

Independent Pricing and Regulatory Tribunal
New South Wales

Assessment of Camden Growth Areas Contributions Plan

Camden Council

**Final Report
Local Government**

May 2018

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ISBN 978-1-76049-229-8

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1 Executive summary

Local infrastructure contributions plans set out the local infrastructure required to meet the demand from new development, and the contributions a council can levy on developers to fund the necessary land and works.¹

IPART assesses contributions plans from councils that propose to levy, or seek funding from the NSW Government for, local infrastructure contributions above \$30,000 per lot or dwelling in identified greenfield areas and \$20,000 per dwelling in other areas.

The maximum contributions in the Camden Growth Areas Contributions Plan (CGA-CP) exceed the \$30,000 threshold that applies to the plan.

CGA-CP has been in force since March 2017. It estimates total costs of \$671.72 million for land, works and plan administration for delivering local infrastructure in two growth area precincts in the Camden Local Government Area: Leppington North and Leppington.

We recommend that before it applies for funding from the NSW Government under the Local Infrastructure Growth Scheme (LIGS), Camden Council reduces the cost of **works** for transport, stormwater and open space by a total of \$47.07 million (\$6.15 million in Leppington North and \$40.93 million in Leppington).² This overall reduction in the cost of works requires a corresponding reduction in **administrative costs** of \$0.71 million.

We also recommend that Camden Council reduces the cost of **land** in the plan by \$7.73 million (an increase of \$2.60 million in Leppington North and a reduction of \$10.33 million in Leppington), mostly to address issues with the way it has applied the method of estimating land acquisition costs.

1.1 What is CGA-CP?

Camden Council's CGA-CP currently applies to development in two separate precincts in Sydney's South West Growth Area (SWGA):

1. Leppington North Precinct (only that part which lies within the boundary of the Camden LGA)
2. Leppington Precinct.

As land in other precincts in the SWGA is rezoned for urban development, Camden Council proposes to amend CGA-CP to include a separate contributions arrangement for each newly-rezoned precinct or area.

¹ From 1 March 2018 the provisions applying to the contributions plans we assess are found in section 7.11 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

² The numbers do not add due to rounding.

Leppington North contains the Leppington railway station and Leppington Major Centre. The precinct was rezoned in 2013 to provide a mix of land uses including retail, commercial, light industrial uses, and medium density residential development. It is anticipated the existing residential population of 326 will grow to 5,142, a net increase of 4,816.

Leppington is expected to accommodate a total of 26,892 residents or a net increase of 25,919. Development will occur in five stages. Stage 1 of this precinct was rezoned in 2015. The Department of Planning and Environment (DPE) has advised precinct planning for two more stages will commence later in 2018.

The total cost of land and works in the plan is \$671.72 million: \$165.69 million in Leppington North and \$506.03 million in Leppington.

In the absence of any cap on the amount the council is able to levy, the contribution for a typical medium density residential development would be around \$40,788 per dwelling/lot in Leppington North and \$48,034 in Leppington. The contribution for a typical low density residential development would be around \$47,681 per dwelling/lot in Leppington North and \$65,048 in Leppington.

1.2 Why have we assessed CGA-CP?

IPART assesses contributions plans from councils that propose to levy contributions above \$30,000 per lot or dwelling in identified greenfield areas and \$20,000 per dwelling in other areas.

The maximum contributions in CGA-CP exceed the \$30,000 threshold that applies to the plan. For the council to levy contributions amounts above \$30,000 per lot or dwelling it will need to amend the plan in accordance with advice from the Minister for Planning (or the Minister's nominee). The Minister's advice will respond to the recommendations in this report.

When Camden Council adopts the amended plan it will be able to levy:

- ▼ up to \$35,000 per residential lot or dwelling until 30 June 2018
- ▼ up to \$40,000 per residential lot or dwelling between 1 July 2018 and 30 June 2019
- ▼ up to \$45,000 per residential lot or dwelling 1 July 2019 and 30 June 2020
- ▼ an uncapped amount from 1 July 2020.

It will also be eligible to apply to DPE for LIGS funding for the amount of any contribution otherwise payable which is above the applicable cap.

1.3 How have we assessed CGA-CP?

We have assessed CGA-CP against the criteria in DPE's *Local Infrastructure Contributions Practice Note*, published on 31 January 2018.³

³ Department of Planning and Environment, *Local Infrastructure Contributions Practice Note*, January 2018.

We have based our assessment on information in the plan, and further information provided by Camden Council officers. We also sought advice from a consultant, Axxess Advisory, on the reasonable cost of transport works in the plan.

1.4 What are our findings against the assessment criteria?

We found that most aspects of the plan meet the assessment criteria. Our main findings relate to the reasonable costs of works and land across all infrastructure categories and council's approach to apportionment of aspects of transport and stormwater costs.

1.4.1 Criterion 1: Essential Works

We are required to assess whether the infrastructure included in CGA-CP is on the Essential Works List (EWL) outlined in the Practice Note.

We found that all of the land, works and administrative costs in CGA-CP are on the EWL except for open space plans of management.

1.4.2 Criterion 2: Nexus

We are required to assess whether there is nexus between the demand arising from new development and the public amenities and services to be provided. Nexus ensures that the infrastructure included in the contributions plan is sufficient to meet, but not exceed, the need generated by the increase in demand from the new development.

We found that there is nexus between the demand arising from development of the Leppington North and Leppington precincts and all the land, works and administrative costs in CGA-CP.

Nexus was mostly established in technical studies prepared during the precinct planning process. For some transport items (local roads, local road creek crossings and some roundabouts) and stormwater items (a standalone biofilter, stabilisation of existing watercourses and some channels) we relied on supplementary information from the council to establish nexus.

For open space we noted that the rate of provision of 3.8ha/1,000 residents of Leppington North exceeds the commonly used benchmark of 2.83ha/1,000. However, we consider that this is not unreasonable when taking into account:

- ▼ Precinct planning for the combined Austral/Leppington North precincts (in Liverpool and Camden LGAs) established demand for open space facilities, with an overall rate of provision of 2.49ha/1,000. It is not appropriate to assess the rate of provision for Leppington North residents in isolation.
- ▼ The land zoned for open space makes use of the extensive creek networks which would not be suitable for other, more substantial types of use and development.

- ▼ Although it is not common for contributions plans to assume that non-residential development creates demand for open space, the technical studies and precinct planning accepted that non-residential development (retail, commercial and civic land uses in the Leppington Major Centre) will create a demand for open space.

1.4.3 Criterion 3: Reasonable costs

We are required to assess whether the contribution rates in the plan are based on reasonable estimates of the cost of land and works. This includes how the costs of land and each item of infrastructure are derived and the method applied to calculate the contribution rates and escalate them over time.

Cost of works

We found that the cost estimates for transport works in the plan are mostly reasonable, with the exception of shared pathway creek crossings where estimates are based on unrealistic assumptions.

For stormwater works, we found that the cost estimates in CGA-CP are high, arising from Camden Council's:

- ▼ application of a high "fill contingency" to all stormwater infrastructure,
- ▼ inconsistent application of costing sources and base rates with different inclusions, and
- ▼ application of an unreasonably high planting establishment and maintenance allowance for stormwater channels.

For open space embellishment, we found the costs are reasonable overall, except for the cost of landscaping maintenance and establishment. We also found that the costs of an amenities buildings in two District Parks may be higher than necessary.

In the council's costing of transport and stormwater works and open space embellishment we also found that it had made a number of calculation errors, which have a small overall impact on the total cost of works in the plan.

Cost of land

We found that the council's method for estimating the cost of land in CGA-CP is mostly reasonable, except that the land value categories are too broad, some of the land value categories are inconsistent across the two precincts, and council's application of the average values does not always reflect the underlying zoning or constraints affecting the land to be acquired. We also found that the cost of land for stormwater basin B19 in Leppington is not included in the plan.

Cost of administering the plan

To estimate plan preparation and administration costs, Camden Council used IPART's benchmark of an allowance equivalent to 1.5% of the cost of works in the plan.⁴ We consider this is reasonable.

⁴ IPART, *Local Infrastructure Benchmark Costs – Final Report*, April 2014.

Indexation of contribution rates

CGA-CP states that the council may index the works components of the contributions rates by the CPI and the land component of the contributions by a land value index (LVI) prepared by the council.

We found that escalation of the cost the works component of the contributions rates is consistent with the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) and is reasonable.⁵ We also found that the use of a LVI is reasonable, in principle, but we consider CGA-CP lacks sufficient detail about how and when the council calculates the LVI for each precinct, and when they apply. We are also concerned that the council does not publish the LVIs despite the plan stating that they would be on the council's website or in its Management Plan or both.

1.4.4 Criterion 4: Timeframe for delivery of infrastructure

We are required to assess whether the public amenities and public services in the plan can be provided within a reasonable timeframe.

CGA-CP indicates that infrastructure will be generally delivered "as and when surrounding development proceeds" or "as adjoining development occurs", with no specific timing being indicated.

We recognise the council has adopted this approach because it faces uncertainty about the pace and pattern of development in these precincts, given the fragmented ownership, owners' varied aspirations and the lack of a lead developer. However, consistent with our approach in previous assessments, we found that the council could include in CGA-CP more concrete indications of when infrastructure items are likely to be delivered.

1.4.5 Criterion 5: Apportionment

We are required to assess whether the contribution rates are based on a reasonable apportionment of costs.

Apportionment refers to the division of the costs equitably between all those who create the need for the infrastructure, including any existing population. While nexus is about establishing a relationship between the development and demand for infrastructure, apportionment is about quantifying the extent of the relationship by ensuring that costs are shared appropriately between and within developments. Full cost recovery from contributions should only occur where the infrastructure is provided to meet the demand arising from new development.

⁵ See cl 32(3)(b) of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

We found Camden Council's approach to apportionment of costs in CGA-CP to be reasonable except for these situations:

- ▼ The inclusion of only some collector roads in Leppington North in CGA-CP is inequitable because it imposes different costs on developments adjoining collector roads within the same precinct.
- ▼ The approach to apportionment of stormwater costs in Leppington North should reflect the applicable Development Control Plan's additional stormwater management requirements for non-residential developments in the precinct.

CGA-CP is the first plan we have reviewed that apportions a significant amount of open space to non-residential development. The council applied the same rate of provision in Leppington North as applies across the whole Austral/Leppington North precinct to determine the amount of land residents need (ie, 66% of the total). The remainder was then allocated to non-residential development. We found this method is reasonable and reflects the particular circumstances of Leppington North.

1.4.6 Criterion 6: Community consultation

We are required to assess whether the council has conducted appropriate community liaison and publicity in preparing the contributions plan. We found that the Camden Council's consultation in preparing CGA-CP was appropriate.

1.4.7 Criterion 7: Other matters

We are required to assess whether the plan complies with other matters we consider relevant. In this context we found that CGA-CP generally complies with the requirements of the EP&A Regulation, but recommend that the council reviews the plan to ensure that the costs reported in the Main Document are consistent with the costs reported in the Technical Document, and to provide a table of indicative contribution rates for a range of dwelling types in the plan itself, as well as in its supporting work schedules.

1.5 What have we recommended and what is the impact?

We have prioritised our recommendations for CGA-CP. We consider Camden Council should address the first tranche of recommendations ('priority recommendations') before it applies for LIGS funding, and the second tranche of recommendations before January 2020.

We expect that the council could address the priority recommendations quickly and without needing to seek external advice from consultants.

The second tranche of recommendations may require the council to revise infrastructure strategies and/or seek external advice. In some cases, the council may reasonably reintroduce some of the costs removed in the first tranche of recommendations.

In total we make 34 recommendations as a result of our assessment. Nineteen of these are recommendations that we consider the council should address before it applies for LIGS

funding. Fourteen are recommendations that we consider the council should address before January 2020. The remaining recommendation is for the council to address each year.

We have estimated the impact of most of the priority recommendations on the total cost of works and indicative residential contributions. We are unable to estimate the impact of our recommendation regarding the apportionment of stormwater costs in Leppington North.

1.5.1 Our recommendations reduce the total cost of land, works and administration

Our priority recommendations reduce the total costs of land, works and administration in Leppington North by \$3.64 million and Leppington by \$51.73 million, as shown in Table 1.1 and Table 1.2.

Table 1.1 Summary of recommendations – Leppington North (\$Dec2016)

	Cost in plan	IPART recommended adjustment	IPART assessed reasonable costs
Transport works	34,218,364		
Correct indexation of unit rates		58,073	
Reduce cost for shared pathway creek crossing		-126,956	
Correct calculation errors		1,234,334	
Total		1,165,451	35,383,816
Stormwater works	22,539,469		
Reduce biofilters cost		-35,244	
Reduce channel costs		-812,736	
Remove 25% fill contingency		-3,524,186	
Total		-4,372,166	18,167,303
Open space embellishment	22,121,626		
Remove cost of plans of management		-111,011	
Remove cost of maintenance and establishment		-2,828,313	
Total		-2,939,324	19,182,301
Land costs	85,631,035		
Adopt revised land costs		2,600,000	
Total		2,600,000	88,231,035
Administration costs	1,183,192	-92,191	1,091,001
Total works	78,879,459	-6,146,039	72,733,420
Total land	85,631,035	2,600,000	88,231,035
Total land, works and administration	165,693,686	-3,638,229	162,055,457

Note: Columns do not add due to rounding.

