,097	14.18%
28 Dwellings / Ha	33.1	927	2.4	2,224	10.18%
21 Dwellings / Ha	1.553	33	2.9	96	0.44%
17 Dwellings / Ha	127.167 ~~128.72~~	2,162 ~~2,188~~	2.9	6,269 ~~6,346~~	28.61% ~~29.05%~~
14 Dwellings / Ha	162.93	2,281	3.4	7,755	35.51%
2 Dwellings / Ha	9.61	19	3.4	65	0.30%
Non Res in R1 & R3 zones	0.1			5	0.02%
B6 zones	3.02			50	0.23%
B2 zones	17.232			2,300	10.53%
Non Res in B2 zones	7.078				
		6,713		21,862	
Totals	**395.75**	**~~6,706~~**		**~~21,843~~**	**100.00%**

6.6 Staging of Facilities

Some small parks and recreation facilities are likely to be provided as works in kind by developers and as such are provided at the beginning of a development. Council will build larger recreation facilities such as playing fields as the population threshold for their construction is usually much larger than individual developments. These will be provided as funds become available and as land can be acquired from existing owners.

7. Transport and Access Facilities

7.1 Background

The *Edmondson Park Transport Study (Transport Management and Accessibility Plan*) identifies the transport measures which would be required to service and link the future community of Edmondson Park (Liverpool). The ultimate road and transport network was generated by an integrated design process focused on access and servicing considerations to ensure a high quality public domain and pedestrian accessibility. Accessibility and circulation are central to the efficient functioning of the town centre, the villages and surrounding neighbourhoods and the specific design principles underpinning the plan for Edmondson Park (Liverpool). The *Liverpool DCP 2008* outlines the key objectives for access. This includes:

- to integrate public transport opportunities into the planning process;
- to ensure vehicular, pedestrian and cycle ways link efficiently within and between residential areas, employment areas and civic and cultural facilities; and
- to accommodate people with disabilities throughout Edmondson Park.

The *Liverpool DCP 2008* outlines the required regional traffic connections, local street network, cycle way and bus priority corridor to be delivered.

7.2 Nexus

The *Liverpool DCP 2008* proposes a network and hierarchy of roads that link the various areas of Edmondson Park with the surrounding urban areas (and their networks). The *Liverpool DCP 2008* provides a cross section of the various street types (for example, neighbourhood connectors, town centre secondary streets, typical residential streets) illustrating the level of design detail required. The street cross section designs are based on the various objectives and functions of the street and the relationship with the building forms proposed in Edmondson Park (that is, reflective of density, height, and role of the street).

The location of the train line and the link to the Parramatta to Liverpool Bus Transit Way provide the opportunity to increase the access of Edmondson Park through a public transport system with feeder buses.

A cycle and pedestrian network outlined in the *Liverpool DCP 2008* link the residential areas, villages and town centre and assists to reduce the reliance on the private vehicle.

The *Liverpool DCP 2008* outlines the key strategies for road and transport provision:

Road Network

Two main streets link the town centre with Camden Valley Way. The extension of Bernera Road along a realigned Croatia Avenue will provide the main transport access and will have a bus priority corridor that links with the proposed train station interchange. Bardia Avenue a diagonal northwest spine road links to the western end of Edmondson Park. This road becomes the main street into the town centre.

To the north of the site a secondary system of east-west street link Camden Way with the ridge top neighbourhood centres and the town centre. In addition, a secondary east west link connects the gully neighbourhood centres and the hilltop active recreation areas. Asset protection streets follow the boundary of the conservation areas.

In the southern area of the town centre a system of secondary streets is formed by parallel streets located 200 m from the main street.

Intersections

Five signalised intersections with right in and right out turns are provided along Camden Valley Way.

Fixed Roads

Fixed roads are identified in the *Liverpool DCP 2008* and are those roads identified as essential to link the town centre with the northern and southern areas of Edmondson Park. Future development must ensure that these linkages are provided and consistent with the cross sections and treatments provided in the *Liverpool DCP 2008*.

Bus Priority Corridor

The Bus Priority Corridor (along with the proposed train station) will provide an opportunity to integrate public transport into the residential development. Bus stops will be located where there is a concentration of retail, commercial, medium density development, schools and community centres. It is proposed to link two feeder bus routes from the residential areas to the proposed train station (one at the eastern part of Edmondson Park and the other at the north of Edmondson Park).

7.3 Apportionment

The local road network (fixed) and bus priority corridor will be required to service the additional population of Edmondson Park (Liverpool) and therefore contributions have been apportioned equally across all new development in Edmondson Park (Liverpool).

There is no apportionment for road works within Campbelltown LGA as all road works will be provided separately by each Council.

7.4 Works Schedule and Costs

Map of Works and Land Acquisition

Refer to Infrastructure Map No 15, 17, 18 & 19 for the location of each item in Table 7.2.

Works and Land Acquisition Schedule

Table 7.2 identifies the fixed local road network and bus priority corridor to be funded through the Contributions Plan, which is in addition to that which will be provided and funded through other means such as, the State Levy and possible Planning Agreements (for regional level facilities and non traditional measures such as workplace travel plans).

The location and level of treatment is clearly specified in the *Liverpool DCP 2008*.

Composition of the works and land component

The composition of works and land component for streets fronting a public facility is identified in Table 7.1.

Table 7.1 Composition of the works and land component

Item	Land component		Works component	
Bus Priority Corridor (junction with CVW)	(35.4 - 15) =	20.4 m	(26.4 - 7.2) =	19.2 m
Bus Priority Corridor (1 park frontage)	(28.4 - 7.5) =	20.9 m	(19.4 - 3.6) =	15.8 m
Bus Priority Corridor (2 park frontages)	(28.4 - 0) =	28.4 m	(19.4 - 0) =	19.4 m
Bus Priority Corridor	(28.4 - 15) =	13.4 m	(19.4 - 7.2) =	12.2 m
Neighbourhood Connector	(19 - 15) =	4 m	(11 - 7.2) =	3.8 m
Neighbourhood Connector (facility on one frontage)	(19 - 7.5) =	11.5 m	(11 - 3.6) =	7.4 m
Neighbourhood Connector (facility on both frontages)	(19 - 0) =	19 m	(11 - 0) =	11 m
Local Street (7.2 m width)	(15 - 15) =	0 m	(7.2 - 7.2) =	0 m
Local Streets (facility on one frontage)	(15 - 7.5) =	7.5 m	(7.2 - 5.5) =	1.7 m
Local Street Park (facility on both frontages)	(15 - 0) =	15 m	(7.2 - 0) =	7.2 m
Park Street	(20.4 - 15) =	5.4 m	(11 - 7.2) =	3.8 m
Park Street (facility on one frontage)	(20.4 - 7.5) =	12.9 m	(11 - 1.7) =	9.3 m
Main Town Centre Street	(27.4 - 15) =	12.4 m	(15.6 - 7.2) =	8.4 m
Main Town Centre Street (park frontage)	(27.4 - 7.5) =	19.9 m	(15.6 - 3.6) =	12 m
Main Town Centre Street (junction with Campbelltown Rd)	(36.2 - 15) =	21.2 m	(24.4 - 7.2) =	17.2 m
Secondary Town Centre	(23.4 - 15) =	15.9	(14.6 - 7.2) =	7.4 m
Secondary Town Centre (facility on one frontage)	(23.4 -7.5) =	8.4 m	(14.6 - 3.6) =	11 m
Asset Protection (bushland frontage)	(22 - 7.5) =	14.5 m	(6 - 1.7) =	4.3 m
Asset Protection (bushland frontage School)	(22 - 0) =	22 m	(6 - 0) =	6 m

Table 7.2: Transport and Access Facilities Works and Land Acquisition Costs

Ref	Items	Length / No. of items	Street width	Pavement width	Works Unit Cost	Total Land Cost ($140 / sqm)	Total Works Cost
		m	m	m	$ / m	$	$
RC2	Neighbourhood Connector	705	4.0	4	$320	$394,800	$225,733
RC3	Neighbourhood Connector	323	11.5	4	$704	$520,030	$227,238
RLR5a	Local (park frontage)	692	7.5	1.7	$194	$726,600	$134,309
RLR5b	Local (park frontage)	85	7.5	1.7	$194	$89,250	$16,498
RMN6	Main Neighbourhood	688	16.1	8.4	$708	$1,550,752	$486,955
RMN7	Main Neighbourhood	944	16.1	8.4	$708	$2,127,776	$668,148
RMN8	Main Neighbourhood (park frontage)	56	16.1	12.0	$1,091	$126,224	$61,103
RMN9	Main Neighbourhood	687	16.1	8.4	$708	$1,548,498	$486,248
RBC10	Bus Priority Corridor	1236	13.4	12.2	$1,449	$2,318,736	$1,791,450
RBC10a	Bus Priority Corridor (CVW Intersection)	30	20.4	19.2	$2,189	$85,680	$65,676
RBC10b	Main Town Centre Street (Campbelltown Rd Intersection)	60	21.2	17.2	$1,978	$178,080	$118,670
RBC10c	Bus Priority Corridor	60	13.4	12.2	$1,449	$112,560	$86,964
RC11	Neighbourhood Connector (rail frontage)	70	11.5	11.0	$779	$112,700	$54,497
RC12	Neighbourhood Connector (park frontage)	499	11.5	11.0	$704	$803,390	$351,058
RC13	Neighbourhood Connector (park frontage)	578	11.5	7.4	$704	$930,580	$406,637
RAP14a	Neighbourhood Connector (bushland frontage APZ)	700	14.5	4.3	$442	$1,421,000	$309,623
RAP14b	Neighbourhood Connector (park frontage)	60	22.0	6.0	$816	$184,800	$48,934
RC17a	Neighbourhood Connector (park frontage)	257	11.5	7.4	$704	$413,770	$180,806
RC17b	Neighbourhood Connector	366	4.0	3.8	$320	$204,960	$117,189
RLR18a	Local (park frontage)	142	7.5	1.7	$194	$149,100	$27,561
RLR18b	Local (school frontage)	237	7.5	1.7	$269	$248,850	$63,774
RLR19	Local (school / park frontage)	100	15.0	7.2	$793	$210,000	$79,320
RPS20	Local (park frontage)	180	7.5	1.7	$194	$189,000	$34,936
RLR21	Local (park frontage)	70	7.5	1.7	$194	$73,500	$13,586
RC22a	Neighbourhood Connector (park frontage)	25	11.5	7.4	$704	$40,250	$17,588
RC22b	Neighbourhood Connector (park frontage both sides)	50	19.0	11.0	$1,007	$133,000	$50,343
RC22c	Neighbourhood Connector (park frontage)	25	11.5	7.4	$704	$40,250	$17,588
RLR23	Local (park frontage)	303	7.5	1.7	$194	$318,150	$58,809
RLR24	Local (park frontage)	64	7.5	1.7	$194	$67,200	$12,422
RLR25	Local (park frontage)	269	7.5	1.7	$194	$282,450	$52,210
RLR26	Local (park frontage)	303	7.5	1.7	$194	$318,150	$58,809

Ref	Items	Length / No. of items	Street width	Pavement width	Works Unit Cost	Total Land Cost ($140 / sqm)	Total Works Cost
		m	m	m	$ / m	$	$
RLR27	Local (park frontage)	267	7.5	1.7	$194	$280,350	$51,822
RLR28	Local (park frontage)	148	7.5	1.7	$194	$155,400	$28,725
RLR30	Local (park frontage)	540	7.5	1.7	$194	$567,000	$104,808
RLR31	Local (park frontage)	303	7.5	1.7	$194	$318,150	$58,809
RLR32	Local (park frontage)	572	7.5	1.7	$194	$600,600	$111,019
RLR33	Local (park frontage)	72	7.5	1.7	$194	$75,600	$13,974
RLR34	Local (park frontage)	374	7.5	1.7	$194	$392,700	$72,589
RLR35a	Local (park frontage)	184	7.5	1.7	$194	$193,200	$35,712
RLR35b	Park Street (park frontage / bus route)	76	12.9	0.0	$939	$137,256	$71,335
RLR35c	Park Street (school frontage / bus route)	192	12.9	9.3	$939	$346,752	$180,215
RPS34	Local (school / park frontage)	175	15.0	7.2	$793	$367,500	$138,810
RC36	Main St Town Centre (park frontage)	118	19.9	12.0	$1,348	$328,748	$159,094
RC37	Main St Town Centre (park frontage)	707	19.9	12.0	$1,348	$1,969,702	$953,217
RTC38	Main St Town Centre (park frontage / community centre)	227	19.9	12.0	$1,348	$632,422	$306,054
RAP41	Neighbourhood Connector (bushland frontage APZ)	221	14.5	4.3	$442	$448,630	$97,752
RAP42a	Neighbourhood Connector (bushland frontage APZ / School)	346	22.0	6.0	$816	$1,065,680	$282,184
RAP42b	Neighbourhood Connector (bushland frontage APZ)	220	14.5	4.3	$442	$446,600	$97,310
RLR43a	Local (park frontage both sides)	279	15.0	7.2	$643	$585,900	$179,451
RLR43b	Local (park frontage)	380.4	7.5	1.7	$194	$399,420	$73,831
RTC44	Main St Town Centre (school frontage)	202.7	19.9	12.0	$1,348	$564,722	$273,291
RLR45	Main St Town Centre (park frontage)	410	19.9	12.0	$1,348	$1,142,260	$552,785
RAP46	Main St Town Centre (bushland frontage APZ)	155	14.5	12.0	$1,348	$314,650	$208,980
RBC51	Main St Town Centre	753	13.4	12.2	$1,449	$1,412,628	$1,091,393
RLR52a	Local (bushland frontage APZ)	506	14.5	4.3	$442	$1,027,180	$223,813
RLR52b	Local (bushland frontage APZ)	500	14.5	4.3	$442	$1,015,000	$221,159
RAP54	Neighbourhood Connector (school frontage)	207	11.5	7.4	$779		
RC55	Neighbourhood Connector (school frontage)	72	11.5	7.4	$779	$115,920	$56,054
RCCA	Horningsea Park Dr Culvert		15.0				$396,500

Ref	Items	Length / No. of items	Street width	Pavement width	Works Unit Cost	Total Land Cost ($140 / sqm)	Total Works Cost
		m	m	m	$ / m	$	$
RCCB	Neighbourhood Connector Culvert		15.0				$100,000
RCCC	Neighbourhood Connector Culvert		15.0				$395,300
RCCD	Bus Corridor Culvert		36.0				$487,700
RCCE	Bus Corridor Culvert		36.0				$1,154,200
RCCF	Neighbourhood Connector Culvert		15.0				$758,200
RCCG	Neighbourhood Connector Culvert		15.0				$695,600
RCB90	Rail Pedestrian Bridge	60	5.0		$1,000		$300,000
RCB91	Neighbourhood Connector (rail bridge)	60	19.0		$1,700		$1,938,000
RCB92	Main St Town Centre (rail bridge)	60	27.4		$1,700		$2,794,800
RCB93	Neighbourhood Connector (rail bridge)	60	19.0		$1,700		$1,938,000
	Contingency						$2,292,717
	Share of CVW traffic facilities						$500,000
	Sub Total					**$30,824,056**	**$25,719,882**
	Bus Stops / shelters	6			$13,575		$81,450
	Bus Stops / seats	33			$1,000		$33,000
RTP100	Asset Protection Ethane Pipeline (Horningsea Park Rd)	20			$5,000		$100,000
RTP101	Asset Protection Ethane Pipeline (Corfield Rd)	20			$5,000		$100,000
RTP102	Asset Protection Ethane Pipeline (Ash Rd)	20			$5,000		$100,000
RTP103	Asset Protection Ethane Pipeline (Croatia Ave)	20			$5,000		$100,000
RTP104	Asset Protection Ethane Pipeline (Rynan Ave)	20			$5,000		$100,000
RTCS109	Signals	1			$350,000		$350,000
RTCS110	Signals	1			$350,000		$350,000
RTCS111	Signals	1			$350,000		$350,000
RTCS112	Signals	1			$350,000		$350,000
RTCS113	Signals	1			$175,000		$175,000
RTCS114	Signals	1			$175,000		$175,000
RRB115	Roundabout	1	400		$150,000	$56,000	$150,000
RRB116	Roundabout	1	400		$150,000	$56,000	$150,000
	Contingency						$266,445
	Sub Total					**$112,000**	**$2,930,895**
	Total					**$30,936,056**	**$28,650,777**

7.5 Contributions Formulae

Contributions Formula

Contributions for traffic facilities are calculated as follows:

$$\text{Contribution rate per Ha} = \frac{\text{C x Proportion of population the respective dwelling density group}}{\text{Area in hectares of dwelling density group}}$$

or where land is required to be dedicated in lieu of payment of a contribution for land acquisition

$$\text{Area of land to be dedicated} = \frac{\text{A x Proportion of total Population of the respective dwelling density group}}{\text{Area in hectares of the respective dwelling density group}}$$

Where,

C = Cost of works or land identified in the contributions plan.

A = Total area of land identified to be acquired in the contributions plan.

Dwelling density group means the minimum dwelling density as specified by *Liverpool LEP 2008*.

Proportion of population and Area in hectares of respective dwelling density groups are as follows:

Table 7.3: Development Details

Dwellings/ha	Total	Lot Yield	Pop /dw	Total Pop	% of Pop
38 Dwellings / Ha	33.96	1,290	2.4	3,097	14.18%
28 Dwellings / Ha	33.1	927	2.4	2,224	10.18%
21 Dwellings / Ha	1.553	33	2.9	96	0.44%
	127.167	2,162		6,269	28.61%
17 Dwellings / Ha	~~128.72~~	~~2,188~~	2.9	~~6,346~~	~~29.05%~~
14 Dwellings / Ha	162.93	2,281	3.4	7,755	35.51%
2 Dwellings / Ha	9.61	19	3.4	65	0.30%
Non Res in R1 & R3 zones	0.1			5	0.02%
B6 zones	3.02			50	0.23%
B2 zones	17.232			2,300	10.53%
Non Res in B2 zones	7.078				
		6,713		21,862	
Totals	**395.75**	~~6,706~~		~~21,843~~	**100.00%**

Sample of contribution formula

Contribution for the works component of traffic facilities for land in the 14 dwellings per hectare minimum density =

$$\frac{\$28,650,777 \times 35.51\%}{162.93 \text{ Ha}} = \$62,435$$

7.6 Staging of Facilities

Most transport facilities are expected to be provided as works in kind by developers. The timing of these will depend on where development takes place. Certain higher order facilities may be provided by Council and these will be provided as funds become available and as land can be acquired from existing owners.

8. Stormwater Management

8.1 Background

The *Edmondson Park Water Cycle Management: Stormwater* identifies the stormwater management measured required to service the future population of the Edmondson Park.

Three Creeks and their tributaries dissect Edmondson Park and drain in a northerly direction, discharging under the Camden Valley Way. The southern corner drains in a southerly direction to Bunbury Curran Creek. The Edmondson *Park Water Cycle Management: Stormwater* report recognises that the hydrological catchment areas are larger than Edmondson Park, resulting in runoff entering the site at the upstream site boundaries and discharging through the site.

The *Edmondson Park Water Cycle Management: Stormwater* report undertook hydrological simulations for 20, 50 and 100 year average recurrence intervals. The report identified the guiding principles for future drainage management in broad terms which are aimed at retaining as much stormwater as possible to minimise impacts on receiving waters by losing stormwater along the transport chain, thereby minimising transportation of gross and sediment borne pollutants.

8.2 Nexus

The *Edmondson Park Water Cycle Management: Stormwater* report details the approach to be taken for stormwater management in Edmondson Park. The report identifies works needed and these have been incorporated into the design framework for Edmondson Park (Liverpool) and detailed in the *Liverpool DCP 2008*. The aim of the stormwater quantity and quality management is to reduce the impact of rapid stormwater conveyance to streams and wetlands, remove pollutants to improve water quality, retain habitants, conserve water and integrate landscape and recreational opportunities. These aims clearly form the basis of the stormwater quality and quantity management objectives outlined in the *Liverpool DCP 2008*.

The stormwater management system includes:

- flood management through provision of five extended detention wet/dry basins, to be located offline where possible and drainage corridors/easement/bio engineered;
- flow attenuation through retarding basins, lakes/ponds, wetlands, rehabilitated creeks, vegetated swales, buffer strips and water re-use schemes;
- flow volume reduction through water re-use and other techniques such as rainwater tanks; and
- water quality management through wetlands, extended detention wet/dry basins and primary/secondary stormwater treatment processes including sediment, litter, nutrient and bacteria treatment.

8.3 Apportionment

There is no appointment for drainage for areas upstream in Denham Court as the proposed drainage works are only intended to mitigate the impact of development in Edmondson Park (Liverpool). There is no development outside of the precinct in Denham Court expected to take place which requires the provision of the proposed drainage. There is no apportionment for drainage within Campbelltown LGA as all drainage works will be provided separately by each Council.

8.4 Works Schedule and Costs

Map of Works and Land Acquisition

Refer to Infrastructure Map No 15 & 19 for the location of each item in Table 8.1.

Works and Land Acquisition Schedule

Table 8.1 identifies the drainage elements required and associated costs. The detailed works and costings are provided in the *Edmondson Park Water Management: Stormwater* report and from additional background work undertaken by Liverpool City Council.

Table 8.1: Stormwater Management Facilties Works and Land Acquisition Costs

	Land Cost / Sqm	$140	$113	$40				
		Land Areas in Ha						
	Items	Above 1% flood	Between 5% & 1% floods	Below 5% Flood	Area	Land	Works	GPT Works cost
1	Western Arm Cabramatta Creek Raingarden	0	0	0.22	0.22	$88,000	$113,820	$45,000
2	Western Arm Cabramatta Creek Raingarden	0	0.01	0.63	0.64	$263,300	$528,640	$180,000
3	Cabramatta Creek Raingarden	0.05	0	0.09	0.14	$106,000	$134,120	$45,000
4	Within Open Space OS1 Raingarden						$988,120	$240,000
5	Maxwells Creek Raingarden						$301,560	$84,000
6	Cabramatta Creek Raingarden	0.21	0.04	0.23	0.48	$431,200	$467,600	$240,000
7	Maxwell Tributary North Raingarden						$1,008,560	$240,000
8	Maxwell Tributary North Raingarden						$737,240	$240,000
9	Maxwells Creek Raingarden	0.17	0.04	0.62	0.83	$531,200	$685,580	$180,000
10	Maxwells Creek Raingarden	0.21	0	0	0.21	$294,000	$157,080	$56,000
11	Within Open Space OS5 Raingarden						$108,080	$45,000
12	Maxwell Tributary North Raingarden						$443,520	$12,000
13	Maxwells Creek Raingarden						$252,000	$66,500
14	Maxwells Creek Raingarden						$490,000	$120,000

	Maxwell Tributary North			
	Detention basin weir/culvert		$1,500,000	
	Sub Total	$1,713,700	$7,915,920	$1,793,500
9%	Design Cost		$712,433	$161,415
10%	Contingencies		$791,592	$179,350
			$9,419,945	**$2,134,265**
	Total	**$1,713,700**	**$11,554,210**	

8.5 Contributions Formulae

Contribution Formula

Contributions for water basins are calculated as follows:

$$\textbf{Contribution rate per hectare (\$)} = \frac{\textbf{C x Proportion of total Runoff of the respective dwelling density group}}{\textbf{Area in hectares of the respective dwelling density group}}$$

or where land is required to be dedicated in lieu of payment of a contributions for land acquisition

$$\textbf{Area of land to be dedicated (Ha)} = \frac{\textbf{A x Proportion of total Runoff of the respective dwelling density group}}{\textbf{Area in hectares of the respective dwelling density group}}$$

Where:

C = Cost of works or land identified in the contributions plan.

A = Total area of land identified to be acquired in the contributions plan.

Dwelling density group means the minimum dwelling density as specified by *Liverpool LEP 2008*.

Table 8.2 gives the relative impacts of alternative types of development on runoff generation.

Table 8.2: Development Details

Dwellings/ha	Total	Lot Yield	Run-off Coeffs	% of Runoff
38 Dwellings / Ha	33.96	1,290	0.95	11.25%
28 Dwellings / Ha	33.1	927	0.95	10.97%
17 Dwellings / Ha & 21 Dwellings / Ha	128.72	2,195 ~~2,188~~	0.7	31.43%
14 Dwellings / Ha	162.93	2,281	0.65	36.95%
2 Dwellings / Ha	9.61	19	0.09	0.31%
Non Res in R1 & R3 zones	0.1		0.8	0.03%
B6 zones	3.02		0.95	1.00%
B2 zones	17.232		0.95	5.71%
Non Res in B2 zones	7.078		0.95	2.35%
Totals	**395.75**	**6,706**	**286.65**	**100.00%**

Sample of contribution formula

Contribution (per ha) for the works component of drainage facilities for land in the 14 dwellings per hectare minimum density =

$$\frac{\$11,554,210 \times 36.95\%}{162.93} = \$26,200$$

8.6 Staging of Facilities

Some drainage facilities are expected to be provided as works in kind by developers. The timing of these will depend on where development takes place. Much of the drainage is expected to be provided by Council and these will be provided as funds become available and as land can be acquired from existing owners.

9. Plan Management

9.1 Background

Liverpool City Council requires a contribution to manage and administer this Contributions Plan given the significant costs associated with managing development and funds of this magnitude. Council considers that the cost involved with administering a Contributions Plan are an integral and essential component of the efficient provision of facilities generated by the incoming population of Edmondson Park. It is reasonable that the costs associated with managing and reviewing the Contributions Plan be recouped from development contributions. Costs associated with ongoing administration and management of the Contributions Plan will be levied on all applications

9.2 Nexus

Implementation of this plan will require ongoing administration. A contribution is required for the costs associated with administration, such as:

- preparing this Contributions Plan;
- executing legal documents for works-in-kind agreements;
- ongoing land valuations, to review this Contribution Plan depending on movements in the property market; and
- research and investigation to amend or modify parts of this Contributions Plan

The administration of contributions funds carries significant associated costs. Professional officers within Council are required to prepare, review and implement the Contributions Plan throughout its life. They are assisted by a team which provides support in coordinating the process, preparing status reports, reviewing relevant data, and liaising with other Council staff, external consultants and other external authorities.

In accordance, with the requirements of the *NSW Department of Planning*, the administration costs contributed under this Contributions Plan consists only of the expenses for personnel directly involved in the preparation and administration of this Contributions Plan. It is considered appropriate that a pool of funds be available to meet these costs. These costs are indicated in Table 9.1.

In addition, any specialist reports prepared to determine the infrastructure requirements and costing for Edmondson Park (Liverpool) will also be recouped through this Contributions Plan. These costs are indicated in Table 9.2.

In addition, any specialist reports prepared to determine the infrastructure requirements and costing for Edmondson Park (Liverpool) will also be recouped through this Contributions Plan. The specialist reports that have been included in the Contributions Plan are also shown in Table 9.2.

9.3 Apportionment

The proportion of the cost of the above studies is apportioned between Liverpool and Campbelltown City Councils on the basis of the council's proportion of development in the overall Edmondson Park Precinct.

9.4 Costs

The estimated costs associated with plan preparation and implementing this Contributions Plan and also for professional service fees are shown in Tables 9.1 and 9.2. These will be reviewed and adjusted on an annual basis.

Table 9.1: Professional Services

Item	Cost
Contamination Studies (for future public open space)	$130,000
Aboriginal Archaeological Studies (for future public open space)	$190,000
Land valuations and reviews	$285,000
Water Cycle Concept Plans	$510,000
Transport and Street Layout Concept Plans	$640,000
Total	**$1,755,000**

Table 9.2: Recoverable Plan Preparation Costs

Technical Studies, Project Management and Masterplanning	Cost	% Recoverable	Recoverable
Transport	$100,000	100%	$100,000
Drainage	$80,000	100%	$80,000
Infrastructure	$90,000	0%	$0
Ecology	$100,000	5%	$5,000
Social and S94	$110,000	100%	$110,000
Statutory Planning	$42,000	0%	$0
Retail	$10,000	0%	$0
Economic Feasibility	$33,000	0%	$0
Land Capability	$62,000	35%	$21,700
Aboriginal Heritage	$47,000	0%	$0
Aboriginal Land Council fees	$20,000	0%	$0
European Heritage	$40,000	0%	$0
Surveying	$35,000	0%	$0
Legal Advice	$5,000	0%	$0
Project Management (APP)	$770,000		$315,063
Master planning (Rohan Dickson and Associates)	$120,000		$49,101
Total			$680,864
Liverpool City Council Portion		**79%**	**$537,883**

Explanatory Notes

Fees as spent at July 2005

Recoverable cost to be split between CCC and LCC according to developable land area.

LCC = 332ha (79%) and CCC = 88ha (21%) according to Background Report, Nov 2004

9.5 Contributions Formulae

Contribution Formulae

Contributions for Plan Management and Recoverable Plan Preparation Costs are calculated as follows:

$$\text{Contribution rate per Ha} = \frac{C \times \text{Proportion of population in respective dwelling density group}}{\text{Area in hectares of respective dwelling density group}}$$

Where,

C = Cost of works or land identified for the catchment area in the contributions plan.

Dwelling density group means the minimum dwelling density as specified by *Liverpool LEP 2008*.

Proportion of population and Area in hectares of respective dwelling density groups are as follows:

Table 9.3 Development Details

Dwellings/ha	Total	Lot Yield	Pop /dw	Total Pop	% of Pop
38 Dwellings / Ha	33.96	1,290	2.4	3,097	14.18%
28 Dwellings / Ha	33.1	927	2.4	2,224	10.18%
21 Dwellings/Ha	1.553	33	2.9	96	0.44%
	127.167	2,162		6,269	28.61%
17 Dwellings / Ha	~~128.72~~	~~2,188~~	2.9	~~6,346~~	~~29.05%~~
14 Dwellings / Ha	162.93	2,281	3.4	7,755	35.51%
2 Dwellings / Ha	9.61	19	3.4	65	0.30%
Non Res in R1 & R3 zones	0.1			5	0.02%
B6 zones	3.02			50	0.23%
B2 zones	17.232			2,300	10.53%
Non Res in B2 zones	7.078				
		6,713		21,862	
Totals	395.75	~~6,706~~		~~21,843~~	100.00%

Sample of contribution formula

Contribution (per ha) for Plan Professional Fees in the 14 dwellings per hectare minimum density = $\frac{\$1,755,000 \times 5.51\%}{162.93}$ = $3,824

Contribution (per ha) for Recoverable Plan Preparation Costs in the 14 dwellings per hectare minimum density = $\frac{\$537,883 \times 35.51\%}{162.93}$ = $1,172

References

Civitas partnership, 2004, Edmondson Park – Background Report.

MJ Davis Report, 2005

Civitas partnership, 2004, Edmondson Park – Background Report.

Clouston Associates, 2003, Edmondson Park – Revised Community Planning Study, Part 2 Open Space and Recreation.

Elton Consulting, 2003, Edmondson Park – Revised Community Planning Study Part 1 Social Infrastructure.

GHD, 2003, Edmondson Park – Master Planning Water Cycle Management: Stormwater.

Hill PDA, 2003, Edmondson Park - An Analysis of the Housing Market 2003.

Maunsell, 2003, Edmondson Park – Transport Study.

URS, 2003, Edmondson Park Infrastructure Planning.

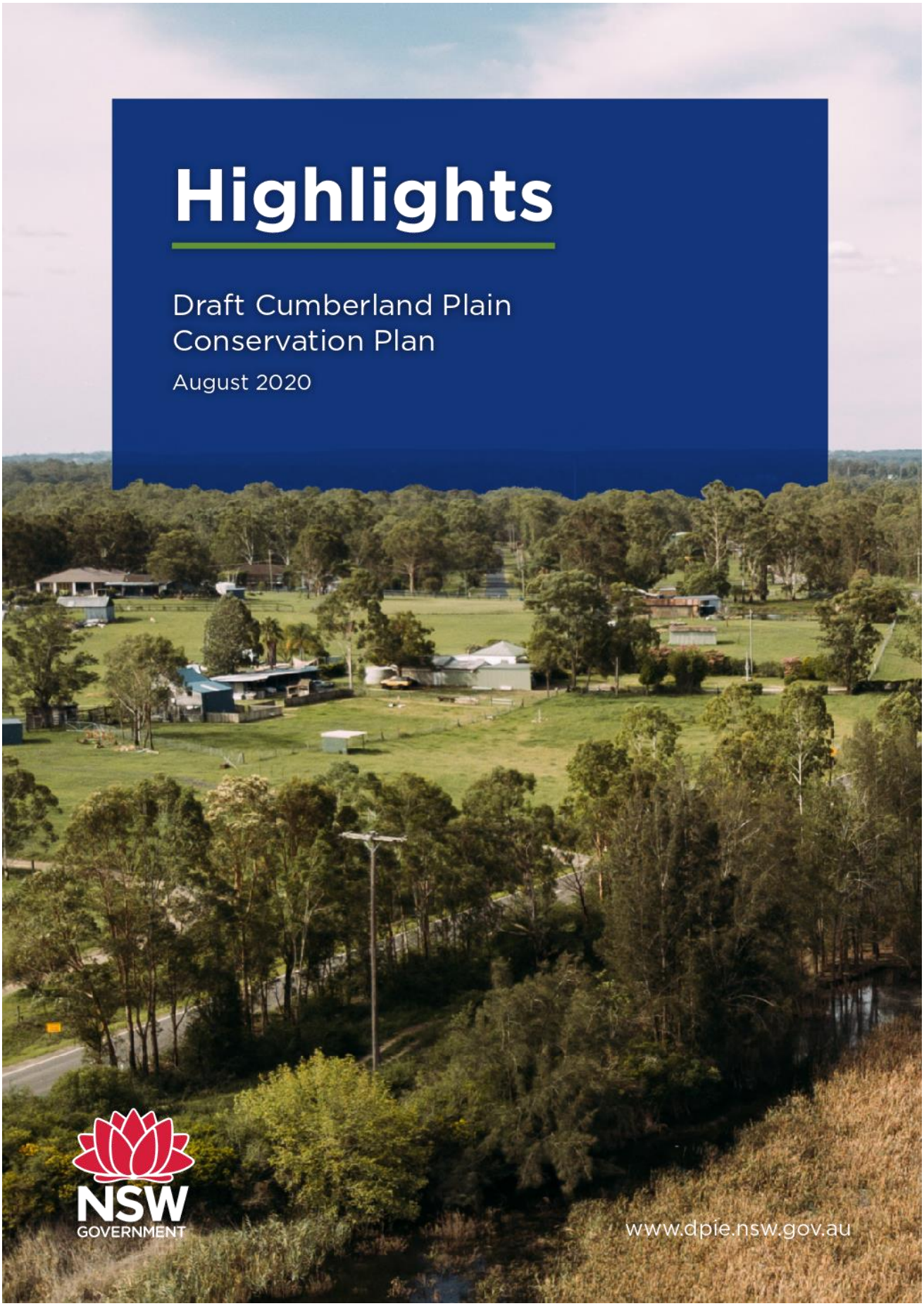
Rider Hunt, 2006, Indicative Budget Estimate

J. Wyndham Prince 2007 Edmondson Park – Section 94 Background

Jackson Teece, 2007, Liverpool DCP 61 - Edmondson Park

Liverpool LEP 2008

Liverpool DCP 2008


Highlights
Draft Cumberland Plain Conservation Plan
August 2020
NSW GOVERNMENT
www.dpie.nsw.gov.au

Find out more
www.dpie.nsw.gov.au

Title: Highlights of the Draft Cumberland Plain Conservation Plan

Subtitle: A Conservation Plan for Western Sydney

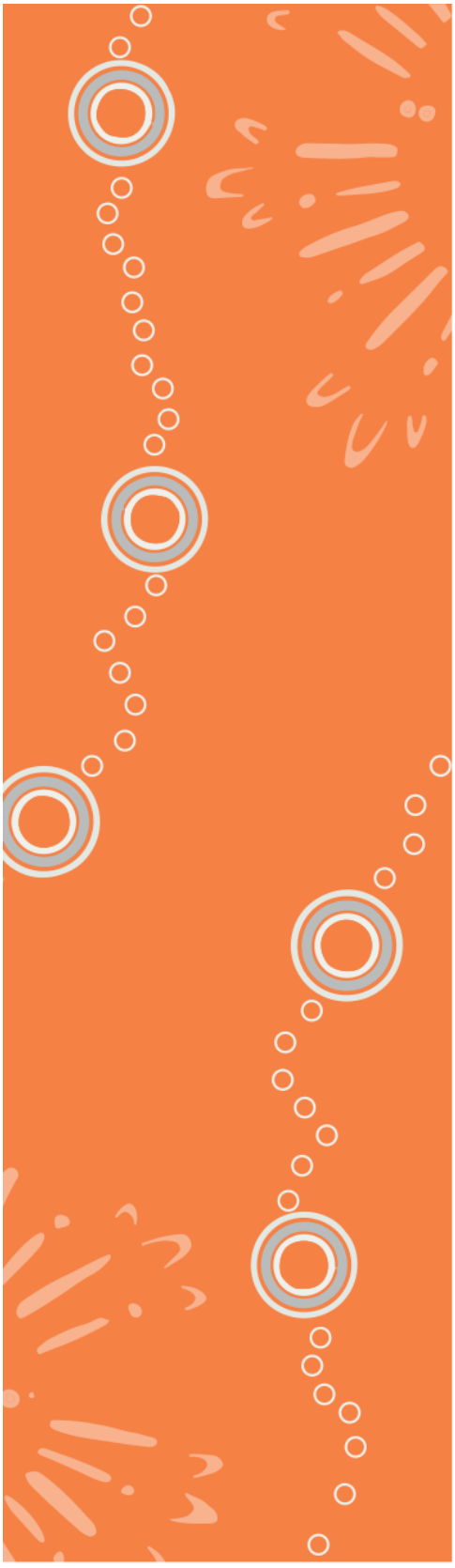
First published: August 2020

Acknowledgements

Cover image: Rural land and remnant woodland near Pitt Town, Joshua Tredinnick, Department of Planning, Industry and Environment

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (August 2020) and may not be accurate, current or complete. The State of New South Wales (including the NSW Department of Planning, Industry and Environment), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.