Source: CGA-CP Technical Document, Appendix A.3 and IPART calculations

Table 1.2 Summary of recommendations – Leppington (\$Dec2016)

	Cost in plan	IPART recommended adjustment	IPART assessed reasonable costs
Transport works	103,240,052		
Correct indexation of unit rates		423,219	
Reduce cost for shared pathway creek crossing		-3,322,254	
Total		-2,899,035	100,341,016
Stormwater works	83,239,382		
Remove planting allowance		-8,010,023	
Apply correct basin rates		-3,836,517	
Adjust embedded biofilter costs		-1,207,062	
Remove GPT costs from embedded biofilters		-207,900	
Correct indexation error for channels		221,159	
Remove planting allowance for channels		-2,157,069	
Remove 25% fill contingency		-13,187,507	
Total		-28,384,919	54,854,463
Open space embellishment	67,624,259		
Remove cost of plans of management		-214,000	
Remove cost of maintenance and establishment		-8,712,702	
Correct calculation errors		-716,740	
Total		-9,643,442	57,980,817
Land costs	248,114,087		
Adopt revised land costs		-10,184,652	
Total		-10,184,652	237,929,435
Administration costs	3,813,168	-615,524	3,197,644
Total works	254,103,693	-40,927,396	213,176,296
Total land	248,114,087	-10,184,652	237,929,435
Total land, works and administration	506,030,947	-51,727,572	454,303,376

Note: Columns do not add due to rounding.

Source: CGA-CP Technical Document, Appendix B.3 and IPART calculations.

1.5.2 Our recommendations reduce contribution rates

Table 1.3 shows the impact of our priority recommendations on indicative residential contribution rates in CGA-CP. The final impact on contribution rates will depend on Camden Council's adjustment to total costs in the plan.

Table 1.3 Indicative residential contribution rates – Leppington North (\$Dec2016)

Type of development	Density (dwellings per ha)	Occupancy rate per dwelling	Contribution amount in plan	Contribution amount – IPART assessed reasonable cost
Low density dwelling	25	3.4	47,681	46,527
Secondary dwelling >60m ² GFA	25	3.4	47,681	46,527
Medium Density dwelling	25	2.6	40,788	39,826
Secondary dwelling <=60m ² GFA	25	2.6	40,788	39,826
High density dwelling	40	1.8	27,000	26,357
Seniors living dwelling	25	1.5	31,309	30,611

Note: The indicative contribution rates in the last column as based on the recommended adjustments to the costs of land and infrastructure in CGA-CP specified in Table 1.1. GFA refers to Gross Floor Area.

Source: CGA-CP Main Document, Table 2 and Appendix A Leppington North contribution rates and IPART calculations

Table 1.4 Indicative residential contribution rates – Leppington (\$Dec2016)

Type of development	Density (dwellings per ha)	Occupancy rate per dwelling	Contribution amount in plan	Contribution amount – IPART assessed reasonable cost
Low density dwelling	18	3.4	65,048	58,542
Medium Density dwelling	25	2.6	48,034	43,254
Secondary dwelling <=60m ² GFA	25	2.6	48,034	43,254
High density dwelling	40	1.8	31,402	28,304
Seniors living dwelling	25	1.5	39,354	35,269

Note: The indicative contribution rates in the last column as based on the recommended adjustments to the costs of land and infrastructure in CGA-CP specified in Table 1.2.

Note: Columns do not add due to rounding. GFA refers to Gross Floor Area.

Source: CGA-CP Main Document, Table 2 and Appendix B Leppington contribution rates and IPART calculations.

1.6 List of recommendations

Below is a list of all of our recommendations for CGA-CP. Appendix A lists the recommendations by priority.

Transport

- 1 Before applying for LIGS funding, Camden Council correct calculation errors for Intersection IN2 and Electrical Service Relocations ES2. This would increase transport works costs by \$1,234,334. 33
- 2 Before applying for LIGS funding, Camden Council adjust for correct indexation of local and collector roads, T-intersections and signalised intersections. This would increase transport works costs by \$481,292. 33

3	Before applying for LIGS funding, Camden Council reduce cost estimates for shared pathway creek crossings by \$3,449,210 as an interim measure until the council reviews the costing method for these items.	33
4	Before January 2020, Camden Council:	33
	– review the costing methodology for shared pathway creek crossings to ensure the costs reflect the size of crossings and bridges that are being provided in CGA-CP	33
	– consider adopting a culvert-based approach for shared pathway creek crossings, where appropriate, to reduce costs.	33
5	Before January 2020, Camden Council review the inclusions for all transport infrastructure cost estimates to ensure the base rates used to estimate costs reflect the work that is required to deliver the proposed infrastructure.	33
6	Before January 2020, Camden Council consider applying the more cost-reflective <i>ABS Producer Price Index (Road and Bridge Construction) NSW</i> instead of the <i>Consumer Price Index (All Groups) Sydney</i> to index the estimated cost of transport works to the base period of the plan.	34
7	Before January 2020, Camden Council review the delivery of collector roads in Leppington North to ensure a consistent approach to the delivery of all collector roads.	38

Stormwater management

8	Before applying for LIGS funding, Camden Council remove the 25% fill contingency allowance for stormwater works. This would reduce stormwater works costs by \$16,711,693.	46
9	Before applying for LIGS funding, Camden Council remove the planting establishment and maintenance allowance from basin costs in Leppington. This would reduce basin costs in Leppington by \$8,010,023.	46
10	Before applying for LIGS funding, Camden Council apply the correct Type A basin rate to basins B2, B4, B8 and B9 in Leppington. This would reduce basin costs in Leppington by \$3,836,517.	46
11	Before applying for LIGS funding, Camden Council adjust the costs of embedded biofilters in Leppington. This would reduce biofilter costs in Leppington by \$1,207,062.	46
12	Before applying for LIGS funding, Camden Council remove the cost of GPTs from standalone biofilters in Leppington. This would reduce biofilter costs in Leppington by \$207,900.	46
13	Before applying for LIGS funding, Camden Council recalculate the cost of biofilter BA1 in Leppington North. This would reduce biofilter costs in Leppington North by \$35,244.	46
14	Before applying for LIGS funding, Camden Council remove the planting establishment and maintenance allowance from channel costs in Leppington North (\$812,736) and	

	Leppington (\$2,157,069). This would reduce stormwater works costs by a total of \$2,969,805.	46
15	Before applying for LIGS funding, Camden Council correct the indexation error for channel rates in Leppington. This would increase channel costs in Leppington by \$221,159.	46
16	Before January 2020, Camden Council:	46
	– review the cost of spreading or removing material excavated for stormwater works	46
	– review the cost of planting establishment and maintenance for basins and channels	46
	– review the cost estimates for all stormwater infrastructure to ensure they are consistent with the current stormwater management strategies for the precincts and the design of each component.	46
17	Before January 2020, Camden Council consider applying the more cost-reflective <i>ABS Producer Price Index (Road and Bridge Construction) NSW</i> instead of the <i>Consumer Price Index (All Groups) Sydney</i> to index the estimated cost of stormwater works to the base period of the plan.	46
18	Before applying for LIGS funding, Camden Council review and amend its approach to apportionment of stormwater costs in Leppington North to reflect the Liverpool Growth Centre Precinct Development Control Plan’s different stormwater management requirements for developments in the precinct.	53

Open space

19	Before applying for LIGS funding, Camden Council remove the cost of plans of management for the reserves in each precinct. This would reduce open space embellishment costs by \$111,011 in Leppington North and \$214,000 in Leppington.	56
20	Before applying for LIGS funding, Camden Council remove the 15% allowance for maintenance and establishment from the cost of all parks in Leppington North Precinct (an amount of \$2,828,313) and Leppington Precinct (an amount of \$8,712,702) and re-calculate it based on the cost of soft landscaping only.	62
21	Before applying for LIGS funding, Camden Council correct calculation errors for the costs of local parks LP20 and LP21, and channel parks CP12, CP13, CP14, CP15 in Leppington, and reduce the costs in the plan by \$716,740.	62
22	Before January 2020 Camden Council:	62
	– revise the costs of the amenities buildings in DP1 Leppington North and DP1 Leppington so that they are commensurate with meeting the needs of users of those parks	62
	– consider applying the more cost-reflective <i>ABS Producer Price Index (Non-Residential Building Construction) NSW</i> instead of the <i>Consumer Price Index (All</i>	

Groups) Sydney to index the estimated cost of open space embellishment to the base period of the plan. 62

Plan preparation and administration

23 Before applying for LIGS funding, Camden Council adjust the cost of plan administration so that it is 1.5% of the cost of works in each precinct, (an estimated \$92,191 in Leppington North and \$615,524 in Leppington). 74

Cross category considerations

24 Before applying for LIGS funding, Camden Council reduce the cost of land in CGA-CP by \$9,100,000 (\$2,600,000 increase in Leppington North and \$11,700,000 decrease in Leppington) to reflect updated unit cost rates provided by MJ Davis. 77

25 Before January 2020, Camden Council review: 77

- its land value classifications to ensure they accurately reflect the expected land uses in the precincts and the category names are consistent across the precincts 77
- its application of average values to land in CGA-CP to ensure the average values reflect the underlying zonings and constraints on the land. 77

26 Before applying for LIGS funding, Camden Council include the cost of land for Basin B19 in Leppington. This would increase the cost by \$1,370,264. 77

27 Before applying for LIGS funding, Camden Council correct calculation errors for the cost of land for the regional community facility in Leppington. This would increase the cost by \$145,084. 77

28 Before January 2020, Camden Council: 83

- provide more information in CGA-CP about how it calculates the Land Value Index for Leppington North and the Land Value Index for Leppington, or 83
- publish on its website a policy on how it calculates land value indexes for local infrastructure contributions plans. 83

29 Before January 2020, Camden Council include in CGA-CP a statement identifying when the Land Value Index for Leppington North and the Land Value Index for Leppington will be applied to the land component of the contributions rates. 83

30 Each year, Camden Council publish the Land Value Index for Leppington North and the Land Value Index for Leppington on its website. 83

31 Before January 2020, Camden Council review timeframes and establish priorities for delivering infrastructure in CGA-CP. 85



Other matters

- | | | |
|----|---|----|
| 32 | Before January 2020, Camden Council ensure that the costs reported in the CGA-CP Main Document are consistent with the costs reported in the Technical Document. | 87 |
| 33 | Before January 2020, Camden Council include in CGA-CP a table of Indicative contribution rates for a range of dwelling types. | 88 |
| 34 | Before January 2020, Camden Council identify whether there are any beneficiaries of the Crown development outside the plan's catchment area and, if practical, recover a proportionate share of the costs of the local infrastructure attributed to the Crown development from these beneficiaries (eg, via rates) and amend the contributions rates in CGA-CP accordingly. | 90 |

2 Our assessment approach

Local infrastructure contributions plans set out the local infrastructure required to meet the demand from new development, and the contributions a council can levy on developers to fund the necessary land and works.

IPART assesses contributions plans from councils that propose to levy contributions above \$30,000 per lot or dwelling in identified greenfield areas and \$20,000 per dwelling in other areas.

An IPART-reviewed contributions plan entitles the council to levy:

- ▼ for specified transition areas, up to a capped amount (currently \$35,000 in greenfield areas and \$25,000 elsewhere) and apply for Local Infrastructure Growth Scheme (LIGS) funding for the amount of any contribution which is above the cap, and
- ▼ for other areas, the full contribution amount.

The maximum contributions in CGA-CP exceed the \$30,000 threshold that applies to the plan. The plan is for a transition area and the council intends to apply for LIGS funding.

2.1 Camden Council submitted the plan to IPART in June 2017

Camden Council submitted the *Camden Growth Areas Contribution Plan (CGA-CP)* to IPART for assessment in June 2017. IPART's assessment of the plan was formally on hold for a period of three months to allow the council to provide additional information.

2.2 Our terms of reference are issued by the Premier

IPART's assessment functions for local infrastructure contributions plans are based on terms of reference issued by the Premier under section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992*. The terms of reference and delegation are in Appendix B.

2.3 We assessed CGA-CP against criteria in the Practice Note

We have assessed CGA-CP against the criteria in DPE's *Local Infrastructure Contributions Practice Note*, published on 31 January 2018.⁶ These criteria are set out in Box 2.1.

The 2018 Practice Note replaces the 2014 *Revised Local Development Contributions Practice Note for the assessment of Local Contributions Plans by IPART*. It describes which plans councils should submit to IPART, consistent with the policy changes announced in June 2017 and the

⁶ Department of Planning and Environment, *Local Infrastructure Contributions Practice Note*, January 2018.

Minister's s94E Direction of 28 July 2017.⁷ The assessment criteria for our review remain unchanged since the 2014 Practice Note.

Box 2.1 Contributions plan assessment criteria

IPART assesses contributions plans in accordance with the criteria set out in the Department of Planning and Environment's Practice Note. The criteria require us to assess whether:

1. the public amenities and public services in the plan are on the **essential works list**
2. the proposed public amenities and public services are reasonable in terms of **nexus**
3. the proposed development contribution is based on a **reasonable estimate of the cost** of the proposed public amenities and public services
4. the proposed public amenities and public services can be provided within a **reasonable timeframe**
5. the proposed development contribution is based on a **reasonable apportionment** of costs
6. the council has conducted **appropriate community liaison and publicity** in preparing the contributions plan, and
7. the plan complies with **other matters** IPART considers relevant.

Note: Nexus ensures that there is a connection between the land and facilities in a contributions plan and the demand for them arising from the additional population as a result of the new development.

2.4 We consulted with Camden Council

In the early stages of our assessment, the Delegated Committee and the IPART Secretariat met with council officers who provided an introduction to the plan, and undertook a site visit to Leppington North and Leppington precincts. We have also based our assessment of CGA-CP on information provided by Camden Council officers in responses to several information requests, and during on-site discussions.

At our request, Camden Council obtained further advice from its external valuer on updated average land value rates for certain categories of land to facilitate our assessment of the plan.

Camden Council officers provided comments on a draft of this report, which we considered in finalising our assessment.

2.5 We engaged a consultant for advice on transport costs

To assist with our assessment of the reasonableness of cost estimates for transport works in the plan, we engaged an independent transport engineering consultant, Axess Advisory Pty Ltd. The consultant's report is in Appendix E of this report.

⁷ From 1 March 2018 the provisions applying to Ministerial Directions concerning contributions plans are in section 7.17 of the *Environmental Planning and Assessment Act 1979*.

2.6 We have prioritised our recommendations for the council

We have prioritised our recommendations for CGA-CP. We consider Camden Council should address the first tranche of recommendations ('priority recommendations') before it applies for LIGS funding, and the second tranche of recommendations before January 2020. This would enable the council to finalise the plan prior to July 2020 when all caps on the contributions will be removed.

By 2020 the council could also know the outcome of several reviews of planning controls, (discussed in section 3.3.3 of this report) that will affect some of the plan's underlying assumptions about land use and dwelling yields.

We expect that the council could address the priority recommendations quickly and without needing to seek external advice from consultants. The recommendations in this group reduce costs in most cases.

The second tranche of recommendations may require the council to revise infrastructure strategies and/or seek external advice. In some cases, it may reasonably reintroduce some of the costs removed in the first tranche of recommendations. The council may choose to address the second tranche of recommendations well before January 2020.

2.7 The Minister will consider our recommendations

We have provided a copy of this report to the Minister for Planning, DPE and Camden Council. The report is also available on IPART's website.

The Minister will consider our report and the Minister (or Minister's nominee) will advise the council of any required amendments to the contributions plan. This advice will be published on DPE's website.

The council must then make any required amendments before it levies any contribution above \$30,000 per residential lot or dwelling or applies for LIGS funding.

When Camden Council adopts the amended plan it will be able to levy:

- ▼ up to \$35,000 per residential lot or dwelling until 30 June 2018
- ▼ up to \$40,000 per residential lot or dwelling between 1 July 2018 and 30 June 2019
- ▼ up to \$45,000 per residential lot or dwelling between 1 July 2019 and 30 June 2020, and
- ▼ an uncapped amount from 1 July 2020.

It will also be eligible to apply to DPE for LIGS funding for the amount of any contribution otherwise payable which is above the applicable cap.

3 Overview of Camden Growth Areas Contributions Plan

CGA-CP applies to the part of Leppington North Precinct which is within the Camden local government area (LGA), and the Leppington Precinct. Both areas are located within Sydney's South West Growth Area (SWGA).⁸

The Leppington North Precinct was rezoned for urban development in 2013. It will accommodate most of the Leppington Major Centre (which will be the main civic, retail and commercial hub for precincts in the South West and Western Sydney Growth Areas), employment land and medium density residential development. Projections are for around 4,800 new residents and a capacity for employment of up to 13,000 jobs.

The Leppington Precinct will accommodate predominantly low density residential development, and is projected to accommodate almost 26,000 new residents. An estimated 7,750 of those will be in Stage 1, the only part of the precinct rezoned to date.

Camden Council estimates total costs for infrastructure in both precincts of around \$670.62 million (\$165.69 million in Leppington North and \$504.93 million in Leppington).

3.1 Status of CGA-CP

Camden Council adopted CGA-CP on 28 February 2017, and it came into effect on 15 March 2017. The plan comprises a Main Document and a Technical Document.

CGA-CP repeals *Camden Section 94 Contributions Plan (Leppington North Precinct)* and the *Camden Contributions Plan 2011* no longer applies to land within CGA-CP catchments.

3.2 Catchment area of CGA-CP

CGA-CP applies to development in two separate precincts in the SWGA:

1. Leppington North Precinct (only that part which lies within the boundary of the Camden LGA)⁹
2. Leppington Precinct.

The location of the precincts is shown in the context of the SWGA in Figure 3.1. As land in other precincts in the SWGA is rezoned for urban development, Camden Council plans to

⁸ SWGA consists of the southernmost 11 of the 18 precincts of the original South West Growth Centre. The SWGA incorporates precincts in three local government areas: Camden, Campbelltown and Liverpool (Austral and Leppington North). The other precincts now lie within the Western Sydney Airport Growth Area.

⁹ The remainder of the Leppington North Precinct is in the Liverpool LGA. Liverpool City Council has a separate contributions plan for the Austral and Leppington North precincts.

amend CGA-CP to include a separate contributions arrangement for each newly-rezoned precinct or area.¹⁰

The net developable areas (NDA) of the Leppington North and Leppington catchments are 224.77 hectares and 436.67 hectares respectively. (See Table 3.1 which notes where the gross area in Leppington is adjusted to reflect constraints on potential development).

In Leppington, the council made adjustments to the gross area of some Low Density Residential land to reflect constraints due to transmission easements, and to the gross area of E4 Environmental Living due to its lower development potential.

The council's calculation of NDA does not include land set aside for public infrastructure. It excludes land for public schools in Leppington and 13.5 hectares of land zoned B4 Mixed Use in Leppington North which will accommodate a TAFE college campus, regional health care centre and a cultural/community centre.¹¹

Table 3.1 Net developable area – Leppington North and Leppington precincts (ha)

Land use (zoning or anticipated zoning)	Leppington North	Leppington (adjusted)
R2 Low Density Residential		381.68
R2 Low Density Residential with easement		11.57 ^a
R3 Medium Density Residential	67.06	36.39
E4 Environmental Living		2.21 ^b
B4 Mixed Use	17.41	
B2 Local Centre		4.81
B3 Commercial	21.89	
B7 Business Park	68.57	
B5 Business Development	0.89	
IN2 Light Industrial	48.95	
TOTAL	224.77	436.67

^a The NDA has been adjusted to reflect the impact of the easement which will reduce the number of dwellings per hectare from 18 to 10. (Leppington Work Schedule Tab NDA and population Row 5.)

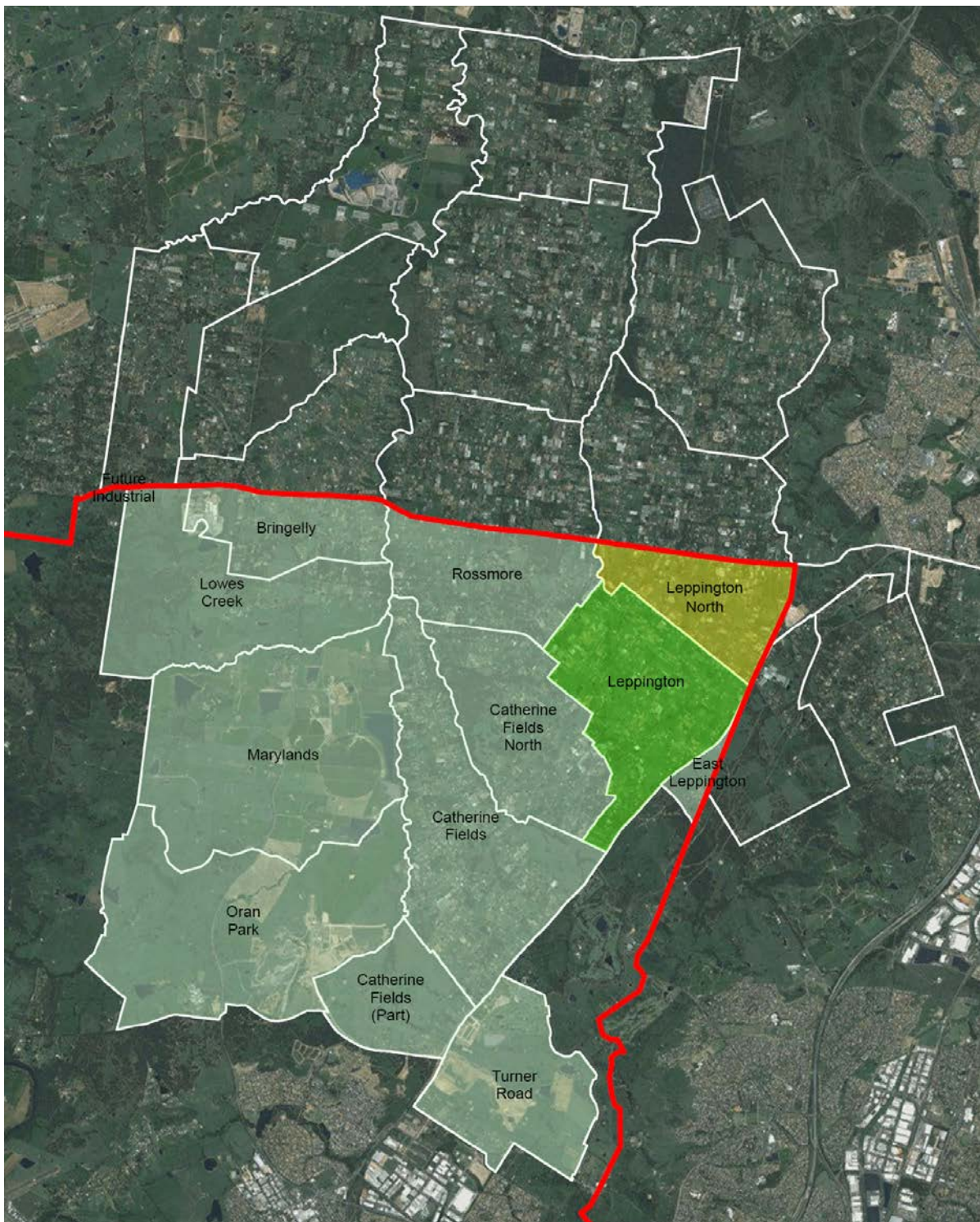
^b The NDA has been adjusted to ensure that each detached dwelling in this zone is charged traffic and transport and water cycle management contributions at the same rate as each detached dwelling in the R2 Low Density Residential zone.

Source: CGA-CP Technical Document, pp 4 and 48.

¹⁰ CGA-CP Main Document, p 2.

¹¹ CGA-CP Main Document, pp 9 and 28 and CGA-CP Technical Document, sections A.1.2 and B.1.2, pp 4 and 47.

Figure 3.1 Location of the Leppington North (Camden) and Leppington precincts



Source: CGA-CP Main Document, p 1.

3.3 Development in the Leppington North and Leppington precincts

The predominant land use in both precincts at present is rural and rural residential development with some small-scale industry, mainly agricultural.

The entire Leppington North Precinct was rezoned for urban development in 2013. Only Stage 1 of the Leppington Precinct has been rezoned. When the plan was submitted to IPART for assessment, the council had issued only a limited number of development consents requiring payment of contributions within the precincts. The council's current assumption is that development is likely to occur over the next 20 to 30 years.¹²

Several planning initiatives are currently underway which, collectively, will result in changes to zonings and dwelling yields relating to proposed development in Leppington North and Leppington.

3.3.1 Expected development in Leppington North

Precinct planning for Leppington North was undertaken as part of planning for the broader Austral and Leppington North Precincts. Figure 3.2 shows the Indicative Layout Plan (ILP) for the part of the precinct which is within the Camden Local Government Area. It contains:

- ▼ the Leppington Major Centre, a commercial and civic centre which will service an estimated population of 130,000 new residents in the South West Growth Area (SWGA)
- ▼ Leppington Station and the South West Rail Line corridor, commuter parking and a bus interchange
- ▼ a new TAFE college campus, regional health care centre and a cultural/community centre
- ▼ a retail shopping centre, mixed use retail/commercial, bulky goods retail, commercial/business park and light industrial development
- ▼ medium density residential development, and
- ▼ active open space (playing fields), passive open space and areas of environmental conservation along two creek corridors.¹³

Leppington North is expected to accommodate approximately 2,112 dwellings (including existing dwellings) and a total net additional population of 4,816.¹⁴

The Leppington Major Centre and adjacent employment land has an estimated capacity of 13,000 jobs in the retailing, light industrial, business park, human services and entertainment sectors. The anticipated gross floor area (GFA) of non-residential land uses in the catchment area is 944,280 square metres (see Table 3.2).