Acknowledgement of Country

The development of the Cumberland Plain Conservation Plan acknowledges more than 60,000 years of continuous Aboriginal connection to the land that makes up NSW.

This Plan recognises that, as part of the world's oldest living culture, traditional Aboriginal and Torres Strait Islander owners and custodians of the Australian continent and adjacent islands share a unique bond to Country—a bond forged through thousands of years of travelling across lands and waterways for ceremony, religion, trading and seasonal migration.

Aboriginal peoples maintain a strong belief that if we care for Country, it will care for us. The area covered by the Cumberland Plain Conservation Plan is cared for by three Aboriginal groups: the Darug, Dharawal and Gundungurra. Others, such as the Eora, Darkinjung, Wiradjuri and Yuin maintain trade or other obligatory care relationships with the area. The Deerubbin, Gandangara and Tharawal Local Aboriginal Land Councils also have local land holdings and responsibilities towards Aboriginal peoples living in the area.

This significant connection to Country has played an important part in shaping this Plan.

For Traditional Owners, Country takes in everything within the physical, cultural and spiritual landscape—landforms, waters, air, trees, rocks, plants, animals, foods, medicines, minerals, stories and special places. It includes cultural practice, kinship, knowledge, songs, stories and art, as well as spiritual beings, and people: past, present and future.

Contents

List of figures

Have your say

We want your feedback on the Draft Cumberland Plain Conservation Plan (the Plan).

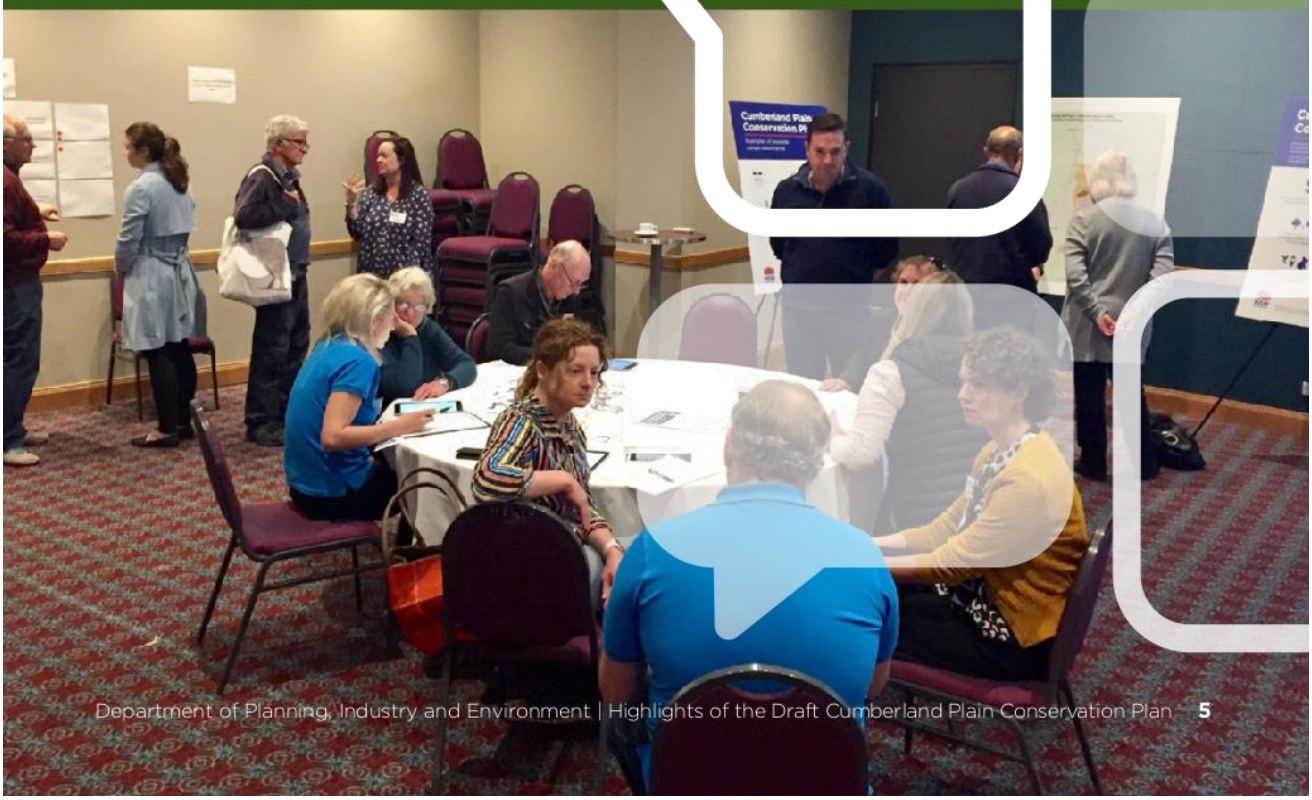
The Plan comprises a conservation program with commitments and actions to achieve the Plan's vision, objectives and outcomes.

The Plan has been informed by our scientific assessments and what we've heard through many collaborative forums. We worked with the Cumberland Plain Conservation Plan Community Reference Group and the People's Panel to support the Plan's development.

We also met community members and stakeholders during drop-in sessions, workshops and meetings as part of a six-month early engagement process in 2019, as well as engaging with people through online tools and social media. This feedback helped shape the Plan, and we're now seeking formal submissions on the Plan.

You can find further information on the process and how to make a submission on the website.

We will consider feedback gathered from the submissions when finalising the Plan.



Snapshot

Delivering the conservation program to 2056

Secure 5,475 hectares of native vegetation within new conservation lands to offset development

Secure 1,885 hectares of koala habitat through the newly established Georges River Koala Reserve

Creation of new reserves and extension of existing reserves

Biodiversity stewardship agreements will be established with landowners

Ecological restoration for up to 25% of the new conservation land target

Implement strategies to manage landscape threats such as fire, weed invasion, pest animals and disease

Research programs to directly support the Plan's key conservation commitments

Education and engagement programs to raise awareness of biodiversity conservation

10-year strategy to promote and support economic opportunities and Caring for Country for Aboriginal communities

Introduce development controls specific to protecting biodiversity

An evaluation program will be developed to ensure success of the Plan

Introduction

The Western Parkland City is projected to grow from 740,000 people in 2016 to 1.1 million by 2036, and to well over 1.5 million by 2056. A thriving, liveable Western Parkland City must be well planned to meet that growth. It should include dedicated areas to protect the many unique native plants and animals in the region, and publicly accessible, open and green spaces that local communities can enjoy.

The NSW Department of Planning, Industry and Environment has undertaken strategic conservation planning to develop the Draft Cumberland Plain Conservation Plan (the Plan). The Plan will support biodiversity and growth in the Western Parkland City by protecting the region's important conservation values. It will do this through the creation of new reserves, conservation areas and green spaces for the local community.

The Plan has a conservation program designed to improve ecological resilience and function, and to offset biodiversity impacts from new housing, employment areas and infrastructure in the Western Parkland City. Taking a landscape approach will deliver the greatest safeguards for Western Sydney's natural environment over the long term.

This document provides an overview of the Plan's context and presents the highlights of the conservation program that will be delivered over the life of the Plan.

Top: Casuarina seed pods are a food source for threatened cockatoos

Photography:
Ingleburn Dam at Emerald Hills, Joshua Tredinnick/DPIE

Conservation values in the Western Parkland City

The Plan Area covers approximately 200,000 hectares from north of Windsor to south of Picton, and from the Hawkesbury—Nepean River in the west to the Georges River near Liverpool in the east.

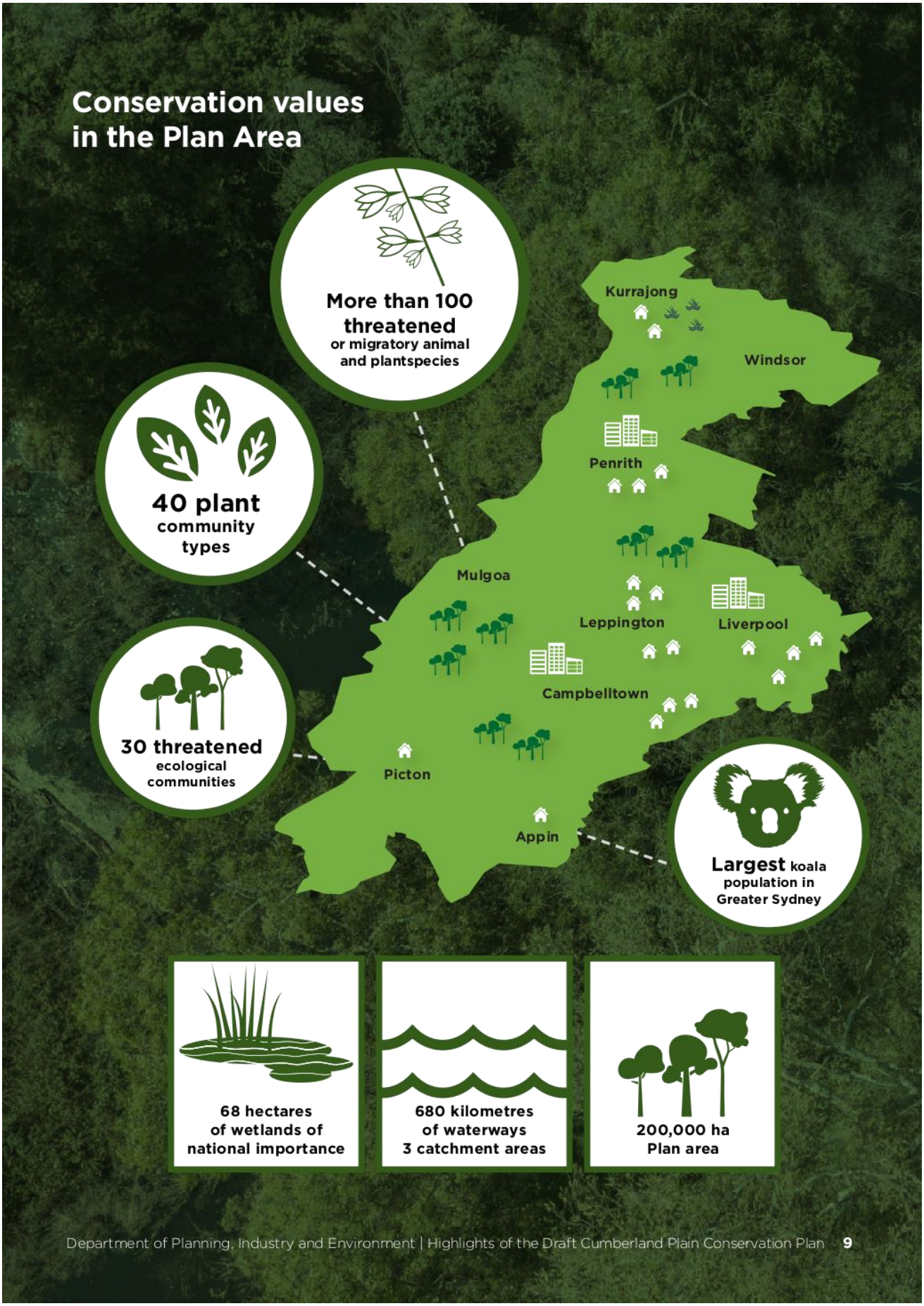
The Western Parkland City is home to a rich variety of plants and animals and their habitats. This includes, among others, the Cumberland Plain Land Snail; foraging habitat for the Swift Parrot; and significant plants such as the Nodding Geebung and Spiked Rice-flower. The Southern-Sydney koala population is the largest koala population in Sydney and is one of the only chlamydia-free koala populations in NSW.

Native vegetation in the Western Parkland City has been, historically, cleared for agriculture and more intensive land uses, resulting in extensive fragmentation of the remaining native vegetation, reduced connectivity and overall loss of ecological resilience. As of today, approximately 10% of the remaining native vegetation in the area covered by the Plan is protected within a public reserve or through a biodiversity agreement.

200,000
Hectares covered by the Plan Area

10%
Native vegetation currently protected

Photography:
Remnant woodland near Appin, Joshua Tredinnick/DPIE


Conservation values in the Plan Area
More than 100 threatened or migratory animal and plantspecies
40 plant community types
30 threatened ecological communities
Largest koala population in Greater Sydney
Kurrajong
Windsor
Penrith
Mulgoa
Leppington
Liverpool
Campbelltown
Picton
Appin
68 hectares of wetlands of national importance
680 kilometres of waterways 3 catchment areas
200,000 ha Plan area

Delivering the Western Parkland City

The Western Parkland City is being established on the strength of the new Western Sydney International (Nancy-Bird Walton) Airport and Western Sydney Aerotropolis. It will be a city with multiple centres, capitalising on the established centres of Liverpool, Greater Penrith and Campbelltown–Macarthur.

The Plan will support the vision of the Western Parkland City, which is to protect and enhance bushland and biodiversity through the creation of new conservation lands such as public reserves. This will ensure the Western Parkland City is a liveable place where people can easily access and enjoy nature and green spaces. The planning context for the Plan is shown in Figure 1.

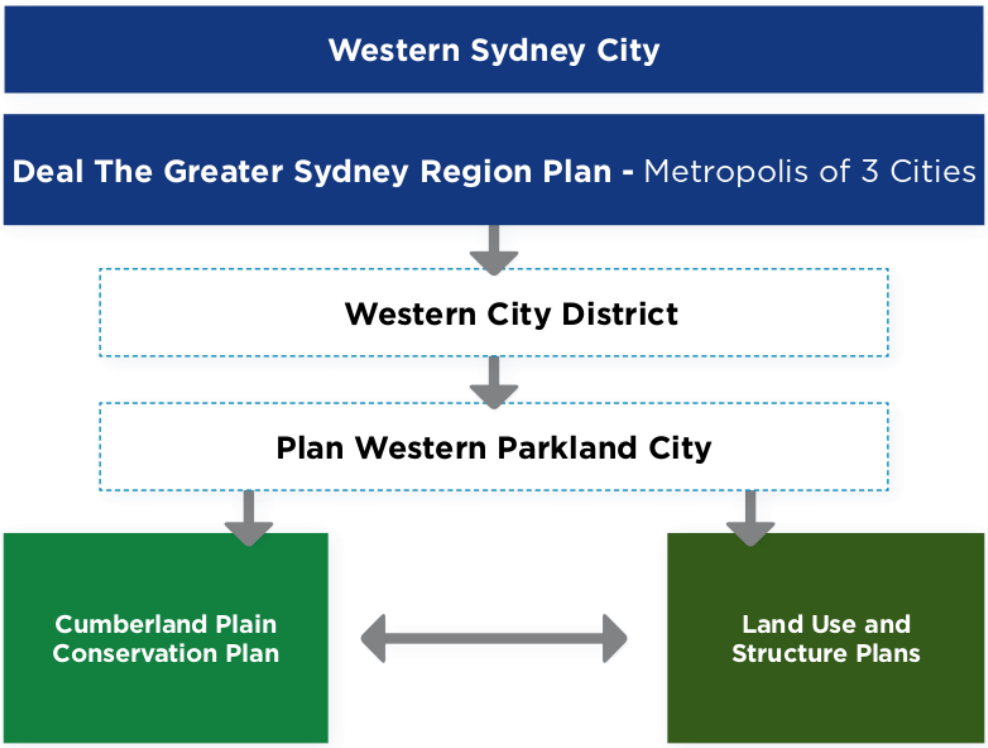


Figure 1. Planning context for the Plan

Western Sydney City Deal

The Australian Government, the NSW Government and eight Western Sydney councils signed the Western Sydney City Deal in March 2018. Under the deal, the NSW Government committed to delivering 185,000 new homes over the next 20 years. This is consistent with targets in the Western City District Plan, while also progressing a streamlined environmental assessment process to reduce duplication between the NSW and Australian governments.

Greater Sydney Region Plan and Western City District Plan

The *Greater Sydney Region Plan: A Metropolis of Three Cities* is a 40-year vision for a global metropolis of three cities incorporating land use, transport and infrastructure planning.

The Greater Sydney Region Plan is guided by 10 overarching directions and 40 objectives for liveability, sustainability, productivity and infrastructure in Greater Sydney. Two core directions address sustainability and provide planning objectives that inform the Plan:

- Objective 26—A cool and green parkland city in the Wianamatta (South Creek) corridor
- Objective 27—Biodiversity is protected, urban bushland and remnant vegetation is enhanced.

This Plan supports the implementation of the Greater Sydney Commission's Greater Sydney Region Plan for a Western Parkland City and the *Western City District Plan's* liveability planning priorities for:

- Planning Priority W13—creating a Parkland City urban structure and identity, with Wianamatta (South Creek) as a defining spatial element
- Planning Priority W14—protecting and enhancing bushland and biodiversity
- Planning Priority W16—protecting and enhancing scenic and cultural landscapes.

Focus areas for new development in the Western Parkland City

This Plan facilitates the delivery of four nominated areas for urban development in the Western Parkland City. These nominated areas will be the key focus for development to 2056 and the centres of economic activity in Western Sydney.

The nominated areas seeking approval through this Plan under the *Biodiversity Conservation Act 2016 (NSW)* and *Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)* (see Figure 2) are:

- Greater Macarthur Growth Area
- Greater Penrith to Eastern Creek Investigation Area
- Western Sydney Aerotropolis
- Wilton Growth Area.

This Plan excludes areas of the Western Sydney Aerotropolis that overlap with the South West Growth Area, the Western Sydney International Airport and the eastern part of Mamre Road Precinct (see Figure 2).

The Plan plays a critical role in avoiding impacts to biodiversity and informing land use planning for developments at strategic, precinct and local levels in each nominated area. Structure plans provide a line of sight from the Greater Sydney Region Plan to planning at a precinct level. They also identify areas of important biodiversity values and contain precinct planning principles, including for biodiversity considerations.

Western Sydney major infrastructure corridors

The NSW Government's Future Transport 2056 identifies a series of major infrastructure corridors for the coming decades. For Western Sydney, major transport infrastructure is planned to respond to local needs over the next 40 years. Responsibility for developing and delivering transport infrastructure rests primarily with the NSW Government, specifically Transport for NSW and Sydney Metro.

This Plan will facilitate the delivery of the following key infrastructure corridors in Western Sydney (see Figure 2):

- Metro Rail future extension to Macarthur (excluding areas within the South West Growth Area)
- the Western Sydney Freight Line corridor
- the Outer Sydney Orbital between Box Hill and the Hume Motorway near Menangle
- the M7/Ropes Crossing Link Road.

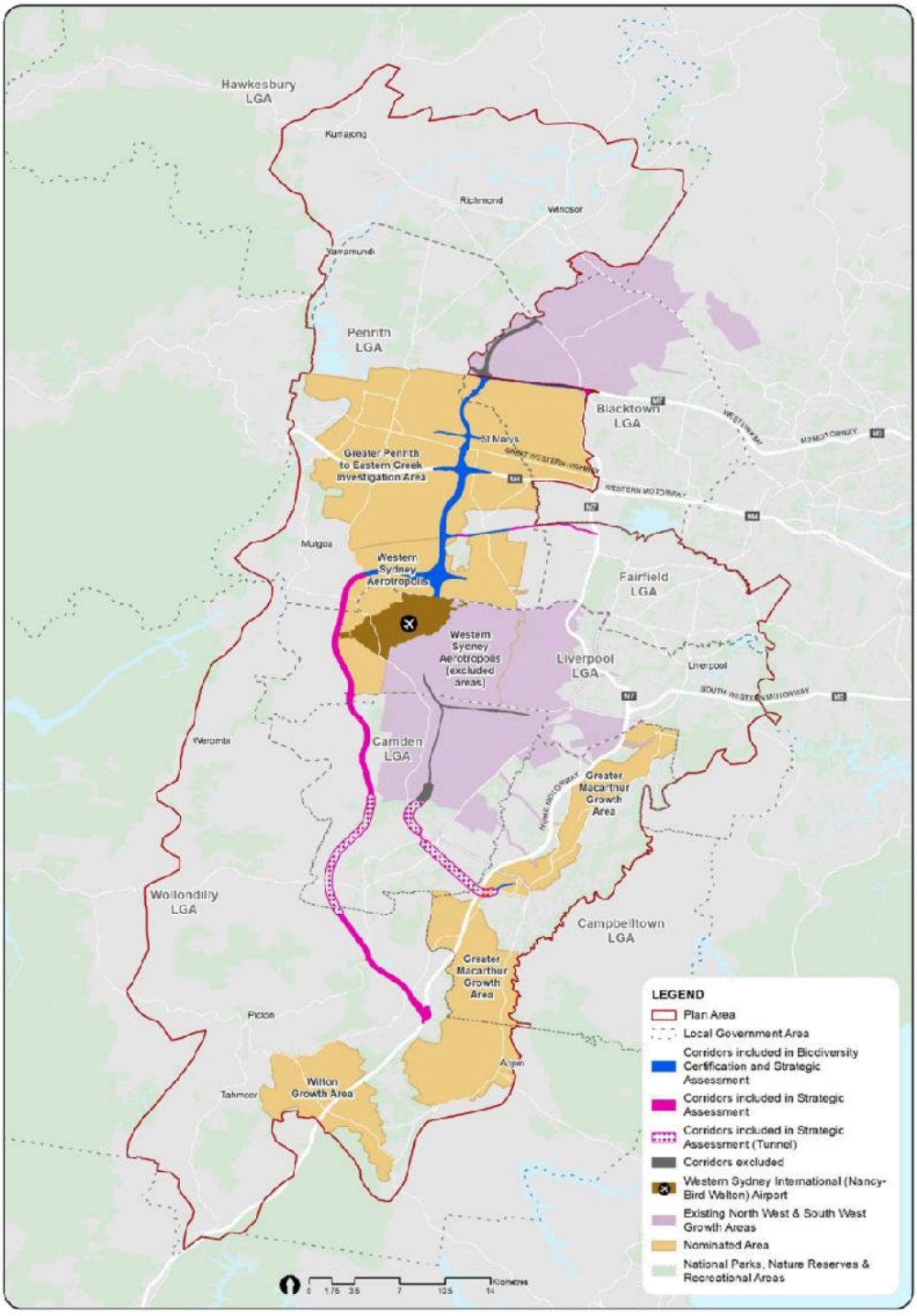


Figure 2. Draft Cumberland Plain Conservation Plan Area and scope

Some major corridors identified for Western Sydney in Future Transport 2056 are excluded from the Plan and their biodiversity approvals will be sought through alternative approval pathways. This includes the Sydney Metro Greater West line north of Western Sydney International (Nancy-Bird Walton) Airport, and major infrastructure corridors identified within existing north-west and south-west growth areas.

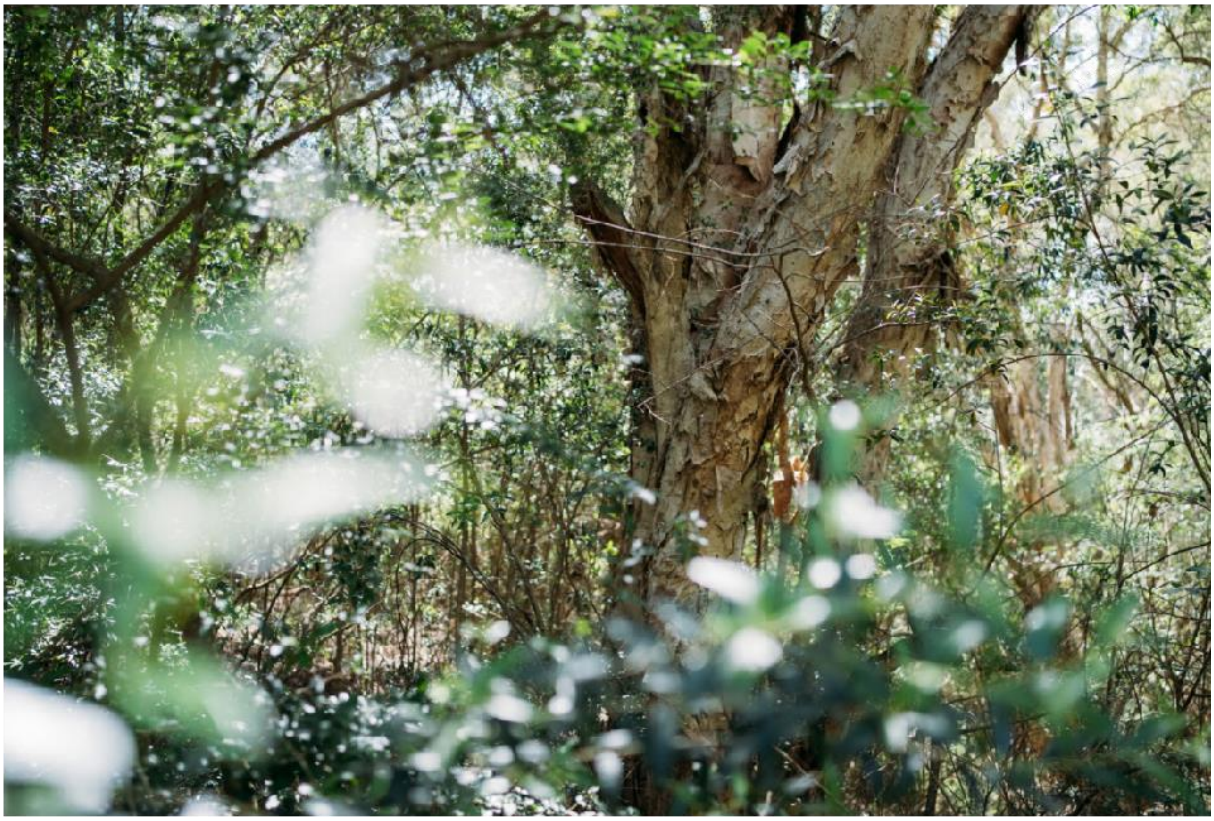
Premier's Priorities

The Premier's Priorities represent the NSW Government's commitment to significantly enhancing the quality of life of the people of NSW. The Plan plays an important role in helping to deliver two priorities:

Greening our city—increase the tree canopy and green cover across Greater Sydney by planting 1 million trees by 2022

Greener public spaces—increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10% by 2023.

The Plan will contribute to these by establishing conservation lands such as public reserves and through ecological restoration, increasing canopy cover and providing quality green and open spaces for local communities.



Photography:
Western Sydney Dry Rainforest, Joshua Tredinnick/DPIE

Overview of the Plan

Strategic conservation planning in Western Sydney

Strategic conservation planning is an approach to assessing and conserving biodiversity upfront early in the planning process for large-scale development, to ensure our unique and diverse plants and animals are protected.

Strategic conservation planning enables decision-makers to identify and protect the most important areas for plants and animals while identifying areas suitable for development for housing and infrastructure for local communities.

The Plan has been prepared to meet requirements for strategic biodiversity certification under the NSW *Biodiversity Conservation Act 2016* and strategic assessment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The Cumberland Plain Conservation Plan

The Plan Area includes parts of eight local government areas—Wollondilly, Camden, Campbelltown, Liverpool, Fairfield, Penrith, Blacktown and Hawkesbury.

The Plan's vision is to 'support Western Sydney's biodiversity and growth'. This means it will support the delivery of infrastructure, housing and jobs for Western Sydney in a planned and strategic way that protects and maintains important biodiversity.

The Plan will deliver commitments and a series of planned and managed actions designed to improve ecological resilience and function, and offset biodiversity impacts from housing and infrastructure development. Taking a landscape approach will deliver the greatest safeguards for Western Sydney's natural environment over the long term.

The Plan will deliver long-term conservation outcomes to the Western Parkland City by avoiding and/or protecting important biodiversity in areas for new development and in infrastructure corridors. Outside those areas, it will ensure outcomes through new or additions to public reserves such as national parks, investing in biodiversity stewardship sites on privately owned land, and ecological restoration of native vegetation.

This Plan represents one of the largest strategic conservation planning exercises ever undertaken in Australia and will provide an enduring conservation legacy for Western Sydney. It is also the first strategic biodiversity certification to be undertaken under the NSW *Biodiversity Conservation Act 2016*.

Components of the Plan

This Plan comprises six documents (plus this highlights document) (see Figure 4) that together play a key role in ensuring the success of strategic conservation planning for Western Sydney:

1. **The Draft Cumberland Plain Conservation Plan** describes where development will occur and how impacts to biodiversity values protected under the *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999* will be addressed through the Plan's conservation program and implementation framework.
2. **Sub-Plan A: Conservation Program and Implementation** outlines how the conservation program will be implemented over the life of the Plan, including the Plan's evaluation program.
3. **Sub-Plan B: Koalas** outlines the conservation program for the local koala population, including protecting and connecting key areas of habitat.

4. **State Environmental Planning Policy for Strategic Conservation Planning:** The Explanation of Intended Effect (EIE) describes the planning measures and mechanisms that will support strategic conservation planning, including the Plan.
5. **The Draft Cumberland Plain Assessment Report** assesses the impacts of proposed development in the nominated areas and major transport corridors facilitated by the Plan. It also evaluates the adequacy and acceptability of the Plan, ensuring it is in accordance with the regulatory requirements of the NSW *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
6. **The Summary Assessment Report** is a high-level summary of the Draft Cumberland Plain Assessment Report. It also includes an overview of the report including impacts and evaluation of the Plan.

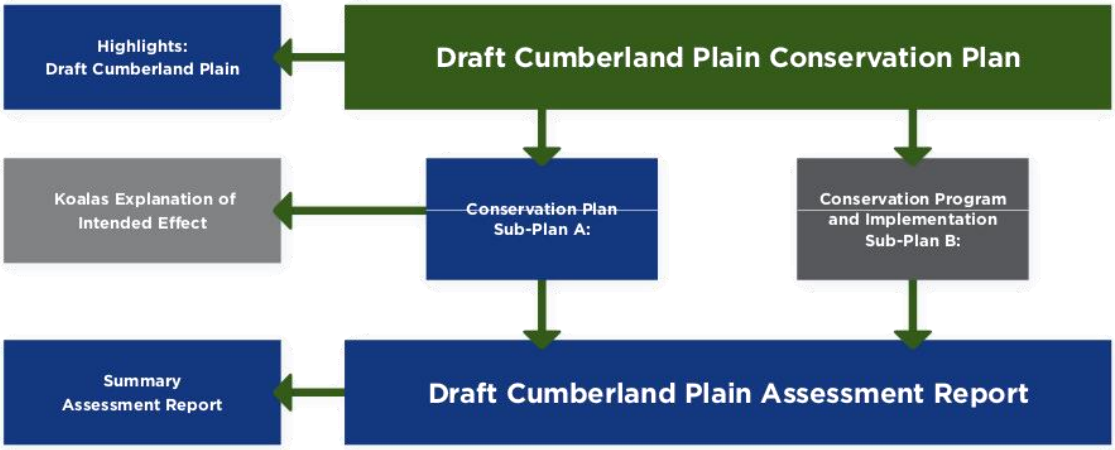


Figure 3. Components of the Plan

The Plan's conservation program

The Plan's conservation program comprises 28 commitments. They fall into five categories that address impacts to biodiversity from projected growth in Western Sydney, as identified through the Draft Cumberland Plain Assessment Report. The commitments will be implemented over the life of the Plan until 2056 and will be achieved through a series of planned and managed actions, according to priority and feasibility over time (see page 16).

The NSW Government has committed $84 million in the first five years to plant 100,000 trees to restore important koala habitat in the Georges River Koala Reserve, install 120 kilometres of koala exclusion fencing in priority locations and establish biodiversity stewardship agreements.

Within the first five years of the Plan's implementation, the NSW Government will prioritise the establishment of three new public reserves to help deliver the Plan's commitment of more than 5,475 hectares for new conservation lands. These new reserves are critical to the protection of threatened plants and animals in Western Sydney.

The establishment of the Georges River Koala Reserve has been announced as part of the Plan, and two additional public reserves are under investigation for feasibility. These are the:

- Gulguer reserve investigation area
- Confluence reserve investigation area.

Other locations within the strategic conservation area, such as Bargo, have also been identified for further investigation as future reserves to provide greater landscape connectivity.

Commitments to be delivered through the Plan

Category	Description
 **Avoiding and minimising impacts**	The Plan will avoid at least 4,315 hectares of valuable biodiversity from urban development using information collected during biodiversity assessments. These areas will be protected by environmental conservation zoning.
 **Mitigating indirect and prescribed impacts**	In addition to the direct impacts associated with clearing, development will cause indirect impacts to biodiversity. Indirect impacts are defined as those that occur beyond the development footprint from vegetation clearing and changes in land-use patterns. These include changes to hydrology and water quality, disruption of habitat connectivity, altered fire regimes, spread of disease and vehicle strikes of animals. The department will work with local councils to introduce development controls specifically to protect biodiversity and other key environmental features in the nominated areas from indirect and prescribed impacts.
 **Conserving flora, fauna and associated habitats**	These commitments will focus on establishing new conservation lands for in-perpetuity protection of biodiversity by securing new (or additions to) national parks, and council- or community-based biodiversity reserves, and establishing biodiversity stewardship sites on public or private land. Ecological restoration of native vegetation in conservation lands will play a critical role in expanding natural habitat and restoring connectivity in degraded areas. These commitments will make up 90% of conservation program funding over the life of the Plan.
 **Managing landscape threats**	Reducing and managing threats to the area's biodiversity in a strategic and coordinated manner will be essential for achieving the Plan's objective to improve long-term ecological function and resilience. The Plan will focus on managing weeds, pest animals and disease. Actions will also focus on fire management and adaptation to climate change.
 **Building knowledge and capacity**	Western Sydney has unique plants and animals, and many local groups and residents already help protect and manage important natural areas. Education will form an important part of the Plan and help ensure that current and future residents of Western Sydney know about and get an opportunity to help manage their unique local environment. Research will enhance our knowledge of threatened species while a compliance program will ensure effective management of biodiversity values.

Collaborating with the community and stakeholders

The department values input from stakeholders and the Western Sydney community. During the Plan's development, the department used a variety of engagement methods to better understand the views of the community and stakeholders—including what areas of biodiversity are important to them—and to obtain feedback during development of key elements of the Plan.

People's Panel

The department established the Cumberland Plain Conservation Plan People's Panel in 2018. The People's Panel was made up of 18 randomly selected community members—with at least two representatives from each local government area in the Plan Area.

The panel participated in a series of workshops and a bus trip around the Plan Area, where members were able to provide community views on the conservation program and how it should be implemented. This process provided the department with direct feedback from community members who may not have previously had a voice on NSW Government initiatives. The Panel's views have directly informed this Plan and its conservation program.

Community Reference Group

The department also established the Cumberland Plain Conservation Plan Community Reference Group in 2018. This group, chaired by the Total Environment Centre, was made up of expert representatives from a range of environmental, Aboriginal, landscape profession and scientific groups in Western Sydney.

The Community Reference Group provided independent advice to the department on the strategic conservation planning process, and input and advice to support the development of the Plan.

Early engagement with community and stakeholders

Between July and December 2019, the department engaged with the community and stakeholders to seek early feedback to support development of the Plan for statutory public exhibition. The department specifically sought feedback from the community on local conservation priorities, and how people value biodiversity and green spaces through an online survey and a social pinpoint map. This ensured that local and expert knowledge informed the Plan's content and conservation program.