¹² Camden Council, Application for assessment of the Camden Growth Areas Contribution Plan (Application form), p 2 and Part 3 p 16.

¹³ Camden Growth Areas CP, Technical Document, pp 4-6.

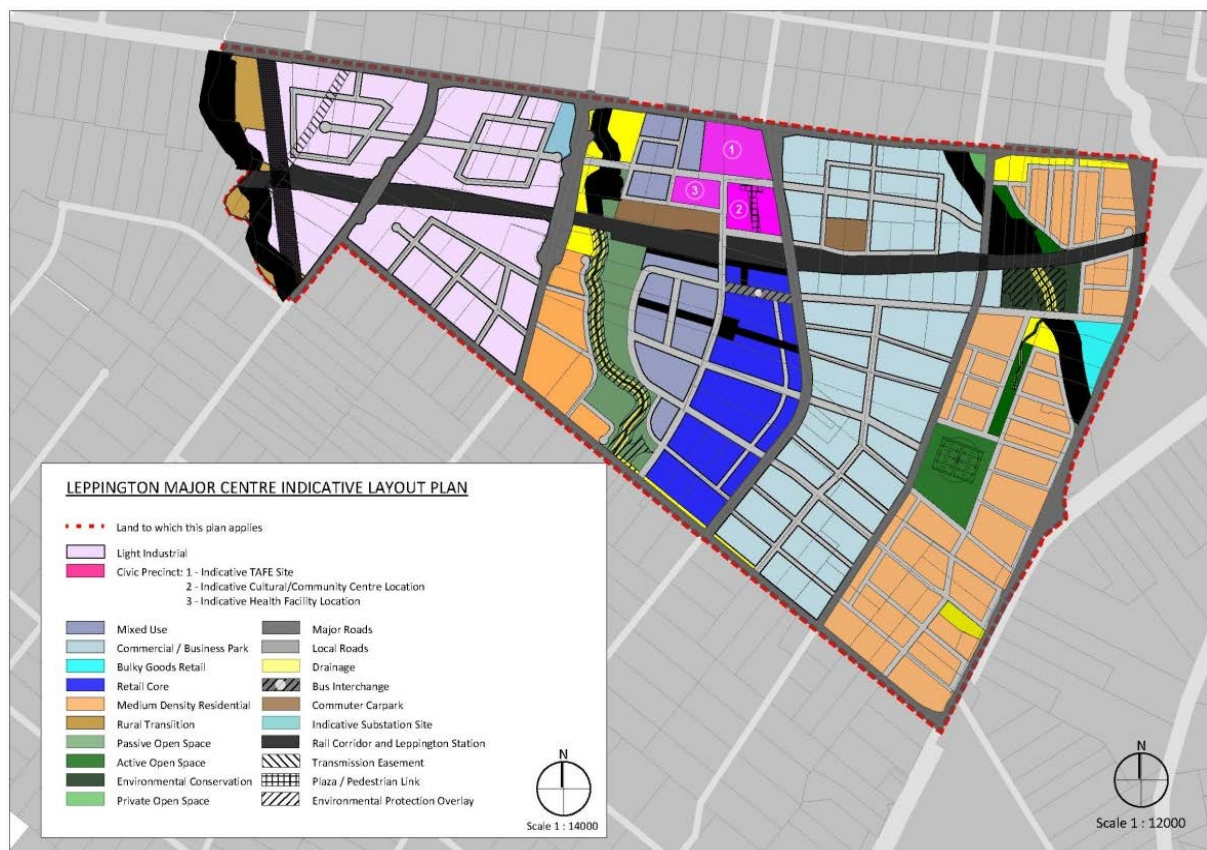
¹⁴ Camden Growth Areas CP, Technical Document, pp 4-6.

Table 3.2 Non-residential floor space - Leppington North

	Projected GFA (m ²)
B4 Mixed use and B3 Commercial Core	120,000
B7 Business park	600,000
B5 Business development	4,005
IN2 Light Industrial	220,275
TOTAL	944,280

Source: CGA-CP Technical Document, Tables A4 and A6, p 8.

Figure 3.2 Indicative Layout Plan - Leppington North



Source: CGA-CP Technical Document, p 6.

3.3.2 Expected development in Leppington

Leppington will be predominantly residential, with a small retail/commercial area. The Housing Analysis completed during precinct planning indicated the vast majority (85%) of the demand in the precinct would be for single detached dwellings, which is reflected in the indicative layout plan shown in Figure 3.3.

The precinct is expected to accommodate 26,892 people in approximately 8,208 dwellings. The plan assumes a net increase in population of 25,919.

DPE is adopting a staged approach to precinct planning and rezoning in the Leppington precinct.¹⁵ Only Stage 1 of the precinct has been rezoned. It will accommodate:

- ▼ residential development (low and medium density with some environmental living)
- ▼ two public schools and a K-12 private school
- ▼ open space playing fields and small parks, and
- ▼ a small community centre.¹⁶

Projections made during precinct planning for Stage 1 estimated 2,446 dwellings and 7,750 new residents.¹⁷

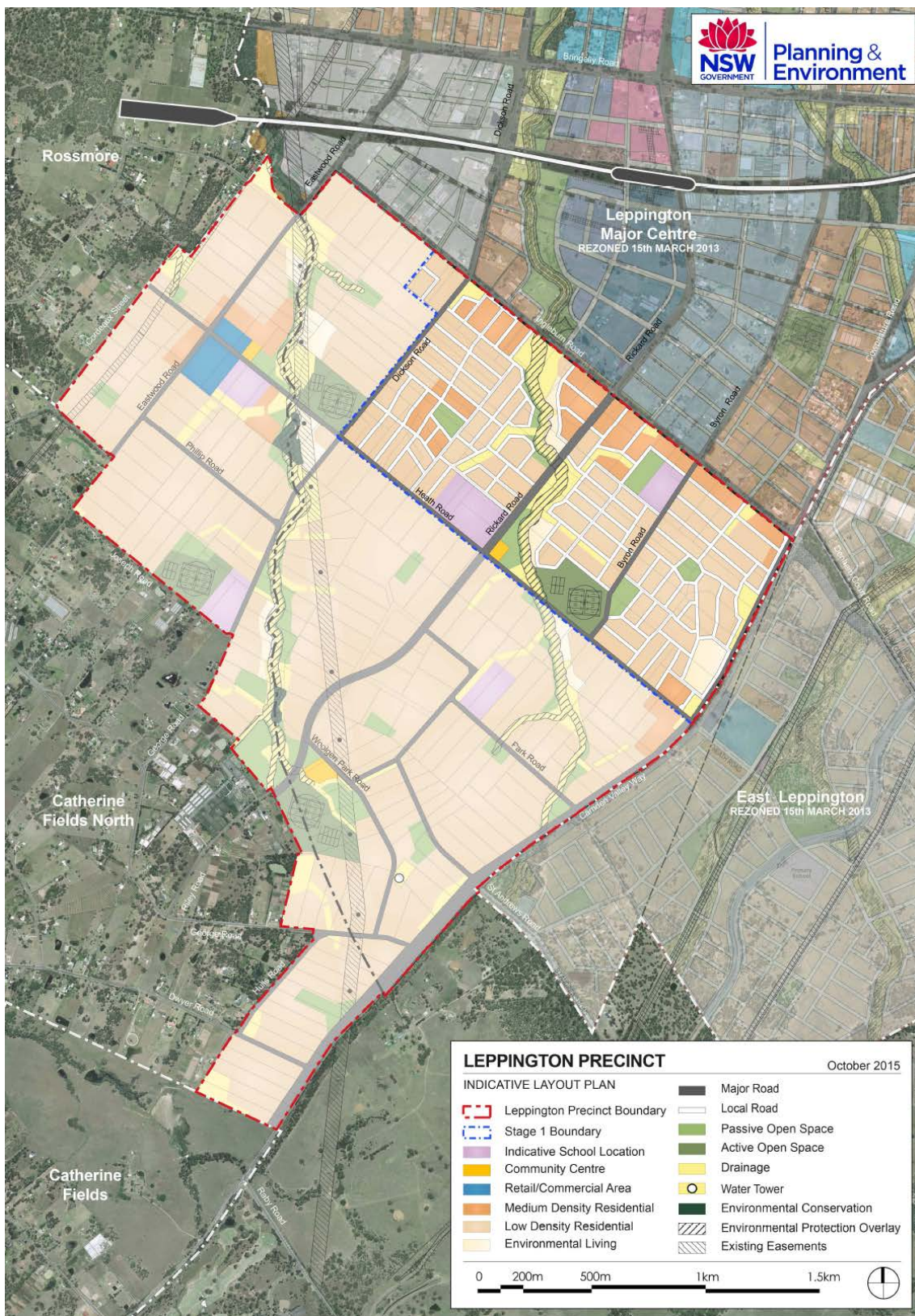
Development in the remainder of the precinct will occur following provision of essential water, sewer and electricity infrastructure, which to date has been made available to land in Stage 1 only.

¹⁵ DPE indicates that a staged approach provides greater efficiency and certainty for landowners and developers, and responds both to the provision of infrastructure and the predicted rate of demand for new homes. Rezoning will only occur when the required infrastructure is in place or utilities and developers have committed to fund and deliver it. See DPE, *Leppington (Stage 1) Finalisation Report*, October 2015, p 11.

¹⁶ DPE, *Leppington (Stage 1) Finalisation Report*, October 2015, ILP pp 5, 16.

¹⁷ DPE, *Leppington (Stage 1) Finalisation Report*, October 2015, pp 4, 10, 17.

Figure 3.3 Indicative Layout Plan - Leppington



Source: CGA-CP Technical Document, p 51.

3.3.3 Land use and dwelling yields are subject to further rezoning decisions

Several planning initiatives are currently underway which, collectively, will result in changes to zonings and dwelling yields relating to proposed development in Leppington North and Leppington. The initiatives are:

- ▼ A review is underway to update the structure plan and planning controls for all precincts in the SWGA, which is likely to increase residential densities.¹⁸ Preliminary studies of transport, housing demand and open space needs will underpin a revised land use and infrastructure implementation plan which should be released later in 2018.
- ▼ DPE is working with Camden Council to review residential densities in the Leppington Town Centre in Leppington North Precinct. Release of a revised draft precinct plan, likely to increase residential densities and commercial floorspace, is expected in mid-2018.
- ▼ DPE's work program for the next financial year includes precinct planning leading to rezoning of Stages 2 and 5 of Leppington Precinct. Providers of essential infrastructure (water, sewer and electricity) have indicated that they will be available from 2019.¹⁹

3.4 Cost of land and works

The costs in CGA-CP for land, works and administration for Leppington North Precinct are shown in Table 3.3 and for the Leppington Precinct in Table 3.4.

Table 3.3 Cost of land and works in the plan – Leppington North (\$Dec2016)

	Land	Works	Administration	Total
Transport	21,296,736	34,218,364		55,515,100
Stormwater	24,068,009	22,539,469		46,607,478
Open space	39,342,688	22,121,626		61,464,314
Community services	923,602			923,602
Administration			1,183,192	1,183,192
TOTAL	85,631,035	78,879,459	1,183,192	165,693,686

Source: CGA-CP Technical Document, Appendix A.3: Works schedules.

¹⁸ DPE conducted a similar review of the NWGA in 2017: see DPE, *Land Use and Infrastructure Implementation Plan for the North West Priority Growth Area (NWPGA)*, May 2017 and proposed amendments to the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP). The SEPP amendments are under consideration by DPE.

¹⁹ Informal advice from DPE Sydney Region West, 26 February 2018.

Table 3.4 Cost of land and works in the plan – Leppington (\$Dec2016)

	Land	Works	Administration	Total
Transport	13,979,224	103,240,052		117,219,276
Stormwater	96,008,703	83,239,382		179,248,085
Open space	132,431,374	67,624,259		200,055,633
Community services	5,694,785			5,694,785
Administration			3,813,168	3,813,168
TOTAL	248,114,086	254,103,693	3,813,168	506,030,947

Source: CGA-CP Technical Document, Appendix B.3: Works schedules for transport, open space, community services and administration. CGA-CP Main Document, Appendix B: Leppington Contribution Rates for stormwater.

CGA-CP also includes costs for non-essential works, ie, dog off-leash parks and skate parks in each precinct and a BMX track in Leppington North, but these costs are not included in the calculation of contribution rates.

3.5 Contribution rates

CGA-CP has separate contribution rates for each precinct. The plan levies contributions for:

- ▼ transport and stormwater infrastructure on a per hectare of NDA basis for residential and non-residential development in both precincts
- ▼ open space land and embellishment on a per person basis for residential development in both precincts, and on a per square metre of GFA basis for non-residential development²⁰ in the Leppington North Precinct
- ▼ land for community services facilities on a per person basis for residential development in each precinct, and
- ▼ administration costs on a per hectare of NDA basis for residential and non-residential development in both precincts.

The contribution rates for each infrastructure type are set out in Table 3.5 for the Leppington North Precinct and Table 3.6 for the Leppington Precinct.

Table 3.5 Contribution rates in the plan – Leppington North (\$Dec2016)

	Residential	Non-residential
Transport	\$246,986 per ha NDA	\$246,986 per ha NDA
Stormwater	\$207,356 per ha NDA	\$207,356 per ha NDA
Open space	\$8,425 per person	\$2,885 per 100m ² of GFA ^a
Community services	\$192 per person	n/a
Plan administration	\$5,264 per ha NDA	\$5,264 per ha NDA

^a Contributions will apply to non-residential development located in the B3, B4, B5 and B7 zones.

Source: CGA-CP Main Document, Appendix A: Leppington North Contribution Rates.

²⁰ Contributions will be levied on development on land zoned B7 Business Park, B4 Mixed Development, B5 Business Development, but not IN2 Light Industrial: CGA-CP Technical Document, p 8.

Table 3.6 Contribution rates in the plan – Leppington (\$Dec2016)

	Residential	Non-residential
Transport	\$268,686 per ha NDA	\$268,686 per ha NDA
Stormwater	\$410,490 per ha NDA	\$410,490 per ha NDA
Open space	\$7,718 per person	n/a
Community services	\$173 per person	n/a
Plan administration	\$8,732 per ha NDA	\$8,732 per ha NDA

Source: CGA-CP Main Document, Appendix B: Leppington Contribution Rates.

3.5.1 Indicative residential contribution rates

Indicative contribution rates for different types of residential development in the Leppington North and Leppington Precincts are set out in Table 3.7.

The contribution rate in CGA-CP for any residential lot or dwelling will depend on the cost of infrastructure in the precinct in which it is located, as well as the assumptions about the density of development per hectare and occupancy rates. The density (dwellings per hectare) and occupancy rates Camden Council has assumed are shown in the tables. The per person rates are converted to per dwelling rates using the occupancy assumptions.

Table 3.7 Indicative residential contribution rates in the plan (\$Dec2016)

Type of development	Density (dwellings per ha)	Occupancy rate per dwelling	Contribution amounts Leppington North	Contribution amounts Leppington
Low density dwelling or lot	25	3.4 persons (low density)	\$47,681	
Low density dwelling or lot	18	3.4 persons		\$65,048
Secondary dwelling > 60m ² GFA	25	3.4 persons	\$47,681	
Medium density dwelling	25	2.6 persons	\$40,788	\$48,034
Secondary dwelling, 2 bed <= 60m ² GFA	25	2.6 persons	\$40,788	\$48,034
High density dwelling	40	1.8 persons	\$27,000	\$31,402
Seniors living dwelling	25	1.5 persons	\$31,309	\$39,354

Source: CGA-CP, Leppington North S94 Plan Revised Schedule_GLN changes 20170309, Tab IPART res rates summary. CGA-CP, Leppington S94 Plan Schedule 20170309, Tab IPART res rates summary.

3.5.2 Indexing contribution rates

CGA-CP states that monetary contribution rates (and monetary contribution amounts in development consents) will be regularly adjusted using the following indices:

- ▼ A customised Land Value Index (LVI) prepared by the council and published on the council's website, using annual changes to the LVI for rates relating to land yet to be acquired.
- ▼ The *Consumer Price Index – Sydney All Groups (CPI)* published by the Australian Bureau of Statistics (ABS) using quarterly changes to the CPI for rates relating to all works schedule items of infrastructure and land acquired.

The base rate for further indexation of contribution rates is the CPI for December 2016 (110.9). The base rate for the LVI is 100.0. Camden Council will, through the life of the plan, engage a registered valuer on at least an annual basis to review and (if necessary) update the LVI for each of the land classes.²¹

3.5.3 Credits for existing development

The contribution rates calculated on a per person basis in CGA-CP (ie, for open space and community services infrastructure categories) are based on the expected net additional population anticipated to occupy the residential development in each precinct.²² The existing residential population is housed in a rural living environment.²³ The council assumes the existing population is:

- ▼ 326 in Leppington North, and
- ▼ 972 in Leppington.²⁴

In calculating contributions for open space and community services infrastructure in both precincts, the plan provides for an allowance to be made (or credit given) for the demand for open space infrastructure attributable to development that existed at the time the land was rezoned for urban purposes.²⁵

3.5.4 Exemptions from contributions

CGA-CP provides that certain types of development will be exempt from contributions. Some exemptions reflect that the contributions have already been levied in respect of that land or development. Other examples are affordable housing, secondary dwellings (1-bedroom $\leq 60\text{m}^2$) and adaptive reuse of environmental heritage items. Public infrastructure to be provided by or on behalf of the State Government or the council, and utility undertakings carried out by water, sewer or energy providers are also exempt from contributions.

²¹ See Camden Growth Areas CP, p 22 and 24, and Camden Growth Areas CP Technical Document, pp 10 and 55.

²² CGA-CP, p 7 (section 2.2.1).

²³ CGA-CP Technical Document, p 8.

²⁴ CGA-CP Technical Document, Table A5, p 7 and Table B4, p 52.

²⁵ See CGA-CP Main Document, section 2.5, pp 10 -11. The existing development for which credits may be granted is identified on maps and schedules in sections A.1.1 and B.1.1 of the Technical Document.

4 Transport

This chapter presents our assessment of transport infrastructure in CGA-CP against the essential works list, nexus, reasonable cost (works only) and apportionment criteria in the Practice Note. To assist with our assessment we engaged consultants, Axxess Advisory Pty Ltd (Axxess),²⁶ to review the reasonableness of cost estimates for transport infrastructure in CGA-CP.

The total cost of transport infrastructure in CGA-CP is \$172.73 million (26% of total costs), comprising \$35.27 million for land and \$137.46 million for works.

Our findings and recommendations are summarised in Table 4.1. We recommend that before it applies for LIGS funding, Camden Council make adjustments to the plan which we estimate would reduce the cost of transport works by around \$1.73 million (1.3%).

Table 4.1 Summary of IPART-recommended adjustments to transport works

Criterion	Finding	Recommendation	Leppington North (\$Dec2016)	Leppington (\$Dec2016)
Total cost in plan			\$34.22m	\$103.24m
Essential Works List	All items are on the Essential Works List			
Nexus	Nexus is established for all items			
Reasonable costs	There are some calculation errors	Adjust cost of Intersection IN4 and electrical service relocations on Dickson Rd (ES2)	\$1.23m	
	Some unit costs are not correctly indexed	Apply correct indexation	\$0.06m	\$0.42m
	Cost of shared pathway creek crossings is unreasonable	Adjust cost of shared pathway creek crossings	-\$0.13m	-\$3.32m
Apportionment	Inclusion of collector roads in Leppington North is inconsistent and inequitable		Not calculated	Not calculated
Total IPART recommended cost adjustment			\$1.17m	-\$2.90m
Total IPART assessed reasonable cost			\$35.38m	\$100.34m

Note: Columns may not add due to rounding.

²⁶ See: Axxess Advisory Pty Ltd, *CGA-CP Transport Cost Review, Final Report*, December 2017. Axxess was assisted in its review by CCHD Pty Ltd (Civil Consulting & Highway Design).

4.1 Criterion 1: Essential Works List

We found that all transport infrastructure in CGA-CP is on the EWL. Table 4.2 summarises our assessment.

To reach our finding that all transport infrastructure items in CGA-CP are on the EWL, we required additional information from the council regarding relocation of electrical services and design fees for four roads in Leppington North.

Table 4.2 Our assessment of transport infrastructure items in CGA-CP against the EWL

Items on the Essential Works List	
▼ Road upgrades and new roads	▼ Bus shelters
▼ Bridges	▼ Pedestrian crossings
▼ Culverts	▼ Land for essential transport infrastructure
▼ Roundabouts	▼ Electrical service relocation
▼ Signalised intersections	▼ Road design

4.1.1 Relocation of electrical service infrastructure are essential works

CGA-CP includes the cost of relocating electrical service infrastructure on Byron Road and Dickson Road in Leppington North. We requested further information from Camden Council to establish the essential nature of these works. The council advised that the relocations are required as a result of road upgrades that include widening of Byron Road and Dickson Road. The existing electricity poles and wires are located within the proposed road reserve.

We consider this is essential work to provide collector roads within Leppington North.

4.1.2 Road design fees for four collector roads are essential works

CGA-CP includes the cost of road design for four collector roads in Leppington North where the associated road work costs are not included in the plan.

We requested additional information from the council to assess whether these design costs are on the EWL, including the nature of the design work and intended result of the work. The costs of road design are usually included as part of the on-costs for the associated road works. Camden Council officers advised that:

Due to fragmented land ownership, there is the high likelihood that the collector roads will be delivered in small segments associated with DAs on these sites. Council is proposing to levy contributions to ensure that the comprehensive and coherent design is completed. The design will identify critical information such as levels (e.g. the crown of the road and top of kerb) and the drainage design for the road, and will ensure that developers can progressively construct the road in accordance with an overarching design.

...If these costs were excluded from the CP, the design and construction of these roads would occur in an ad-hoc manner which might result in sub-optimal outcomes such as inconsistent designs and levels, sacrificial works (including re-constructing sections of infrastructure) and delays in construction.²⁷

We consider that council’s explanation demonstrates the essential nature of this work to ensure the associated collector roads are delivered in accordance with the overall road network design for the precinct.

However, we note that Camden Council’s inclusion of design and works costs for collector road in CGA-CP is inconsistent and inequitable. We address this issue with respect to the apportionment criterion at section 4.4.

4.2 Criterion 2: Nexus

In assessing whether there is nexus between the transport land and works in CGA-CP and development in the precincts, we considered whether the infrastructure is sufficient to meet, but not exceed, the demand from the anticipated new residents and workers in the Leppington North and Leppington precincts. We assessed nexus separately for each precinct in CGA-CP.

We found that the supporting technical studies listed in Table 4.3 establish nexus for most items.

Table 4.3 Technical studies for transport works in CGA-CP

Author	Title	Date
AECOM	<i>Austral and Leppington North (ALN) Precincts Transport Assessment -Draft, (AECOM 2011)</i>	August 2011
AECOM	<i>Austral and Leppington North (ALN) Precincts Transport Assessment – Post-Exhibition Traffic Report (Addendum), (AECOM 2012)</i>	July 2012
AECOM	<i>Leppington Precinct – Transport and Access Strategy, (AECOM 2014)</i>	March 2014
Parsons Brinckerhoff	<i>Preliminary sizing and costing of basins and watercourse crossings – Leppington Precinct</i>	December 2013

The following DPE precinct planning and infrastructure delivery reports also provide justification for some transport items:

- ▼ DPE, *Austral and Leppington North Precinct Plan, State Environmental Planning Policy (Sydney Region Growth Centres) – Post-exhibition Planning Report, December 2012*
- ▼ DPE *Leppington Precinct, Infrastructure Delivery Plan (Draft), June 2014, and*
- ▼ DPE, *Leppington (Stage 1) Finalisation Report, October 2015.*

²⁷ Camden Council, *Response to IPART Request for Information*, 16 February 2018, Question 2.

The AECOM studies use traffic modelling to establish a road hierarchy in the precincts, based on traffic and transport needs. They also establish pedestrian and cycle networks, including crossings of creek lines and the South West Rail Link, to ensure a continuous network of facilities within the precincts and connections with regional routes. Parsons Brinkerhoff used flood analysis to establish the need for culverts (road crossings).

We found three items that differ from the supporting technical studies:

- ▼ local roads in both precincts
- ▼ local road creek crossings in both precincts, and
- ▼ 10 roundabouts in the Leppington Precinct.

Camden Council officers provided us with explanations to support the inclusion of local roads and local road creek crossings in the plan. Advice from our transport consultants in relation to roundabouts on collector roads in another contributions plan (CP21 – Marsden Park) supports the inclusion of roundabouts on collector roads in the Leppington Precinct. We consider these explanations and advice establish nexus between the infrastructure and development in the precincts.

4.2.1 There is nexus for local roads that were not in technical studies

CGA-CP includes 13 local roads (one in Leppington North and 12 in Leppington). Most of the local roads are adjacent to open space, stormwater land, and school sites. Only one local road is not. We consider it is reasonable to include local roads adjoining open space and stormwater land in the plan as these are facilities that benefit the surrounding development and there is no adjoining developer that would otherwise be responsible for providing the road.

A submission to Camden Council on the draft CGA-CP requested that the plan be amended to include half-road construction (land and works) where half the local road is located on land identified for public open space and schools, as it is unlikely that the future development of these sites will involve the construction of the remaining half of the road. In response, Camden Council amended CGA-CP to ensure funding for half-road construction fronting future open space and identified school sites is consistent throughout the plan.²⁸

We asked council to explain its inclusion of a half width local road (LR3), which is adjacent to land zoned E4 – Environmental Living. The council explained that LR3 has been included to provide a through connection to open space. It notes that the orientation of adjoining E4 Environmental Living lots will be such that they receive no benefit from LR3, and therefore the council will be unable to require these lots to provide LR3 as a condition of consent.