The department also engaged with stakeholder groups though a series of workshops and meetings, including Local Aboriginal Land Councils, local councils, state and Australian government agencies, industry groups and peak bodies, environment groups, developers and landholders in the nominated areas. Feedback from early engagement was considered in preparing the Plan.

The full report on the community engagement process, including what we heard, is available on the department's website.

Plan highlights

The following sections provide seven Plan highlights from the suite of commitments and actions proposed under the conservation program.

1. Establishing new conservation lands

The conservation program will secure at least 5,475 hectares of native vegetation.
This will offset native vegetation that is cleared for urban development and transport infrastructure.

New conservation lands will protect Western Sydney's threatened plants and animals and native vegetation to enhance long-term resilience and ecological function. In-perpetuity protection of biodiversity will be achieved through establishing new or adding to existing public reserves such as national parks, and by establishing biodiversity stewardship sites.

The conservation program will prioritise sites in the strategic conservation area to establish new conservation lands over the life of the Plan (see Figure 4). The strategic conservation area is identified as having the greatest potential to deliver long-term conservation outcomes for biodiversity in the Plan Area. It includes large patches of native vegetation with good connectivity to other such patches, or areas with the potential to enhance connectivity that directly offset impacts on threatened plants and animals. The strategic conservation area will be monitored over the life of the Plan and regularly refined as constraints and opportunities change.

Establishing new reserves

Public reserves are recognised as the foundation of biodiversity protection as they protect the largest and most intact remnants of vegetation in perpetuity. In addition to their biodiversity value, they provide social and wellbeing benefits to local communities by increasing access to nature and green spaces and protecting heritage. Feedback from the Western Sydney community during early engagement found a strong preference for public reserves to be delivered under the Plan.

Within the first five years of the Plan's implementation, the NSW Government will prioritise the establishment of three new public reserves. This will help deliver the Plan's commitment to secure at least 5,475 hectares of native vegetation in new conservation lands. The establishment of the Georges River Koala Reserve has been announced as part of the Plan. Two additional public reserves are under investigation for feasibility, including the Gulguer reserve investigation area and the Confluence reserve investigation area (see case studies 1 and 2). Other locations within the strategic conservation area have also been identified for further investigation as future reserves to provide greater landscape connectivity such as Bargo.

These reserves may be national parks, nature reserves, state conservation areas or regional parks managed by the NSW National Parks and Wildlife Service, council reserves or community-based reserves. New reserves could also be managed jointly with Local Aboriginal Land Councils.

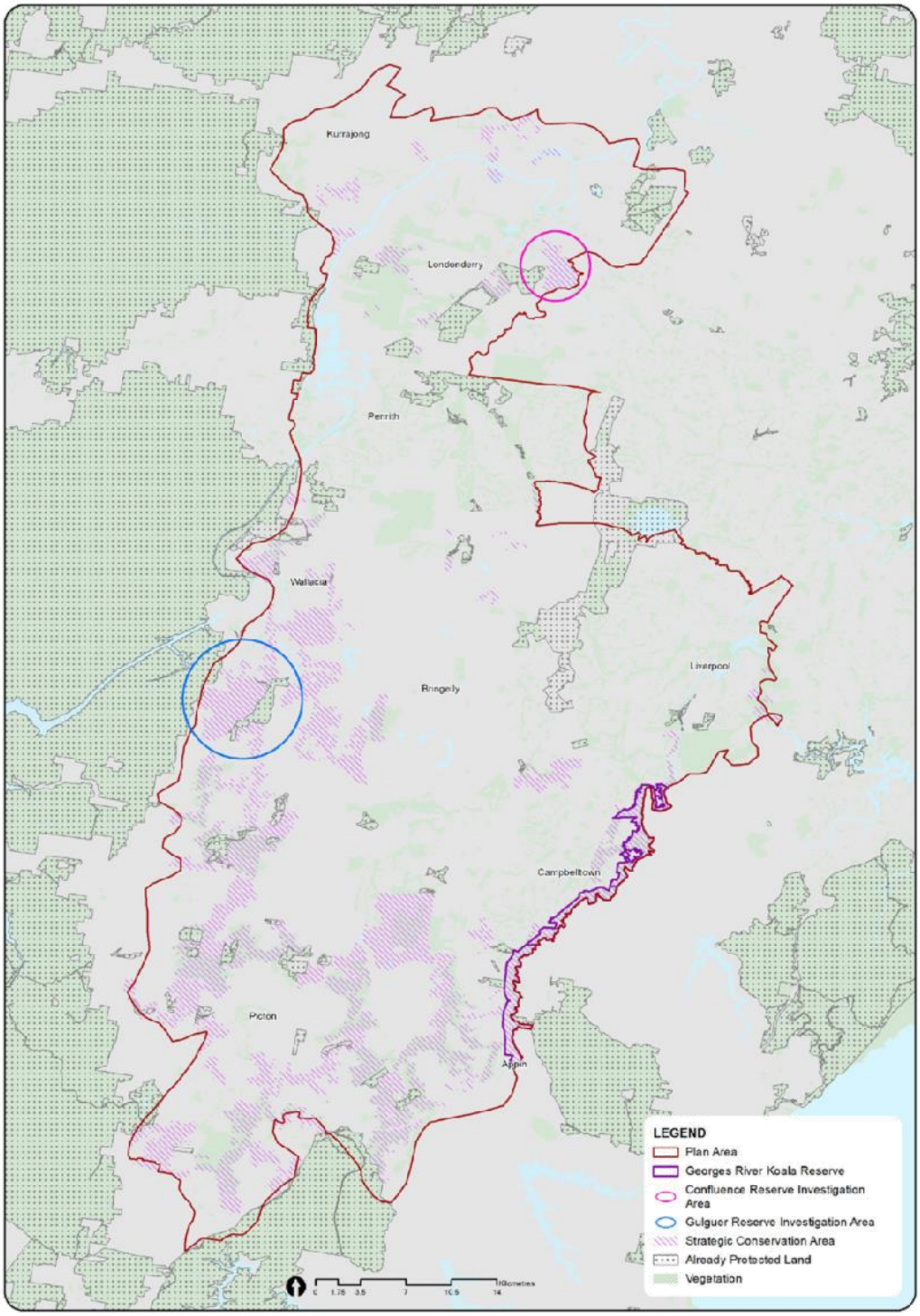


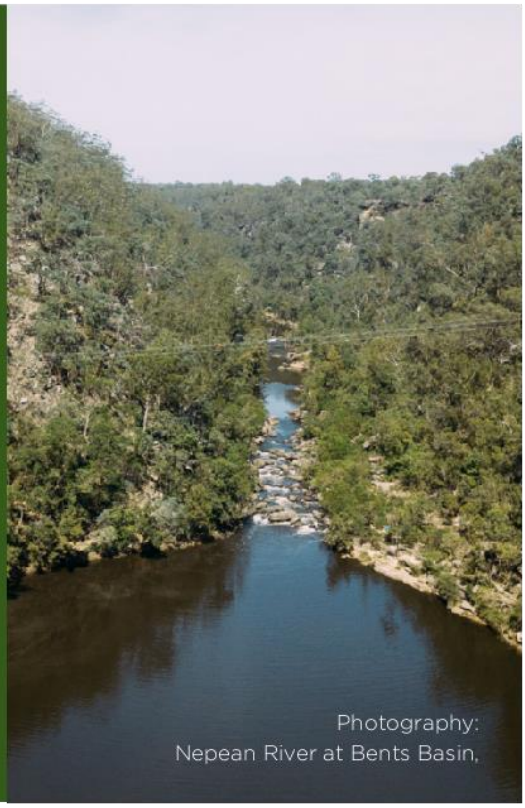
Figure 4. Western Sydney strategic conservation area and reserve investigation areas

Case study 1: The Gulguer reserve investigation area

The Gulguer reserve investigation area covers about 1,800 hectares in the Wollondilly local government area (see Figure 4). The reserve investigation area will support the east-west connection between Burragorang State Conservation Area and Gulguer Nature Reserve and relieve the highly visited Bents Basin State Conservation Area.

Vegetation within the investigation area includes ecological communities listed as threatened under both the NSW *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, including approximately 585 hectares of shale–sandstone transition forest and 180 hectares of Cumberland Plain woodland.

The area is potential habitat for known species and key Matters of National Environmental Significance targeted in the Plan's conservation program, including around 1,165 hectares for the Swift Parrot and the Regent Honeyeater, and 780 hectares for the Cumberland Plain Land Snail.



Photography: Nepean River at Bents Basin,

Establishing new stewardship sites

A biodiversity stewardship agreement is an agreement between the Biodiversity Conservation Trust and a landholder to protect the biodiversity on their land in perpetuity. More than 75% of the remaining native vegetation in the Cumberland subregion is on private land and as such biodiversity stewardship agreements will play an important role in protecting biodiversity into the future.

Establishing biodiversity stewardship sites on private land is useful in areas where land management is fragmented, such as in Western Sydney. Stewardship sites can offer opportunities to expand the range of protected biodiversity values while providing buffers and corridors to already protected areas.

A landholder voluntarily enters into the biodiversity stewardship agreement and manages the area according to an agreed management plan. The biodiversity stewardship agreement is registered on the title of the property and provides in-perpetuity protection of the site's biodiversity values, while giving the owner a secure, ongoing source of funding.

Delivering targeted ecological restoration

Historically, vegetation in the Plan Area has been cleared for agriculture and more intensive land uses, resulting in extensive fragmentation of the remaining native vegetation and reduced connectivity.

Ecological restoration can play a vital role in improving connectivity between disconnected patches of vegetation, expanding the area of remnant habitat and re-establishing over-cleared vegetation communities.

This conservation program will build on the restoration efforts and techniques already occurring in the Plan Area, with up to 25% of the targeted 5,475 hectares of native vegetation to be delivered through ecological restoration of threatened native vegetation. Areas identified as a priority for conservation will be assessed to identify ecological restoration opportunities. Restoration will aim to expand the habitat available for threatened species and create greater connectivity with neighbouring reserves and other areas of high biodiversity value.

Case study 2: The Confluence reserve investigation area

The Confluence reserve investigation area covers about 600 hectares in the Hawkesbury local government area (see Figure 4). The site has been identified as a potential area for conservation and ecological restoration efforts due to its proximity to several existing nature reserves, thus improving local connectivity.

The area provides a significant ecological restoration opportunity, with up to 365 hectares of cleared land targeted for restoration. Communities likely to be restored include Cooks River/Castlereagh ironbark forest, River-Flat eucalypt forest and Cumberland Plain woodland.

The area is also a potential habitat to known species that have been targeted for conservation efforts under the Plan, including around 65 hectares for *Pultenaea parviflora*, a species that is listed as a Matter of National Environmental Significance under Commonwealth legislation, and around 65 hectares for the Swift Parrot.

Photography: Swift Parrot, Dave Watts/DPIE

2. Protecting koalas in Western Sydney

Koala numbers are in decline in NSW, and koalas in Campbelltown local government area are one of the healthiest populations in NSW.

The Plan aims to ensure that the Southern-Sydney koala population can continue to grow and thrive.

Protecting and enhancing important koala habitat

The conservation program was developed based on advice from the NSW Deputy Chief Scientist & Engineer, released in August 2020 in an independent expert panel report, *Advice on the protection of the Campbelltown koala population* (Chief Scientist Koala Report). The conservation program for koalas will establish new conservation lands such as reserves and biodiversity stewardship agreements on private land holdings to protect important koala habitat in perpetuity. Ecological restoration of the habitat will also aim to expand the area's native vegetation and maximise ecological connectivity for koalas.

In the first five years of delivering the conservation program, the NSW Government will plant 100,000 trees to restore important koala habitat in Georges River Koala Reserve, along Ousedale Creek, around Appin and other priority locations.

River Koala Reserve

The conservation program will establish the Georges River Koala Reserve in the first 10 years of implementation of the Plan. This reserve will protect the most important north–south koala movement corridor along the Georges River between Appin and Kentlyn (see Figure 4). This north–south corridor has high-fertility shale and shale-influenced transition soil that supports preferred koala feed trees.

The establishment of the Georges River reserve was recognised in the Chief Scientist's Koala Report as essential to the persistence of the Southern-Sydney koala population.

The reserve will protect and manage up to 1,885 hectares (including ecological restoration), which is three times the required offset target for important koala habitat for the Plan. Some 800 hectares of publicly owned land was announced in November 2018 to be set aside as part of the reserve. There is also an opportunity to restore up to 200 hectares of important koala habitat within the reserve.

Mitigating key threats

Indirect and prescribed impacts to koala populations are often associated with human-induced disturbances, such as through urbanisation. Some of the key urban development threats for koalas are fragmentation of habitat, domestic dog attack, vehicle strikes and drowning in swimming pools.

As part of the Plan, 120 kilometres of koala-exclusion fencing will be installed between koala habitat and the urban capable land to protect koalas from urban-related threats. It will also be installed along Appin Road to mitigate vehicle strike for koalas. As part of the Plan, the department has prepared model clauses for development control plans to address threats related to pre-construction, translocation, site management, precinct and road design for nominated areas, and these will be adopted as the precinct plans are developed.

Supporting koala welfare

The conservation program will deliver education and a targeted stakeholder and community engagement program to build awareness among residents about koala conservation and key threats. Research will enhance our knowledge of koalas, allow for conservation initiatives and monitor populations as development occurs in Western Sydney.

The Plan will fund training and technical resources needed by wildlife carers and veterinarians through the NSW Koala Strategy and their NSW Volunteer Wildlife Rehabilitation Sector Strategy. Funding will improve access to resources, veterinary services, transport and facilities for the Southern-Sydney koala population.

3. Protecting plants and animals through planning measures

The primary method of protecting threatened plants and animals is establishing conservation lands. But planning controls are also being used to identify and protect areas of strategic conservation value for the region, which will be critical to the implementation of the Plan.

A proposed state environmental planning policy (SEPP) is the key statutory mechanism to protect threatened plants and animals under the Plan.

To protect avoided land, controls include:

- a requirement to ensure consistency between the urban capable land in precinct plans and the areas of certified land identified by the Plan
- applying environmental conservation (E2) zoning to protect avoided land identified under the Plan, including land with high-value biodiversity, riparian corridors and steep slopes
- requiring public authorities to avoid, minimise, mitigate and offset impacts to biodiversity when undertaking essential infrastructure development on certain land in the nominated areas.

To manage impacts to the strategic conservation area, controls include:

- requiring the consent authority to consider biodiversity values when determining development applications on the strategic conservation area, to minimise impacts to this land that has high biodiversity value, important connectivity or ecological restoration potential.

To help secure future conservation land to implement the Plan, the Plan proposes:

- acquisition clauses to help secure suitable conservation lands for new public reserves or national parks. Any land acquisition is subject to funding and consultation with community and key stakeholders.

Development controls to protect biodiversity

Development of the nominated areas and major transport corridors will have indirect and prescribed impacts on biodiversity. Indirect impacts are those occurring beyond the development footprint, such as vegetation clearing, changes to hydrology and water quality, disruption of habitat connectivity, altered fire regimes, spread of disease, and vehicle strikes of animals. Prescribed impacts are impacts or potential impacts to habitat features (such as caves and cliffs, rocks, man-made structures and non-native vegetation) as well as impacts on habitat connectivity, threatened species movement, water bodies and water-related processes that sustain threatened species.

Development controls are needed to avoid, mitigate or minimise the indirect and prescribed impacts associated with increased urbanisation and growth. Development control plans (DCPs) provide detailed planning and design guidance to support statutory instruments and guide development. Councils assess development applications in accordance with the relevant DCPs.

The DCPs prepared for each nominated area will include objectives and controls to address the threats identified in the Plan and guide the protection of biodiversity. The department has prepared model clauses for DCPs to address threats and protect biodiversity and other key environmental features in the nominated areas and will work with local councils to implement these development controls.

Growth Area

Mitigation controls were developed for risk and threats to biodiversity in Wilton using a scientifically grounded, species-based method. These were drafted as development controls and included in the comprehensive DCP to address threatened ecological communities, species and their habitats in the Wilton Growth Area.

Biodiversity controls were directly integrated into the precinct planning process for Wilton Growth Area and through the draft Wilton DCP. These controls inform the protection of biodiversity and address species and threatened ecological communities including both direct and indirect threats to biodiversity in Wilton Growth Area.

These Wilton-specific objectives and controls were reviewed by council and are designed to improve biodiversity outcomes, guide neighbourhood planning and minimise indirect and prescribed impacts in Wilton Growth Area.

Photography:
Koala fencing on Appin Road,
Joshua Tredinnick/DPIE

4. Managing landscape threats

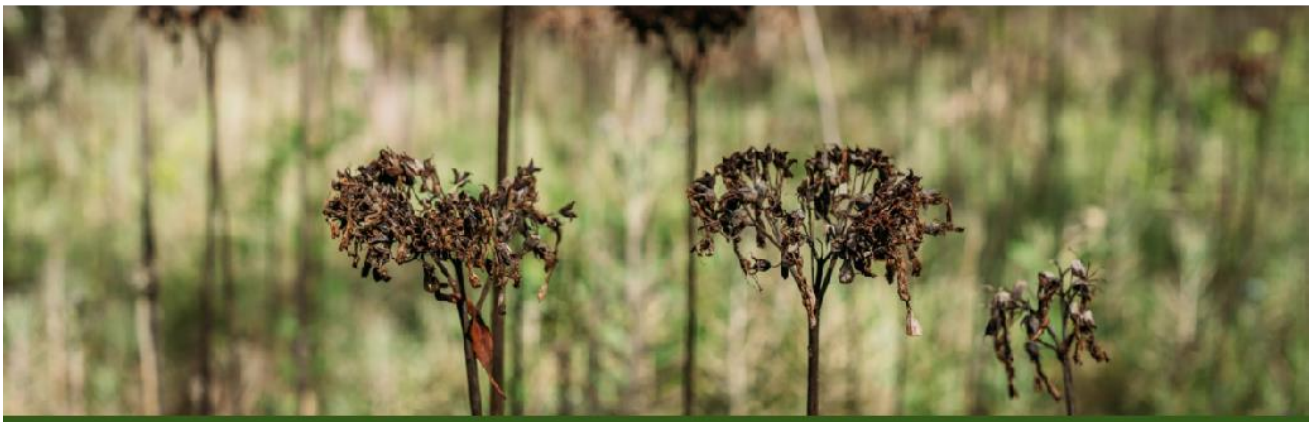
Increasing urbanisation raises the number and extent of threats to biodiversity, such as habitat loss, weed invasion, pest animals and disease. Climate change is also a serious threat to native species and ecosystems. Reducing and managing threats to the area's biodiversity in a strategic and coordinated manner will be essential for achieving the Plan's objective of improving ecological function and creating resilience to a changing climate.

Managing fire to protect biodiversity

Fire is a natural element of the ecology of most Western Sydney vegetation communities. A vegetation community's responses to fire can be influenced by fire frequency, temperature, season, prior and subsequent weather conditions, and proximity to unburnt refuge areas.

The 2019–20 bushfires in NSW were unprecedented in their extent and intensity. As of late January 2020, the fires had burnt 5.3 million hectares (6.7% of NSW), including 2.7 million hectares in national parks (37% of the national park estate) and more than 80% of the Greater Blue Mountains World Heritage Area.

The conservation program will manage fire in strategic locations in Western Sydney to support the maintenance of biodiversity values on new conservation lands such as reserves. It will also help to minimise bushfire risks to people and property from adjacent native vegetation through measures such as hazard reduction and appropriate land management.



Case study 5: Delivering a fire management strategy

The conservation program includes an action for the department to develop and implement a fire management strategy. This must align with the fire strategies of the NSW National Parks and Wildlife Service and the NSW Rural Fire Service to protect biodiversity values, property and people. This strategy aims to manage fire regimes in existing and new conservation lands, such as national parks and reserves, to maintain and enhance biodiversity over time.

A range of fire management strategies will be developed for each new nominated area in Western Sydney, including for fuel reduction, fire trails and detection, and for cooperative arrangements. Where urban boundaries and conservation lands abut, fuel reduction programs and fire trail maintenance will be designed and implemented in consultation with relevant stakeholders to best protect life, property, and natural and cultural assets.

Providing support for climate change mitigation

Climate change is a serious threat to native species and natural ecosystems and is expected to be an ongoing challenge to effective conservation in Western Sydney. Increasing extreme heat as a result of a changing climate, combined with changes to bushfire and rainfall patterns, are likely to place additional pressure on Western Sydney's biodiversity.

The Plan will support existing and new conservation programs to help threatened species and ecological communities adapt to the impacts of climate change in Western Sydney by:

- filling knowledge gaps on climate change adaptation measures for biodiversity
- including priority locations in the strategic conservation area (if they are not already present) to support adaptation of biodiversity to climate impacts
- providing advice and support to councils to integrate the results of research, including identification of any important climate refugia, in their reserve management programs.

Managing feral animals, weeds and disease

Feral animals, weeds and diseases have numerous adverse effects on native plants and animals in the Plan Area, including weakening or killing species, predation, overgrazing and competition. The conservation program includes actions for delivery partners, such as Local Land Services, local councils and Landcare groups, to reduce these landscape threats by:

- reducing key weed species on conservation lands established under the Plan
- applying a strategic approach to eradicating pest animals
- identifying conservation programs that contribute to the management of disease and dieback
- preparing a 'disease control implementation strategy'.

5. Building our knowledge through research

Despite substantial research into understanding the ecology of Western Sydney, many areas remain where further research will help us better manage threatened plants and animals. The Plan will play an important role in facilitating this work.

Research to support the conservation program

The Plan will include research that will underpin the adaptive management needed to achieve the environmental outcomes. Research programs will cover topics such as:

- the adaptive potential of threatened species and ecological communities to climate change
- improved techniques for restoring threatened ecological communities
- biodiversity threats
- land use impacts
- threatened species conservation
- behavioural science, and
- connections between biodiversity and Aboriginal culture and practices in Western Sydney.

Knowledge and data gathered through research will directly support the implementation of each of the Plan's key conservation commitments. They will also help improve ecological knowledge about the area's threatened species and ecosystems and our ability to monitor plant, animal and community responses to our efforts.

Case study 6: Threatened species ecology and distribution

The Plan will include a five-year research program that will target threatened species in Western Sydney. This research program will be implemented through the NSW Government's existing Saving our Species program. The species selected for research will include those that have been assessed to be affected by future urban development and infrastructure.

The research program will aim to improve our understanding of the habitat requirements of species, the geographic distribution of species, and responses to changing land use and climate.

Photography: Spotted-tailed Quoll, Lachlan Hall/DPIE

6. Partnering with the Aboriginal community

Aboriginal people have managed, cultivated and cared for Country for more than 60,000 years. Aboriginal people hold profound knowledge, understanding, obligation and custodianship of the landscape, often referred to as 'connection to Country'.

Through connection to Country, Aboriginal people have developed their own systems of knowledge and understanding of their surrounding ecology and biodiversity, which is representative of a living, symbiotic relationship with the land and waters of their traditional homeland estates. This includes widespread systems of knowledge incorporating biodiversity, climate, land, culture and people.

The aims and objectives of the Plan are aligned with Aboriginal understanding of and respect for the land. They aim to ensure land management, planning and land use in Western Sydney improves ecological resilience and meets social, economic and liveability needs.

Aboriginal people of Western Sydney

Western Sydney has the largest concentration of Aboriginal people in Australia, with many families originating from areas across NSW and throughout Australia.

Local Aboriginal Land Councils, including Tharawal, Deerubbin and Gandangara, are major landowners in local government areas within the Plan Area. They are responsible for achieving the social, cultural and economic aspirations of Aboriginal people through those land holdings. Planning controls proposed in the Plan for the strategic conservation area and the environmental conservation zone will not be applied to any land owned or under claim by Local Aboriginal Land Councils in the Plan Area.

Engaging and partnering with Aboriginal people

The department started engaging on the Plan with Local Aboriginal Land Councils and the Aboriginal community in Western Sydney in 2018.

The feedback through this engagement has supported actions in the Plan and a decision to develop a 10-year Aboriginal engagement and implementation strategy for Western Sydney as part of the Plan. The department will continue to work with Local Aboriginal Land Councils and Western Sydney's Aboriginal community to collaboratively develop this strategy.

The strategy will outline opportunities for targeted and ongoing engagement with the local Aboriginal community to promote and support opportunities arising from the Plan, such as jointly managing new conservation reserves. It could also support resolving Aboriginal land claims over potential conservation lands, upfront funding to help establish biodiversity stewardship sites on Aboriginal-owned land and acknowledging culturally and environmentally significant lands in Western Sydney.

Case study 7: Build capacity in Aboriginal businesses and organisations

One of the objectives of developing a 10-year Aboriginal engagement and implementation strategy is to build capacity in Aboriginal businesses and organisation to help deliver the Plan.

The strategy could fund grants to provide support for existing Aboriginal-owned businesses or startup funding to get new businesses off the ground in the land management and restoration sector. The department will award a minimum of 5% of expenditure for services needed for implementation of the Plan to Aboriginal-owned businesses. This is 2% above the current quota under the NSW Government's Aboriginal Procurement Policy.

The department could also work with Local Aboriginal Land Councils and Aboriginal businesses to investigate training opportunities that will help to achieve the Plan's conservation outcomes. For example, training could be provided for Biodiversity Assessment Method assessor accreditation and for ecological restoration and Indigenous land use practitioners.

7. Involving the community in conservation

The conservation program will include a range of actions that aim to raise awareness of biodiversity values and issues and encourage people to participate in biodiversity conservation. An effective education and engagement program will support the outcomes of the Plan by fostering a greater understanding of the environment in which Western Parkland City residents live, and the unique biodiversity values it supports.

Community education and engagement

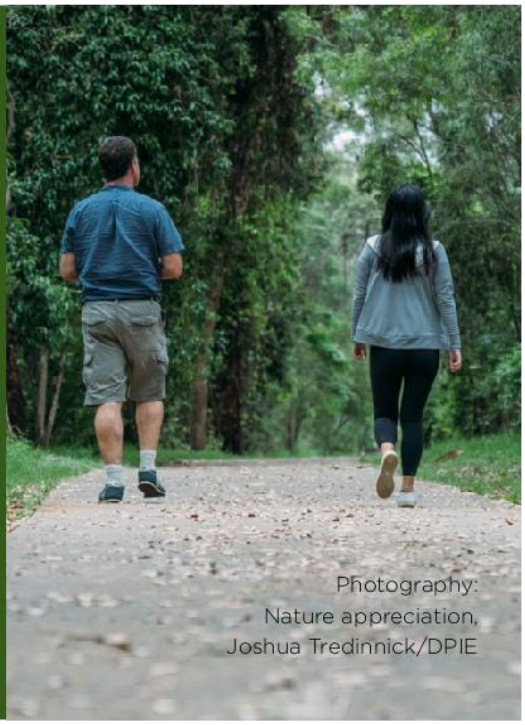
Early engagement for the Plan showed that many long-term residents are very aware of Western Sydney's biodiversity values and the importance of protecting them. With an extra 700,000 people living in Western Sydney by 2056, it will be important to educate new and existing communities about how they can protect biodiversity and support conservation in the Western Parkland City.

Case study 8: Biodiversity education officers engage with community and schools

The conservation program will fund a network of biodiversity education officers in local councils to directly engage with schools, community groups and the broader community to implement environmental programs and organise community events.

Two part-time Aboriginal education officers and three full-time biodiversity education officers will deliver biodiversity, cultural awareness and engagement activities to schools and communities.

This may lead to increased involvement in ecological restoration activities through Bushcare and Landcare, greater awareness of the value of having native species in gardens, increased interest and involvement in citizen science monitoring programs, and reduced rubbish dumping and damage from inappropriate recreational activities.



Photography: Nature appreciation, Joshua Tredinnick/DPIE

Residents will have opportunities to learn about the biodiversity of the Cumberland Plain and actively engage in conservation programs and activities. These will include participation in school education programs, and community activities such as tree planting, nature walks and citizen science programs.

One of the actions of the conservation program is to develop and implement an 'education and engagement implementation strategy'. The strategy will be developed in consultation with local councils, members of the community, the NSW Department of Education and other relevant stakeholders.

Extension services to property owners and land managers

The Plan will provide for extension services to community groups, local councils, Local Aboriginal Land Councils and landholders to support biodiversity conservation on public and private land. These services will enhance or complement existing programs and will aim to strengthen the conservation outcomes of the Plan. For example, supporting landholders to control weeds and feral animals on properties bordering conservation lands will help protect these areas from biodiversity threats.

Extension services or extension programs to be delivered under the Plan include:

- partnering with the Biodiversity Conservation Trust to promote stewardship options and biodiversity management on private land in the Plan Area
- partnering with Local Land Services and councils to deliver community workshops on managing weeds and feral animals
- supporting community groups working on public or private conservation lands by delivering training in best-practice bush regeneration and restoration techniques.

Next steps

Public exhibition

The Plan is now on public exhibition. We invite the community and stakeholders to make a submission on the Plan and other documents on exhibition.

We will consider all submissions when preparing the final Plan and publish a report summarising the feedback from the public exhibition.

Approval of the Plan

The department will review and, where necessary, update the mapping of urban-capable land and strategic conservation areas following feedback from the exhibition. We will then complete the final impact assessment to quantify the biodiversity impacts associated with the final urban-capable land.

We will submit the Plan and its associated documents to the NSW Minister for Environment for approval under the NSW *Biodiversity Conservation Act 2016* and to the Commonwealth Minister for Environment for approval under the Commonwealth *Environment Protection and Biodiversity Act 1999*.

How to contact us

The department is committed to engaging with the community and industry as we continue to deliver the Plan for protecting Western Sydney's biodiversity.

If you have any questions, you can email
biodiversity@planning.nsw.gov.au
or call **1300 305 695**.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Explanation of Intended Effect

State Environmental Planning Policy for Strategic Conservation Planning

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Contents

Introduction

This Explanation of Intended Effect (EIE) has been prepared under section 3.30 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). It recommends the creation of a new State Environmental Planning Policy (SEPP) for strategic conservation planning.

In order to support the *Draft Cumberland Plain Conservation Plan* (the Plan), the Department of Planning, Industry and Environment is seeking submissions on the proposed new SEPP (proposed SEPP) for strategic conservation planning.

The department has also published the Draft Cumberland Plain Conservation Plan Viewer for public exhibition to support the proposed planning measures and mechanisms described in this EIE.

This EIE is presented in three parts.

Part 1—Background and context

This section provides an overview of:

- the NSW and Commonwealth Government biodiversity approval pathways
- the role of strategic conservation planning in protecting biodiversity
- an overview of the Plan
- how the planning system supports the Plan's delivery.

Part 2—Proposed State Environmental Planning Policy

This section explains policy objectives and planning controls for the proposed SEPP. It describes how the proposed SEPP will work and what it seeks to achieve.

Part 3—Other supporting changes and policies

This section explains the relationship between the proposed SEPP and existing policies. It will also explain any amendments or policy changes needed to support the proposed SEPP's implementation.

Part 1—Background and context

1.1 NSW and Commonwealth Government biodiversity conservation approvals

The *Draft Cumberland Plain Conservation Plan* (the Plan) has been developed to meet requirements for strategic biodiversity certification under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and strategic assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

1.1.1 NSW strategic biodiversity certification

The BC Act was enacted in 2017 following a review of the legislative and policy framework that delivered the conservation of biodiversity and native vegetation management in NSW.

The BC Act offers three pathways through the Biodiversity Offsets Scheme to ensure the impacts on biodiversity can be managed according to the type of development. These are:

- site by site assessment
- standard biodiversity certification (available to both landowners and planning authorities)
- strategic biodiversity certification (available to planning authorities only).

Under Part 8 of the BC Act, biodiversity certification allows a streamlined process of biodiversity assessment for land that is proposed for development. The process identifies areas that can be developed once biodiversity certified, without further need for a site by site assessment or offsetting. Areas can only be biodiversity certified if measures under that certification adequately avoid, minimise and offset the development's impact on biodiversity values. Biodiversity certification is subject to the NSW Minister for Energy and Environment's determination.

Strategic biodiversity certification is only available to planning authorities, as defined in section 8.1 of the BC Act. These include the Minister for Planning and Public Spaces, the Secretary of the department or a local council. Strategic biodiversity certification is designed to support significant regional development and planning, and to provide a mechanism that addresses the potential impacts on biodiversity during strategic land use planning. It encourages planning authorities to avoid and minimise impacts on biodiversity at a landscape scale and helps manage residual impacts through an approved offsetting program.

1.1.2 Strategic assessment under the *Environment Protection and Biodiversity Conservation Act 1999*

Under Part 10 of the EPBC Act, strategic assessments are allowed to consider the significant impacts or likely significant impacts of a policy, plan or program on matters of national environmental significance on a larger scale, rather than through project by project assessment. Similar to strategic biodiversity certification, it is designed to streamline the assessment of the impact of actions on matters of national environmental significance and help address the cumulative impacts at a landscape scale early in the planning process.

Strategic assessment ensures that, by implementing a policy, plan or program, the impact of development actions is avoided, mitigated and offset at a landscape scale.

1.2 The role of strategic conservation planning in protecting biodiversity

Strategic conservation planning involves a landscape-scale approach to assessing and protecting biodiversity when planning large-scale development. Taking a landscape-scale approach enables

decision-makers to identify and protect the most important habitat at a regional scale, to ensure a species' viability and connectivity across the landscape. It identifies areas suitable for development which, if the development is in accordance with a previously approved plan, would not require additional biodiversity approvals.

Strategic conservation planning can help:

- improve ecological resilience and function over the long term
- enhance connectivity through the establishment of new conservation areas
- support unique habitat features for native flora and fauna
- provide the local community with accessible green and open spaces
- streamline the delivery of housing and transport infrastructure.

The implementation of avoidance and minimisation principles through strategic conservation planning within the NSW planning system will help to avoid development impacts to these lands into the future. It is a critical step in protecting remaining biodiversity and reducing the cumulative impacts of proposed development on the natural environment.

1.3 The *Draft Cumberland Plain Conservation Plan*

The Plan will identify how biodiversity impacts from development in Western Sydney will be addressed to provide for growth while also ensuring the long-term protection of biodiversity. The Plan's vision is to 'support Western Sydney's biodiversity and growth'. This means it will support the delivery of infrastructure, housing and jobs for Western Sydney in a planned and strategic way that protects and maintains important biodiversity, including threatened flora and fauna.

The Plan Area covers 198,789 hectares, including a significant portion of the vast Cumberland Interim Biogeographic Regionalisation for Australia (IBRA) subregion, and some minor areas of the Sydney Cataract and Wollemi IBRA subregions. The area includes parts of the following eight local government areas: Blacktown City, Camden, Campbelltown City, Fairfield City, Hawkesbury City, Liverpool City, Penrith City and Wollondilly Shire.

The department has nominated four areas for strategic conservation planning in Western Sydney. These nominated areas are:

- Greater Macarthur Growth Area
- Greater Penrith to Eastern Creek Investigation Area
- Western Sydney Aerotropolis
- Wilton Growth Area.

The Plan's conservation program will offset development impacts on biodiversity and help to protect biodiversity over the life of the Plan to 2056. The conservation program outlines the commitments and actions that will help establish new reserves, biodiversity stewardship sites and ecological restoration to support the creation of new conservation corridors in Western Sydney.

The Plan commits to securing at least 5,475 hectares of native vegetation in the Cumberland subregion to conserve biodiversity values. This presents an opportunity to make Western Sydney more liveable, both by fostering greater urban tree canopy and by creating greener public spaces in critical areas, which will take into account existing urban biodiversity.

1.4 Role of the NSW planning system in delivering the *Draft Cumberland Plain Conservation Plan*

1.4.1 Supporting avoidance in the nominated areas

The Plan commits to preventing impact on at least 3,670 hectares of native vegetation in the Western Sydney nominated areas, ensured through the strategic planning of future urban capable land[1].

Avoiding impacts to biodiversity is the first step in minimising impacts from development and is required under NSW and Commonwealth Government biodiversity frameworks. 'Avoided land' within the nominated areas includes land identified as non-certified because it has:

- areas of high-value biodiversity, which are avoided for biodiversity purposes in the Plan
- riparian corridors and steep slopes, which are avoided for other purposes in the Plan.

Avoided land will not be biodiversity certified for development. The department developed strategic avoidance criteria, consistent with the NSW Biodiversity Assessment Method, to help identify urban capable lands while avoiding land with high-value biodiversity.

Land that is identified for development in the Western Sydney nominated areas under the Plan is proposed to have biodiversity certification under the BC Act to facilitate development in those areas.