We consider that council’s explanation establishes nexus for the inclusion of Local Road LR3 in CGA-CP.

²⁸ Camden Council, *Business Paper, Ordinary Council Meeting 28 February 2017*, p 24.

4.2.2 There is nexus for creek crossings that were not in technical studies

CGA-CP includes 16 local road creek crossings (two in Leppington North and 14 in Leppington) that are justified in the plan as follows:

These crossings fulfil a broader planning objective of making the new residential neighbourhoods more connected, rather than meeting a need for direct access to individual developers' lands. It is therefore not reasonable to require developers of land near creeks to construct creek crossings as part of their subdivision works.²⁹

Council further advised that the creek crossings are strategically located to provide access to the riparian corridor leisure routes. It noted:

The inclusion of creek crossings on local roads is an outcome of the master planning process and the desire to facilitate connectivity across the precinct and pedestrian access to the linear riparian corridors, in particular.³⁰

Our review of the location of the local road creek crossings showed that while some crossings may provide access to riparian corridor leisure routes, their primary purpose appears to be a crossing of stormwater drainage channels.³¹

As the stormwater drainage channels are part of the water cycle management strategies for the precincts that are delivered through CGA-CP, nexus is also established for local road creek crossings of these channels.

4.2.3 There is nexus for roundabouts that were not in technical studies

The technical studies do not explicitly establish nexus for 10 roundabouts on collector roads that are to be constructed in the Leppington Precinct.³² In relation to roundabouts in the Leppington Precinct, CGA-CP provides:

Intersections of the proposed collector roads will generally be controlled by roundabouts. This type of treatment is anticipated to meet the expected traffic volumes on these roads in 2036, at an assumed level of service 'D' or better.³³

The Level of Service relates to the average delay per vehicle at an intersection. AECOM advises that the average delay per vehicle for Level D is 43 to 56 seconds. It also notes that:

- ▼ Level of Service D is generally accepted by Roads and Maritime as a design constraint, and
- ▼ it is generally acceptable to provide road capacity at Level of Service D in the peak hour since over-provision of road capacity is not conducive to promoting alternative transport modes to the car.³⁴

However, 10 of the roundabouts included CGA-CP were not identified by AECOM as being required to achieve this level of service.

²⁹ CGA-CP Technical Document, p 59.

³⁰ Camden Council, *Response to IPART Request for Information*, 16 February 2018, Question 43.

³¹ See, for example, local road creek crossings LRC1 and LRC14 in Leppington that are not part of a riparian corridor leisure route but cross stormwater channels.

³² Roundabouts RB1 and RB4-12.

³³ CGA-CP, Technical Document, p 59.

³⁴ AECOM 2014, p 10.

In our 2017 review of CP21 – Marsden Park, our transport consultants (ARRB Ltd) advised that a roundabout is most likely to be an appropriate treatment between two collector roads. We consider that this advice from ARRB provides sufficient evidence to establish nexus for roundabouts on collector roads in CGA-CP.

4.3 Criterion 3: Reasonable costs of transport works

To assess whether Camden Council based the development contributions in CGA-CP on a reasonable estimate of the cost of transport works, we considered the costing methods it used in preparing the plan. We then considered whether the cost estimates and the choice of indices to escalate cost estimates to the base period of the plan are reasonable.

To assist with our assessment, we engaged consultants Axxess, which reviewed the reasonableness of cost estimates for transport infrastructure in CGA-CP.

We found the council's costing method for transport works reasonable for most infrastructure items. However, the costing method for shared pathway creek crossings is unreasonable and results in high cost estimates. Axxess' review of transport works costs in CGA-CP also found that these costs are broadly reasonable except for:

- ▼ calculation errors for two items, Intersection IN2 and Electrical Service Relocations (ES2)
- ▼ incorrect indexation of some items, and
- ▼ shared pathway creek crossings.

Axxess also identified some different inclusions in cost estimates for transport infrastructure and instances of minor double-counting.

Recommendations

- 1 Before applying for LIGS funding, Camden Council correct calculation errors for Intersection IN2 and Electrical Service Relocations ES2. This would increase transport works costs by \$1,234,334.
- 2 Before applying for LIGS funding, Camden Council adjust for correct indexation of local and collector roads, T-intersections and signalised intersections. This would increase transport works costs by \$481,292.
- 3 Before applying for LIGS funding, Camden Council reduce cost estimates for shared pathway creek crossings by \$3,449,210 as an interim measure until the council reviews the costing method for these items.
- 4 Before January 2020, Camden Council:
 - review the costing methodology for shared pathway creek crossings to ensure the costs reflect the size of crossings and bridges that are being provided in CGA-CP
 - consider adopting a culvert-based approach for shared pathway creek crossings, where appropriate, to reduce costs.
- 5 Before January 2020, Camden Council review the inclusions for all transport infrastructure cost estimates to ensure the base rates used to estimate costs reflect the work that is required to deliver the proposed infrastructure.

- 6 Before January 2020, Camden Council consider applying the more cost-reflective *ABS Producer Price Index (Road and Bridge Construction) NSW* instead of the *Consumer Price Index (All Groups) Sydney* to index the estimated cost of transport works to the base period of the plan.

4.3.1 The method for estimating transport works costs is reasonable

Camden Council estimated the cost of transport infrastructure works in CGA-CP using:

- ▼ consultant costings (including Davis Langdon (AECOM) and Cardno), adjusted by the council for various allowances based on other Camden Council contributions plans
- ▼ unit rates used in other Camden Council contribution plans (eg, the bus shelter rate used in the contributions plan for Oran Park)
- ▼ recent tender prices for similar works (eg, roundabouts and electrical service relocations)
- ▼ Rawlinsons 2013 square metre rate for demolition of dwellings, and
- ▼ on-costs determined by Camden Council.

We consider that this approach is reasonable.

4.3.2 There are some calculation errors

Axess' review of transport works costs in CGA-CP identified two calculation errors in Camden Council's works schedules:

- ▼ Intersection IN4 in Leppington North, which has an estimated cost of \$92 in CGA-CP. Axess costs this intersection at \$1,116,692.³⁵
- ▼ Electrical service relocations on Dickson Rd (ES2) in Leppington North, which have an estimated cost of \$105,880 in CGA-CP. Axess costs this work at \$565,311.³⁶

We recommend Camden Council adjust the cost estimates in CGA-CP to correct these errors. This would increase transport works costs in Leppington North by \$1,234,334.³⁷

4.3.3 Some unit costs are not correctly indexed

Axess also identified a small error in Camden Council's indexation of the Davis Langdon (AECOM) rates that are the basis of CGA-CP rates for local and collector roads, T-intersections and signalised intersections. Camden Council has applied indexation to Davis Langdon rates from March 2012 to December 2016, however the Davis Langdon base rates are accurate as at 25 July 2011.³⁸ Therefore, eight months' worth of indexation has been omitted. This means that the costs for local and collector roads, T-intersections and

³⁵ Axess Pty Ltd, *CGA-CP Transport Cost Review*, Final Report, December 2017 (Axess December 2017) p 21. This cost does not include the 7% construction contingency.

³⁶ Axess December 2017, p 21. This cost does not include the 7% construction contingency.

³⁷ This includes the 7% construction contingency.

³⁸ Davis Langdon, *ALN Precinct, Master Plan Road Cost Estimate*, 25 July 2011.

signalised intersections are slightly lower in CGA-CP than they would be had the council indexed them from the earlier date.

We recommend Camden Council adjust the cost estimates in CGA-CP to reflect the correct indexation. This would increase transport works costs by \$481,292, comprising:

- ▼ \$58,073 in Leppington North, and
- ▼ \$423,219 in Leppington.³⁹

4.3.4 The cost of shared pathway creek crossings is unreasonable

CGA-CP includes 18 shared pathway creek crossings (two in Leppington North and 16 in Leppington) which vary in length from 3 metres to 12 metres. Camden Council has estimated the cost of these crossings using a base rate derived from a 21-metre span bridge installed in Elderslie.

In reviewing the cost of shared pathway creek crossings in CGA-CP, Axxess noted that the foundations, abutments and approaches would not be the same for 3 to 12-metre long bridges as for a 21-metre long bridge. Axxess concluded that council's use of a base rate for a 21-metre span bridge as a benchmark for creek crossings was unrealistic.⁴⁰

Without detailed design information, Axxess was unable to advise what the reasonable cost for these creek crossings would be. Axxess was able, however, to compare the CGA-CP base rate for shared pathway creek crossings with a 29-metre span pedestrian bridge installed in 2016 at Tumbi Umbi. This comparison shows that the 21-metre span CGA-CP base rate is high, even compared with the costs of a longer, 29-metre span bridge. Using the lower (Tumbi Umbi) base rate to estimate costs for shared pathway creek crossings in CGA-CP would result in a \$3.4 million reduction in costs.⁴¹

Axxess also suggested that Camden Council should consider adopting a culvert-based approach for shared pathway creek crossings, where appropriate, to further reduce costs.

We recommend that, as an interim measure, Camden Council reduce the costs of shared pathway creek crossings in CGA-CP by \$3,449,210. Individual cost adjustments for the 18 crossings prepared by our consultant are provided in Appendix D.

We also recommend that before January 2020, the council reviews the costing methodology for shared pathway creek crossings to ensure the costs reflect the size of crossings and bridges that are being provided through CGA-CP. As part of this review, council should consider whether a culvert-based approach could be used to further reduce costs.

³⁹ This estimate assumes council indexation of costs by the CPI. We make a separate recommendation about the choice of index for escalating costs to the base period of the plan: see section 4.3.6.

⁴⁰ Axxess December 2017, pp 17-18.

⁴¹ Axxess December 2017, pp 19-27 and IPART calculations. Comprises 2 pedestrian bridges in Leppington North and 16 shared pathway creek crossings in Leppington. Axxess' works cost for these items does not include contingencies. When contingency allowances are added, the reduction in costs is \$3.4 million.

4.3.5 Transport cost estimate inclusions are broadly reasonable

While Axxess found that most transport costs in CGA-CP are broadly reasonable, Axxess and IPART have identified some inclusions in the underlying base rates that Camden Council should further review or specify before January 2020. These inclusions are:

- ▼ relocation of existing water supply pipes
- ▼ street lighting
- ▼ traffic management, and
- ▼ environmental controls.

Relocation of existing rural water pipes

Axxess identified that the Davis Langdon (AECOM) rates used for roads, T-intersections and four-way signalised intersections in CGA-CP include the cost of relocating existing rural water supply pipes.⁴²

We asked Sydney Water about the nature of its works to provide services to new development in Leppington and Leppington North to help clarify whether the existing rural water pipes would be replaced as part of this work. If so, the cost of relocation should not be included in road construction costs. Sydney Water advised that, where possible, existing system capacity is used to service development. However, as the area transitions from rural residential to higher density housing, the capacity of the network must increase and some mains will need to be replaced with larger mains.⁴³

We consider it is unlikely that rural water supply pipes will be relocated along every road, T-intersection and four-way intersection which are costed in CGA-CP. Therefore, it is not reasonable to include the full cost of pipe relocation in the base rate for these items.

We recommend Camden Council review this inclusion before January 2020.

Street lighting

The base rates for local collector and sub-arterial roads used in CGA-CP include \$150 per linear metre for full-width street lighting, and \$75 for half-width, but do not specify the height or spacing of street lights. Axxess advised that this provision for street lighting is low for its assumed specification of street lights 10 metres high, spaced at 40 metre intervals.

We recommend that, before January 2020, Camden Council:

- ▼ provide further design specifications for proposed street lighting in Leppington and Leppington North, and
- ▼ review the costs of providing street lighting for these specifications.

⁴² Axxess December 2017, pp 8, 10, 11, 14 and 15.

⁴³ Sydney Water, email to IPART, 20 December 2017.

Traffic management

The base rates for transport infrastructure used in CGA-CP include an allowance for traffic management works involving upgrades to existing facilities, however there is no allowance for traffic management for new facilities. Axsess advised that a small additional allowance for traffic management for new works is reasonable to provide for traffic management when joining new facilities to existing facilities.

Axsess also identified that the base rate for upgrades to sub-arterial roads double counts the traffic management allowance.

We recommend that, before January 2020, Camden Council review the traffic management inclusions for all transport infrastructure in CGA-CP to address Axsess' findings.

Environmental controls

CGA-CP base rates for transport infrastructure do not include an allowance for environmental controls such as dust control and noise monitoring. Axsess advised that it would be reasonable for Camden Council to include an allowance for environmental controls at \$10 per linear metre. This is consistent with the inclusions in road cost estimates we have seen in other contributions plans assessed by IPART.⁴⁴

We recommend that, before January 2020, Camden Council consider including an allowance for environmental controls in CGA-CP transport infrastructure base rates.