Several planning controls will provide for the ongoing protection of biodiversity values on avoided land, as identified by the Plan. These are:

- requirements to ensure that certified—urban capable land in precinct plans covered by biodiversity approvals are consistent with the areas of biodiversity certified land
- the application of environmental conservation (E2) zoning to protect avoided land, including land with high-value biodiversity, riparian corridors and steep slopes
- requirements to ensure that asset protection zones are located wholly within urban capable land
- a Ministerial Direction under section 9.1 of the EP&A Act to protect avoided land.

The proposed environmental conservation (E2) zoning will not apply to land owned by Local Aboriginal Land Councils (LALCs) or under claim by LALCs. LALC owned land and land under claim represents 90 hectares of 4,795 hectares of avoided land.

1.4.2 Protecting biodiversity across the Plan Area

The Plan also commits to introducing planning controls across the Plan Area to minimise impacts on areas that have high biodiversity value and that provide the best opportunities to deliver biodiversity outcomes and support the Cumberland subregion's ecological function.

This includes areas with important connectivity or the potential for ecological restoration, and which may be suitable as future conservation land on which to protect native biodiversity and habitat value. The Plan identifies these areas as the strategic conservation area and is approximately 28,300 hectares.

To support the protection of these areas, the Plan proposes to introduce:

[1] Urban-capable land refers to the areas within the nominated areas where the NSW Government has streamlined the delivery of priority housing and infrastructure through the biodiversity certification process.

- planning controls on the strategic conservation area that includes matters relating to biodiversity values that the consent or determining authority must consider when assessing development applications
- a Ministerial Direction under section 9.1 of the EP&A Act to protect the strategic conservation area.

The proposed planning controls for the strategic conservation area will not apply to land owned by LALCs or under claim by LALCs. Deerubbin owned land has been excluded from the strategic conservation area at their request. Other LALC owned land and land under claim represents 1,700 hectares of approximately 28,300 hectares of the strategic conservation area.

1.4.3 Securing future conservation land to implement the Plan

The Plan proposes to introduce legal mechanisms, as required, to support the identification, management and acquisition of sites that have been proposed for future public land conservation (for example public reserves and new or additional national parks) to offset development impacts and help meet the Plan's commitments.

1.4.4 Managing impacts to biodiversity from infrastructure development in the nominated areas

The Plan proposes guidelines to manage the impacts of infrastructure development on biodiversity matters protected under the BC Act and EPBC Act. These guidelines are designed to ensure that infrastructure, such as water supply systems, electricity generating works or telecommunications facilities, avoids, minimises, mitigates and offsets impacts on biodiversity in the nominated areas, consistent with the conservation outcomes of the Plan.

1.5 Summary of proposed controls

1.5.1 Consistency clause to contain urban development to the certified—urban capable land

The Plan proposes a requirement to ensure consistency between the urban capable land in precinct plans and the areas of certified—urban capable land identified by the Plan to contain urban development to the biodiversity certified areas and protect avoided land for its important environmental value.

1.5.2 Environmental conservation (E2) zoning for avoided land

Environmental conservation (E2) zones are designed to protect land with important environmental value. Environmental conservation (E2) zones will be applied to areas that are identified in the Plan as non-certified because they are avoided for biodiversity reasons or avoided for other purposes. Environmental conservation (E2) zones will not be applied to land owned by LALCs or under claim by LALCs.

1.5.3 Planning controls for the strategic conservation area

The Plan identifies areas across Western Sydney:

- that have strategic biodiversity value and include threatened ecological communities and species
- with important connectivity across the landscape
- with ecological restoration potential.

These areas are identified as the strategic conservation area in the Plan.

The Plan proposes planning controls for the strategic conservation area, except for land owned by LALCs or under claim by LALCs.

The proposed planning controls will include matters relating to biodiversity values for the consent or determining authority, for example councils, to consider when assessing any development applications in the strategic conservation area. The consent or determining authority must also be satisfied that development will avoid or minimise impact on identified strategic biodiversity values.

1.5.4 Section 9.1 Ministerial Direction for land identified under the Plan

The section 9.1 Ministerial Direction will apply when a relevant planning authority prepares a planning proposal for avoided land within the nominated areas or prepares a planning proposal that would result in an intensification of land use in the strategic conservation area.

If the planning proposal is for avoided land, the section 9.1 Ministerial Direction will require a relevant planning authority to ensure the objectives of the E2 zone are met, or consider impacts on strategic biodiversity values if the planning proposal is for the strategic conservation area.

1.5.5 Acquisition clauses to secure suitable conservation lands

To deliver the Plan, the NSW Government proposes to acquire some areas of private land in Western Sydney to create new public reserves or national parks, which are integral to the delivery of the Plan and the character and activity in urban environments. These green and open spaces support sustainability, efficiency and resilience within communities.

Tenure of land across the Plan Area is mostly freehold, meaning land will need to be acquired from private landowners over time. This is subject to available funding and consultation with community and key stakeholders.

Acquisition clauses will be included in the proposed SEPP to support this process over the life of the Plan.

1.5.6 Guidelines for infrastructure development in the nominated areas

The department is proposing to introduce guidelines to manage the impacts of infrastructure development on matters protected under the BC Act and EPBC Act. These guidelines will include:

- requirements for public authorities to notify the department and avoid, minimise, mitigate and offset impacts to biodiversity when undertaking essential infrastructure development on avoided land in the nominated areas or certain land in the Western Sydney Aerotropolis identified under the Plan
- planning controls for the strategic conservation area that a determining authority must consider for activities assessed under Part 5 of the EP&A Act
- mitigation measures to address indirect and prescribed impacts on biodiversity from infrastructure development in the nominated areas.

Part 2—Proposed State Environmental Planning Policy

The proposed SEPP is being developed as the key statutory mechanism to implement strategic conservation planning and provide certainty that the Plan's commitments and actions to protect, enhance, maintain and restore biodiversity in Western Sydney will be met.

2.1 Objectives of the proposed SEPP

The proposed SEPP's policy objectives are consistent with the BC Act, the EPBC Act, provisions in the EP&A Act, and the Plan's commitments and actions. The proposed SEPP's objectives are to:

- ensure development in the nominated areas is consistent with NSW and Commonwealth Government biodiversity approvals
- facilitate appropriate development on biodiversity certified areas
- identify and protect areas of high-value biodiversity in the nominated areas
- identify areas across the Plan Area that have high-value biodiversity and/or strategic biodiversity values that can support the ecological function of the Cumberland subregion, including threatened ecological communities and species, and areas with important connectivity or ecological restoration potential
- minimise impacts from future development on biodiversity values in areas of high-value biodiversity
- support the acquisition of priority areas of high-value biodiversity in the Cumberland subregion as conservation lands in perpetuity
- minimise impacts to biodiversity values on land secured for conservation from adjoining land uses.

2.2 Planning controls

The proposed SEPP will include:

- a clause that requires consistency between the certified—urban capable land in precinct plans and the areas of biodiversity certified land covered by the biodiversity approvals, to protect avoided land identified in the Plan
- environmental conservation (E2) zoning to protect avoided land
- planning controls designed to minimise impacts to the strategic conservation area, which is identified by the Plan as having strategic biodiversity value, important connectivity or ecological restoration potential
- acquisition clauses that allow the relevant acquisition authority to secure lands suitable for public reserves, such as national parks and local council reserves, subject to funding availability

2.2.1 Consistency clause to contain urban development to the certified—urban capable land

Objective

The objective of this clause is to ensure that urban development in the nominated areas occurs on the certified—urban capable land identified under the Plan, to protect land avoided for its high-value biodiversity.

Identification

The proposed clause will apply to precinct plans prepared in any of the nominated areas, over the life of the Plan. It will require precinct plans to be consistent with the biodiversity approvals under the Plan, and specifically to identify the certified—urban capable land as the biodiversity certified land mapped by the Plan. This provision will prevail over any other Environmental Planning Instrument (EPI) to the extent of inconsistency.

Additional provision for asset protection zones

The proposed SEPP will require that asset protection zones identified in precinct plans in any of the nominated areas are located wholly within the certified—urban capable land, and not in avoided land identified by the Plan.

2.2.2 Environmental conservation (E2) zoning for avoided land

Objective

The objective of environmental conservation (E2) zoning is to protect parts of the nominated areas that have been identified as non-certified because they are avoided for biodiversity purposes or avoided for other purposes.

Avoided land will not be biodiversity certified, will not be zoned for development. Only certain development will be permitted with consent.

Identification

The E2 zone will be applied to lands in the nominated areas that have been identified by the Plan as being non-certified—avoided for biodiversity purposes, and also to lands identified as non-certified—avoided for other purposes (for example, riparian corridors along creek lines and steep land). These lands are mapped in the Draft Cumberland Plain Conservation Plan Viewer for public exhibition.

Land avoided for biodiversity purposes includes land with threatened ecological communities listed under Schedule 2 of the BC Act, including regional koala corridors and priority koala habitat.

Where avoided land does not cover an entire land parcel, it is proposed that the land parcel will be split-zoned. In this case, the part identified as avoided land will be zoned as E2, while the remainder of the land parcel will remain in the existing zoning as identified in the relevant EPI.[2]

Timing of zoning application

The E2 zone will be applied to the avoided land at the time the Plan is approved, to protect biodiversity on avoided land and meet the requirements of avoidance under NSW Government and Commonwealth Government biodiversity laws.

Land use permissibility

The aims of the E2 zone are to:

- protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values
- prevent development that could destroy, damage or otherwise adversely affect those values.

Certain development will be permitted with consent, including environmental protection works and flood mitigation work. These works will need to support environmental management and the objectives of the zone. Further, the consent authority must be satisfied that the development will not impact the area's biodiversity.

[2] Split-zoning involves rezoning part of a single lot when acknowledging the different development potential of land due to topography, differing environmental values, certain land constraints or different designated future land uses.

No other development will be permitted on avoided land under the proposed SEPP.

In some cases, an E2 zone will already exist under another EPI but its provisions will be inconsistent with the E2 zone proposed under this SEPP. If the land is identified as avoided land, the proposed SEPP will remove some permitted land uses of the existing E2 zone to align the zone with the E2 zone proposed under this SEPP. The Draft Cumberland Plain Conservation Plan Viewer displays:

- existing E2 zones in the Plan Area
- avoided land proposed for E2 zoning under the Plan.

Existing use rights

The EP&A Act includes protections for land uses that were established with appropriate approvals. These protections are known as 'existing use rights'. Existing use rights will apply to avoided land proposed for E2 zoning under the Plan, and will allow existing land uses to continue while preventing any further extension of those same uses.

Additional provisions

Development consent will be required to clear native vegetation on avoided land identified in the Plan. The meaning of native vegetation in the proposed SEPP will be the same as the definition in section 60B of the *Local Land Services Act 2013* (NSW).

Further, a consent authority must not approve the clearing of native vegetation on avoided land unless the consent authority is satisfied that sufficient measures have been, or will be, taken to avoid and minimise any impact to biodiversity, and where possible, protect and enhance the biodiversity value and ecological integrity of the avoided land.

This provision will prevail over any other EPI to the extent of inconsistency.

This proposed provision does not apply to or in respect of action required or authorised to be done by or under the *Electricity Supply Act 1995*, the *Roads Act 1993*, the *Sydney Water Act 1994* or the *Surveying Act 2002*.

2.2.3 Planning controls for the strategic conservation area

Objective

The objective of this planning control is to minimise impacts from development on areas of regionally significant biodiversity, improve the management of biodiversity and help protect threatened ecological communities and species in these areas. These areas have been identified as the strategic conservation area under the Plan and include areas with high-value biodiversity, as well as areas with important connectivity or potential for ecological restoration.

The planning controls for the strategic conservation area will:

- require the consideration of biodiversity values
- require the consent authority to be satisfied that development will avoid or minimise or mitigate threatening processes and actions that would impact an area's strategic biodiversity value
- protect and maintain or otherwise improve ecological function.

Identification

The proposed planning controls apply to the land mapped as the strategic conservation area in the Plan. These are areas of value to the Plan based on the assessment of biodiversity impacts on the nominated areas, and the land's suitability and potential for future conservation management.

The strategic conservation area includes:

- remnant native vegetation
- threatened ecological communities and species
- areas with important connectivity across the landscape
- areas that have the potential for ecological restoration
- areas that will enhance connectivity.

It represents areas that contain key plant communities and species habitat important to the Plan's implementation.

Proposed matters for consideration

The proposed SEPP will contain the following matters that a consent authority must consider before granting development consent on the strategic conservation area, including:

- impacts on the biodiversity values of the site, such as:
    - ecological function
    - ecological communities
    - species habitat and population numbers
    - habitat connectivity
    - ecosystem resilience
- whether the development will cause a negative impact on the condition and ecological function of vegetation, or else result in a detrimental change to the distribution of native flora and fauna communities, either on or adjacent to the site
- whether the development will disturb a site's native fauna, cause a loss of habitat, or else impact a threatened species, habitat connectivity or links to wildlife corridors and restoration areas
- whether the development is likely to adversely impact the integrity and resilience of the surface and groundwater (hydrological) environment, or else adversely impact the quality or natural flow of water in a wetland or riparian corridor
- whether the development will result in cumulative impacts to existing biodiversity values, or to the land's potential for ecological restoration, including impacts that fragment, disturb or diminish the land's biodiversity structure, function and ecological composition
- whether sections of the development site need to be avoided for biodiversity purposes, including identified habitat or vegetated areas.

Matters that a consent authority must be satisfied of before granting development consent include:

- development being designed, sited and managed to minimise vegetation clearing, and to avoid adverse impact to high-value vegetation or potential vegetation restoration areas
- that the height, bulk, scale, size and proposed use of the development would not disturb habitat or disrupt the surrounding natural environment
- that any setback, asset protection zones or infrastructure required for the development would not adversely impact the environmental values or result in the removal of vegetation
- that the development has minimised any impact on native species
- that the development has minimised any loss of habitat or potential impact on threatened species, habitat connectivity or links to wildlife corridors and restoration areas.

Additional matters that a consent authority must be satisfied of before granting consent for subdivision include:

- that the subdivision will result in the continued protection and long-term management of the high-value native vegetation
- that the subdivision will not increase the risk impact or disturbance to vegetation, habitat or native species
- that there will be no increased potential for land-use conflict or land-use intensification as a result of the subdivision.

Additional provisions

Approval will be required to clear native vegetation in the strategic conservation area. The meaning of native vegetation in the proposed SEPP will be the same as the definition in section 60B of the *Local Land Services Act 2013* (NSW).

Further, a consent authority must not approve the clearing of native vegetation in the strategic conservation area unless the consent authority is satisfied that sufficient measures have been, or will be, taken to avoid and minimise any impact to biodiversity, and where possible, protect and enhance the biodiversity value and ecological integrity of the strategic conservation area.

Relationship to existing biodiversity provisions and overlays

Some sections of the Plan Area are already subject to biodiversity provisions and overlays, based on the biodiversity provisions in the relevant EPI that already applies to the land. The provisions proposed as part of the Plan are additional to these and relate specifically to the lands' strategic conservation values.

If a land parcel that is subject to planning controls in the proposed SEPP intersects with one or more biodiversity overlays in a relevant EPI, and the development controls of those biodiversity overlays are inconsistent with the proposed SEPP, the development controls of the SEPP will prevail to the extent of that inconsistency.

2.2.4 Acquisition clauses to secure suitable conservation lands

Objective

The Plan's conservation program will offset development impacts on biodiversity and includes the establishment of public reserves such as national parks and local council reserves. The establishment of new reserves or extensions to existing reserves will require the acquisition of land.

The objective of the acquisition clause is to allow the relevant acquisition authority to secure suitable conservation lands as funding becomes available following the Plan's approval.

Description

The Plan will identify priority sites suitable for public conservation land, which could be secured as public reserves, or as new or additional national parks to meet the Plan's commitment to offset development impacts. Other conservation lands will be identified as being more suitable for community- or council-managed reserves, or for biodiversity stewardship agreement sites, which can be on private or public land.

The Plan includes conservation land selection steps to guide the selection of offset sites when establishing reserves and biodiversity stewardship sites and including areas for ecological restoration.

New conservation lands will be established on a voluntary basis, in consultation with landowners. Compulsory acquisition will only be used in limited circumstances in order to acquire land that is critical to creating a proposed conservation reserve when voluntary acquisition has not been

otherwise successful. The department will consult closely with landowners prior to acquiring land to establish national parks and reserves. The proposed SEPP would identify land for acquisition as funding becomes available.

Acquisition of areas that have been identified as suitable for future national parks and reserves will be staged over the life of the Plan, as needed.

Identification

As required under the Plan, and subject to funding, some private land in the Plan Area may be identified for future acquisition. Acquisition clauses will be included in the proposed SEPP and, once it has been funded for acquisition, a map will be created to identify the land.

Sites to be acquired for future reserves under the Plan will be selected based on the conservation land selection steps set out by the Plan, subject to funding availability and following feasibility assessment and consultation with the future land managers such as National Parks and Wildlife Services.

Managing land uses on land that adjoins secured conservation land

Consideration will also be given to the need for an adjoining land clause for land secured for conservation to manage the impact of changing adjoining land uses, such as roads, or high-intensity commercial or industrial development.

The clause will require that where development is proposed on land that adjoins land secured for conservation under the proposed SEPP, the consent authority needs to consider the environmental impacts on the future reserve when determining the development.

Proposed considerations include:

- whether the development is compatible with and does not detract from environmental conservation area values
- any management plans applicable to the future reserves/area
- if the proposed development has been designed and sited to minimise environmental impacts, mitigate risks to biodiversity or limit visual intrusion.

Part 3—Other supporting changes and policies

3.1 Proposed Section 9.1 Ministerial Direction

The department is proposing to make a Ministerial Direction under section 9.1 of the EP&A Act to protect avoided land and the strategic conservation area from rezoning. Specifically, the Ministerial Direction will restrict the ability to rezone avoided land, increase development, or intensify land uses in the strategic conservation area.

The direction will apply to avoided land and the strategic conservation area as mapped in the proposed SEPP.

The Ministerial Direction will require a relevant planning authority to ensure any planning proposals consider the land use objectives that apply to avoided land or, if the proposal is for the strategic conservation area, the matters for consideration in the planning controls that apply to the strategic conservation area.

If a planning proposal relates to land that is both avoided land and within the strategic conservation area, the direction will require the planning proposal authority to ensure the proposal considers the objectives of the planning controls that apply to both the avoided land and the strategic conservation area.

3.2 Proposed guidelines for infrastructure development in the nominated areas

The department is proposing to introduce guidelines to manage the impacts of infrastructure development on matters protected under the BC Act and the EPBC Act.

3.2.1 Planning controls to support essential infrastructure development

The department proposes requirements for public authorities to notify the department, and avoid, minimise, mitigate and offset impacts to biodiversity when undertaking essential infrastructure development on avoided land in the nominated areas and on certain land in the Western Sydney Aerotropolis identified under the Plan. These requirements are described in Appendix A of the Plan.

3.3.2 Planning controls for the strategic conservation area

The department will establish guidelines that will include the planning controls for the strategic conservation area that are described under section 2.2.3, and these will need to be considered by the determining authority for activities assessed under Part 5 of the EP&A Act.

3.3.3 Mitigation measures for indirect and prescribed impacts on biodiversity

The department will establish guidelines that will include the mitigation measures for indirect and prescribed impacts on biodiversity in the nominated areas, and these will need to be considered by the determining authority for activities assessed under Part 5 of the EP&A Act. These mitigation measures are described in Appendix E of the Plan.

Terms and abbreviations used in this document

Please refer to the Cumberland Plain Conservation Plan Glossary for terms and abbreviations used in this document.

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Environmental consulting

AUGUST 2020

DRAFT CUMBERLAND PLAIN ASSESSMENT REPORT

SUMMARY REPORT

PREPARED FOR THE NSW GOVERNMENT DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT

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Summary Report Contents

The purpose of this report is to provide the community and other stakeholders with a summary of the Cumberland Plain Assessment Report, including the overall impacts and evaluation of the conservation benefits of the Cumberland Plain Conservation Plan on biodiversity values and other protected matters

1 Introduction

The NSW Government has identified four areas for urban growth and other development ('nominated areas') and a series of transport corridors within and outside the nominated areas to support the future growth of Western Sydney for the next 36 years. These initiatives are identified under two key planning strategies:

- *A Metropolis of Three Cities - The Greater Sydney Region Plan* (Greater Sydney Commission, 2017)
- *Future Transport 2056* (Transport for NSW, 2018)

The NSW Department of Planning, Industry and Environment (the Department) has prepared the Cumberland Plain Conservation Plan (the Plan) as part of the environmental approvals for the development.

The Plan will establish long-term certainty for biodiversity conservation and development in Western Sydney. The Plan supports the delivery of infrastructure, housing and jobs for Western Sydney in a planned and strategic way that also protects and maintains key biodiversity values of Western Sydney.

The Plan describes the proposed urban and other development and sets out a conservation program comprising a range of specific commitments to avoid, mitigate and offset the impacts of the development on biodiversity values and other matters protected under Commonwealth and NSW biodiversity legislation.

1.1 WHAT IS THE CUMBERLAND PLAIN ASSESSMENT REPORT?

The purpose of the Cumberland Plain Assessment Report (Assessment Report) is to evaluate the Plan's acceptability under Commonwealth and NSW biodiversity legislation in terms of the impacts of the development on biodiversity values and other protected matters, and the commitments made to avoid, mitigate and offset these impacts.

The Assessment Report examines the direct, indirect, prescribed and cumulative impacts of the development.

The report comprises both:

- A Biodiversity Certification Assessment Report prepared in accordance with the NSW Biodiversity Assessment Method (BAM) made under the NSW *Biodiversity Conservation Act 2016* (BC Act)
- A Strategic Assessment Report (SAR) prepared in accordance with the Terms of Reference made for the project under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

Table 1 shows the approvals being sought for the different developments under the Plan.

Table 1: Actions being assessed for approval under the BC Act and EPBC Act

Development	Biodiversity certification under BC Act	Approval under Part 10 of EPBC Act
The following development within the nominated areas: • Urban, industrial, infrastructure and agribusiness development • Transport corridors	✓	✓
Transport corridors outside the nominated areas*	-	✓

*Biodiversity certification may be sought for the transport corridors outside the nominated areas at a later date, and included as a modification or series of modifications to this biodiversity certification

1.2 WHAT AREA IS COVERED BY THE ASSESSMENT?

The Assessment Report examines the impacts of the development within the Plan Area (see Figure 1).

The area is primarily within the Cumberland subregion of the Sydney Basin Bioregion. It also includes some minor areas of the adjacent Sydney Cataract subregion. The Plan Area is approximately 200,000 hectares.

Prior to European settlement, the Cumberland subregion supported a wide variety of vegetation types, including grassy woodlands, ironbark and turpentine forests, and floodplain communities. The subregion has historically been extensively cleared for agricultural development and is now under pressure from urban development.

Only approximately 13 per cent of the pre-1970 extent of native vegetation in the Cumberland subregion remains intact, with an additional 12 per cent occurring as heavily degraded communities (DECCW, 2011).

The remaining vegetation in the Plan Area is often of high conservation value as it typically contains threatened ecological communities (TECs) and habitat for threatened species, as well as species that occur only in the subregion.

Current key threats within the subregion include:

- Habitat loss and fragmentation due to land clearing
- Weeds invasion
- Predation and competition from pest animals
- Altered fire regimes
- Altered hydrological regimes and water quality, particularly runoff from urban and agricultural areas
- Spread of disease, including *Phytophthora* and Myrtle rust

1.3 WHAT DEVELOPMENT IS PROPOSED UNDER THE PLAN?

The development under the Plan comprises:

- Urban, industrial and infrastructure development within urban capable land in four nominated areas:
  - Wilton Growth Area
  - Greater Macarthur Growth Area (GMAC)
  - Western Sydney Aerotropolis (WSA)
  - Greater Penrith to Eastern Creek Investigation Area (GPEC)
- Agribusiness development within urban capable land in the agribusiness precinct within WSA
- Major transport corridors (see Table 2):
  - Outside urban capable land within GPEC, WSA and a small part of GMAC (a transport corridor tunnel)
  - In several locations outside the nominated areas (within the broader area covered by the Plan)

Figure 1 shows the area covered by the Plan and the location of the four nominated areas and the transport corridors.

Not all parts of the nominated areas are proposed for development. The proposed development will occur within specified urban capable land within the nominated areas. Other parts of the nominated areas include:

- Land avoided from impacts under the Plan, including for biodiversity and other reasons (such as steep slopes)
- Land excluded from coverage under the Plan that is not part of the approvals (such as already developed land)

Table 2: Transport corridors for investigation

Project	Description	Timing for investigation
Sydney Metro Greater West south from Western Sydney Aerotropolis to Macarthur (except for those areas within the existing South West Growth Area)	Provides for a commuter railway line	0 to 10 years
Western Sydney Freight Line corridor	Provides for a future freight rail line to connect Port Botany and Western Sydney	10 to 20 years
Outer Sydney Orbital (Stage 1) from Palmyra Avenue to the Hume Motorway	Provides for a future north south motorway and freight rail line	
Remaining Outer Sydney Orbital 1		20 or more years
M7/Ropes Crossing Link Road	Provides for a future east-west motorway linking the M7 to the future Outer Sydney Orbital at Ropes Crossing	

1.4 WHAT CONSERVATION IS PROPOSED UNDER THE PLAN?

A key part of the Plan's objective is to:

Deliver biodiversity outcomes and support the ecological function of the Cumberland Plain….

The Plan also specifies a series of environmental outcomes to be achieved. These include to increase and improve the extent and condition of native vegetation and ensure threatened ecological communities (TECs) and populations of target species persist and their habitat improves, in areas most likely to support long-term viability in the Cumberland subregion.

The Plan includes a conservation program and a set of 28 commitments and 141 associated actions to achieve the objective and outcomes, and to mitigate and offset the impacts of the urban, industrial, infrastructure, agribusiness and transport development under the Plan. In summary, the key commitments under the Plan are:

- Avoiding at least 4,315 hectares of land within the nominated areas, including 3,670 hectares of native vegetation
- Protecting at least 5,475 hectares of high biodiversity value areas in the Cumberland subregion in perpetuity. As part of this commitment, the following will be delivered under the Plan:
  - Providing offsets for TECs and several threatened species likely to be at risk of impacts under the Plan
  - Establishing a reserve to protect the north-south Koala movement corridor along the Georges River between Appin and Kentlyn and at least two other reserves to protect areas of high biodiversity value
  - Securing priority habitat corridors
  - Undertaking ecological restoration in priority sites
- Managing landscape threats across the subregion, including through weed, pest animal, disease and fire programs
- Implementing an evaluation program, including use of adaptive management, to ensure the commitments are efficiently and effectively delivered and outcomes are achieved

As part of these commitments, the NSW Government proposes to establish three new public reserves within the first five years of the Plan's implementation to deliver early strategic offsets. These are the Georges River Koala Reserve, Gulguer Reserve Investigation Area, and Confluence Reserve Investigation Area. Other areas have also been identified for further investigation as future reserves to provide greater landscape connectivity, such as in the Bargo area.

The commitments relating to the protection of land for conservation under the Plan will be delivered within Strategic Conservation Areas (SCAs). SCAs were identified through an independently peer-reviewed process and represent the areas in the Cumberland subregion that are considered most likely to be viable in the long-term and to maximise ecological function and connectivity across the landscape. In determining the location of the SCAs, priority was given to including the largest, best condition and best-connected areas of native vegetation remaining in the subregion.

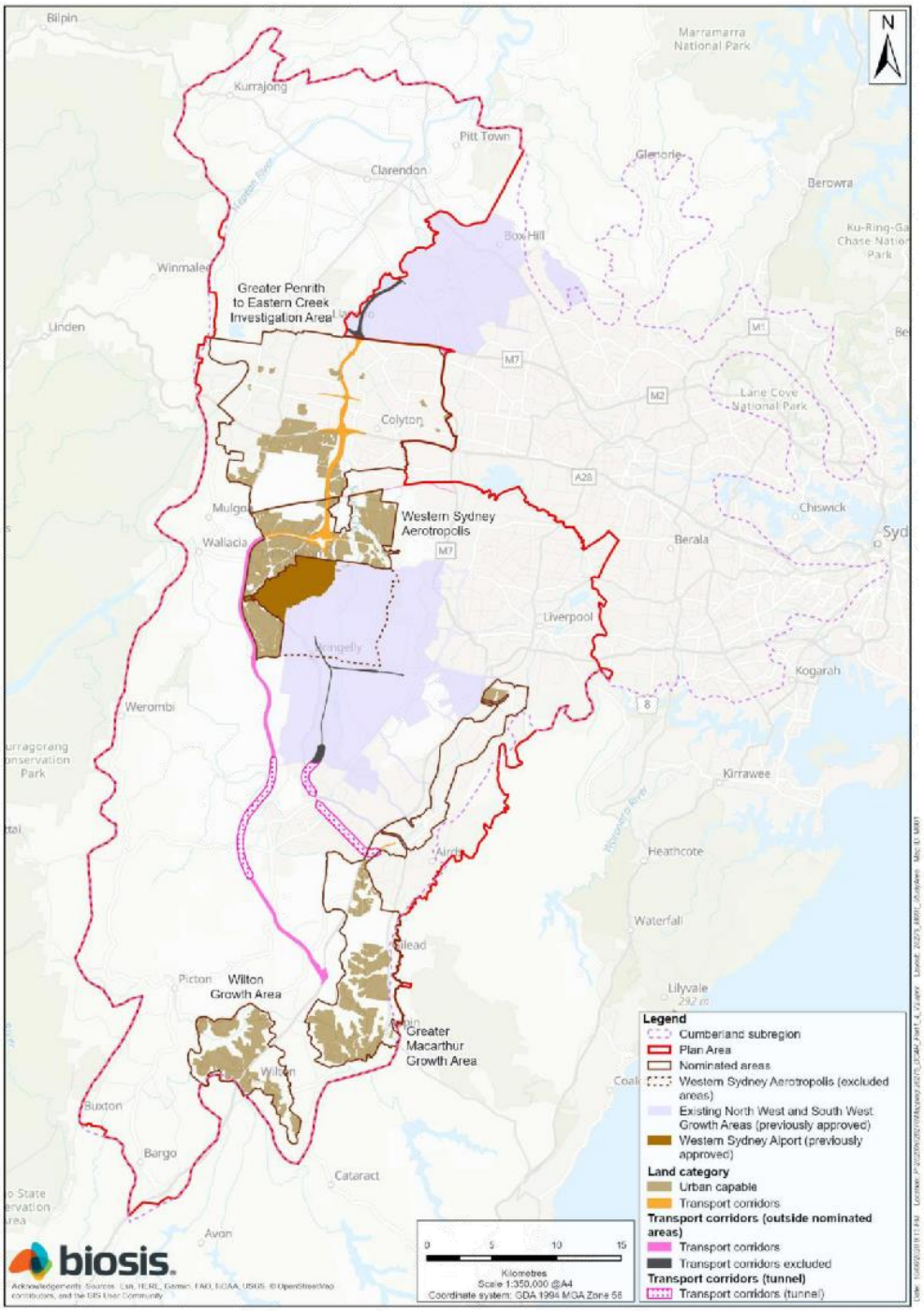


Figure 1: Location of the Plan Area, nominated areas and transport corridors

2 Assessment approach

The Assessment Report examines the direct, indirect, prescribed and cumulative impacts of the development under the Plan on biodiversity values and other matters protected under NSW and Commonwealth biodiversity legislation. The report was prepared in accordance with two main assessment methods:

- The BAM that applies under the BC Act
- Steps to address the Terms of Reference that applies under the EPBC Act

The assessment approach to address both of these methods was based on the best available data on biodiversity values of the Plan Area and informed by multiple field investigations, expert reports and peer review. The assessment is complex, which reflects the large geographic scale and long timeframes of the Plan. To help address this complexity, a wide range of detailed, technical analyses informed the assessment. Some examples of these include:

- Detailed analysis of the outcomes for each protected matter (e.g. threatened species) against key regulatory documents such as recovery plans and conservation advices
- A trend analysis undertaken by RMIT University (Gordon & Peterson, 2019) that examined the extent and condition of a component of Cumberland Plain Woodland to understand how it will fare over the life of the Plan
- A viability analysis for Commonwealth listed TECs, which mapped the most viable patches across the Plan Area

In accordance with the Terms of Reference, the Department commissioned an independent peer reviewer to review the methods used to determine the Commonwealth listed biodiversity values of the Plan Area. The report concluded that the methods were sound and appropriate for a large scale assessment such as this project, and are generally conservative and are unlikely to under-represent the presence or distribution of TECs or species habitat.

2.1 WHAT BIODIVERSITY VALUES OCCUR AND NEED ASSESSMENT?

The BAM and Terms of Reference require the Assessment Report to identify the NSW and Commonwealth listed species, TECs and other protected matters that may occur in the Plan Area and that need assessment. Separate processes were undertaken to identify NSW and Commonwealth matters.

Details of these processes are set out in Part 3, Chapter 11.1 of the Assessment Report.

2.1.1 NSW MATTERS

NSW listed species were identified in accordance with a process under the BAM to predict the species that may occur in the nominated areas and consider whether any can be excluded from the assessment based on their likelihood of occurrence. This takes into account habitat suitability and other published information on the species.

NSW listed TECs were identified on the basis of detailed native vegetation mapping undertaken within the nominated areas for this project, and the relationship between plant community types and TECs.

2.1.2 COMMONWEALTH MATTERS

Commonwealth matters were identified by through searches of the Australian Government's online Protected Matters Search Tool and other relevant databases to establish an initial list of matters that may occur in the Plan Area. A set of criteria was applied to Commonwealth listed species to further determine their relevance and reliance on the Plan Area.

2.1.3 LIST OF MATTERS THAT NEED ASSESSMENT

The Commonwealth and NSW listed biodiversity values and other protected matters that occur in the Plan Area and that were assessed in the Assessment Report are summarised in Table 3.

Table 3: Biodiversity values and other protected matters covered in the Assessment Report

Value/protected matter	Plan Area	Nominated areas
Plant community types (PCTs)	39 PCTs (> 1 hectares)	16 PCTs
	Commonwealth matters	**NSW matters**
TECs	8 TECs, plus one nominated for listing	9 TECs
Threatened flora species	23 flora	Ecosystem credit species – 0
		Candidate species credit species – 23
Threatened fauna species	20 fauna (including 6 migratory sp.)	Ecosystem credit species – 45
		Candidate species credit species – 17
Migratory species	21 migratory shorebirds 9 other migratory species	N/A
RAMSAR wetlands	1 site	N/A
World and National Heritage	4 places	N/A
Commonwealth land	12 sites	N/A

2.2 WHAT NEW SURVEYS WERE DONE?

A range of new and existing information was used to identify and assess the biodiversity values in the Plan Area.

New surveys were undertaken within the nominated areas in accordance with the BAM and Terms of Reference. Surveys were completed between 2017 and 2019 and included two main types:

- Vegetation plots to confirm plant community types and TECs and their condition
- Threatened species surveys to confirm species presence and habitat suitability

Vegetation plots and threatened species surveys were undertaken on land where landholders granted access. Some areas of the nominated areas were not able to be accessed, which limited the ability to undertake threatened species surveys for some species in accordance with NSW EES threatened species guidelines.

Outside the nominated areas, data and mapping of vegetation, TECs and species habitat is based on existing vegetation maps and species records. No surveys were undertaken outside the nominated areas.

A total of 258 native vegetation plots were surveyed within the nominated areas, which meets the requirements of the BAM. A total of 2,190 hectares of combined species habitat was surveyed across the nominated areas.

2.3 HOW WAS NATIVE VEGETATION AND HABITAT MAPPED?

2.3.1 NATIVE VEGETATION MAPPING

Detailed mapping of the extent and condition of native vegetation within the nominated areas was undertaken based on field surveys and data analysis, including interpretation of aerial photo imagery. Mapping of the remaining Plan Area outside the nominated areas was based on existing native vegetation maps (OEH, 2013, 2016).

2.3.2 THREATENED ECOLOGICAL COMMUNITIES MAPPING

Commonwealth and NSW listed TECs were mapped based on associations between plant community types and TECs identified in NSW BioNet. For the Commonwealth listed TECs, rule-sets were then applied to these associations to refine the maps based on definitions in Commonwealth Conservation Advices.

2.3.3 SPECIES HABITAT MAPPING

Different mapping methods were applied within the nominated areas and outside the nominated areas, as well as to NSW and Commonwealth listed species, because of the different requirements of the BAM and Terms of Reference. Three methods were used to map species habitat:

- Preparing expert reports (reports by recognised experts on a particular species). Expert reports were prepared for 14 species that could not be sufficiently surveyed due to either access restrictions, seasonality or their cryptic nature
- Identifying potential habitat using a 'knowledge-based' mapping method and assuming the species is present
- Undertaking Species Distribution Modelling (this was undertaken outside the nominated areas only)

The 'knowledge-based method' applied rule-sets based on the ecological requirements of each species to refine initial broad habitat maps based on the relationship between a species and plant community types. These maps are likely to overestimate the extent of actual habitat for most species and are therefore considered very precautionary.