4.3.6 Cost estimates are indexed by the CPI

Camden Council has indexed the cost of transport works to December 2016 using the *CPI (All Groups) for Sydney*. We consider indexing costs by the CPI is not unreasonable, however we recommend the council consider using a relevant Producer Price Index (PPI) published by the ABS which would be more cost-reflective for the type of infrastructure. The most suitable PPI for the cost of transport works is the PPI (Road and Bridge Construction) NSW.⁴⁵

Our preferred approach of indexing costs for transport works by the PPI (Road and Bridge Construction) NSW is consistent with IPART's recommendations in our assessments of the Rockdale Contributions Plan 2016 – Urban Renewal Area and the Draft West Dapto Contributions Plan.⁴⁶ We note that this change would have a minimal impact on the cost of transport works because the PPI (Road and Bridge Construction) NSW has tracked closely to CPI in recent years.

⁴⁴ For example, an allowance for environmental controls was included in road cost estimates in the *Rockdale Contributions Plan 2016 – Urban Renewal Area*.

⁴⁵ ABS, 6427.0 Producer Price Indexes, Australia, Table 17, Index No 3101 Road and bridge construction New South Wales.

⁴⁶ See IPART, *Assessment of Bayside Council's Rockdale Contributions Plan 2016 – Urban Renewal Area*, December 2016, p 60, and IPART, *Assessment of Wollongong City Council's Draft West Dapto Section 94 Development Contributions Plan*, October 2016, p 20.

4.4 Criterion 5: Apportionment

In assessing apportionment of transport costs in CGA-CP, we have taken into account AECOM's findings in relation to:

- ▼ the demand for transport infrastructure in Leppington North and Leppington arising from the expected development inside and outside the precincts
- ▼ the capacity of existing infrastructure, and
- ▼ the demand generated by different types of development that will occur in the precincts.

We found that Camden Council's approach to apportionment of transport costs in CGA-CP is mostly reasonable, except for council's inconsistent inclusion of collector roads in Leppington North. This inclusion of costs of only some Leppington North precinct collector roads in CGA-CP is inequitable because it imposes different costs on developments adjoining collector roads within the same precinct.

Recommendation

- 7 Before January 2020, Camden Council review the delivery of collector roads in Leppington North to ensure a consistent approach to the delivery of all collector roads.

4.4.1 Apportionment of transport costs on an area basis is reasonable in this plan

Camden Council apportions transport costs to both residential and non-residential development in CGA-CP on an area (per hectare of NDA) basis.

AECOM developed transport strategies for Leppington and Leppington North that are determined by the future forecast traffic volumes in these precincts, including public transport needs, and the pedestrian and bicycle networks required to service new development.

Apportionment of the costs of this infrastructure on an NDA basis is not ideal as the size of a lot is not the best indicator of the amount or type of vehicle traffic associated with development of the land. An example is that traffic volumes or demand for pedestrian and bicycle networks generated by one hectare of industrial development may be very different from the demand generated by one hectare of residential development.

Nevertheless, in the absence of traffic modelling results that can quantify the relative contribution of each land use type to the demand for transport infrastructure, an apportionment between land use types on an NDA basis is reasonable. This is consistent with other plans IPART has assessed.⁴⁷ It is also consistent with the apportionment of transport costs under the Special Infrastructure Contribution – Western Sydney Growth Areas Determination.⁴⁸

⁴⁷ For example, CP21 – Marsden Park.

⁴⁸ *Environmental Planning and Assessment (Special Infrastructure Contribution – Western Sydney Growth Areas) Determination 2011*, section 7-8.

In past assessments of plans for catchments with both residential and non-residential development,⁴⁹ IPART has recommended that councils consider apportioning transport costs for residential development on a per person basis.⁵⁰ This is because a population-based approach better reflects the demand created by residential development in the precincts.

However, adopting this approach for the Leppington North precinct would be problematic as it contains land zoned for mixed use development (B4). A mixed use zone may contain a mix of residential and non-residential development, generally within the same building. It would be unreasonable for council to apportion transport costs in the mixed use zone entirely to residential development or entirely to non-residential development.

Therefore, we consider that it is reasonable for Camden Council to apportion transport costs on a 'per hectare of NDA' basis for all development in Leppington North.

We have calculated the indicative (per dwelling) contribution amounts for transport infrastructure that would apply to residential development in the Leppington precinct using a per person rate and a 'per hectare of NDA' rate and found very little difference between the two. Therefore, in the interests of consistency within CGA-CP, we consider that apportionment of transport costs on an area basis is also reasonable in the Leppington precinct.

4.4.2 Inclusion of collector roads in Leppington North is inconsistent and inequitable

The road infrastructure proposed by AECOM in its draft transport strategy for Leppington North includes a number of collector roads as shown at Figure 4.1. AECOM subsequently included a further collector road⁵¹ following exhibition of the draft strategy.⁵²

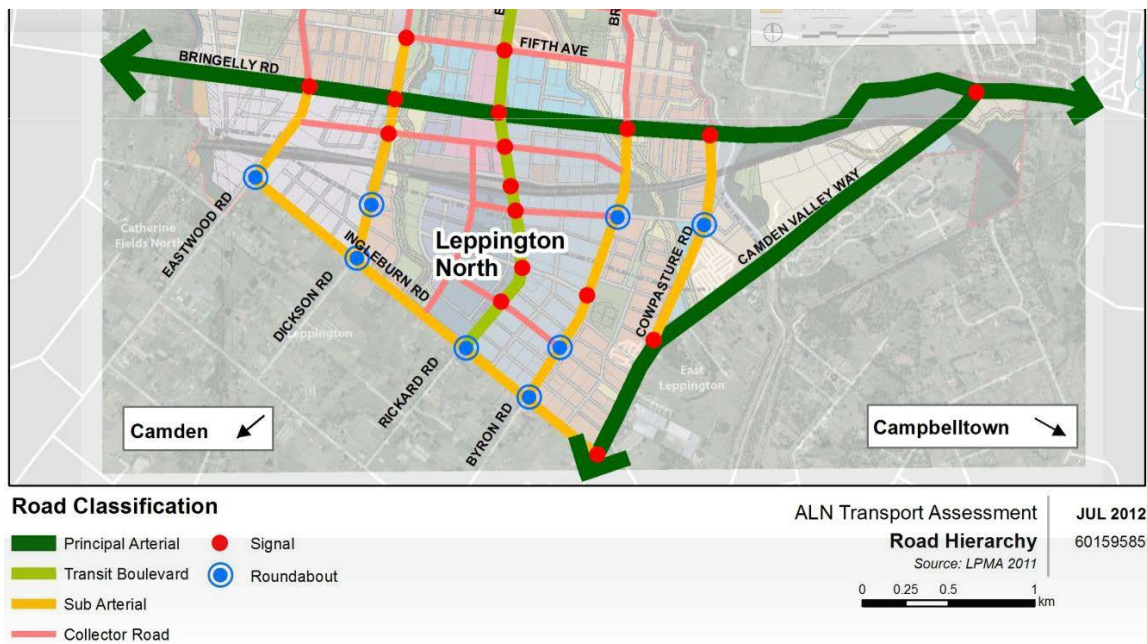
⁴⁹ IPART, *Assessment of Blacktown City Council's Amended Section 94 Contributions Plan No 20*, March 2015, p 46.

⁵⁰ For clarity, this involves a two-step process. First, costs are apportioned between residential and non-residential development based on the respective NDA of these land uses. Secondly, the dollar amount apportioned to residential development is divided by the anticipated number of new residents to derive a per person contribution rate.

⁵¹ Byron Road extension (collector roads CR5 and CR6 in CGA-CP).

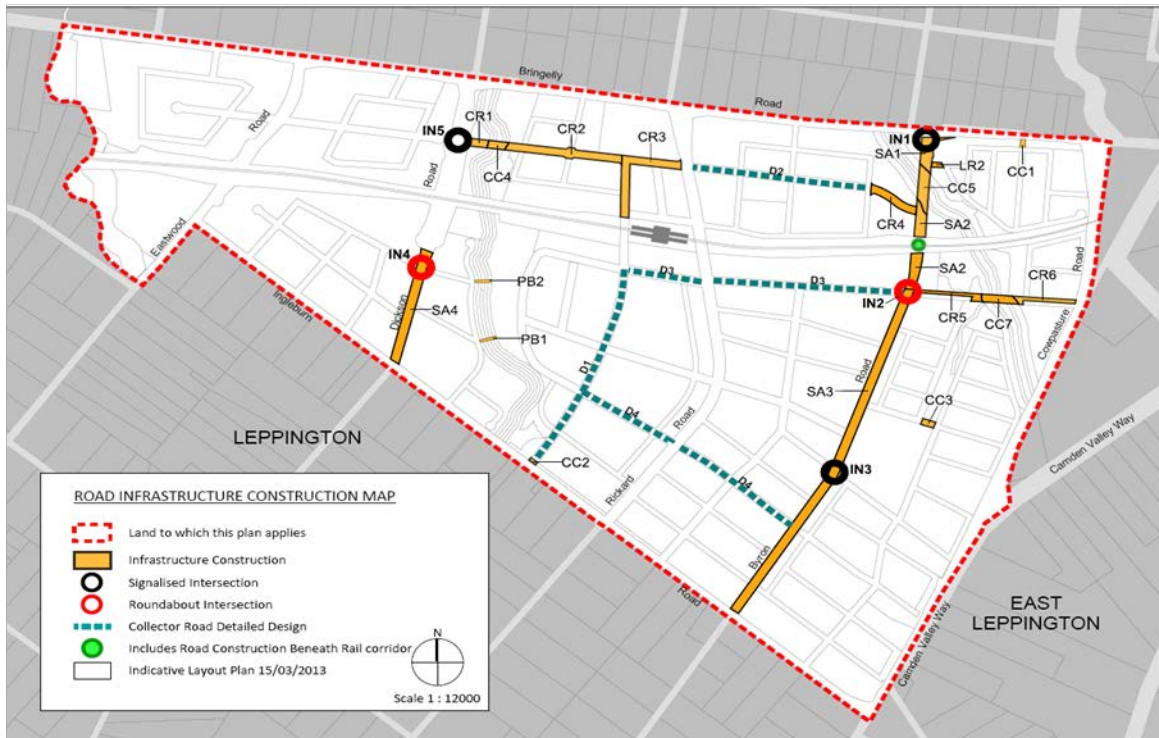
⁵² Camden Council, *Response to IPART Request for Information* 16 February 2018, follow up to Question 1; and AECOM, *Austral and Leppington North (ALN) Precincts Transport Assessment, Post-Exhibition Traffic Report (Addendum)*, 4 July 2012, Appendix A-2; and Camden Council, *Response to IPART Request for Information*, 16 February 2018, follow-up to Question 1.

Figure 4.1 Road hierarchy in technical study for Leppington North



Source: AECOM, Austral and Leppington North (ALN) Precincts Transport Assessment Post-Exhibition Traffic Report (Addendum), July 2012, p 9.

Figure 4.2 Transport items in CGA-CP for Leppington North



Note: PB = Pedestrian Bridge; CR = Collector Road; CC = Creek Crossing; SA = Sub-arterial Road; LR = Local Road.
 Source: CGA-CP Technical Document, p 37 (Works location maps, A.4)



Inconsistent approaches are taken within CGA-CP to the inclusion of costs for these collector roads, as follows:

- ▼ Work items C1, C2, C3, C4, C5 and C6 (collector roads or sections of collector roads) – CGA-CP includes the full cost of the road.
- ▼ Work items D1, D2, D3 and D4 – CGA-CP includes only the design costs associated with the collector roads (ie, no construction costs), with the developers of adjoining land to construct the road as a condition of development consent.
- ▼ All other collector roads – the costs of design and construction will be met by developers of adjoining land as conditions of development consent.⁵³

This inconsistent treatment of collector roads is inequitable. Some developers will have to deliver the collector road adjoining their development as a condition of development consent and contribute to the cost of other collector roads in the precinct through development contributions. Other developers will only be required to contribute to the cost of collector roads in the precinct through development contributions.

To address this inequity we recommend Camden Council review the delivery of collector roads in Leppington North to ensure a consistent approach to the delivery of all collector roads.

⁵³ See Figure 4.2 which shows the collector roads and design costs for collector roads that are included in CGA-CP.

5 Stormwater management

This chapter presents our assessment of stormwater management infrastructure in CGA-CP against the essential works list, nexus, reasonable cost (works only) and apportionment criteria in the Practice Note.

The total cost of stormwater infrastructure in CGA-CP is \$225.86 million (33.6% of total costs), comprising \$120.08 million for land and \$105.78 million for stormwater works.

Our findings and recommendations are summarised in Table 5.1. We recommend that before it applies for LIGS funding, Camden Council makes adjustments to the plan which we estimate would reduce the cost of stormwater works by \$32.76 million (31.0%).