Within the nominated areas, habitat maps were refined based on species surveys. Where areas were adequately surveyed and the species was not found, the habitat map for that species was refined to reflect this.

Specific separate mapping was undertaken for Koala, including:

- Species Distribution Modelling for the species across the Cumberland subregion
- Corridor habitat mapping to identify 'important habitat' required to be mapped under the BAM
- Mapping of habitat critical to the survival of the species

2.4 WHAT ARE THE LIMITATIONS OF THE ASSESSMENT?

Key limitations of the assessment include:

- Native vegetation plots and species surveys were only undertaken within the nominated areas and were restricted to sites where access was granted by landholders. Access was not possible over all areas of land
- Species surveys were not always able to be undertaken in accordance with EES survey guidelines due to the very large scale of the Plan Area and limited access to land at the appropriate survey season
- Only potential habitat for species was able to be mapped due to the very large scale of the Plan Area. The species maps are therefore likely to be precautionary and greatly overpredict actual habitat

3 Avoidance and minimisation of impacts

Avoiding and minimising impacts to biodiversity values is a critical step in reducing the impacts of the proposed development and the need for commitments and actions to offset those impacts.

3.1 WHAT DOES AVOIDANCE MEAN?

There may be several reasons why land is not impacted under the Plan, including because:

- Land has high biodiversity value and is avoided for biodiversity purposes
- Land is not suitable for development because it is a riparian corridor and is regulated under *Water Management Act 2000* or it is too steep for development (any land with a slope greater than 18 degrees)
- Land is excluded from the area covered under the Plan (excluded land) including because it is existing protected land, is Commonwealth land, or is land that is already developed (e.g. existing urban areas)

Under the BAM, avoidance refers to land that is suitable for development and included in the area proposed for development or biodiversity certification, but has been avoided because of its biodiversity value.

3.2 WHAT WERE THE STEPS TAKEN TO AVOID IMPACTS?

3.2.1 URBAN, INDUSTRIAL, INFRASTRUCTURE AND AGRIBUSINESS DEVELOPMENT IN NOMINATED AREAS

As part of developing the Plan, the Department designed the urban capable land within the nominated areas (containing the urban, industrial, infrastructure and agribusiness development) to avoid and minimise impacts on biodiversity values. This work was guided by the requirements of the BAM and Terms of Reference.

STEPS TAKEN TO AVOID IMPACTS

The process to identify the urban capable land and avoided areas within the nominated areas was iterative and began early in the assessment process before the final data on biodiversity values was completed.

The boundaries of the urban capable land were identified in three main phases:

- Strategic planning to locate the nominated areas
- Initial development of footprints through preparation of Land Use and Infrastructure Implementation Plans
- Iterative refinement of the urban capable land through development of the Plan and assessment of impacts.

The third step involved the compilation of data on the biodiversity values of each nominated area and the development and application of criteria to identify priorities for biodiversity avoidance. The avoidance criteria were applied to each nominated area through a series of workshops with precinct planners and ecologists.

The final urban capable land boundaries within each nominated area reflect the priorities for biodiversity avoidance determined through application of the criteria, and, where avoidance of less important biodiversity values was not possible, a balance between biodiversity and urban development priorities.

The avoidance criteria are set out in Chapter 14 of the Assessment Report.

COMMITMENTS FOR AVOIDANCE

The Plan includes a commitment (Commitment 2) to avoid and minimise impacts to at least 4,315 hectares of land within the nominated areas, including 3,670 hectares of native vegetation.

Environment (E2) conservation zoning will be applied to all lands avoided for biodiversity purposes and other purposes (riparian corridors, steep land). Note that avoided land will have environment (E2) conservation zoning applied except

for land owned by Local Aboriginal Land Councils (LALCs) or under claim by LALCs. LALC owned land and land under claim represents 90 ha of the 4,795 ha of avoided land.[1]

The environmental conservation zoning will strengthen the protection of avoided lands from the impacts of new development and land uses, but will not affect existing land uses.

3.2.2 TRANSPORT CORRIDORS

STEPS TAKEN TO AVOID IMPACTS

Avoidance and minimisation of impacts from the transport corridors is being undertaken in two stages:

- Process to locate the transport corridors. This has been completed, and the details are set out in Chapter 14
- Future detailed design of the footprints for each transport project within the transport corridors to further avoid and minimise impacts. This will be undertaken as part of future strategic planning processes and environmental impact assessments for each transport project under NSW planning and assessment legislation

COMMITMENTS FOR AVOIDANCE

The Plan includes commitments to ensure further avoidance and minimisation of impacts during detailed design of the transport projects within the transport corridors. This will be undertaken through a process of strategic planning and detailed design, which will determine the final alignment of each transport project.

Commitments 3 and 4 of the Plan commit Transport for NSW to avoid and minimise impacts to TECs, species and habitat. This includes avoiding where possible:

- Areas of high biodiversity value
- Areas of potential habitat connectivity, particularly vegetation in riparian corridors, for specific species
- Known flora populations in specific locations, other identified areas of high biodiversity value, and specific Commonwealth land sites

3.2.3 ESSENTIAL INFRASTRUCTURE DEVELOPMENT

Planning for essential infrastructure to support the nominated areas, such as water and electricity utilities, is in various stages of development, and this infrastructure may need to be located outside urban capable lands. The Plan is seeking approval under the EPBC Act for certain essential infrastructure development to occur within the nominated areas outside urban capable lands (i.e. within avoided lands but not excluded lands).

STEPS TAKEN TO AVOID BIODIVERSITY VALUES

The Plan specifies that every effort should be made to ensure that essential infrastructure development is limited to urban capable lands. Where essential infrastructure occurs outside urban capable lands (i.e. within avoided lands), the development must comply with the 'Guidelines for essential infrastructure development' in Appendix A of the Plan. This includes a requirement to assess the biodiversity impacts of each project under the BC Act and BAM, which requires an avoid, mitigate and offset process to be applied.

COMMITMENTS FOR AVOIDANCE

As part of avoidance under Commitment 2 of the Plan, the total direct impacts over the life of the Plan from essential infrastructure to Shale Sandstone Transition Forest within avoided land will be limited to no more than 20 hectares in Wilton and 20 hectares in GMAC. Furthermore, avoidance of several known populations of flora and important Koala corridors to maintain their integrity within Wilton and GMAC will be prioritised (Commitment 2.3 and 2.4).

[1] The total area of avoided land at the start of the Plan is 4,795 hectares. The avoidance target of 4,315 hectares has reduced this figure by 10 per cent to allow for potential future development of essential infrastructure in non-certified land

3.3 WHAT WERE THE AVOIDANCE OUTCOMES?

Urban, industrial, infrastructure and agribusiness development in urban capable land within the nominated areas has avoided the majority of native vegetation, including almost all native vegetation in high condition, and the majority of the most important NSW and Commonwealth listed TECs and species habitat and areas of habitat connectivity.

Within the nominated areas, total avoidance (not including excluded lands) is summarised in Table 4. The biodiversity values presented in the table are consistent with the guidance for avoidance under section 8 of the BAM.

Table 4: Avoidance outcomes for urban, industrial, infrastructure and agribusiness development within nominated areas

Biodiversity values	Summary of avoidance outcome in the nominated areas*
Native vegetation	67.2% avoided
High (intact) condition native vegetation	95.2% avoided
Commonwealth listed TECs (critically endangered/endangered)	87.5% avoided
NSW listed TECs (critically endangered/endangered)	71.7% avoided
Potential habitat for the three NSW listed species with a very high biodiversity risk weighting (>3) under BAM	77.8% avoided
Potential habitat for the 31 NSW listed species with a high biodiversity risk weighting (>/=2) under BAM	78.6% avoided
Commonwealth important populations	12 of the 14 species avoided (either wholly or partially)
Habitat connectivity (Bio Map areas)	88.3% of Bio Map core areas
	86.0% of Bio Map corridors

*Note that these figures include the amount of land 'avoided' for other purposes (e.g. riparian corridors and steep land) and not just biodiversity purposes. The figures do not include excluded land (land not covered by the Plan)

3.3.1 TRANSPORT AND ESSENTIAL INFRASTRUCTURE DEVELOPMENT

The commitments for future avoidance relating to the transport corridors and essential infrastructure are considered adequate to ensure this development avoids and minimises the risk of unacceptable impacts on biodiversity values.

The commitments ensure:

- Avoidance outcomes are achieved consistent with the Plan
- There is a robust process in place to assess impacts and apply an avoidance process to detailed design of the projects
- Impacts to existing key biodiversity values are avoided and minimised where possible, including specific species and their habitat, and/or specific locations of high biodiversity or other value
- Avoidance of biodiversity values as well as the costs of offsets, is taken into account in during detailed design

4 Impacts and benefits of the Plan

The Assessment Report examines the direct, indirect, prescribed, and cumulative impacts of the urban, industrial, infrastructure, agribusiness and transport development on biodiversity values and other protected matters.

The assessment of impacts, particularly direct impacts, is done differently for Commonwealth and NSW listed matters to meet the requirements of the BAM and Terms of Reference. In particular, direct impacts for native vegetation and NSW matters are assessed quantitatively to determine the number of credits to offset the impacts of the development, while impacts on Commonwealth matters are assessed through a combination of quantitative and qualitative analysis.

As described in Chapter 1, the Plan includes a conservation program and a set of 28 commitments and 141 associated actions to achieve its objective and environmental outcomes, and to offset and mitigate the impacts of the development under the Plan. This includes a commitment to protecting a minimum of 5,475 hectares of native vegetation in the Cumberland subregion to conserve biodiversity values in perpetuity.

As part of this commitment, offset targets were established for:

- Each impacted Commonwealth and NSW listed TEC
- Those Commonwealth and NSW listed species considered likely to be at risk of residual adverse impacts

4.1 WHAT ARE THE OVERALL IMPACTS?

4.1.1 NATIVE VEGETATION

The urban, industrial, infrastructure, agribusiness and transport development in the nominated areas will directly impact approximately 1,778 hectares of native vegetation. An additional 89 hectares of Commonwealth listed vegetation will be impacted by the transport corridors in the Plan Area outside the nominated areas.

All native vegetation impacted within the nominated areas comprises NSW listed TECs.

The vast majority of direct impacts to native vegetation in the nominated areas occurs to vegetation in low condition. Of the total impacts, only about 7 per cent (118 hectares) occur to vegetation in high (intact) condition. About 50 per cent of the impacts occur to vegetation in low condition (scattered trees or derived native grassland).

4.1.2 THREATENED ECOLOGICAL COMMUNITIES

The urban, industrial, infrastructure, agribusiness and transport development in the nominated areas will directly impact eight NSW listed TECs and five Commonwealth listed TECs (one of these is subject to listing).

Two Commonwealth listed TECs will be impacted by the transport corridors outside the nominated areas.

4.1.3 THREATENED SPECIES

The urban, industrial, infrastructure, agribusiness and transport development within and outside the nominated areas will directly impact potential habitat of 49 Commonwealth and/or NSW listed flora and fauna species. Of these, 15 species are identified as being at risk of residual adverse impacts from the development (see Appendix A).

4.2 WHAT ARE THE BIODIVERSITY VALUES MOST AT RISK OF IMPACTS?

The TECs and species most likely to be at risk of residual adverse impacts due to the development are identified Appendix A in Table 5 (Commonwealth listed TECs), Table 6 (NSW listed TECs), and Table 7 (Commonwealth and NSW listed species). The tables in Appendix A summarise the key direct impacts of the development and identify the offset targets that will be implemented under the Plan to manage impacts to each of these matters.

Commitments and specific mitigation measures under the Plan to manage indirect and prescribed impacts are expected to adequately address the risks to each of the TECs and species in Table 5, Table 6 and Table 7. These commitments and mitigation measures and the processes to implement them are discussed further in Section 4.3.

4.3 WHAT ARE THE INDIRECT AND PRESCRIBED IMPACTS?

The urban, industrial, infrastructure, agribusiness and transport development under the Plan has the potential to result in a range of indirect and prescribed[2] impacts on biodiversity values and other protected matters.

The indirect impact types are summarised in Appendix B (see Table 8) and include potential issues such as the spread of weeds and pest animals, inappropriate fire regimes, and habitat disturbance.

Prescribed impacts include impacts on, or associated with:

- Karst, caves, crevices, cliffs
- Rocky habitat
- Human-made structures
- Non-native vegetation
- Habitat connectivity/movement of species
- Water bodies/hydrological processes
- Vehicle strikes

4.3.1 COMMITMENTS AND MITIGATION MEASURES TO ADDRESS INDIRECT AND PRESCRIBED IMPACTS

The Plan includes commitments to mitigate the indirect and prescribed impacts of urban, industrial, agribusiness, infrastructure and transport development on biodiversity values and other protected matters. The processes to implement these commitments are different for the types of development under the Plan.

URBAN, INDUSTRIAL AND AGRIBUSINESS DEVELOPMENT

The Plan includes a commitment to mitigate indirect and prescribed impacts from development to best practice standards (Commitment 5). This commitment will be delivered through the NSW planning system.

Specific Development Control Plans (DCPs) will be prepared for each nominated area, or controls may be integrated into existing local government DCPs where precincts require the use of existing DCPs.

A DCP provides detailed guidelines and environmental standards for new development, which need to be considered when preparing a development application seeking development approval.

The Department will work with the relevant consent authorities to introduce development controls in DCPs to protect biodiversity, specific species and other key environmental features in urban development areas. The Department will provide support to councils in applying DCP controls and sharing knowledge, maps and data.

DCPs will include a range of general development controls relevant to managing the indirect and prescribed impacts of the urban, industrial and agribusiness development. DCPs will also include several TEC or species-specific mitigation measures identified in the Plan through the indirect impact assessment (see below).

TRANSPORT AND INFRASTRUCTURE DEVELOPMENT

The Plan includes commitments to mitigate indirect and prescribed impacts from infrastructure development (Commitment 5.3) and transport development (Commitment 6). These commitments will be delivered through processes of environmental assessment and approval that will be applied under NSW planning and assessment legislation to detailed design of each project, at the time the projects are brought forward for development.

[2] Prescribed impacts are a specific list of impacts that are required to be assessed under the BAM. They are defined generally as impacts on biodiversity values that do not comprise direct clearing of native vegetation that are assessed through credits. Prescribed impacts can be direct impacts (e.g. impacts on species' habitat of a type that is not native vegetation, such as rocks) or indirect impacts (e.g. impacts on species associated with the severing of a habitat corridor)

Transport projects will be assessed under the State Significant Infrastructure approval process under the EP&A Act and infrastructure projects under Part 4 or Part 5 of the EP&A Act (or equivalent at the time).

These future environmental assessments provide a process through which to identify and implement mitigation measures relevant to managing the indirect and prescribed impacts of the transport and infrastructure development, including several TEC or species-specific mitigation measures identified in the Plan (see below).

ADDITIONAL SPECIFIC MITIGATION MEASURES

In assessing the risks of indirect and prescribed impacts as part of the Assessment Report, several TEC and species-specific mitigation measures that apply in specific locations were identified where general development controls or future assessment processes were not considered to adequately manage the risks to these species.

These specific mitigation measures have been incorporated into the commitments and actions under the Plan, and are set out in Chapter 15 of the Assessment Report and Appendix E of the Plan.

The commitments and specific mitigation measures under the Plan, along with processes to implement them, are expected to adequately manage the potential indirect and prescribed impacts risks of the development on biodiversity values and other protected matters.

4.4 WHAT ARE THE CUMULATIVE IMPACTS?

Cumulative impacts are required to be assessed under the EPBC Act. The purpose of the cumulative impact assessment was to identify the protected matters most impacted under the Plan and by other major projects in the Cumberland subregion, and determine whether the commitments are adequate to in the context of those cumulative impacts.

The protected matters that are most likely at risk from cumulative impacts and that may need additional commitments under the Plan in the context of those impacts are those matters where:

- The Plan is having a notable impact on the matter, and
- The major projects make a significant contribution to cumulative impacts, and
- There is a significant total cumulative impact from the Plan and major projects

Several Commonwealth listed species and TECs met these criteria, including:

- *Acacia pubescens*
- *Cynanchum elegans*
- *Micromyrtus minutiflora*
- *Pimelea spicata*
- *Pultenaea parviflora*
- Regent Honeyeater
- Swift Parrot
- Dural Land Snail
- Grey-headed Flying-fox
- Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest

The Assessment Report concluded that the Plan adequately addresses the potential cumulative impacts (from the Plan together with other major projects) on these species and TECs in the context of the risks to these matters from the Plan and the contribution the Plan makes through offsets to conserve these matters in the Cumberland subregion.

4.5 WHAT ARE THE IMPACTS ON OTHER VALUES?

Direct and indirect impacts on other values, including migratory species, Ramsar wetlands, World and National Heritage, and Commonwealth land, are required to be assessed under the EPBC Act. These matters have been assessed in relation to the nominated areas and the transport corridors within and outside the nominated areas.

MIGRATORY SPECIES

Migratory birds

Nine bird species listed in the *Draft Referral guideline for 14 migratory birds listed under the EPBC Act* (DoE, 2015) have been observed within the Plan Area. These species have large areas of important habitat across Australia.

Potential impacts of the development on these species are considered to be negligible.

Only one of the species (White-throated Needletail) has been observed in ecologically significant numbers in the Cumberland subregion. This species is found over a wide range of habitats including extensively modified and urban areas. Development under the Plan is considered unlikely to disrupt this species' use of the Plan Area.

Migratory shorebirds

Thirty-seven species of migratory shorebirds regularly visit Australia during their non-breeding season. Twenty-one of these species have been recorded within the Cumberland subregion. Two of those have been recorded at a site level in important numbers, including the Sharp-tailed Sandpiper and Latham's Snipe.

Potential impacts of the development on these species are considered to be negligible. No important habitat will be lost, and the risk of indirect impacts such as degradation of habitat and disturbance of birds is considered to be low.

RAMSAR WETLANDS

There will be no direct impacts to any Ramsar sites due to development under the Plan. The closest Ramsar site to the development is Towra Point Nature Reserve, which is approximately 23 km from the northern part of GMAC.

A small part of the Plan Area – 170 hectares of urban development in GMAC and 9 hectares of transport corridors – is located within the Georges River sub-catchment, which is one of four major sub-catchments connected to the Ramsar site. Development under the Plan has the potential to cause reduction in surface water quality and changes to surface water flows due to run-off from the development, and potential impacts increased recreational use of the reserve associated with larger populations in Western Sydney facilitated by the urban development

The Plan includes a commitment to mitigate the indirect impacts of the development to best practice standards, including implementing several development controls on new urban development though the NSW planning system to control urban-run-off. It is considered that these development controls, and the existing measures already in place to manage increased human visitation, are adequate to mitigate these potential impacts on the Ramsar site.

WORLD AND NATIONAL HERITAGE

Three World and/or National Heritage sites occur within or near the Plan Area.

There will be no direct impacts to these sites. The closest site to the development is the Greater Blue Mountains World Heritage Area, which is located approximately 1 km from the western edge of GPEC.

The indirect and facilitated impacts to these sites from the Plan are negligible. There is the possibility of facilitated impacts from increased human visitation, but visitor impacts are already managed at each site and the existing management arrangements for these sites are considered sufficient to manage this risk.

COMMONWEALTH LAND

Under the EPBC Act, an assessment of impacts to Commonwealth land needs to consider the whole of the environment, which is broader than biodiversity values and includes the qualities and characteristics of places, and heritage values.

There are 12 Commonwealth land sites within the Plan Area. Potentially only one site (Site 10) will be directly impacted by development (by the transport corridors outside the nominated areas). Three other sites – Site 4 (Western Sydney University – Campbelltown Campus), Site 6 (Camden Airport) and Site 7 (a small site at Grassmere) – may also be directly impacted by the tunnels associated with the transport corridors.

Many of the Commonwealth land sites are located a large distance and/or upstream from the nearest development under the Plan, meaning they very unlikely to be affected by impacts typically associated with construction, such as air quality, noise, construction traffic, or impacts to hydrology or water quality.

The Plan includes commitments to avoid and minimise impacts from the development on biodiversity values and disruption to existing services and infrastructure on Commonwealth Land. The Plan also includes a commitment to mitigate indirect and prescribed impacts to best practice standards. These commitments are considered adequate to address the indirect impacts of development on Commonwealth land.

5 Evaluation of the Plan

The purpose of the Assessment Report is to evaluate the Plan's acceptability under Commonwealth and NSW biodiversity legislation in terms of the impacts of the development on biodiversity values and other protected matters and the commitments made to avoid, mitigate and offset these impacts.

Strategic assessments represent large, complex programs that will run over long timeframes. Lessons learnt from previous projects around Australia of a similar nature highlight the importance of ensuring these programs are well designed, supported by robust governance arrangements, and implemented adaptively.

5.1 WHAT WAS THE APPROACH TO EVALUATING THE PLAN?

The Assessment Report sets out the approach used to evaluate the acceptability of the Plan. The approach was based on:

- Guidance provided in the draft *Guidelines for planning authorities for proposing conservation measures in strategic applications for biodiversity certification* (draft version 6) ('draft guidelines for planning authorities') (EES, 2019)
- Requirements of the Terms of Reference, which requires the report to evaluate the commitments and outcomes for protected matters, and specifies several factors to consider

The evaluation was undertaken at three levels:

- In relation to the principles of Ecologically Sustainable Development (ESD)
- In relation to the overall adequacy of the Plan in accordance with the 'draft guidelines for planning authorities' and requirements of the Terms of Reference
- For individual Commonwealth protected matters, which is set out in Chapters 29 – 35 of the Assessment Report

The requirements of the 'draft guidelines for planning authorities' (EES, 2019) and Terms of Reference are similar or overlap in some cases, and so they were grouped and addressed together in themes. The themes are:

- Theme 1: Are serious and irreversible impacts avoided and minimised?
- Theme 2: Do the commitments address the values being impacted?
- Theme 3: Do the commitments address the most important values?
- Theme 4: Do the commitments improve values and ecological function in the long-term?
- Theme 5: Are the commitments additional to existing requirements?
- Theme 6: Do development controls proposed as commitments conserve the environment?
- Theme 7: Are proposed new national parks consistent with the CAR reserve framework?
- Theme 8: Will the Plan be effectively implemented and will outcomes be certain?
- Theme 9: Does the Plan facilitate adaptation to climate change?

5.2 WHAT WERE THE CONCLUSIONS OF THE EVALUATION?

5.2.1 THEME 1: ARE SERIOUS AND IRREVERSIBLE IMPACTS AVOIDED AND MINIMISED?

The avoidance outcome achieved through the process to design and locate the urban capable lands within the nominated areas is considered adequate and generally consistent with the BAM and Terms of Reference.

The avoidance process was detailed and robust and based on the best available data on biodiversity values. The process achieved substantial avoidance outcomes for native vegetation, high (intact) condition native vegetation, the majority of Commonwealth listed and NSW listed TECs, including the most endangered TECs, as well as potential habitat for species with a very high and high biodiversity risk weighting (greater than three).

Avoidance effort has generally focused on native vegetation and TECs in higher condition that are more likely to be viable in the long-term, with residual impacts from the development generally occurring to:

- Smaller patches
- Native vegetation or TECs in lower condition
- Only the edges of larger, contiguous patches associated with waterways and gullies and gorges, particularly in Wilton and GMAC, which minimises fragmentation and impacts on habitat connectivity

Despite this overall conclusion, for some SAII entities, about half or less of the TEC or potential species habitat was avoided and residual impacts remain. This includes:

- Cumberland Plain Woodland
- Cooks River/ Castlereagh Ironbark Forest
- *Allocasuarina glareicola*
- Green and Golden Bell Frog

For these TECs, the scale of impacts are relatively minor when considering the extent of these TECs across the Plan Area, and the majority of impacts are to lower viability areas. The offsets proposed by the Plan for these TECs (Commitment 8) will provide a substantial addition to the level of protection of these TECs and address key threats to the TECs identified in BioNet profiles and Conservation Advices.

For *Allocasuarina glareicola*, there are no impacts to records or important populations of the species (one important population occurs on excluded lands and will not be impacted).

While there will be direct impacts to small areas of Green and Golden Bell Frog habitat for a potential population in GPEC, it is not known whether this population still exists. Under Commitment 5, the Department will undertake surveys for this species along Ropes Creek, and if confirmed present, the Plan includes a species specific measure to consult with land managers of the riparian corridor to ensure key habitat features are protected and enhanced.

5.2.2 THEME 2: DO THE COMMITMENTS ADDRESS THE VALUES BEING IMPACTED?

The analysis of Theme 2 involved an assessment of the adequacy of the offset targets for each impacted NSW listed TEC and the extent to which commitments involving offsets meet the principles of the EPBC Act Environmental Offsets Policy (DSEWPC, 2012).

The analysis concluded that:

- The total offset target for NSW TECs (5,475 hectares) is estimated to be broadly within the range required to satisfy the BAM credit requirements (between 4,698 hectares and 9,820 hectares)
- The offset targets are estimated to generally satisfy the minimum credit requirements of the BAM for the majority (7 of 9) of the impacted NSW TECs (for three of these seven TECs, there is a negligible shortfall (< 6 hectares))
- The Commonwealth listed TEC offset targets meet the requirements of the EPBC Act Environmental Offsets Policy when assessed on the basis of the requirements of the offsets assessment guide
- The SCAs contain enough Commonwealth listed TECs to broadly satisfy the offset target for four of the five TECs. The shortfall for Cooks River/Castlereagh Ironbark Forest (26 hectares) could potentially be negated through the restoration of PCT 725 within SCAs, which is estimated to be 47 hectares

5.2.3 THEME 3: DO THE COMMITMENTS ADDRESS THE MOST IMPORTANT VALUES?

The analysis of Theme 3 suggests that the commitments generally prioritise the protection of important biodiversity values. This is because the SCAs (where the offsets are intended to be delivered):

- Contain each impacted Commonwealth and NSW listed TEC
- Contain potential habitat for the majority of Commonwealth and NSW listed species
- Significantly contribute to increasing representation of PCTs in protected lands in the Cumberland subregion
- Include substantial areas of land identified by the NSW Government as priorities for conservation, including BIO Map core areas and corridors (OEH, 2015) and areas in the EES biodiversity values map (OEH, 2019)

BIO Map core areas represent the habitat in the subregion most likely to support species persistence and interactions between species and landscape scale ecological processes, while BIO Map corridors play a crucial role in maintaining connections between species populations that would otherwise be isolated and at greater risk of local extinction.

Furthermore, it is likely that offset sites for the majority of species with specific offsets under the Plan are currently available (or are soon to be available) on Biobank or Stewardship sites and/or are represented within the SCAs. The data indicates that sourcing offsets for these species should be achievable under the Plan.

5.2.4 THEME 4: DO THE COMMITMENTS IMPROVE VALUES AND ECOLOGICAL FUNCTION IN THE LONG-TERM?

The analysis of Theme 4 suggests that the commitments broadly ensure biodiversity values and ecological function are likely to be improved in the long term. This is because the SCAs (where the offsets are intended to be delivered):

- Include many large patches greater than 50 hectares (these comprise over 87 per cent of the total native vegetation in the SCAs) and contain substantial amounts (35 per cent) of the total area of patches greater than 50 hectares in the Plan Area
- Contain substantial amounts of BIO Map core areas and corridors (see above)

Importantly, the Plan further addresses ecological function and landscape-scale ecological processes within the Cumberland subregion by committing to undertaking ecological restoration in priority areas within the landscape and managing key landscape threats in strategic areas to benefit conservation lands, including weeds, pest animals and fire.

5.2.5 THEME 5: ARE THE COMMITMENTS ADDITIONAL TO EXISTING REQUIREMENTS?

The 'draft guidelines for planning authorities' (Principle 5) requires that commitments are additional to existing conservation obligations. Existing conservation obligations are actions that are legally required to be carried out on land. The Plan ensures that commitments are additional to existing conservation obligations through:

- Accounting for existing conservation obligations in the process to identify SCAs
- Securing land in SCAs in accordance with the rules and processes under the BC Act and BAM, which account for existing conservation obligations
- Establishing an accounting process to track progress in meeting offset targets, including a method to reduce the number of hectares that are counted towards an offset target where existing conservation obligations apply to a site

5.2.6 THEME 6: DO DEVELOPMENT CONTROLS PROPOSED AS COMMITMENTS CONSERVE THE ENVIRONMENT?

The Department is proposing a new State Environmental Planning Policy (SEPP) to implement the Plan's strategic conservation planning requirements, as well as introduce a Ministerial Direction under section 9.1 of the EP&A Act to apply to avoided land and the SCAs as mapped in the proposed SEPP.

Note that these planning controls will be applied across the SCAs except for land owned by LALCs or under claim by LALCs. Deerubbin owned land has been excluded from the SCAs at their request. Other LALC owned land and land under claim represents 1,700 ha of the 28,300 ha of the SCAs.

The SEPP and Ministerial Direction will improve the security of biodiversity values in avoided lands and the SCAs, and represent a significant upgrade to existing levels of protection in these areas, as they will:

- Include zoning objectives and permissible uses consistent with conservation (for avoided lands)
- Reduce the risk of rezoning avoided land or increasing development or intensifying land uses in the SCAs, which reduces the likelihood of potential impacts from future planning proposals within these areas
- Ensure planning authorities take into account the land use objectives that apply to avoided land or, if the development proposal is for the SCAs, the matters in the planning controls that apply to the area, when considering development and other planning proposals for avoided lands or SCAs
- Facilitate the acquisition of high biodiversity value land within the SCAs under the conservation program

5.2.7 THEME 7: ARE PROPOSED NEW NATIONAL PARKS CONSISTENT WITH THE CAR RESERVE FRAMEWORK?

The Department has identified initial locations for land that will be potentially reserved under the *National Parks and Wildlife Act 1974* within the SCAs. This includes three new reserves proposed to be established within the first five years of the Plan's implementation to deliver early strategic offsets. These are:

- The Georges River Koala Reserve – This is the most important north–south Koala movement corridor along the Georges River between Appin and Kentlyn, and contains larges areas of several TECs
- The Gulguer Reserve Investigation Area – This investigation area covers about 1,800 hectares and is located in the Warragamba area. A reserve in this area will support the east-west connection between Burragorang State Conservation Area and Gulguer Nature Reserve and contains large areas of several TECs
- The Confluence Reserve Investigation Area – This investigation area lies in the Hawkesbury LGA in the north of the Plan Area, to the east of Londonderry and covers about 600 hectares, and provides areas important for restoration

These reserve locations are not final and are likely to be refined. Note that other areas within the SCAs have also been identified for further investigation as future reserves to provide greater landscape connectivity, such as the Bargo area.

The analysis suggests that the potential reserves are broadly consistent with the CAR reserve system scientific framework (after Commonwealth of Australia, 2010) as the reserves:

- Include the vast majority of PCTs impacted by the development
- Comprise patches greater than 50 hectares for the vast majority of native vegetation in the reserves
- Contribute greater than 10 per cent to existing levels of representation for the majority of PCTs

Further consideration of the CAR reserve system scientific framework will be made in finalising the locations of the potential reserves during implementation of the Plan.

5.2.8 THEME 8: WILL THE PLAN BE EFFECTIVELY IMPLEMENTED AND WILL OUTCOMES BE CERTAIN?

The Plan includes the key elements that are considered to be important for effective delivery of a large scale development and conservation program. In particular, the Plan provides:

- Clear and feasible outcomes that the Plan will deliver
- Clarity about the delivery framework and mechanisms to implement the Plan
- Appropriate flexibility within the Plan to ensure it remains relevant over time
- Clear governance arrangements, including certain funding
- Comprehensive processes to monitor and report on implementation, and adapt implementation as needed

Importantly, the Plan includes an accounting process to track the impacts of the development on biodiversity values as clearing progresses and progress in securing the offset targets. If progress in securing offsets is not keeping pace with the impacts, the Plan sets out an adaptive management response that will triggered at a specific point to rectify the balance. This will include, in order of priority:

- Voluntary or compulsory property acquisition to secure offsets
- Land use planning responses to development, which may include a pause in rezoning of remaining precincts in the nominated areas until sufficient offsets are secured

The Department will consider the use of compulsory acquisition only after voluntary options are not successful, and would consult with the community and key stakeholders before compulsory acquisition was undertaken.

These arrangements provide assurance to regulators and other key stakeholders that if progress in implementing the conservation program is delayed, a process will be put in place to address this situation.

It is also important to note that the Plan and subplans are high level documents providing an overarching framework and assurance processes for implementing the Plan, and that successful implementation relies on considerable further work being done during the early stages of implementation to sort out details.

This is appropriate because it allows detailed consideration of complex issues, seeking of expert advice, and comprehensive engagement with stakeholders. The Plan provides a clear framework for this future work by identifying a set of actions that will be undertaken to deliver each commitment within a program logic framework.

5.2.9 THEME 9: DOES THE PLAN FACILITATE ADAPTATION TO CLIMATE CHANGE?

The extent and nature of the impacts of climate change on specific biodiversity values is difficult to predict. There is a lack of information about how specific matters are likely to respond to climate change, and there is debate and uncertainty over how to best facilitate adaptation. Given this, the analysis was undertaken in two main ways:

- A qualitative evaluation using a set of broad principles derived from the scientific literature on how to best manage the impacts and facilitate adaptation of biodiversity to climate change
- A quantitative evaluation using recent modelling by Macquarie University on changes to future habitat suitability on the Cumberland Plain for some Commonwealth listed species under several climate change scenarios

The analysis concluded that the Plan has taken adequate steps to consider climate change. In particular, the SCAs have been designed consistent with key principles commonly recommended by scientists and practitioners to facilitate adaptation of biodiversity to climate change, including:

- Ensuring representativeness and replication
- Protecting the largest and most viable patches
- Maintaining and improving habitat connectivity
- Reducing the impacts of other threats
- Managing uncertainty through adaptive management

5.3 OVERALL CONCLUSION

The Assessment Report concludes that the Plan is likely to deliver substantial conservation outcomes for the Cumberland subregion and adequately addresses the impacts of the development on biodiversity values and other protected matters under NSW and Commonwealth biodiversity legislation.

The Plan is broadly consistent with the principles of Ecologically Sustainable Development (ESD), has achieved substantial avoidance outcomes for biodiversity values, and includes a set of commitments that adequately address the biodiversity values being impacted, as well as manage key landscape threats in the Cumberland subregion.

In concluding that the Plan adequately addresses the impacts of the development, it is important to note that the Plan's commitments are not driven solely by meeting the biodiversity credit requirements of the BAM, which is a key part of the definition of 'no net loss' under the BAM. This is consistent with the BC Act. For strategic biodiversity certifications such as the Plan, the Act does not require the value of commitments be calculated in terms of credits.

This recognises that strategic biodiversity certification provides significant opportunities to maximise benefits to biodiversity and address landscape scale conservation challenges that are not provided by site-by-site assessment processes. The key commitments under the Plan have been developed in recognition of these benefits, including:

- Focusing the conservation program, including offsets, on the areas of the landscape considered most likely to be viable in the long-term and maximise ecological function and connectivity across the landscape
- Addressing ecological function and landscape-scale ecological processes through improving habitat connectivity and undertaking ecological restoration in priority parts of the landscape
- Implementing programs to manage threats at a landscape scale that can benefit multiple species and TECs
- Consolidating offsets into larger patches that are likely to be more viable in the long term

Furthermore, modelling work undertaken as part of the Assessment Report that looked at trends in native vegetation extent and condition in the subregion (see Supporting Document D in the Assessment Report) demonstrated that the existing level of landscape threats is significant and is likely to lead to substantial declines in native vegetation over time unless action is taken. The Plan's commitments will help to address this ongoing decline by ensuring large areas in the landscape are secured and managed in perpetuity and through programs to manage landscape threats.

A key implication of the modelling work for the Plan is that offsets should be established as early as possible to help reverse the trend of decline. This is addressed to a large extent under the Plan through the NSW Government committing to fund the first five years of implementation of the Plan and prioritising the establishment of three new reserves (the Georges River Koala Reserve, the Gulguer Reserve Investigation Area, and the Confluence Reserve Investigation Area) to deliver early strategic offsets to protect TECs and species habitat.

Summary Report References

Biolink (2018) *Koala Corridor Project: Campbelltown City Council & Wollondilly Local Government Areas* (Report to NSW Office of Environment & Heritage).

DECCW (2011) *Cumberland Plain recovery plan* Sydney, N.S.W.: Department of Environment, Climate Change and Water NSW. Retrieved from http://www.environment.nsw.gov.au/~/media/B867A5B1616049578763809F0729B4A7.ashx

DoE (2015) *Referral guideline for 14 birds listed as migratory species under the EPBC Act* Department of the Environment.

DSEWPC (2012) *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* Australian Government | Department of Sustainability, Environment, Water, Population and Communities.

EES (2019) *Draft Guidelines for planning authorities for proposing conservation measures in strategic applications for biodiversity certification. Draft Version 6* NSW Environment, Energy and Science – Department of Planning, Industry and Environment.

Gordon, A., & Peterson, I. (2019) *Cumberland Subregion Conservation Plan — Vegetation Trend Analysis* (Report commissioned for the NSW Department of Planning Environment, Biosis and Open Lines) Melbourne: RMIT University.

GSC (2017) *Our Greater Sydney 2056: A metropolis of three cities- Overview* Greater Sydney Commission. Retrieved from https://gsc-public-1.s3.amazonaws.com/s3fs-public/gsrp_overview_web.pdf

OEH (2013) *Remnant Vegetation of the Western Cumberland Subregion 2013 Update* Office of Environment and Heritage. Retrieved from http://data.environment.nsw.gov.au/dataset/remnant-vegetation-of-the-western-cumberland-subregion-2013-update-vis_id-4207fd1f4

OEH (2015) *Biodiversity Investment Opportunities Map* Office of Environment and Heritage for the NSW Government.

OEH (2016) *The Native Vegetation of the Sydney Metropolitan Area Volume 1 and Volume 2* Sydney, N.S.W.

OEH (2018) *Conserving koalas in Wollondilly and Campbelltown LGAs. Final.* NSW Government - Office of Environment and Heritage.

OEH (2019) *Biodiversity Values Map*. Retrieved 17 December 2019, from http://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-offsets-scheme/entry-requirements/biodiversity-values-map

Transport for NSW (2018) *Future Transport Strategy 2056*. Retrieved from https://future.transport.nsw.gov.au/plans/future-transport-strategy

Appendix A: Biodiversity values most at risk

Table 5: Commonwealth listed threatened ecological communities most at risk under the Plan

Name	Status	SAII entity*	Description of key impacts	Offset target

Shale Sandstone Transition Forest	CE	Yes	The Plan may lead to the loss of 191.8 hectares of the TEC in the urban capable lands within the nominated areas, and potentially an additional 40 hectares within avoided lands due to essential infrastructure. It is not considered likely that this will threaten the long-term viability of the TEC because:
			• The majority of the remaining areas of higher viability TEC in the nominated areas have been avoided and are not impacted by the Plan, including:
			  ○ 1,141 hectares avoided for biodiversity purposes
			  ○ 205 hectares avoided for other purposes
			• The majority of impacts are to lower viability areas of the TEC:
			  ○ 0.6 per cent of higher viability TEC in the Plan Area
			  ○ 2 per cent of higher viability TEC in the nominated areas
			• The impacts are unlikely to increase the level of fragmentation
			The offset for this TEC will provide a substantial addition to the level of protection of the TEC and will support a key high priority action in the Conservation Advice to increase the area of larger, high quality patches of TEC that is secured and managed for conservation
				715 hectares

Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	CE	Yes	The Plan may lead to the loss of 154.7 hectares of the TEC. It is not considered likely that this will threaten the long-term viability of the TEC because:
			• The scale of impacts are relatively minor when considering the mapped extent across the Plan Area (less than 1.6 per cent)
			• The majority of impacts are to lower viability areas of the TEC:
			  ○ Less than 0.3 per cent of higher viability TEC in the Plan Area
			  ○ About 3.7 per cent of higher viability TEC in the nominated areas
			• The impacts are unlikely to increase the level of fragmentation
			• The offset for this TEC will provide a substantial addition to its level of protection and address a key threat identified in the Conservation Advice around its current low level of protection
				575 hectares

Name	Status	SAII entity*	Description of key impacts	Offset target
Coastal floodplain eucalypt forest of eastern Australia (subject to listing)	-	No	This ecological community (EC) is currently being assessed for listing under the EPBC Act. While the Plan will result in the loss of 210.2 hectares of this, this is not expected to influence the long-term viability of the EC because: • The mapping of the EC is based on PCT 835 which provides an over-estimate of both impacts and conservation actions for what might be the listed TEC • Although the Plan authorises the clearing of 210.2 hectares (approximately 3 per cent of the remaining EC), most of this is in thinned and scattered condition. 28.6 hectares occurs in intact condition • The majority of impacts are to small patches, or to the edges of patches • Transport projects will apply future efforts to avoid impacts to the EC • The Plan commits to protecting and managing 575 hectares of PCT 835 as a surrogate for the future listed TEC. These areas will occur in the SCAs as part of the Plan's conservation program. Securing high conservation value EC directly supports a key high priority action in the Draft Conservation Advice to conserve remaining areas of the EC	575 hectares
Cooks River Castlereagh Ironbark Forest	CE	Yes	The Plan may lead to the loss of 26.3 hectares of the TEC. The impacts in WSA are not expected to threaten the long-term viability of the TEC because: • Impacts are to a number of smaller already fragmented patches • Of the 7.0 hectares impacted, only 0.2 hectares is in intact condition and none is mapped as higher viability • The impacts are unlikely to increase the level of fragmentation of the TEC The impacts in GPEC are more complex because: • Impacts from the Outer Sydney Orbital fragment the TEC in the Wianamatta Regional Park • Of the 19.3 hectares to be impacted, 10.8 hectares is mapped as higher viability. This represents 1.8 per cent of the higher viability TEC in the Strategic Assessment Area (592 hectares) It is noted that the Plan commits (Commitment 3) to avoid and minimise impacts to the TEC due to the construction of the Outer Sydney Orbital in GPEC. It will be critical that this process avoids and minimise impacts as far as possible to reduce the scale of impacts The offset for this TEC will provide a substantial contribution to the area of the TEC that is protected within the Strategic Assessment Area (an additional 13.3 per cent), and supports a number of high priority actions in the Conservation Advice. As part of this commitment, the Plan is also prioritising restoration of up to 25 per cent of the offset target for the TEC. Restoration provides the potential for substantial improvements in the	105 hectares

Name	Status	SAII entity*	Description of key impacts	Offset target
			long-term viability of the TEC The timing of offsetting will be critical for the TEC. Offsets should be provided early during the implementation of the Plan and ideally be in place before construction of the Outer Sydney Orbital	

* 'SAII entities' are TECs or species that may be subject to serious and irreversible impacts. SAII entities are identified in the basis of a set of principles under the Biodiversity Conservation Regulation 2017. The Assessment Report identifies the NSW and Commonwealth listed SAII entities that may be subject to serious and irreversible impacts and that are potentially impacted by the development under the Plan. NSW listed SAII entities are assessed in Chapter 25 and Commonwealth listed SAII entities are assessed in Chapters 29 to 31

Table 6: NSW listed threatened ecological communities most at risk under the Plan

Name	Status	SAII entity*	Description of key impacts		Offset target
			Area impacted	No. of ecosystem credits needed to offset impacts	
Cumberland Plain Woodland	CE	Yes	1,014.5 hectares	20,476 credits	3,170 hectares
Shale Sandstone Transition Forest	CE	Yes	487.7 hectares	13,393 credits	1,540 hectares
River-Flat Eucalypt Forest	E	No	165.1 hectares	4,939 credits	450 hectares
Shale Gravel Transition Forest	E	No	52.2 hectares	1,218 credits	150 hectares
Cooks River Castlereagh Ironbark Forest	E	Yes	36.9 hectares	809 credits	110 hectares

* 'SAII entities' are TECs or species that may be subject to serious and irreversible impacts. SAII entities are identified in the basis of a set of principles under the Biodiversity Conservation Regulation 2017. The Assessment Report identifies the NSW and Commonwealth listed SAII entities that may be subject to serious and irreversible impacts and that are potentially impacted by the development under the Plan. NSW listed SAII entities are assessed in Chapter 25 and Commonwealth listed SAII entities are assessed in Chapters 29 to 31

Table 7: Commonwealth and NSW listed threatened species most at risk under the Plan

Name	Status		SAII entity*	Description of key impacts	Offset target
	Cth	NSW			
Cynanchum elegans	E	E	No	**EPBC Act assessment for Plan Area** The Plan will lead to: • Loss of 19.6 hectares of potential habitat within the transport corridors • Potential fragmentation of population 14 due to the development of the Outer Sydney Orbital at Cobbitty The risk of residual adverse impacts to this species is medium It is considered likely that the Outer Sydney Orbital will result in internal fragmentation of a population of the species near Cobbitty, which is the key driver for this risk rating. While there is some uncertainty about the accuracy of the records, the population is of moderate size comprising up to 19 plants. It is likely that this population is important to the ongoing viability and recovery of the species, as this species is endangered The offsets for this species will add to the existing level of protection for this species in NSW and contribute to its long-term preservation The Plan also includes a broader set of commitments and actions which are likely to benefit the species. The SCAs contain approximately 1,502 hectares of mapped potential habitat for *Cynanchum elegans*. It is very likely that areas of potential habitat in addition to the 2 offset locations will be protected within these SCAs as part of offset commitments for other matters under the Plan Overall, the direct and indirect impacts to this species are not expected to threaten the long-term viability of the species	2 offset locations
Dillwynia tenuifolia	-	V	No	**BC Act assessment for nominated areas** Area of habitat directly impacted: 175.6 hectares No. of species credits needed to offset impacts: 3,407 credits	3 offset locations
Epacris purpurascens var. *purpurascens*	-	V	No	**BC Act assessment for nominated areas** Area of habitat directly impacted: 87.6 hectares (this equates to an estimated number of individuals of 1,589, as required by the BAM) No. of species credits needed to offset impacts: 2,384 credits	1 offset location
Grevillea juniperina subsp. *juniperina*	-	V	No	**BC Act assessment for nominated areas** Area of habitat directly impacted: 457.8 hectares No. of species credits needed to offset impacts: 6,851 credits	3 offset locations

Name	Status		SAII entity*	Description of key impacts	Offset target
	Cth	NSW			
Hibbertia fumana	-	CE	Yes	**BC Act assessment for nominated areas** Area of habitat directly impacted: 37.5 hectares No. of species credits needed to offset impacts: 1,466 credits	1 offset location
Hibbertia puberula	-	E	No	**BC Act assessment for nominated areas** Area of habitat directly impacted: 41.6 hectares No. of species credits needed to offset impacts: 1,039 credits	1 offset locations
Koala	V	V	No	**EPBC Act assessment for Plan Area** ***Impacts to habitat*** The Plan will lead to the loss of 260.6 hectares of important habitat for Koalas within GMAC and Wilton. This equates to 1.8 per cent of the mapped important habitat for the Southern Sydney population The Plan commits to protecting and managing a minimum of 610 hectares of important Koala habitat, and to protecting and managing a minimum of 1,885 hectares of land within the Georges River Koala Reserve (contains 1,595 hectares of important habitat), and restoring approximately 200 hectares of cleared land, which significantly exceeds the 610 hectares offset target for Koala The action to restore land is consistent with Principle 3 of Conserving Koalas in Wollondilly and Campbelltown LGAs (OEH, 2018d). These commitments also support several priority actions in the Conservation Advice ***Impacts to habitat connectivity*** The Plan will not result in the loss of primary or secondary habitat corridors in Wilton or GMAC due to clearing. However, habitat connectivity has the potential to be impacted by the development Both EES (2018) and Biolink (2018) discuss the importance of the north-south primary corridor to the east of Appin Road. This will be protected (as a new reserve) and improved (through restoration) under the Plan East-west connectivity through Douglas Park (between the Wilton and GMAC nominated area boundaries) is also recognised for its importance to connectivity. This area will not be impacted by the Plan and parts of it are included in the SCAs which are targeted for offsets under the Plan The main risk to connectivity occurs to the east-west connections through GMAC. These are all secondary corridors and are currently compromised in various ways. Biolink (2018) suggests the most important of these connections are the Woodhouse – Menangle and Ousedale corridors. In	610 hectares of important habitat

Name	Status		SAII entity*	Description of key impacts	Offset target
	Cth	NSW			
				developing the Plan, the Department investigated the viability of these corridors for Koala movement and the Plan commits to further investigations of these areas to determine how a permanent corridor can be implemented The Plan provides a strong framework for addressing risks to Koala. Given the long timeframes associated with implementation of the Plan, there is uncertainty about the ultimate effectiveness of these measures. It will be critical that the Plan's monitoring, evaluation and adaptive management measures are effective in addressing this uncertainty	
				BC Act assessment for nominated areas Area of habitat directly impacted: 260.6 hectares No. of species credits needed to offset impacts: 7,757 credits	
Marsdenia viridiflora subsp. *viridiflora*	-	E	No	**BC Act assessment for nominated areas** Area of habitat directly impacted: 412.3 hectares No. of species credits needed to offset impacts: 9,564 credits	1 offset locations
Meridolum corneovirens	-	E	No	**BC Act assessment for nominated areas** Area of habitat directly impacted: 736.4 hectares No. of species credits needed to offset impacts: 18,819 credits	3 offset locations
Persoonia nutans	E	E	No	**EPBC Act assessment for Plan Area** The Plan will lead to: • Direct impacts to a known population (population 63) • Loss of approximately 41 hectares of potential habitat • Potential fragmentation of habitat in one location The risk of residual adverse impacts to this species is medium The likelihood of potential impacts to population 63 due to the development of the Outer Sydney Orbital within Wianamatta Regional Park is the key driver for this risk rating. There is a high level of confidence that the population is extant, as the population was detected on site during surveys. It is likely that this population is important to the ongoing viability and recovery of the species as the species is endangered. The Plan commits (Commitment 3) to avoid and minimise impacts to *Persoonia nutans* due to the construction of the Outer Sydney Orbital in GPEC. It will be critical that this process avoids and minimise impacts as far as possible to reduce the scale of impacts	2 offset locations

Name	Status		SAII entity*	Description of key impacts	Offset target
	Cth	NSW			
				The offsets for this species will add to the existing level of protection for this species in NSW and contribute to its long-term preservation, and is consistent with a performance criterion in the species' recovery plan, which aims to increase the level of protection for this species through conservation planning and land use decisions The Plan also includes a broader set of commitments and actions which are likely to benefit the species. The SCAs contain approximately 1,617 hectares of mapped potential habitat for *Persoonia nutans*. It is very likely that areas of potential habitat in addition to the 2 offset locations will be protected within these SCAs as part of offset commitments for other matters under the Plan Overall, the direct and indirect impacts to this species are not expected to threaten the long-term viability of the species	
				BC Act assessment for nominated areas Area of habitat directly impacted: 40.7 hectares No. of species credits needed to offset impacts: 870 credits	
Pimelea spicata	E	E	No	**EPBC Act assessment for Plan Area** The Plan will lead to: • Direct impacts to a known population (population 532) • Loss of approximately 956 hectares of mapped habitat within the nominated areas and transport corridors • Potential fragmentation of habitat in two locations The risk of residual adverse impacts to this species is high The likelihood of potential impacts to population 532 within the urban capable lands in GMAC is the key driver for this risk rating. There is a high level of confidence the population is extant given the locational accuracy, reputable observer and date of observation. The population is of a moderate size comprising up to 160 plants. It is likely that this population is important to the ongoing viability and recovery of the species Based on this assessment, it is recommended that the Plan adopt an additional species-specific commitment for *Pimelea spicata* to retain some or all of population 532 within GMAC during detailed precinct planning. This recommendation has developed too late in the assessment process to be adopted in the draft version of the Plan for public comment. It is likely the recommendation will be adopted prior to finalising the Plan The offsets for this species will provide a substantial addition to the level of protection for the	3 offset locations

Name	Status		SAII entity*	Description of key impacts	Offset target
	Cth	NSW			
				species which is currently under-represented in protected areas. Furthermore, in situ protection of *Pimelea spicata* is a fundamental component of the species' recovery plan The Plan also includes a broader set of commitments and actions which are likely to benefit the species. The SCAs contain approximately 2,296 hectares of mapped potential habitat for *Pimelea spicata*. It is very likely that areas of potential habitat in addition to the 3 offset locations will be protected within these SCAs as part of offset commitments for other matters under the Plan Overall, the direct and indirect impacts to this species are not expected to threaten the long-term viability of the species	
				BC Act assessment for nominated areas Area of habitat directly impacted: 847.8 hectares (note that 839.18 hectares of this impact is associated with native vegetation removal and this determines the resultant species credit requirement. The remaining 8.6 hectares of impact associated with non native vegetation and has been assessed in the Assessment Report as a prescribed impact) No. of species credits needed to offset impacts: 10,556 credits	
Pultenaea parviflora	V	E	No	**EPBC Act assessment for Plan Area** The Plan will lead to: • Direct impacts to 6 populations, including the loss of one important population (population 127) and impacts to records to two important populations (population 118 and 119) • Loss of approximately 188 hectares of potential habitat within the nominated areas and transport corridors • Potential fragmentation of habitat in one location The risk of residual adverse impacts to this species is high The likelihood of the loss of population 127 as a result of the development of the Outer Sydney Orbital in Wianamatta Regional Park in GPEC is the key driver for this risk rating. There is a high level of confidence that the population is extant as it was detected during species surveys. The population is of a moderate size comprising 83 plants. The Plan commits (Commitment 3) to avoid and minimise impacts to *Pultenaea parviflora* due to the construction of the Outer Sydney Orbital in GPEC. It will be critical that this process avoids and minimise impacts as far as possible The offsets for this species will add to the existing level of protection for this species in NSW and contribute to its long-term preservation, and supports a priority action in the Conservation Advice The Plan also includes a broader set of commitments and actions which are likely to benefit the	2 offset locations

Name	Status		SAII entity*	Description of key impacts	Offset target
	Cth	NSW			
				species. The SCAs contain approximately 1,371 hectares of mapped potential habitat for *Pultenaea parviflora*. It is very likely that areas of potential habitat in addition to the 2 offset locations will be protected within these SCAs as part of offset commitments for other matters under the Plan. For example, two of the proposed reserves in the Plan contain mapped habitat for the species (including 120 hectares in the Georges River Koala Reserve) Overall, the direct and indirect impacts to this species are not expected to threaten the long-term viability of the species	
				BC Act assessment for nominated areas Area of habitat directly impacted: 74.3 hectares No. of species credits needed to offset impacts: 1,744 hectares	
Pultenaea pedunculata	-	E	No	**BC Act assessment for nominated areas** Area of habitat directly impacted: 207.7 hectares No. of species credits needed to offset impacts: 4,482 credits	1 offset locations
Southern Myotis	-	V	No	**BC Act assessment for nominated areas** Area of habitat (hectares) directly impacted: 745.2 hectares No. of species credits needed to offset impacts: 16,968 credits	2 offset locations
Swift Parrot	CE	E	No	**EPBC Act assessment for Plan Area** The Plan will lead to clearing of 1,285 hectares of potential foraging habitat for Swift Parrot. Some of this clearing will be mitigated by the retention of large trees (≥50cm DBH) during precinct planning. Despite this, the scale of clearing presents a medium risk of residual adverse impacts to the species Clearing of potential foraging habitat is unlikely to lead to fragmentation of connectivity for the species given it is highly mobile and the availability of potential foraging resources throughout the landscape. Furthermore, the loss of potential habitat does not affect any of priority sites in the National Recovery Plan and focuses on the poorer condition woodlands, with intact vegetation comprising only 12 per cent (154 hectares) of the impacted areas The offset areas for the Swift Parrot within SCAs will focus on the best condition vegetation strategically located to provide an improved conservation outcome within the subregion The Plan also includes a broader set of commitments and actions which are likely to benefit the species. The SCAs contain 17,403 hectares of potential foraging habitat for the species. It is very likely that areas of suitable foraging habitat for this species in addition to the 4,470 hectares offset	4,470 hectares of potential foraging habitat

Name	Status		SAII entity*	Description of key impacts	Offset target
	Cth	NSW			
				will be protected within these SCAs as part of offset commitments for other matters under the Plan Overall, the direct and indirect impacts to this species are not expected to threaten the long-term viability of the species	
				BC Act assessment for nominated areas Area of habitat (hectares) directly impacted: 1,113 hectares No. of species credits needed to offset impacts: N/A as credits for this species are accounted for through ecosystem credits	

* 'SAII entities' are TECs or species that may be subject to serious and irreversible impacts. SAII entities are identified in the basis of a set of principles under the Biodiversity Conservation Regulation 2017. The Assessment Report identifies the NSW and Commonwealth listed SAII entities that may be subject to serious and irreversible impacts and that are potentially impacted by the development under the Plan. NSW listed SAII entities are assessed in Chapter 25 and Commonwealth listed SAII entities are assessed in Chapters 29 to 31

Appendix B: Types of indirect impacts

Table 8: Indirect impact types and nature, extent and duration of indirect impacts associated with the Plan

Indirect impact type	Development types relevant to the indirect impact				Nature of indirect impact	Extent/general location of indirect impact and/or high risk areas	Duration of indirect impact
	Urban and industrial	Infrastructure	Agribusiness	Transport corridors			
Hydrological/ soil disturbance	✓	✓	✓	✓	Changes to surface water and groundwater flows and quality	Waterways, wetlands, flood-prone areas within or downstream of development	Short term to long-term
Ground settling or subsidence				✓	Settlement/subsidence of ground in the vicinity of transport tunnels due to the tunnel void or groundwater removal, which may cause disturbance to the land surface	Land within or in vicinity of the transport tunnels	Long-term
Spread of infection/disease	✓	✓	✓	✓	Spread of pathogens from contaminated clothing and equipment or surface water runoff	Native vegetation retained within or adjacent to development	Likely long-term
Spread of weeds	✓	✓	✓	✓	Spread of invasive species due to edge effects, surface water run-off, or changed fire regimes	Native vegetation retained within or adjacent to development	Likely long-term
Predation/ competition by pest/domestic fauna	✓		✓	✓	Increased predation and competition of species by pest/domestic fauna	Habitat retained within or adjacent to development including well-connected habitat corridors	Likely long-term
Altered fire regimes	✓		✓	✓	Altered fire regimes as a result of increased burns for asset protection or reduced ability to burn due to risk to surrounding urban areas	Native vegetation retained within or immediately adjacent to development, particularly asset protection zones	Long-term
Disturbance from increased public access to natural areas	✓				Trampling of species or habitat, removal of wood or bushrock, damage from mountain-biking and four-wheel driving	Publicly accessible natural areas retained within or immediately adjacent to development	Short term to permanent

Indirect impact type	Development types relevant to the indirect impact				Nature of indirect impact	Extent/general location of indirect impact and/or high risk areas	Duration of indirect impact
	Urban and industrial	Infrastructure	Agribusiness	Transport corridors			
Fauna mortality, displacement and barriers to movement	✓	✓	✓	✓	Potential for mortality of threatened fauna species by vehicle strike and reduced movement and connectivity between habitat areas from barriers	Habitat intersected by roads	Long-term
Fauna disturbance due to noise, dust or light	✓	✓	✓	✓	Noise, dust or light created by equipment during construction or by new structures during operation	Habitat retained within or immediately adjacent to development	Short-term to long-term
Inadvertent impacts on adjacent habitat or vegetation	✓	✓	✓	✓	Damage to adjacent habitat during construction activities or during ongoing management	Native vegetation immediately adjacent to development	Short-term to long-term

Miller Social Infrastructure Masterplan

Prepared for Liverpool City Council | 2 September 2020

ETHOS URBAN

in collaboration with Otium Planning Group SPORT + LEISURE

CLOUSTON associates

UTS Institute for Public Policy and Governance

Contents

This Social Infrastructure Masterplan for Miller has been prepared for the Liverpool City Council.

The Plan provides an overview of the needs of the community, investment priorities and the way forward for the provision of social infrastructure for the Miller community.

The Masterplan is a collaborative project, prepared by a multi-disciplinary team of experts that understand the complexities of social infrastructure planning in a local government context. Ethos Urban has led the delivery of the project, in partnership with Otium Planning Group, UTS Institute for Public Policy and Governance and Clouston Associates, providing recommendations to Liverpool City Council as to the social infrastructure changes that are required to support the current and future community of Miller. Delivering an evidence based vision to guide the renewal and redevelopment of Council-owned assets within the suburb of Miller, the Masterplan aim to bring intergenerational social benefits, enhancing community wellbeing and resilience.

Acknowledgments

We would like to acknowledge the Cabrogal Clan of the Darug Nation who are the traditional custodians of the land that now resides within Liverpool City Council's boundaries. We acknowledge that this land was also accessed by peoples of the Dhurawal and Darug Nations.

01
Introduction

The Liverpool Local Government Area is one of the fastest growing areas in Australia. To support this growth Liverpool City Council plays a critical role in ensuring the community is effectively supported by an environment that encourages liveability, good quality of life and wellbeing for all.

Australian community expectations of social infrastructure have changed, with more and more people looking for greater flexibility and diversity of social infrastructure within their local area. As social infrastructure assets and networks have aged with some buildings and spaces no longer fit for purpose, councils across Australia are adapting, providing upgraded facilities and services to local communities in non-traditional ways.

This Masterplan provides guidance to Liverpool City Council on the transformation of the social infrastructure within the suburb of Miller. The vision and directions proposed identify the key role social infrastructure will play for future growth and development of the Miller community. Liverpool City Council is committed to putting the community first, and this ground breaking project puts social infrastructure at the core of future development of the Miller Town Centre.

Through the provision of renewed social infrastructure in Miller, Liverpool City Council will contribute to the enhancement of liveability, resilience and sustainability of Miller and the surrounding 2168 community.

Through the provision of renewed social infrastructure in Miller, Liverpool City Council will contribute to the enhancement of liveability, resilience and sustainability of Miller and the surrounding 2168 community.

What is Social Infrastructure?

For the purposes of this Masterplan, social infrastructure takes into account both hard and soft infrastructure, including the facilities, buildings and spaces as well as the programs, services and networks that operate within these facilities. The network of social infrastructure noted to contribute to the social identity and quality of life of the people within Miller. In developing the Masterplan a review was undertaken of the existing supply of social infrastructure in Miller, articulating the supply and demand, with regards to usage patterns, accepted benchmarks and best practice trends.

Role of social infrastructure and why it is so important

Social infrastructure provision is essential for the development of sustainable, liveable, resilient and socially cohesive communities."*Quality social infrastructure are the building blocks for the enhancement of human and social capital.*"[1] Also working to attract investment, growth and economic development to local communities.

There is also growing evidence that failing to provide adequate social infrastructure results in significant costs to governments and communities[2].

Further, deficiencies in social infrastructure provision can create long-term, complex social problems that require costly remedial measures, particularly in socio-economically disadvantaged areas[3].

Conversely, there is a substantial body of evidence that the benefits of social infrastructure far exceed the economic costs of provision[4].

Sustainable
Liveable
Resilient
Socially Cohesive

Importantly, a significant proportion of identified benefits of social infrastructure fall under the responsibility of local governments, with the provision of social infrastructure including:

- **public libraries** – providing an array of social and economic benefits, beyond the simply housing collections of books. Modern public libraries provide communities with a variety of education, cultural, social and support services.
- **community facilities and services** – providing accessible public places for communities to interact and participate in a range of activities that help to increase community wellbeing, develop social capital, encourage civic engagement. As agents of social inclusion the facilities help to reduce social isolation and help to provide positive socio-economic outcomes for residents.
- **cultural activities, events and festivals** – local governments play a key role in facilitating cultural activities, events and festivals, with benefits to direct employment opportunities as well as flow-on effects of increased visitation and expenditure.
- **open space, sport and recreation facilities** – to support the health and wellbeing of residents. The provision of quality parks, sport and recreation facilities supports and sustain communities through physical and mental health benefits, social benefits, environmental and economic benefits. Recent experience has shown that public spaces, parks and pathways are vital to supporting local communities, creating spaces to allow a wide variety of outdoor activities and exercise.

Given the overwhelming evidence for its value in creating liveable and sustainable communities, it is imperative that councils invest in social infrastructure to ensure they meet the changing needs and expectations of their communities.

The delivery of social infrastructure within the Liverpool LGA is informed by the broader Western City District Plan, to deliver social infrastructure that reflects the needs of the community now and into the future, as well as optimising the use of available public land for social infrastructure.

02
Context

Liverpool City Council is working to deliver vibrant places that support individual and community wellbeing. Renewing and enhancing the existing community facilities across the LGA is an important priority with Council looking to renew existing social infrastructure stock that is older in style and has limited capacity to support a changing community.

This Social Infrastructure Masterplan aligns with the strategic planning priorities of Liverpool City Council. Those being: connectivity, productivity, liveability and sustainability.

The Masterplan also aligns with the directions of the Liverpool Community Strategic Plan to:

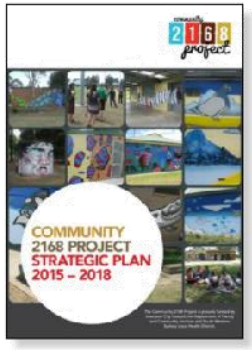
- create connection
- strengthen and protect the environment
- generate opportunity
- lead through collaboration.

Building on the objectives of the Miller Town Centre Masterplan, this work provides a detailed social infrastructure review, identifying key principles to guide future development in Miller. Consideration has also been given to aligning the recommendations with the place-led infrastructure approach of the Fifteenth Avenue Smart Transit Corridor Design Framework.

Carrying forward the work undertaken to deliver the Community 2168 Project the Social Infrastructure Masterplan responds to the socio-economic challenges of the 2168 area, and will allow for ongoing commitment from Liverpool City Council to support the local community and service providers through the delivery of state of the art social infrastructure facilities, places and spaces that foster ownership and pride.

Understanding that Miller is the heart of service provision for the 2168 catchment, this future vision of Miller will ensure access to facilities is improved, public amenities are maintained and good quality of life outcomes for the community are achieved.

Connectivity
Productivity
Liveability
Sustainability



Vision

By 2040 Miller will be the heart of the 2168 community. A place centred around social wellbeing, the Social Infrastructure Masterplan will ensure a sustainable, liveable, resilient and socially cohesive community well into the future.

Designed to accommodate a diverse and growing community, the revitalised social infrastructure of Miller will attract investment, growth and economic development. Revitalised high quality social infrastructure in Miller will provide the building blocks to support the community as it grows into the future.

03
People of Miller

The suburb of Miller is rich in history, with the community having a strong connection to place and people. Miller plays an important role in the provision of social infrastructure for the broader 2168 community.

Provision of social infrastructure services and facilities in the suburb of Miller will help to increase health and wellbeing outcomes for people within the broader 2168 catchment.

Significant population growth is forecast for the Western City District. Pressures on existing facilities will be felt as the population grows and community needs change. There is an opportunity to ensure the development of Miller is managed in a socially sustainable way, delivered around a social infrastructure hub.

Forecasts for Miller

74.7%
population growth by 2036

5,682
people will reside in Miller by 2036

85 and over
will feature the greatest growth of all age groups

30%
of households in Miller are lone person households

Miller and the 2168 catchment are considered relatively **more disadvantaged** than the Liverpool LGA on the SEIFA Index of Relative Socio-Economic Disadvantage.

Miller and the 2168 catchment has a lower proportion of residents aged 15 and over who had **completed Year 12** (30.5% and 46.0% respectively) compared with Liverpool LGA (52.1%).

The 2168 catchment has a much higher proportion of households living in **social housing** (17.7%) compared with Liverpool LGA (7.2%).

Residents of the 2168 catchment are slightly more likely to speak a **language other than English** at home (57.7%) compared with Liverpool LGA as a whole (51.9%). 44.2% of residents speak a language other than English at home.

Significantly lower median weekly household income in Miller ($744) compared to the Liverpool LGA ($1,548). The 2168 catchment has a lower median weekly household income ($1,255).

Family size – count of all children

Families in Miller and the broader 2168 catchment tend to have more children than the average family in Liverpool LGA and Greater Sydney.

- Families with four or more children make up 13.5% of all families with children in Miller and 11.3% of families with children in the broader 2168 catchment. These proportions are higher than those of Liverpool LGA (8.2%) and Greater Sydney (5.1%).
- Families with three or more children make up 33.3% of all families with children in Miller and 30% of families with children in the broader 2168 catchment. These proportions are higher than those of Liverpool LGA (25.7%) and Greater Sydney (19.4%).

Aboriginal and Torres Strait Islander population

The proportion of Aboriginal and/or Torres Strait Islander residents in Miller is more than double the average for Liverpool LGA and Greater Sydney.

- Aboriginal and/or Torres Strait Islander people comprise higher proportions of residents in Miller (3.9%) and the 2168 catchment (2.5%) than in Liverpool LGA (1.5%) and Greater Sydney (1.5%).

Lone person households

Lone person households in Miller are slightly more likely to be male (52%) than female (48%).

- A slight majority of lone person households in Miller are male (52%). In the 2168 catchment and Liverpool LGA, males and females each comprise 50% of lone person households. This differs from Greater Sydney, where males only comprise 44% of lone person households.
- Single male households are more common among 25 – 59 year olds.
- Single female households are more common among those aged 60+ years.

Both male and female lone person households are much more concentrated in Miller than in the broader 2168 catchment, Liverpool LGA or Greater Sydney.

- Male lone person households make up 15.8% of all households in Miller, 8.2% in 2168, 7.3% in Liverpool LGA and 9.0% in Greater Sydney.. 10% of households in Miller are comprised of males aged 35 to 59 living alone. This is a substantial concentration when compared with Liverpool LGA (3.6% of households) and Greater Sydney (3.9%).
- Female lone person households make up 14.7% of all households in Miller, 8.1% in 2168, 7.4% in Liverpool LGA and 11.4% in Greater Sydney.

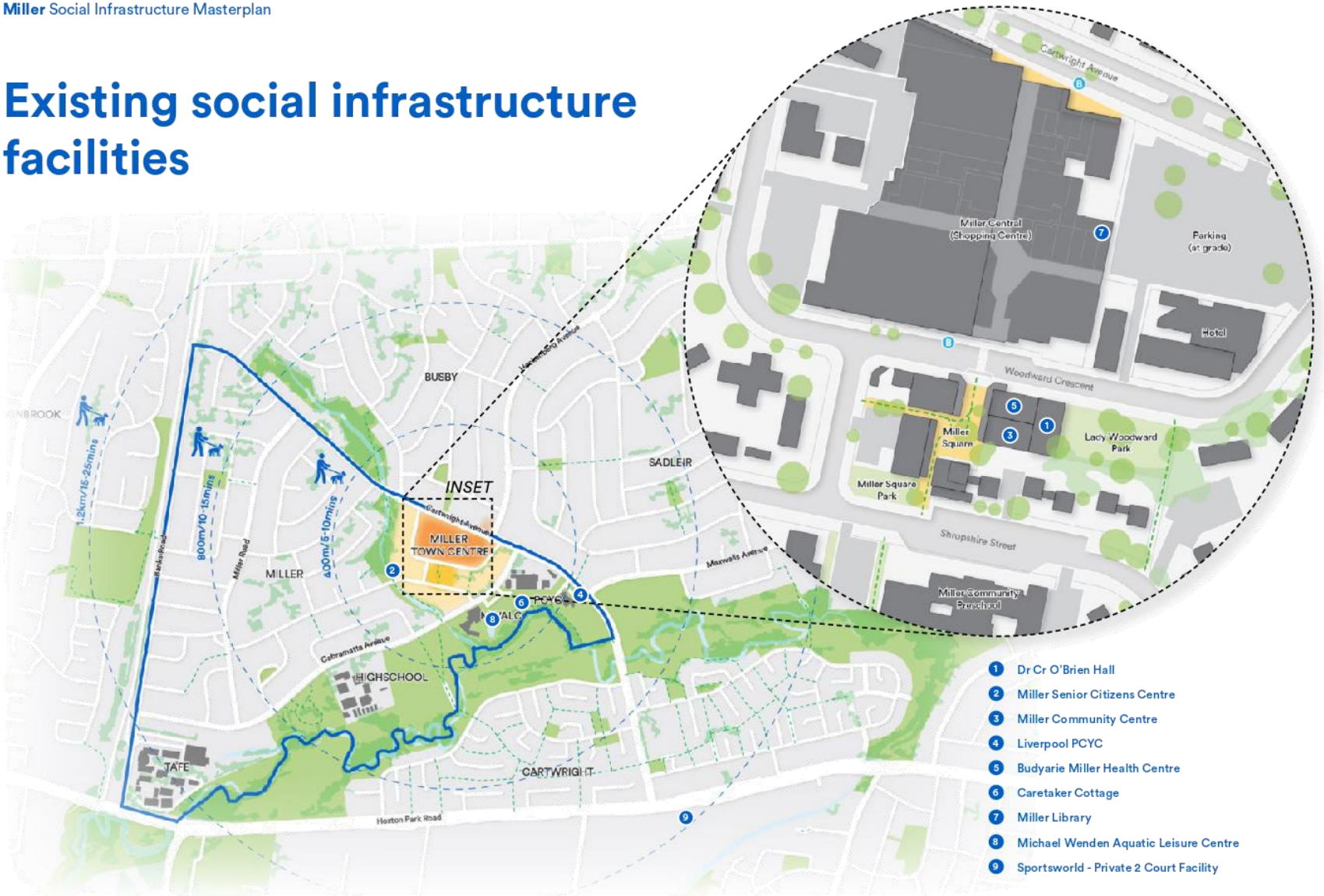
Adaptable, high quality and accessible social infrastructure is critical in supporting the demographic needs of the community. With many users of social infrastructure coming from both the Miller suburb and the wider 2168 postcode catchment, the following findings are useful to the consideration of social infrastructure needs.

Key considerations for the provision of social infrastructure in Miller are:

- The high proportion of lone person households indicates the possibilities of social isolation and loneliness. Future social infrastructure will play a vital role in supporting social sustainability and connecting people with services, groups and activities to foster social connectedness and social capital.
- Balancing the needs of older residents with the younger population is important to ensure multi-generational infrastructure provision, supporting equity of access.
- Affordable community services, accessible by all is a high priority to meet the needs of the population.
- The provision of jobs that social infrastructure can offer may support opportunities for education and increased skills, as well as reducing unemployment rates.

An assessment of the current supply of community facilities, open space and recreational facilities within Miller has been undertaken to inform the Masterplan recommendations. Consideration has been given to the location, distribution, accessibility and connectivity, usage and utilisation. Informed by a review of strategic policies, population analysis, and benchmarks for social infrastructure planning the review takes into account the suite of current facilities and services in and around Miller, reviewing the condition, quality and utilisation by service providers and the community. Broad and targeted stakeholder and community engagement has deepened the understanding, helping to shape the recommendations.

Existing social infrastructure facilities



04
Social infrastructure assessment

An assessment of the current supply of community facilities, open space and recreational facilities within Miller has been undertaken, with consideration of location and distribution, accessibility and connectivity, usage and utilisation. A detailed analysis of individual facilities has been undertaken and documented within the Miller Social Infrastructure Masterplan Analysis Report. Drawing on views expressed through consultation with stakeholders the strengths and opportunities of existing facilities has been considered.

The review of existing provision of community facilities in Miller has taken into account benchmarking guidelines, quantitative and qualitative assessment, to determine strategic and best practice principles in the assessment of facilities.

While benchmarks have been considered, relevant to this project is the unique character of the Miller population. The review takes into consideration community needs that may differ from the standard benchmarking tools, considered against quality and utilisation of facilities, population density and distribution of residents across geographic areas, as well as levels of disadvantage and unique community needs.

The central location of community facilities in Miller is a strength however, there is strong desire to reconsider the design and delivery of facilities and services. Technological enhancements will improve utilisation of facilities and spaces. Safety and security is a key issue with the standalone facilities and costs can be prohibitive in ensuring equal access for the community. There is a strong desire from the community to enhance the provision of library services in the area.

Key findings

Location and distribution

Community facilities in Miller are clustered in a relatively small area, within walking distance of each other and the Miller Town Centre.

The central, visible location of community facilities is a strength. The accessible location is necessary for the Miller community with proximity to footpaths, bike paths and bus stops an important priority.

Whilst accessible, the high number of standalone facilities is to be reconsidered. The clustering of facilities in a single area can help to catalyse connections and collaboration between service providers.

Accessibility and connectivity

Community facilities in Miller have varying levels of accessibility. Whilst generally provided in central locations, close to bus stops, the connections between standalone facilities are poorly lit, in need of maintenance upgrades, and lacking in shade. Some standalone facilities are isolated due to limited visual prominence.

Future facilities are to be walkable, within an environment that is well-lit and secure.

Facilities are to be redesigned to incorporate smart technology.

Designs of the future must ensure spaces cater for all physical accessibility needs as well as ensure participation in programs are not prohibitive in relation to costs for programs and use of spaces.

Usage and utlisation

Community facilities are currently used for a wide variety of activities, sports, gatherings, classes and events. In addition to the variety of playgroups exercise, dance and drama groups and language classes run from the facilities, spaces are also leased to community service providers as office and programming space.

Utilisation and usage varies significantly, with most facilities exclusively leased to community service providers for the provision of programs and office space. As a result spaces are not accessible to the broader community for casual bookings.

Some spaces are highly utilised while others are not, often due to the different approaches from the leaseholders of particular facilities.

The size and design of some spaces, in particular the Miller Library, limits the utilisation as they may not be appropriate for hosting a wide variety of activities.

Quantitative assessment

The quantitative assessment of community facilities identifies the following required to support forecast population growth within the 2168 catchment.

- One integrated multi-purpose community facility of at least 2,000sqm.
- Expansion of the existing library services to meet community needs. Recommended the library is relocated to integrate with other community facilities.
- To meet benchmarks for local community facilities in the catchment, upgrades and expansion of some facilities is required.

05
Review of open space and recreation

The assessment identified **32 sites totalling approximately 70ha of public open space**. However, the analysis found that of the **approximately 50% of the public open space is land with compromised public open space outcomes**. A majority **(81%) of public open space sites only have fair or poor passive surveillance** with limited street frontage.

Public open spaces need to provide a diversity of activities and settings that are well integrated, with activated street frontages to ensure positive and long-term outcomes. Importantly, access needs to be safe and appealing for all members of the community.

Activating street frontage to public open space means protecting and enhancing pedestrian and shared pathway networks to ensure visual access as well as physical access. it also means enhancing use with increased shade and expanding permeability into public open space along with more crossings and linkage across corridors such as Cabramatta Creek.

An assessment of existing public open space and recreation facilities has been undertaken based on a 1,200m catchment from the Miller Town Centre. This catchment area extends beyond Miller and into surrounding suburbs.

Key findings

Distribution and access

Equitable distribution ensures that open space is provided within a reasonable travel time from all residents. '*The ability of residents to gain access to public open space within an easy walk from home, workplaces, and schools is an important factor for quality of life. The geographic distribution of open space is a key access and equity issue for the community*'[1]

In the case of Miller Town Centre, while there is no major public open space integrated into the retail and services zone, there are a number of open space sites on the periphery with the closest being Lady Woodward Park at a walking distance of 80m.

Most residents within the 1,200m catchment area within walking access to public open space. However, the safety of some connections is a concern due to the small width and long nature of the laneways as well as a lack of surveillance.

Quality and surveillance

There was a mixed range of quality across the public open space network. Many open space sites contained good stands of mature natural vegetation and were well maintained. However, park infrastructure lacks consistency and has many ageing elements that require renewal.

Passive surveillance is one of the most important contributors to safety within public spaces. Perceptions of safety influence the nature and extent that people use spaces and places.

A majority (81%) of public open space sites have fair or poor passive surveillance with limited street frontage.

Diversity

Public open spaces need to provide a diversity of activities and settings that are integrated with activated street frontages to ensure positive and long-term outcomes.

Many public open space sites within and around Miller provide similar recreation offerings. The majority of playgrounds are similar in scale and type, and are poorly integrated with the surrounding landscape.

Redevelopment - Michael Wenden Aquatic Leisure Centre

Michael Wenden Aquatic Leisure Centre is a highly valued community facility. It services a broader catchment than Miller, with many users travelling up to 15 minutes to access the various facilities and services offered.

Many components of Michael Wenden Aquatic Leisure Centre are not meeting market needs and are coming to the end of their useable life. As such, it is recommended that a staged redevelopment be progressed to ensure long-term community health and wellbeing outcomes are achieved.

"Providing adequate quantities of open space based on demand should be understood in relation to the quality of the spaces provided. Quality is a key driver of both appreciation and use of public open space. The quality of design and ongoing maintenance and management is critical to attracting use and activating the open space network".[2]

1 GANSW Greener Places Design Guide Pg 17
2 GANSW Greener Places Design Guide Pg 19

06
Community engagement approach

Engagement with the community has helped to shape the development of this draft Masterplan. Engagement activities and communication tools were designed to be practical and collect meaningful feedback from community service providers and community members.

Engagement commenced in February 2020, and was soon impacted by COVID-19 social and physical distancing rules which limited our ability to meet and connect. To respond to COVID-19 an adapted engagement process was developed, and the engagement period was extended through to the end of May 2020.

55 people provided feedback.
Conversations were rich and deep, and reflected the diverse range of community needs, perceptions and aspirations.

Engagement included:

- **25 participants** in face to face meetings with Council Officers and the 2168 Community Forum (pre-COVID-19)
- **13 telephone interviews** with community service providers
- **17 responses** to the online survey
- **211 unique visitors** to the Liverpool Listens online forum
- **8,781 people reached** on social media, and 111 reactions, likes and shares
- **69 emails sent** to 2168 Forum to share with their networks.
- **A media release, council e-newsletter and posters** to raise awareness

Who we heard from?

Conversations with stakeholders were rich and deep, reflecting the diverse range of community needs, perceptions and aspirations, providing valuable insights. In depth discussions were held with:

- Liverpool City Council officers
- 2168 Community Forum'
- Centre for Health Equity Training Research and Evaluation
- CORE Community Services
- Exodus Foundation
- Evolve Housing
- Gooboora Aboriginal Men's Group (NSW Health, SWLHD)
- Hume Community Housing
- Liverpool PCYC
- Michael Wenden Aquatic Leisure Centre
- Miller Library
- New Horizons
- NSW Department of Communities and Justice
- TAFE Services, Miller and Liverpool
- Wesley Mission

What we heard...

The Miller community is strong and resilient, with pride in the history and diversity of the area.

Community members value and respect Miller as a local centre, its location and the multiple services available. The majority of existing users are from Miller or the 2168 area.

Local community organisations and service providers are highly valued and respected in the community, and play a critical role in creating a sense of community belonging.

Michael Wenden Aquatic Centre, Miller Library and Miller Community Centre are the most commonly used facilities, each being used for communities to connect, exercise, study or 'hang out'.

The majority of people would like to see upgrades and improvements to current community facilities in Miller. Facilities are considered to be aging, limited in space and size.

Stakeholders and the community aspire for social infrastructure that is:

Connected, the concept of a community hub or multi-purpose facility is well supported.

Inclusive, recognising space is required for the diverse community, whilst acknowledging certain groups have specific needs.

Varied, people like formal and informal spaces to connect, recreate and 'hang out'. The concept of having formal community meeting spaces and an informal 'community lounge' is supported.

Accessible, people want spaces to remain open longer and sought improved access for people with specific needs.

Affordable, free or cheap access to services, programs, facilities and space is important for the Miller community, and is seen as a barrier to existing use.

Activated, some community members referenced travelling outside of Miller to access services that are bigger and more activated. Safety is a concern for vulnerable community members.

Tech-savvy, includes access to Wi-Fi, computers, printers, copiers etc. Many Miller residents do not have access to these at home. Local organisations would like to see better integration of systems and supported shared resources.

Green, local parks were identified as important spaces for community and family connection. People want to see well-lit open space with seating, trees and play/exercise equipment.

07
The Masterplan

Masterplan Principles

Active streets & spaces

Provide a range of multi-functional and adaptable streets and spaces, allowing open and active place based experiences that respond to the character of Miller. Sharing of spaces for all user groups and service providers, creating active and efficient use of resources.

The co-location of community buildings, services and open space can provide improved accessibility, improved activation and use.

Community living room

Putting people first, the transformation of public spaces in Miller will be guided by a unique and unified design theme in the delivery of social infrastructure.

A suite of public domain furniture and objects will reflect the community aspirations of Miller. The community living room will provide a safe and integrated, technologically smart and aesthetically pleasing series of spaces for the community to gather and connect.

Connected & inclusive

A great strength of Miller is the local community network including dedicated service providers.

Social infrastructure is to be designed for everyone and be accessible to all, regardless of age, ability, socio-economic status or ethnicity.

Revitalised spaces and places will enable effective, high quality service delivery, building existing strengths and supporting the inclusive community.

Health & wellbeing for all

Population growth is supported by accessible, affordable and responsive social infrastructure.

Safety and security will be enhanced through a coordinated approach.

Convenient facilities, with enhanced connections will encourage play and exercise. Equitable access through distribution, design and management will encourage pride and enhanced community identity for Miller.

Strategic Opportunities

It is very important on a local scale to have connections to key destinations in the wider context. By using the existing pedestrian and cycle network and introducing new extended links to make the continuous connections possible. With the focus on safety by using clear visual landscape tree connections and in most cases adjoining the tree canopies to have an increased contribution to ecological value.

One of the key principles is to decrease the urban heat island effect by increasing tree canopy cover not only in Miller Square but also on the proposed wider connections.

Connecting to and from Miller Square into the wider cycle and pedestrian network will enhance social interaction between a wider age profile in the area. By creating recreational nodes along the pedestrian and cycle network that lives out towards the creek will create improved safety through passive surveillance.

Permeability into Miller Square is very important as well as the immediate connections to the shopping center creating a safer environment.

Legend

- Site Location
- Public Open Green Space
- Schools
- Miller Central Shopping Mall
- Existing Cycle/ Pedestrian Link
- Proposed Cycle/ Pedestrian Link
- Miller suburb area
- Local Proposed Connections
- Green streets linking to key destinations
- Key Corridor Connections
- Potential recreational green open space near creek corridor

Constraints

Inwardly facing typologies and spaces leading to poor passive surveillance and safety concerns

Existing layout, buildings and spaces discourages feelings of safety and security, with little activation of public space and inward facing typologies. Pockets within Miller feel unsafe contributed by forgotten and neglected interfaces.

Community facilities are scattered in separate buildings and locations

Dispersed buildings and spaces are not well integrated, nor easily identifiable, impacting accessibility and use.

Miller Square has fragmented ownership

The fragmented land ownership along side the diverse range of service providers operating within Miller creates difficulties in providing a coordinated approach to provision of social infrastructure.

Pedestrian and vehicular conflicts

The town centre has been planned to optimise car usage. At grade car parking dominates, creating pedestrian and vehicular conflicts.

Legibility of public domain and open space

Undefined and low quality space between buildings. Narrow pathways and poorly defined linkages lack legibility in a wider network of spaces. Some spaces are uninviting to informal recreation and social use.

MWALC is not meeting its full potential

The age, condition, size and configuration of facility components is limiting the Centre's capacity to meet community aquatic and recreation needs.

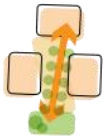
Opportunities

Active edges and spaces

Increased active frontages will enhance visible access, activity, and passive surveillance.

Consolidate multiple facilities into a unified community centre

Working with all land owners, develop a shared vision for Miller Square around an improved public domain and a purpose built community hub, enhancing the role and function of Miller Square.



Improved connections between places, spaces and facilities

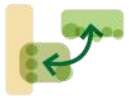
Apply a 'people first' approach and effectively integrate open space and facilities in Miller to improve safety, visual amenity, permeability and accessibility.

Use of residual land

Provide local embellishments and enhanced community garden opportunities, which establish local spaces with visual connections. Working with landowners, ensure future redevelopment of social housing is design led, resulting in optimal placemaking outcomes.

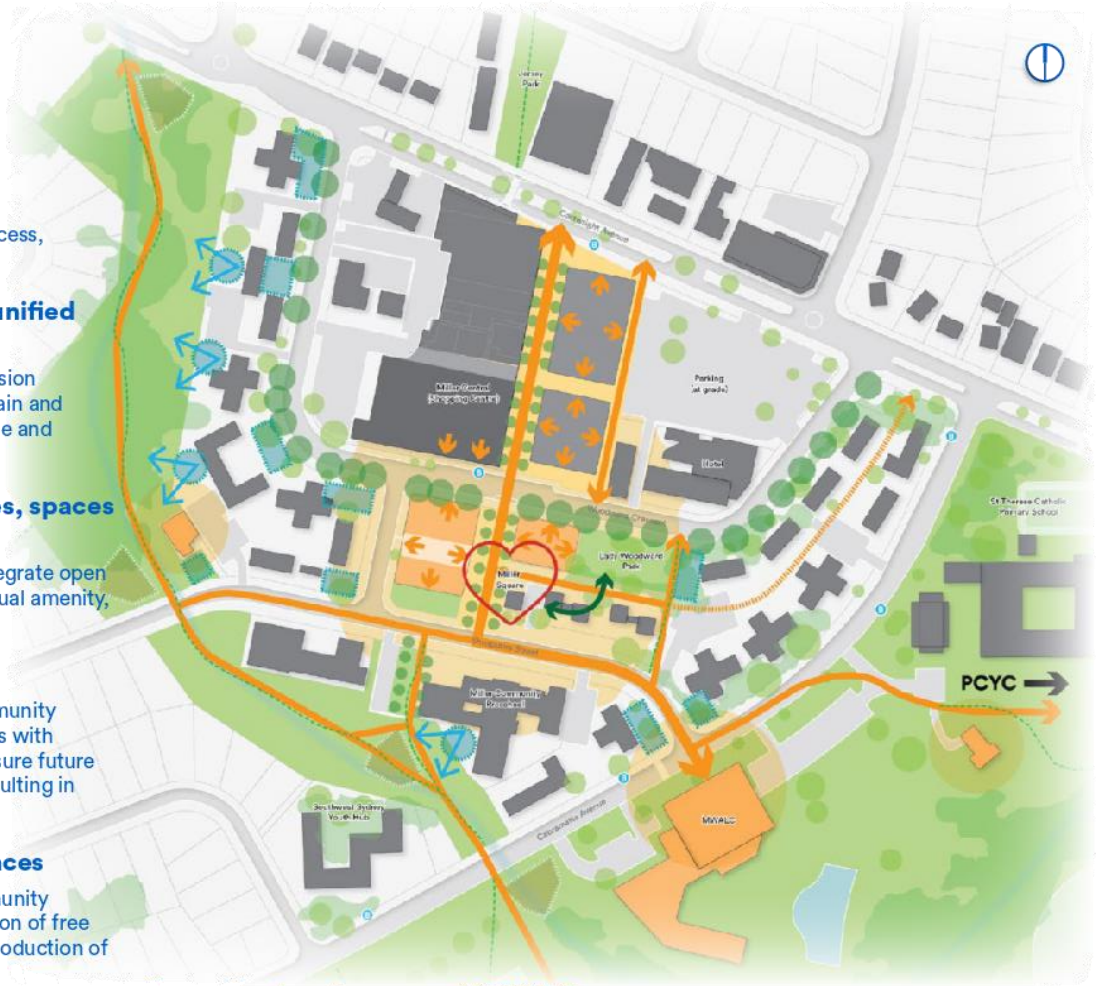
Series of well defined/programed spaces

A 'landscape first' approach to connect key community and recreation facilities is supported. Diversification of free outdoor opportunities is explored through the introduction of low maintenance park infrastructure.



Relocation of Lady Woodward Park

There is the opportunity to relocate Lady Woodward Park while retaining existing trees along the southern boundary. This will allow for greater activation in the heart of Miller.



Staged redevelopment of MWALC

There is an opportunity for a staged redevelopment to ensure long-term community health and wellbeing outcomes are achieved. The staged approach will seek to retain infrastructure that has been deemed to be in good or reasonable condition whilst providing new, well-integrated facilities that meet community demands and industry trends.

Precinct Masterplan

Legend

1. Envisioned Miller Shopping Centre with open and active edges
2. New proposed Miller Square
3. Creating recreational spaces that lives out onto the creek catering for all age groups
4. Proposed increase of urban tree canopy on precinct scale that connects and identifies key connection corridors
5a. Additional 2 indoor courts and new timber sprung floor to existing courts as part of stage 2 redevelopment of MWALC
5b. Future waterplay area / splash park and redevelopment of 50m pool under stage 2 works
6. Opportunity to create larger sport facility precinct. Investigate amenities and lighting upgrades in line with assess management plans.
7. Multi use area for community events
8. Screening planting of backyard fencing to limit graffiti at the north of Cartwright Ave and south of Shropshire St
9. Consolidate signage and upgrade playspace in line with assest management programs at the south of Cartwright Ave
10. Using a landscape first approach to create series of well defined spaces that are connected to key community and recreational facilities
11. Use residual land to provide local embellishments and enhanced community garden opportunities, and establishing local spaces for community to connect
12. Youth-focused spaced at McGirr Park. Opportunities for adventure play and obstacle play space under stage 2 works.
13. Demolish cottage and relocate service to Miller Square
14. Health and fitness Centre under stage 1 works. Opportunities for multipurpose rooms with carpark under.
15. Provide pathway and increase visibility through the park to improve a sense of safety for users
16. Proposed Carpark
17. Proposed program space
18. Stage 1 community hub and park
19. Stage 2 integrated square

<-> New well defined connections to the broader pedestrian / cycle network

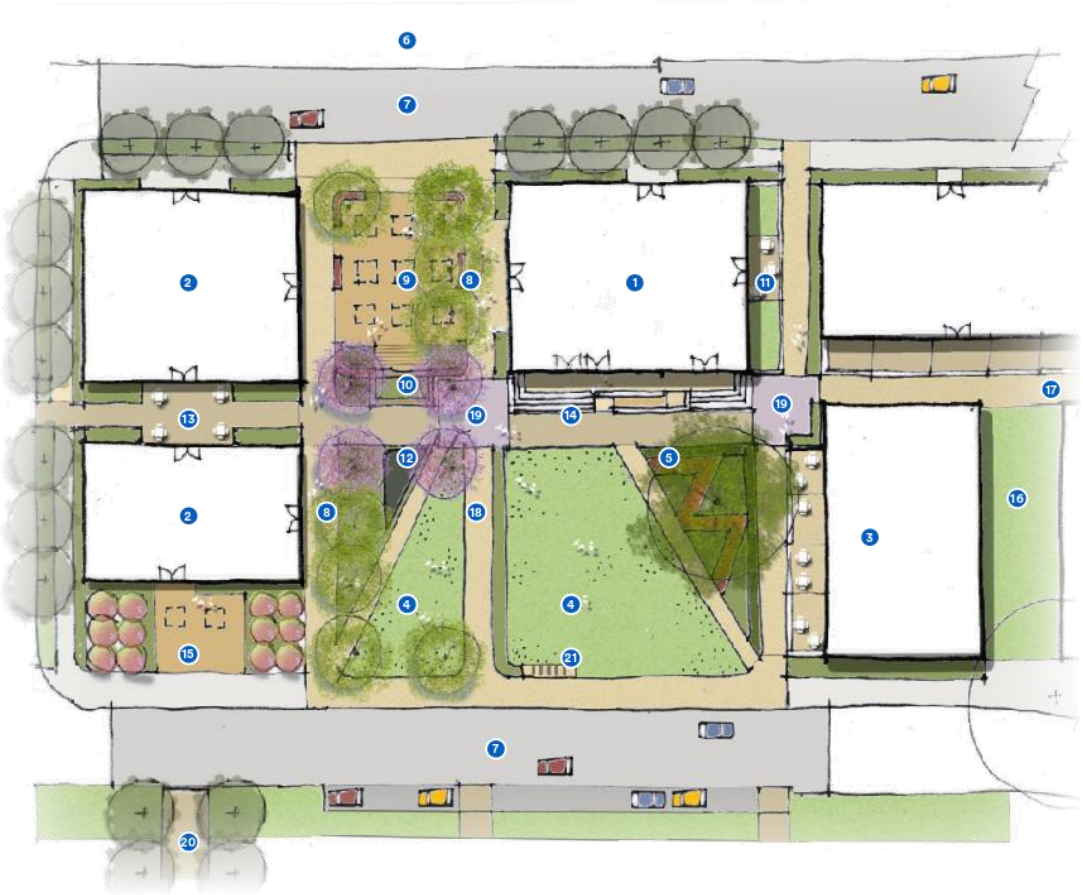
<-> New pedestrian orientated axis connection from Miller Shopping Centre to Miller Square. Focus on safety and visual connections with open and ease of accessibility.

<-> Key creek corridor connections

Miller Square Precinct

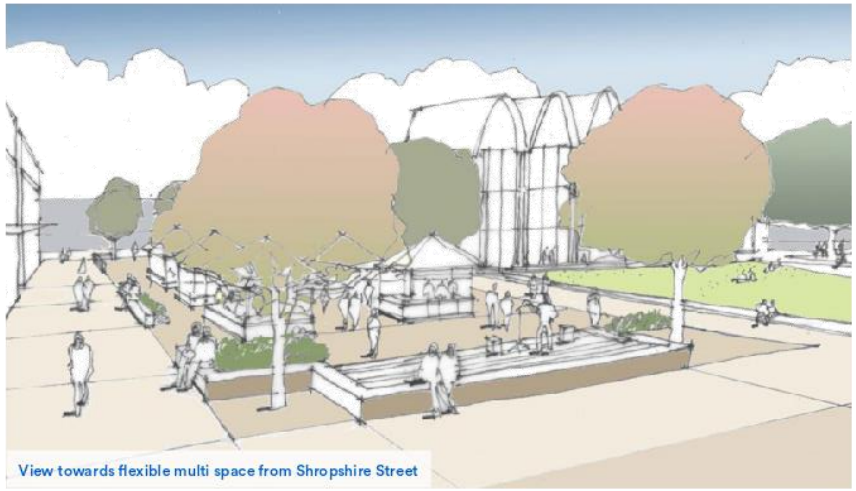
Legend

1. New Library with community facilities
2. Community Services
3. New Social Housing with creative hub spill out areas
4. Relocated central open park area
5. Multi-aged play ground / Seating around feature tree
6. Miller Shopping Centre
7. New pedestrian friendly space with raised crossing to Miller Square
8. New open and connected axis into Miller Square with boulevard of trees. Circulation open and clear visual connections with lighting.
9. Shared shaded seating zone with multi-purpose space / markets
10. Stage area
11. Break out space
12. New Shelter
13. Social corners / spill out areas with planting
14. Steps with ramp in front of Library not publicly accessible
15. Arrival park with recreational activities and accessible
16. Safe social housing recreational spaces
17. Existing trees to be retained
18. Planting and seating wall
19. Opportunity for public art or feature lighting
20. Using a landscape first approach to create series of well defined spaces that are connected to key community and recreational facilities
21. Potential bicycle location promoting active transport



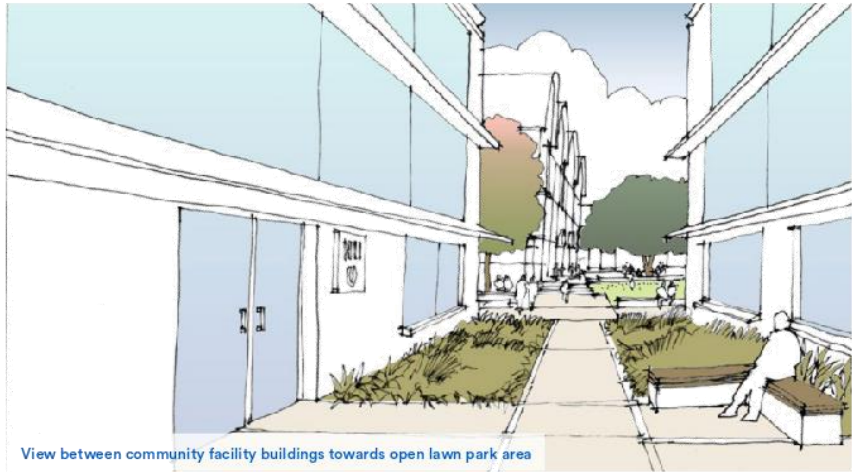
Perspectives

View across central open park area towards library from Shropshire Street



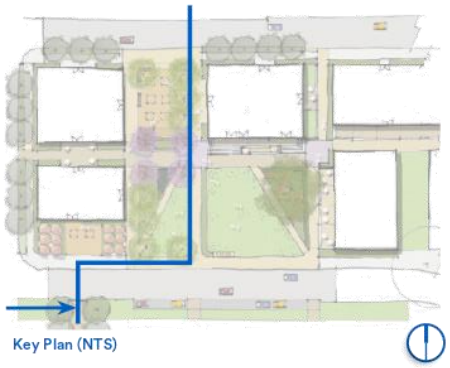
View towards flexible multi space from Shropshire Street

View from existing shopping center across Woodward Crescent towards Miller Square

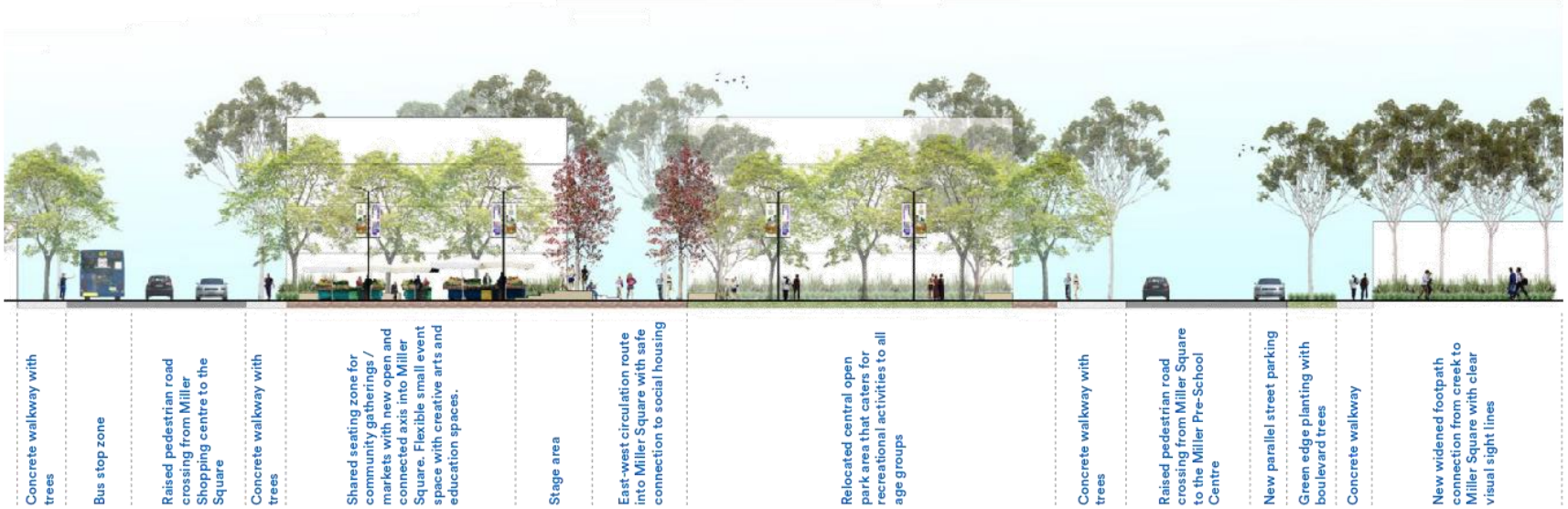


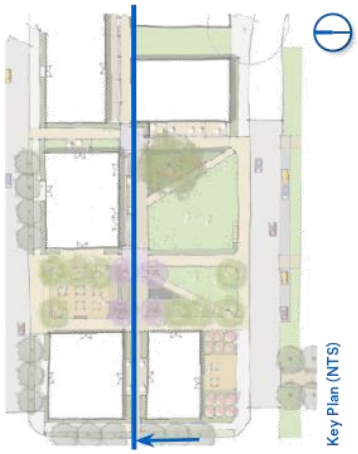
View between community facility buildings towards open lawn park area

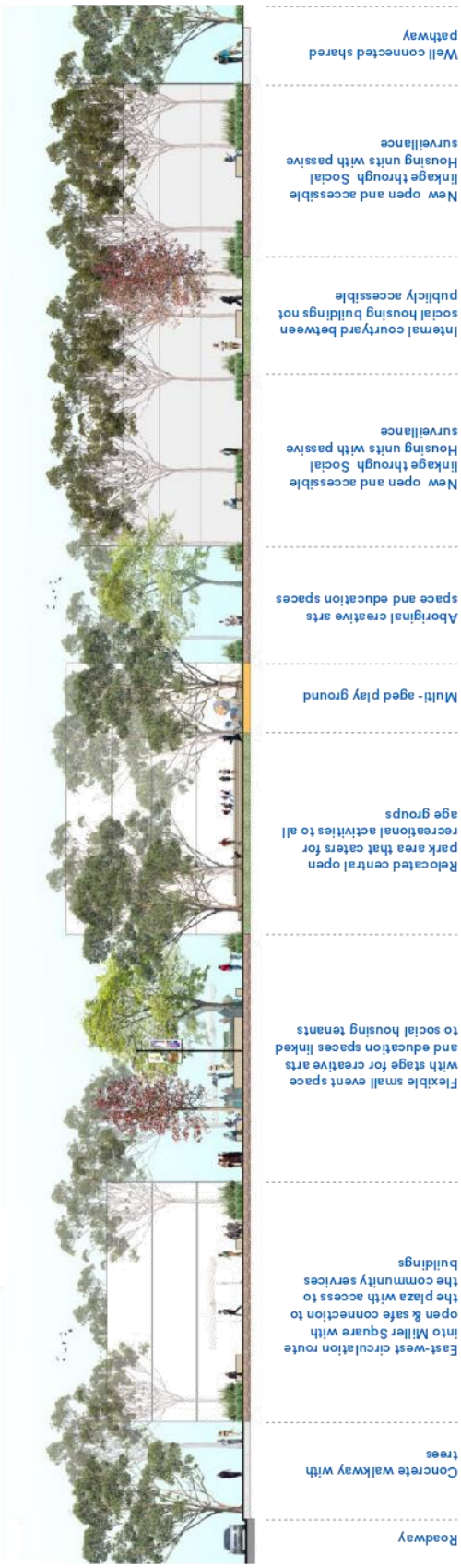
Sections



North-South




Key Plan (NTS)


Roadway
Concrete walkway with trees
East-west circulation route into Miller Square with open & safe connection to the plaza with access to the community services buildings
Flexible small event space with stage for creative arts and education spaces linked to social housing tenants
Relocated central open park area that caters for recreational activities to all age groups
Multi- aged play ground
Aboriginal creative arts space and education spaces
New open and accessible linkage through Social Housing units with passive surveillance
Internal courtyard between social housing buildings not publicly accessible
New open and accessible linkage through Social Housing units with passive surveillance
Well connected shared pathway

East-West

Precedents

Plaza space in front of library

Town centre open lawn area

Opportunities for aboriginal artworks

Town park with balance of hardscape and softscape

Pedestrian friendly environment with landscape and visual amenity

Flexible space for weekend market

Opportunities for creek corridor activation and connection

Maximising opportunities for winter sun and summer shade

Mini plaza with opportunities for socialising

Green link with canopy trees between spaces

Building frontage activation

Plaza with seating and market space opportunities

Playground opportunities

Landscape amenity with seat along the garden bed

Planting selection

Feature trees

Fraxinus raywoodii
Claret Ash

Pyrus calleryana 'Capital'
Ornamental Pear

Magnolia grandiflora 'Little Gem'
Little Gem' Southern Magnolia

Native trees

Tristaniopsis laurina
Water Gum

Corymbia maculata
Spotted Gum

Eucalyptus moluccana
Grey Box

Ornamental shrubs

Dodonea viscosa
Hopbush

Rhaphiolepsis indica 'Cosmic Pink'
Indian Hawthorn

Bursaria spiniosa
Australian Blackthorn

Westringia 'Wyn Gem'
Westringia Wynyabbie Gem

Creek planting

Carex appressa
Tall Sedge

Ficinia nodosa
Knobby Club Rush

Lomandra longifolia 'Nyalla'
Lomandra Nyalla

Juncus usitatus
Common Rush

Ornamental groundcovers/grasses

Cerastium tomentosum
Snow in Summer

Dianella tasmanica 'Blaze'
Dianella Blaze

Dichondra repens
Kidney Weed

Dietes grandiflora
Dietes Wild iris

Rhaphiolepsis indica 'Snow White'
Snow White

Pennisetum alopecuroides
'Pennstripe'
Pennstripe

Liriope muscari
'Dwarf'
Liriope Dwarf

Lomandra longifolia
'Tanika'
Lomandra Tanika

Themeda australi
Kangaroo Grass

Rhodanthe anthemoides
Paper Daisy

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08
Miller Square staging

1. Council Land

This option proposes redevelopment of Council land. Providing a new multi-purpose community centre with enhanced connectivity to Lady Woodward Park. Dr Cr O'Brien Hall is to be reimagined and repurposed, integrating a new library space. Activated edges create stronger links to broader social infrastructure in Miller.

GFA	2,123m² (estimated at 80% efficiency)
Miller Square	1,213m²* *Not including the area of Lady Woodward Park (1,260sqm)

2. Integrated Square

Working with NSW Health this option will see the delivery of upgraded community facility spaces connected by a revitalised Miller Square. Unlocking increased floor space this option provides opportunity to cater for long term population changes. Upgrades to the Woodward Crescent streetscape will support the revitalised Miller Square.

GFA	5,197m² (estimated at 80% efficiency) additional 3,074m² with NSW Health
Miller Square	1,413m²* additional 200m² *Not including the area of Lady Woodward Park (1,260sqm)

3. Integrated Square & Park - Final Masterplan

Miller Square is to be transformed into a linear pedestrian boulevard, supported by local street upgrades. Council in collaboration with NSW Health and NSW Land and Housing Corporation will support stronger connections between the community and users of Miller social infrastructure through the provision of a safer and activated Miller Square, relocating Lady Woodward park into a central location supported with new community facility buildings and revitalised residential dwellings.

GFA	5,437m² (estimated at 60-80% efficiency) additional 240m² with NSW Land and Housing
Miller Square	3,985m²* additional 2,572m² *Including the area of the relocated Lady Woodward Park

1. Council Land

This option proposes to develop a new multi-purpose community centre on council land. Dr Cr O'Brien Hall is to be reimagined and repurposed. A new library space is to be integrated within the revitalised centre. Stronger links to the open space network will be supported through activated edges and continuous frontages for Miller Square and Woodward Crescent. The object building, connected to Lady Woodward Park will enhance the community presence, maximise usage and improve the open space network.

The creation of a landmark facility will enhance the civic space. Opening up and activating the ground level space ensures the streets become safer for the community. Transparent design will ensure the street and shared spaces are negotiable to users.

The design is to be responsive to individual and cultural needs with the final design required to create functional, harmonious, and inspiring collection of spaces for the community to enjoy.

GFA	2,123m² (estimated at 80% efficiency)
Miller Square	1,213m²* *Not including the area of Lady Woodward Park (1,260sqm)


Surry Hills Library

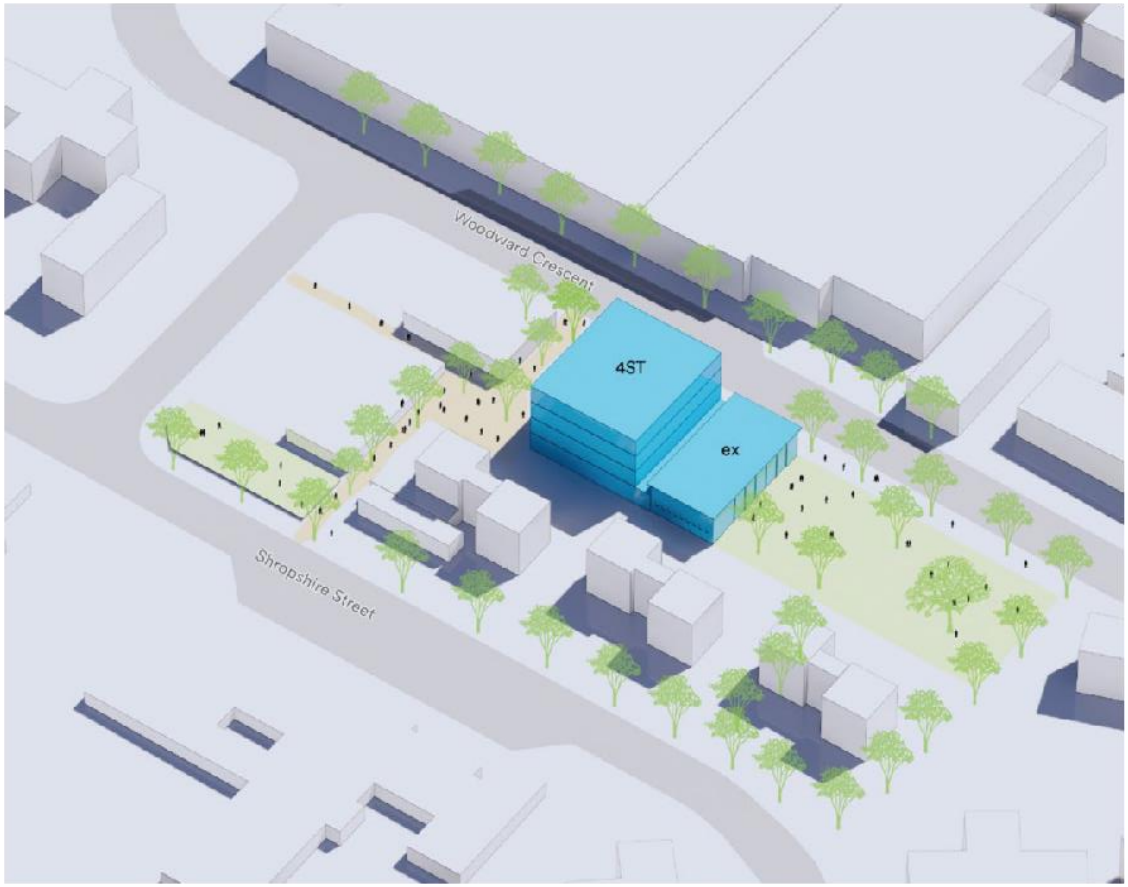

Joynton Avenue Creative Precinct


Surry Hills Library

Legend

Library, community lounges and community hall

Integrated multi-purpose facility
Library as focal point
Reimagined hall and creative arts space



The library acts as an "anchor" for the multi-purpose facility with the 4 level building integrated with surrounding public open space. Adaptable programming space to be provided to include library programs such as storytime, space for arts and creative programs, meeting room space for support services and referral services, as well as adaptable space for education and learning programs. Activated ground level will include café space with open entrance points and informal undercover meeting spaces. Facility uses include a new library (1,500sqm), two large adaptable meeting room spaces, new hall space with adjoining kitchen for education and event use, accessible bathroom facilities, space for Budyari Miller Health Centre, as well as a new music studio and arts and creative spaces.

Legend

- Library, community lounges and community hall

2. Integrated Square

Working with NSW Health this option will see the delivery of an enhanced Miller Square, with surrounding community facility buildings providing shape to a focal point of positive public space in Miller Square.

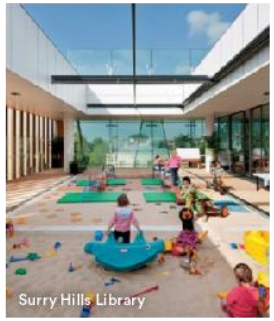
The three buildings will be woven together by a common and consistent thread, considering colour, design and usage. Continuous frontages and activation of uses at the ground level will create enhanced vibrancy and safety for the community. Consideration can be given to enhanced activation of the ground level space through facilitation of retail, focusing on café and restaurants, with enhanced outdoor dining experiences during both day and night.

Unlocking increased floor space this option provides opportunity to cater for long term population needs. Upgrades are to occur to Miller Square as well as the Woodward Crescent streetscape.

GFA	5,197m² (estimated at 80% efficiency) additional 3,074m² with NSW Health
Miller Square	1,413m²* additional 200m² *Not including the area of Lady Woodward Park (1,260sqm)


Marrickville Library and Pavilion


Juanita Nielsen Community Centre


Surry Hills Library

Legend

- Library, community lounges and community hall
- Health and wellness, inlcuding Aboriginal health services

Three interwoven buildings
Common landscaping thread
Flexible and adaptable public domain

Incorporate of Budyari Miller Community Health Centre on western side of Miller Square. Expansion of library spaces and community meeting room spaces to allow for large board room space. Incorporation of space for Sisters of Charity outreach program. Additional space provided for casual drop-in childcare services. Incorporation of space for specialist health services, such as dental facilities, health screening and blood pressure and diabetes testing. Dedicated manager to coordinate use and management of spaces throughout Miller Square.

Legend

- Library, community lounges and community hall
- Health and wellness, including Aboriginal health services

3. Integrated Square & Park - Final Master Plan

Working with NSW Health and NSW Land and Housing Corporation Miller Square will be transformed into a linear pedestrian boulevard. With the creation of strong north-south and east-west connections, the revitalised Square will provide a recognisable connection point to unify social infrastructure more broadly within Miller.

New community facility buildings are to be provided on all sides of Miller Square, woven by a common design thread and usage patterns.

The incorporation of NSW Land and Housing allows for the development of three new residential buildings, incorporating community facility space at the ground level, resulting in improved safety, security and connectivity throughout the site.

Upgrades are to occur to Lady Woodward Park which has been relocated, Miller Square and the Woodward Crescent and Shropshire streetscapes.

Sustainable design is a key objective with the overall building form and aesthetic to express key values of the Miller community.

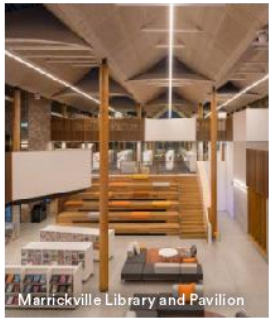
GFA	5,437m² (estimated at 60-80% efficiency) additional 240m² with NSW Land and Housing
Miller Square	3,985m²* additional 2,572m² *Including the area of the relocated Lady Woodward Park

Legend

- Library, community lounges and community hall
- Health and wellness, including Aboriginal health services
- Creative arts and education spaces
- Social housing


Health Sciences Educational Facility (HSEF), Curtin University


HSEF, Curtin University


Marrickville Library and Pavilion

Fully integrated Miller Square
Centralised public park
Expanded creative arts hub

Additional education program space, with expanded creative arts hub. Three unique zones. First zone for library, community lounges and community hall and offices. Second zone for health and wellness, including Aboriginal health services. Third zone for creative arts space and education spaces, linked to social housing tenants. All three zones unified through the reshaped public domain.

Legend

- Library, community lounges and community hall
- Health and wellness, including Aboriginal health services
- Creative arts and education spaces
- Social housing

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09
Action plan

To meet community needs now and in the future, a series of recommendations and actions have been proposed to ensure the future social infrastructure for Miller is an accessible and adaptable network of community facilities, providing innovative and sustainable spaces to support community wellbeing.Recommendations have been made based on short term (within two years) and long term (2+ years) prioritisation. Some actions are ongoing as strategies and frameworks are developed and undergo continual evaluation. The priorities are flexible with opportunity to review following Council assessment.

As the masterplan takes shape it is recommended that Liverpool City Council incorporate the following recommendations and actions into broader council strategies, to assist in the delivery of the key principles.

● Delivers on masterplan principle

Short term
Long term
Ongoing

Action		Project timing	Active streets and spaces	Community living room	Connected & inclusive	Health & wellbeing for all
Facilities and Spaces						
Strategy 1: Undertake short term upgrades to existing community facilities in Miller to improve their quality, capacity and utilisation.						
1.1	**Upgrade** Dr CR O'Brien Hall to improve utilisation and flexibility of existing space, and programmed use of space, opening and enhancing connection to adjoining open space.	Short term	●	○	●	●
1.2	**Upgrade** Caretaker Cottage and repurpose existing space to provide supplementary space that supports future activities associated with Michael Wenden Aquatic Centre.	Short term	●	○	●	○
1.3	**Retain and enhance** quality of Miller Senior Citizens Centre to increase utilisation by a broader range of community members, focus on local enhancement and improved amenity.	Short term	●	○	●	●
1.4	**Retain** Liverpool PCYC and explore opportunities to increase utilisation to be explored. Review of programs and activities and discussion of programming with Miller service providers.	Short term	○	○	●	●
1.5	In the longer term, **identify** opportunities to rationalise the following facilities to support the funding of a new integrated multipurpose facility: - Dr CR O'Brien Hall - Caretaker Cottage - Budyari Aboriginal Health Centre - Miller Community Centre	Long term	●	●	●	●

Action		Project timing				
Strategy 2: Plan, design and deliver a new integrated multi-purpose community facility in Miller, including a new library						
2.1	Work with NSW Health to undertake detailed design and planning for a new multi-purpose community facility, of at least 2,000sqm, within Miller Square, close to Miller Central Shopping Centre. The facility will include a diversity of spaces, including: - Space for unprogrammed activities, such as a community lounge that contains WiFi access, - Expanded library spaces, - Consultation rooms for service providers, - Larger flexible spaces for provision of education, cultural, creative and other community-based programs. These spaces can be hired and shared by different community service providers.	Short - Long term	●	●	●	●
2.2	**Deliver** a new library for Miller within the new multi-purpose facility in Miller Square. This facility will operate as a dynamic, cultural hub, with a flexible design to enable multi-purpose use. The co-location of the library floorspace and other spaces will operate as a community hub, connected to other social infrastructure and community-focused services in Miller.		○	○	●	●
2.3	**Develop** a library services plan for the relocated and expanded Miller Library.		●	●	●	●
2.4	**Formalise** agreement with agencies to share resources and collaborate funding opportunities.		○	○	●	●
2.5	**Undertake** comprehensive community consultation to review staging and outcomes.		○	○	●	○
Strategy 3: Effectively integrate social infrastructure within Miller, to improve visual amenity, permeability and accessibility.						
3.1	A public domain master plan is to be developed through the Liverpool Council City Design and Public Domain team.		●	●	●	●
3.2	Master planning of Miller Town Centre to include well integrated, high quality, well distributed open space including a district level town centre park. Master planning should **seek** to ensure open space areas are 'opened' up by increasing active frontages. Opportunities should increase visible access and passive surveillance through increased road frontage or expansion of adjacent public spaces.		●	●	○	○
3.3	**Develop** a 'landscape first' masterplan for the Cabramatta Creek Corridor that seeks to connect key community and recreation facilities and provides for safe and activated recreation opportunities. The masterplan for Cabramatta Creek is to increase connectivity between residential areas and green space through enhanced permeability of and through green spaces. The master plan will link and help deliver Council's Bike/Active Transport Plan as well as the NSW Government's priorities for establishing green networks – a "green grid" – throughout Sydney.	Short – long term	●	●	○	●
3.4	**Ensure** future site-based master or concept planning for public open space is undertaken through engagement with the local community and incorporates principles of Crime Prevention Through Environmental Design (CPTED) for improving safety in the built environment.		●	○	●	●
3.5	**Diversify** free outdoor recreation opportunities for young people through the introduction of low cost and low maintenance park infrastructure, such as multi-use outdoor courts, a parkour / calisthenics course etc.	Short – long term	○	●	●	●
Strategy 4: Identify increased play opportunities						
4.1	**Increase** the diversity of play opportunities, ensuring that adjacent play spaces offer different play experiences. The development of an overall local play strategy will guide replacements in line with asset renewal programs and direct a number of initiatives including consideration of "7 senses" play spaces, nature play, playable streets and play pathways.		●	●	●	●

Action		Project timing				
4.2	**Provide** a nature play focused space at the northern side of Bradshaw Park, Busby Road.		●	●	○	○
4.3	**Provide** a new play space at Johnson Park, Busby aimed at older children between 8-12 year olds.		●	●	○	○
4.4	**Provide** youth-focused space at McGirr Park. This could be a collaboration project with Liverpool PCYC and surrounding schools and include elements such as an obstacle style play space / course, bouldering, parkour and socialising space. This should only be progressed if strong levels of passive surveillance and integration can be achieved.		●	○	●	●
4.5	**Investigate** the provision of a new play space west of Cartwright Avenue and south of Cabramatta Creek. Sites could include Yampi Park or along Mawson Drive.		●	○	●	●
4.6	**Apply** the NSW 'Everyone Can Play' guidelines to the development of an overall strategy and in designing any new or refurbished play spaces.	Ongoing	●	●	●	●
4.7	**Review** play space distribution and provision across the study area to improve the focus on equitable distribution of quality play spaces and diversity of play. This could include the combination of two sites into a larger single site providing better access and more opportunity for community interaction. Where there are overlaps in access/ distribution, consider the reallocation of play spaces to areas with no access.		○	○	●	●
Strategy 5: Collaborative partnerships to revitalise assets in Miller to improve their quality, accessibility and activation.						
5.1	Work with NSW Land and Housing Corporation to **ensure** any redevelopment of social housing achieves optimal placemaking outcomes. Open space quality, safety, access and diversity should be a focal point of any social housing redevelopment, with high levels of passive surveillance to support activation and the optimum use of social infrastructure and services networks.		●	●	●	●
5.2	In collaboration with NSW Land and Housing Corporation, **identify** any opportunities to deliver new and enhanced social infrastructure through redevelopment of social housing assets in Miller.		●	○	●	●
5.3	Collaborate with NSW Health to **deliver** enhanced social infrastructure facilities and services in Miller Square that meet community needs.	Short – long term	○	○	●	●
5.4	Work with surrounding landowners and operators, in particular the Miller Central Shopping Centre, to **redefine** layout in order to create improvements to shared streets and spaces that holistically integrate with Miller Square.		●	●	○	○
Strategy 6: Improve wayfinding and accessibility throughout the Miller Town Centre						
6.1	**Improve** wayfinding throughout and around the Miller Town Centre. Enhance naming and identification of public spaces and consider ways to create a distinct character for each site through design features		●	●	○	○
6.2	**Audit** all pedestrian path networks for access compliance, and undertake improvements to ensure increased accessibility for those with mobility challenges.		●	●	○	○
6.3	**Develop** a Sustainable Urban Mobility Plan.		●	●	●	●

Action		Project timing				
Activation, programming and placemaking						
Strategy 7: Deliver new streetscapes, street furniture and spaces to enhance the character and activation of Miller						
7.1	**Introduce** a design palette that provides consistent park furniture that is robust and appealing. This palette is to reflect the character of Miller and the broader Liverpool community		●	●	○	○
Strategy 8: Implement CPTED principles to enhance safety outcomes						
8.1	**Ensure** future planning for open space, recreation and community facilities is undertaken through engagement with the local community and incorporates safer by design or Crime Prevention through Environmental Design (CPTED) principles.	Short – long term	○	○	○	●
8.2	In collaboration with key stakeholders, Council to lead the preparation of a Crime Prevention Strategy aimed to **improve** safety outcomes, prevent and minimise crime risks, and target local crime issues.		○	○	○	●
Strategy 9: Increase green infrastructure (including street trees and green screen planting) to reduce urban heat and enhance visual amenity.						
9.1	In collaboration with other agencies, **investigate** the need and opportunity for the establishment of a community garden.		●	○	●	●
9.2	**Develop** and implement a street tree strategy for Miller and surrounding suburbs to enhance visual amenity and reduce urban heat. This will also encourage greater walking and cycling.	Short – strategy development Long – implementation	●	○	○	●
9.3	**Identify** locations where green screen planting along fence boundaries will improve aesthetics without compromising passive surveillance. This will enhance visual amenity and reduce vandalism opportunities.		●	○	○	●
Strategy 10: Develop a placemaking policy and action plan with an emphasis on low cost, innovative actions						
10.1	**Implement** a placemaking plan that identifies planning and engagement activities for parts of Council and its partners responsible for the design and management of public places in Miller. Projects should be innovative, collaborative and encourage the application of healthy placemaking principles. Collaborative partnerships are to be explored between Council and local user groups and service providers, to create physical improvements to the public domain.	Short – long term – ongoing	●	○	●	●
10.2	**Prepare** a creative and cultural events calendar that supports the utilisation of public space for delivery of events and programs, building on the success of existing events, e.g. Miller Community Christmas Party.	Ongoing	○	○	●	●
10.3	Collaborate with relevant agencies and organisations to **develop** a range of public space activation activities. This could integrate community support programs such as youth intervention, community health, social enterprise into key locations such as Miller Park and Miller Square.		●	○	○	●
10.4	Seek to **introduce** new programs and activities that aim to increase use of open space. For example, establishing community walking groups, offering group fitness classes, investigating the establishment of a new Parkrun at Miller etc.		●	○	○	●
10.5	**Provide** a supportive community health and fitness program through encouraging fitness and exercise providers, such as personal trainers, to use specific open space areas at no or discounted rates.	Short – long term	●	○	○	●

Action		Project timing				
Strategy 11: Increase opportunities for community members in Miller to participate in sport and exercise						
11.1	**Seek** shared use or joint use opportunities with Miller Technology High School's double playing fields, depending on demand. Agreements may involve shared funding of amenities or other infrastructure to enable community use.		○	○	○	●
11.2	**Explore** opportunities with Little Athletics NSW and Athletics NSW to establish a new club at Edwin Wheeler Reserve where athletics infrastructure already exists.		○	○	○	●
11.3	**Increase** the capacity of Ron Darcy Reserve and McGirr Park Oval through the provision of new lighting that will enable longer hours of use.		○	○	○	●
11.4	**Upgrade** amenities in line with asset management plans and incorporate best practice design to include female friendly/gender neutral principles as well as state sporting organisation guidelines.		○	○	○	●
Monitoring and evaluation						
Strategy 12: Develop evaluation framework for implementation of Miller Social Infrastructure Masterplan.						
12.1	**Develop** an evaluation framework for the master plan to track its progress over time, through identifying key social outcomes, indicators and targets that will be applied to understand impacts of implementation.	Ongoing	●	●	●	●
12.2	Collaborate with service providers to **identify** evolving community needs and priorities, to inform the future design and delivery of social infrastructure in Miller.	Short – ongoing	○	○	●	○
Strategy 13: Explore opportunities to undertake HIA with NSW Health.						
13.1	**Evaluate** the likely health impacts of the Miller Social Infrastructure Masterplan in the community through undertaking a Health Impact Assessment in collaboration with NSW Health, with a view to maximising positive health outcomes over time.					

1.1 Site specific public open space opportunities

Site specific recommendations have been made based on short term (within two years) and long term (2 + years and ongoing) prioritisation. Prioritisation has been made based on desktop assessment that considered potential asset condition, opportunity impact and proximity to the Miller Town Centre. The priorities are flexible with opportunity to review following Council assessment.

Short term
Long term

Site Name	Suburb	Function	Hierarchy	Opportunities	Priority
Jersey Park	Busby	Park	Local	- Consolidate signage - Provide pathway to current alignment of desire line - Lift the canopy on the trees to adjoining property (west) to increase visibility through the park and improve a sense of safety for users - Replace wheelie bin with park furniture bin	Long term
Lady Woodward Park	Miller	Park	Local	- Enhance existing green screen planting - Provide greater spaces for socialising – seating and shelter - Consolidate signage - Replace wheelie bin with park furniture bin - Increase lighting	Short term
Miller Square Park	Miller	Park	Local	- Redesign to improve connectivity - Consider community focused activations (such as pop up events, artist workshops, etc)	Short term
Johnson Park	Busby	Park	Local	- North south footpath connection - Provision of local playground - Seating - Landscape enhancements - Public art opportunity	Short term
Ron Darcy Oval	Miller	Sportsground	District	- Consider joint use proposal with adjoining school to create larger sport facility precinct - Investigate amenities and lighting upgrades in line with asset management plans	Long term
Gabor Park	Sadleir	Park	Local	- Provide bollards and maintenance gate to prevent unauthorised access - Green screen planting along fence lines - Increase lighting - Lift the canopy on the trees along the western edge to increase visibility through the park and improve a sense of safety for users - Upgrade pathways and consider inclusion of public art / place making	Long term
Costa Park	Busby	Road Reserve	Local	- Re-align pram ramp on south side - Provide street tree planting - Landscape improvement with low shrub and garden species	Short term
McGirr Park	Cartwright	Sportsground	District	- Enhance capacity of sporting facilities though lighting and amenity upgrades - Provide youth focused play that is highly visible, activated and integrated with landscape and surrounding users such as the PCYC.	Short term

Site Name	Suburb	Function	Hierarchy	Opportunities	Priority
Bradshaw Park	Bradshaw	Bushland	Local	North of Cartwright Ave: - Playspace near Coolong Street. Nature focused - Green screen planting of backyard fencing to limit graffiti South of Cartwright Ave: - Consolidate signage - Upgrade playspace in line with asset management programs South of Shropshire Street: - Green screen planting	
Cabramatta Creek	Cartwright	Riparian Corridor	District	- Develop a masterplan that aligns with the Liverpool Bike Plan and the Government Architect's Green Grid - Masterplan is to connect key destinations and provide a range of outdoor recreation opportunities.	
Skillinger Park (East)	Busby	Park	Local	- Green screen planting along fence lines - Investigate pathway connecting Angus Place to Guernsey Street (topography may prohibit this) - Allow for pedestrian access whilst controlling prohibited use	
Skillinger Park (West)	Busby	Park	Local	- Green screen planting along fence lines - Provide pathway connecting Alexandria Place to Guernsey Street - Allow for pedestrian access whilst controlling prohibited use	
Edwin Wheeler Reserve	Sadleir	Sportsground	District	- Carpark - line marking and wheel stops - Landscaping around playground / enhance shading from western sun - Recreation trail along riparian corridor - Other facility requirements pending consultation with sport user groups	
Miller Park	Miller	Park	Neighbourhood	- Consider activation programs - Place making, public art and way finding to be considered	
Yampi Park	Cartwright	Park	Local	- Green screen planting - Bollards to prevent vehicular access - Consider local playground - Landscaping	
Morgan Park	Miller	Park	Local	- Remove play space due to proximity to Miller Park - Pathway and pram ramps - Landscaping including shade tree planting	
Charter Park	Sadleir	Park	Local	- Green screen planting - Landscaping - Replace and re-align pathway - Bollards to prevent vehicular access	

Site Name	Suburb	Function	Hierarchy	Opportunities	Priority
Knox Park	Miller	Park	Local	- Pathway connection to playspace - Remove chainwire and/or fence and replace with bollards - Landscaping / entry features - Green screen planting along southern border	
Eureka Crescent Rec. Reserve	Sadleir	Park	Local	- Recreation trail along riparian corridor - Review laneway to the east- potential closure - Street tree planting along Eureka Crescent	
Wianamatta Park (North)	Miller	Park	Local	- Green screen planting along eastern boundary - Plant larger trees as features elements of the reserve	
Ellis Park	Miller	Road Reserve	Local	- Landscaping / perimeter planting and bollards or sandstone blocks - Seating and shelter	
Wianamatta Park (South)	Miller	Park	Local	- Plant larger trees as features elements of the reserve	
Fassifern Park	Cartwright	Park	Local	- Plant larger trees as features elements of the reserve	
Formica Park	Busby	Park	Local	- Green screen planting - Upgrade playspace in line with asset management plan - Access control at Devon Place to prohibit illegal riding	
Wheat Park	Sadleir	Sportsground	District	- Planting along Celebration drive - Formalise car parking - Potential to consolidate built form (scout hall and amenities)	
Powell Park	Cartwright	Sportsground	District	- Re-align pathway away from Hoxton Park Road - Formalise entrance and carparking - Consolidate built form in consultation with user groups and in line with asset renewals. - Review use of skate facility. Consider re-location of skate facility to a more integrated site.	
Snowy Park	Heckenberg	Park	Local	- Landscape / boundary control between play and street - Upgrade playground with nature focused play opportunities - Green screen planting	
Hermitage Park	Cartwright	Park	Local	- Upgrade boundary fencing	
Cartwright Park	Cartwright	Park	Local	- Consolidate signage - Street tree planting	
Sadlier Park	Sadleir	Park	Local	- Green screen planting	

Site Name	Suburb	Function	Hierarchy	Opportunities	Priority
Gibbs Park	Sadleir	Park	Local	- Green screen planting - Increase lighting / relocate power pole - Replace footpath - Bollards to prevent illegal vehicle access	
Aubrey Keech Reserve	Hinchin-brook	Sportsground	District	- Retain and maintain	Ongoing

1.2 Michael Wenden Aquatic Leisure Centre Future Actions

Recommendation	Priority
Site Redevelopment	
Undertake a detailed feasibility study on the staged redevelopment of Michael Wenden Aquatic Leisure Centre. Proposed Stage 1 works would include new entrance/foyer/ reception, administration, indoor learn to swim, indoor program pool with associated spa and sauna, creche, café, health and fitness, multi-purpose rooms. Proposed Stage 2 works include replacement of the 50m pool and associated seating and shading, redevelopment and expansion of the waterplay area, improve amenity and offerings of the grassed areas, 2 additional indoor courts and potentially the provision of adventure slides. The feasibility study is to include concept plan preparation, financial modelling and relevant technical studies.	
Pending the outcome of the above and Council resolution, proceed to detailed business plan in line with NSW Treasury Guidelines and **undertake** community and stakeholder engagement.	
Develop a funding strategy for the implementation of the proposed staged redevelopment. This funding that could include development contributions, voluntary planning agreements, general Council budgets, state and federal government grants and partnership funding with government agencies such as Housing NSW as part of any future redevelopment of public housing in Miller and surrounding suburbs.	
Miller Town Centre	
Enhance connections between Miller Town Centre and Michael Wenden Aquatic Leisure Centre including consideration of way-finding signage. Key links for investigation are Woodward Crescent and the link through to Shropshire and Michael Wenden Aquatic Leisure Centre as well as Cabramatta Avenue and Cartwright Avenue.	
Relocate use of old caretakers building located between Michael Wenden Aquatic Leisure Centre and the PCYC. Demolish building to enhance future development opportunities of Michael Wenden Aquatic Leisure Centre and activation and enhancement of the OS corridor linking to the PCYC.	
Activate and improve connections between Michael Wenden Aquatic Leisure Centre and PCYC to provide enhanced integration of the two facilities into a more unified precinct. Connection enhancements to apply CPTED principles and increase design and landscape treatments so that the corridor acts as additional park space.	
Enhance the main entry to MWLC with the inclusion of public art, landscape features and a better sense of place and arrival to a key community facility.	
Partnerships and programming	
Work with the operating managers of Michael Wenden Aquatic Leisure Centre, PCYC and local service providers to **complete** business analysis of current aquatic and recreation service provision to ensure offerings are complementary/not competing. **Identify** gaps and opportunities for collaboration of services, particularly with PCYC and other youth/cultural non-profit services. **Formalise** joint marketing and cross promotion opportunities with PCYC ensuring complimentary services are provided.	
Ensure that centre management continues to provide for CALD groups and that marketing and communications consider the diverse local community with promotion material in Arabic and Vietnamese.	Ongoing
Council to work with centre managers to **investigate** ways of engaging local community use through reduced pricing, subsidised access or other mechanisms.	

Indicative cost estimates

In addition to the range of potential funding options, the draft masterplan report provides preliminary cost estimates of the delivery works. This is a snapshot of the cost estimates of the proposed social infrastructure improvements, included in the draft Masterplan.

Item	Cost $ (Excl GST)
Placemaking and Streets	5,356,000
Integrated Community Hub	37,139,000
Michael Wenden Aquatic & Leisure Centre (Stage 1 and Stage 2)	66,142,000
Parks	5,201,000
Sports and Improvements	5,431,000
Construction Cost (inclusive of Design Contingencies)	119,269,000
Estimated Total Construction Cost	**119,269,000**

The Draft Masterplan explores the possible options / sources available within the industry to fund the delivery of the draft Masterplan with funding and delivery analysis developed by the Institute for Public Policy and Governance (IPPG) UTS.

It is considered that the following budget provisions will need to be made to enable the necessary investigations, detailed designs and planning approvals to be completed.

Activity	Estimated Budget	Estimated Year/s
Site investigations and feasibility study	$400,000	2020/21
Detailed Design, environmental assessment and DA Preparation	dependent on staging scope	2021/22 and 2022/23
Construction and project management	$119,269,000	2023/24 to 2034/35
Estimated Total	$119,269,000 plus planning and DA costs	

Conclusion

The potential funding options analysis recommends a range of funding options specific to the Miller Social Infrastructure Masterplan. The estimated cost of the proposed facilities is estimated to be $119.3 M exclusive of site investigations, feasibility study, detailed design, environmental assessment and Development Application preparation.

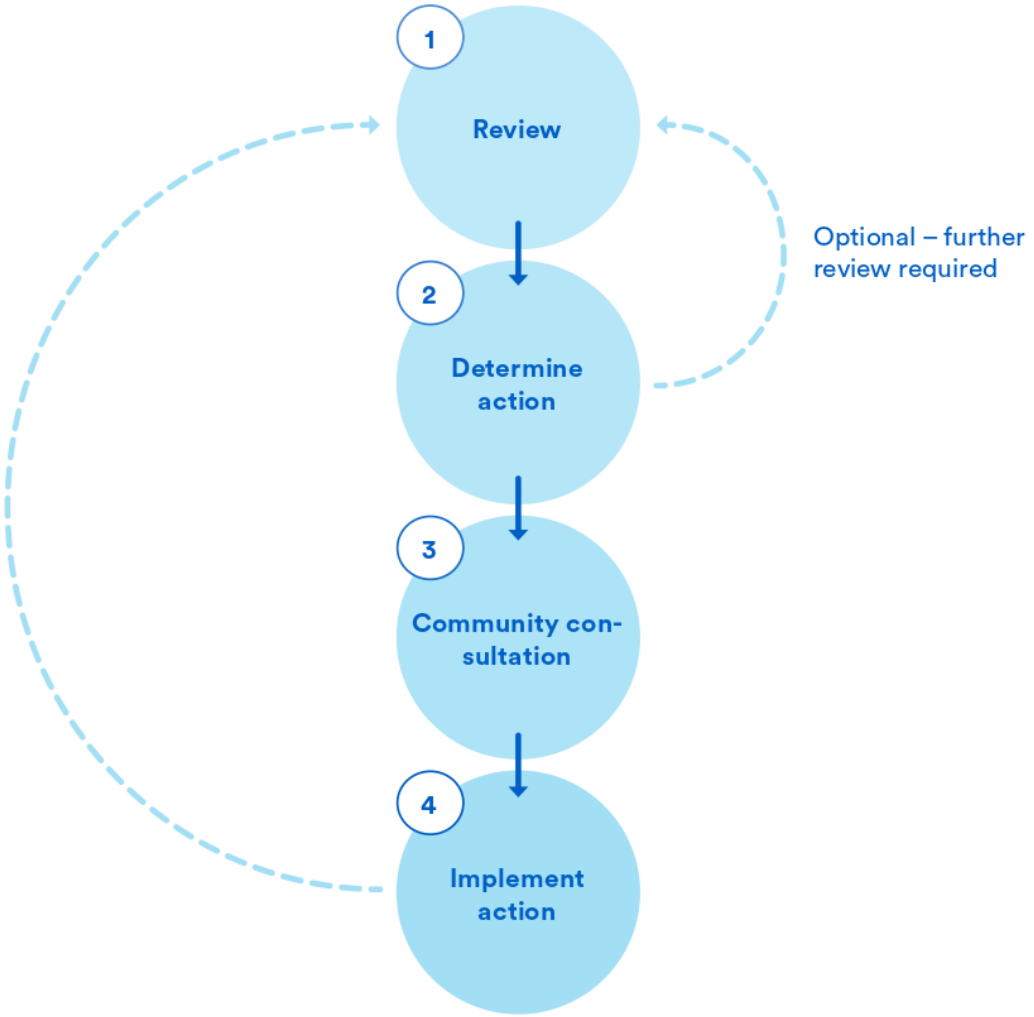
Council officers will continue to explore alternative funding options through State and Federal Government grants to commence the detailed deign process following Council's adoption of the draft Masterplan.

The Masterplan will require further implementation actions. They may include working with all landowners, developing a shared vision for Miller Square around an improved public domain and a purpose-built community hub and enhancing the role and function of Miller Square. Further improved connections between places, spaces and facilities, applying a people first' approach and effectively integrating open space and facilities in Miller to improve safety, visual amenity, permeability and accessibility are essential.

Indicative cost estimates provided Jason Flentjar, Turner & Townsend, August 2020

Implementation Framework

This implementation framework is intended to assist in guiding the design and delivery of programs and facilities across Miller. It is intended that the framework will allow an ongoing evidence base and community driven process for investment decisions in social infrastructure in Miller. Specifically relating to improvements, upgrades, repurposing or decommissioning.



Monitoring and evaluation

To ensure the delivery of revitalised social infrastructure achieves this vision a monitoring and evaluation framework is to be developed to ensure the Masterplan achieves a positive impact on community wellbeing, happiness, health and social outcomes for the current and future population of Miller.

The framework is to be designed in collaboration with key service providers and agencies, working together to define key social outcomes, indicators and targets.

By 2040 Miller will be the heart of the 2168 community. A place centred around social wellbeing, the social infrastructure masterplan will ensure a sustainable, liveable, resilient and socially cohesive community well into the future.

Endnotes

1 Teriman et al., 2010, page 3.
2 Teriman et al., 2010; Casey, 2005, *Establishing Standards for Social Infrastructure.*
3 Teriman et al., 2010; Casey, 2005; Liverpool City Council, 2018, *Community Facilities Strategy: A Blueprint for a Modern Network of Community Facilities.*
4 See for example: Teriman et al., 2010; Casey, 2005.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