Table 5.1 Summary of IPART-recommended adjustments to stormwater works

Criterion	Finding	Recommendation	Leppington North (\$Dec2016)	Leppington (\$Dec2016)
Total cost in plan			\$22.54m	\$83.24m
Essential Works List	All items are on the Essential Works List.			
Nexus	Nexus is established for all items			
Reasonable costs	25% fill contingency is not reasonable	Remove fill contingency	-\$3.52m	-\$13.19m
	Some basin costs are not reasonable	Remove planting allowance	-	-\$8.01m
		Apply correct basin rates	-	-\$3.84m
	Some biofilter costs are not reasonable	Adjust embedded biofilter costs	-	-\$1.21m
		Remove GPT costs from embedded biofilters	-	-\$0.21m
		Correct indexation error	-\$0.04m	-
	Some channel costs are not reasonable	Remove planting allowance	-\$0.81m	-\$2.16m
		Correct indexation errors	-	\$0.22m
Apportionment	Approach is not reasonable in Leppington North	Review and amend	No impact on total cost	No impact on total cost
Total IPART recommended cost adjustment			-\$4.37m	-\$28.38m
Total IPART assessed reasonable cost			\$18.17m	\$54.85m

Note: Columns may not add due to rounding.

5.1 Criterion 1: Essential Works List

We found that all stormwater infrastructure included in CGA-CP is on the Essential Works List (EWL). Table 5.2 summarises our assessment.

Table 5.2 Our assessment of stormwater infrastructure items in CGA-CP against the EWL

Items on the Essential Works List	
▼ Detention basins	▼ Gross pollutant traps (GPTs)
▼ Biofilters (stand alone and located within detention basins)	▼ Stormwater channels

5.2 Criterion 2: Nexus

In assessing whether there is nexus between the stormwater land and works in CGA-CP and development in the precincts, we considered whether the infrastructure is sufficient to meet, but not exceed, the demand arising from expected development in Leppington and Leppington North. We assessed nexus separately for each precinct in CGA-CP.

We found that the supporting technical studies listed in Table 5.3 establish nexus for most items.

We found three items that differ from the supporting technical studies:

- ▼ A stand-alone biofilter (BA1) in Leppington North that was not explicitly recommended by Cardno in December 2012.
- ▼ Stabilisation of existing watercourses (C1, C2, C4 and C5) in Leppington that was not recommended by Cardno in December 2012.
- ▼ Additional channels and increased overall length of channels in Leppington from the channel recommendations of Parsons Brinkerhoff (PB) in July 2014.

Camden Council officers provided us with explanations to support the inclusion of these three items in the plan. We consider these explanations establish nexus between the infrastructure and development in the precincts.

Table 5.3 Technical studies for stormwater management in CGA-CP

Author	Title	Date
Cardno	<i>Austral & Leppington North Precincts: Water Cycle Management Responses to Exhibition Submissions</i> (Cardno 2012)	6 December 2012
Parsons Brinckerhoff	<i>Preliminary sizing and costing of basins and water course crossings – Leppington Precinct</i> (PB 2013)	5 December 2013
Parsons Brinckerhoff	<i>Leppington Precinct Water Cycle Management Strategy</i> (PB 2014)	1 July 2014

5.2.1 The council explained the need for a standalone biofilter in Leppington North

The post-exhibition water cycle management strategy prepared by Cardno in December 2012 for Austral and Leppington North (ALN) does not explicitly recommend a biofilter in the location shown in the plan. However, the Cardno report notes:

Where bioretention locations are not shown, the strategy allows for biofiltration within the road reserve in the form of raingardens and street trees.⁵⁴

Camden Council officers explained that, given the physical constraints in the area of biofilter BA1 and fragmentation of land, it has deemed the inclusion of a raingarden in this area as the most appropriate mechanism for the delivery of water quality infrastructure in line with Cardno's recommendation.⁵⁵

We consider that Camden Council's proposal to include biofilter BA1 in CGA-CP is consistent with the Cardno's stormwater management strategy for ALN, therefore nexus is established for this item.

5.2.2 The council explained the need for stabilisation of existing watercourses in Leppington North

CGA-CP includes the costs of stabilising existing watercourses (Channels C1, C2, C4 and C5) in Leppington North. These works were not included in Cardno's stormwater management strategy for Leppington North.

Camden Council explained that the existing channels are required to efficiently convey stormwater in the precinct to ensure the development outcome planned by DPE. The costs include earth works stabilisation of exposed soil, and are based on Council's experience with stabilisation works in other areas of Camden.⁵⁶

We consider that Camden Council's explanation for including stabilisation works for existing watercourses in Leppington North in CGA-CP establishes nexus for these works.

⁵⁴ Cardno 2012, Note to Figure 8-1, p 46.

⁵⁵ Camden Council, *Response to IPART Request for Information*, 16 February 2018, Question 12.

⁵⁶ Camden Council, *Response to IPART Request for Information*, 16 February 2018, Question 33.

5.2.3 The council explained the need for increased channel provision in Leppington

CGA-CP includes 39 channels⁵⁷ in Leppington with a combined length of 9,241 metres.⁵⁸ The supporting technical study by PB includes 26 channels with a combined length of 6,280 metres.⁵⁹

In explaining the difference between overall channel lengths in CGA-CP and the PB 2014 report, Camden Council officers advised that the following supplementary work was undertaken subsequent to the PB report to finalise the channel lengths required in Leppington:

- ▼ During the master-planning process, DPE and mapping consultants worked with PB to determine the appropriate channel lengths in the Indicative Layout Plan (ILP) to convey stormwater flows.
- ▼ The ILP was then used to inform the boundaries and extent of SP2-zoned land identified for drainage channels. This informed the final dimensions in CGA-CP.⁶⁰

We consider that the council officers' explanation for increased channel provision in Leppington establishes nexus for channels in this precinct.

5.3 Criterion 3: Reasonable cost of stormwater works

In assessing the reasonableness of Camden Council's approach to costing the capital works for stormwater infrastructure in CGA-CP, we considered:

- ▼ costing advice provided to the council by consultants
- ▼ whether the costs are consistent across the precincts, and
- ▼ the choice of indices to escalate cost estimates to the base period of the plan.

To estimate the costs of stormwater infrastructure in CGA-CP, Camden Council has used aspects of two different consultant reports.

We found that the cost estimates for stormwater infrastructure in CGA-CP are high, arising from Camden Council's:

- ▼ application of a high "fill contingency" to all stormwater infrastructure
- ▼ inconsistent application of costing sources and base rates with different inclusions
- ▼ incorrect indexation of some base rates, and
- ▼ application of an unreasonably high planting establishment and maintenance allowance for stormwater channels.

For the next review of CGA-CP, we consider Camden Council should review the cost estimates for all stormwater infrastructure to ensure they are consistent with the current water cycle management strategies for the precincts and the design of each component.

⁵⁷ This is further broken down into 44 channels in the CGA-CP Works Schedule for Leppington.

⁵⁸ CGA-CP, Leppington S94 Plan schedule 20170309, Drain Con tab.

⁵⁹ PB 2013, Table 8.

⁶⁰ Camden Council, *Response to IPART Request for Information*, 16 February 2018, Question 40.

Camden Council should also consider indexing the cost estimates for stormwater infrastructure by the Producer Price Index (PPI), which is the more cost-reflective indexation factor for stormwater works.

Recommendations

- 8 Before applying for LIGS funding, Camden Council remove the 25% fill contingency allowance for stormwater works. This would reduce stormwater works costs by \$16,711,693.
- 9 Before applying for LIGS funding, Camden Council remove the planting establishment and maintenance allowance from basin costs in Leppington. This would reduce basin costs in Leppington by \$8,010,023.
- 10 Before applying for LIGS funding, Camden Council apply the correct Type A basin rate to basins B2, B4, B8 and B9 in Leppington. This would reduce basin costs in Leppington by \$3,836,517.
- 11 Before applying for LIGS funding, Camden Council adjust the costs of embedded biofilters in Leppington. This would reduce biofiler costs in Leppington by \$1,207,062.
- 12 Before applying for LIGS funding, Camden Council remove the cost of GPTs from standalone biofilters in Leppington. This would reduce biofiler costs in Leppington by \$207,900.
- 13 Before applying for LIGS funding, Camden Council recalculate the cost of biofilter BA1 in Leppington North. This would reduce biofilter costs in Leppington North by \$35,244.
- 14 Before applying for LIGS funding, Camden Council remove the planting establishment and maintenance allowance from channel costs in Leppington North (\$812,736) and Leppington (\$2,157,069). This would reduce stormwater works costs by a total of \$2,969,805.
- 15 Before applying for LIGS funding, Camden Council correct the indexation error for channel rates in Leppington. This would increase channel costs in Leppington by \$221,159.
- 16 Before January 2020, Camden Council:
 - review the cost of spreading or removing material excavated for stormwater works
 - review the cost of planting establishment and maintenance for basins and channels
 - review the cost estimates for all stormwater infrastructure to ensure they are consistent with the current stormwater management strategies for the precincts and the design of each component.
- 17 Before January 2020, Camden Council consider applying the more cost-reflective *ABS Producer Price Index (Road and Bridge Construction) NSW* instead of the *Consumer Price Index (All Groups) Sydney* to index the estimated cost of stormwater works to the base period of the plan.

5.3.1 The method for estimating stormwater works costs lacks transparency

Cardno and PB prepared cost estimates for the stormwater works identified in the respective Water Cycle Management Strategies for Leppington and Leppington North, as follows:

- ▼ **Leppington North:** Cardno cost estimates for Austral & Leppington North (ALN) – Revision F, 14 June 2012,⁶¹ and
- ▼ **Leppington:** PB cost estimates, 5 December 2013.

To estimate the costs of stormwater infrastructure in CGA-CP, Camden Council has used aspects of the Cardno and PB cost estimates, supplemented with allowances from other sources. Camden Council’s approach is outlined in Table 5.4.

Table 5.4 Costing sources for stormwater works in CGA-CP

Stormwater infrastructure	Leppington North	Leppington
Basins (including GPTs)	▼ Cardno	▼ Cardno + planting allowance
Embedded biofilters	▼ Cardno	▼ PB
Standalone biofilters	▼ Cardno	▼ PB
Channels	▼ Cardno + planting allowance; or ▼ Camden Council rates for stabilisation	▼ Cardno + planting allowance; or ▼ Cardno + Camden Council rates for stabilisation

Note: Camden Council has also applied a “fill contingency” to all stormwater infrastructure costs (see section 5.3.2) and various other standard allowances and contingencies, such as project on-costs, construction contingency and demolition allowances where existing structures are on land for stormwater infrastructure.

Source: CGA-CP Works Schedules.

The result of this approach is that the costs of stormwater infrastructure (that are based on a certain design and with specific inclusions) do not always align with the water cycle management strategies for the precinct.⁶² This approach also lacks transparency.

We recommend that, before January 2020, the council reviews the cost estimates for all stormwater infrastructure to ensure they are consistent with the current stormwater management strategies for the precincts and the design of each component.

5.3.2 An excessive “fill contingency” is applied to all stormwater works costs

Camden Council has applied a “fill contingency” of 25% to the cost of all stormwater infrastructure in Leppington North and Leppington. While Council advised that this contingency is applied only to basin costs, it is actually applied to the cost of all stormwater infrastructure.⁶³

Council explains that:

This contingency was adopted to provide some risk coverage to Council for the construction of basins given there is no contamination and soil classification available at this time. With fragmented development, it also aims to cover those scenarios when Council does not have a suitable location to store excess VENM⁶⁴ that may be suitable for reuse.⁶⁵

⁶¹ Cardno’s Revision F cost estimates are dated 14 June 2012 and 14 September 2012. Camden Council has used 14 June 2012 as the base date for these costings.

⁶² For example, PB’s stormwater management strategy for Leppington included a GPT for each biofilter and no GPTs as part of detention basins. By using Cardno’s basin costs (that include GPTs) in Leppington, rather than PB’s costings, the costings do not match the design and overall stormwater management strategy for this precinct.

⁶³ Camden Council, *Response to IPART Request for Information* 16 February 2018, Question 37.

⁶⁴ Virgin Excavated Natural Material.

⁶⁵ Camden Council, *Response to IPART Request for Information* 16 February 2018, Question 37.

The Cardno costings, from which the basin and channel costs in CGA-CP and standalone biofilter costs in Leppington North are derived, assume that excess excavated material can be stockpiled, spread on site and appropriately stabilised. The cost of using excavated material on-site is built into the unit rates for most stormwater infrastructure in CGA-CP and, on average, represents around 18% of basin costs. It is not reasonable for Camden Council to apply an additional allowance to cover the cost of stockpiling or disposing of excavated material. Even if the costs of using excavated material on site were not built into the unit rates for stormwater infrastructure, a 25% contingency for stockpiling and/or disposing of excavated material appears high.

It is also unreasonable for Council to apply a fill contingency to the cost of embedded biofilters that sit within detention basins. This is because there is no excavation, and therefore no fill, associated with the cost of embedded biofilters.

We recommend that Camden Council remove the 25% fill contingency allowance for stormwater works in CGA-CP. This would result in a reduction in stormwater works costs of \$16,711,693, comprising

- ▼ \$3,524,186 in Leppington North, and
- ▼ \$13,187,507 in Leppington.

It may be necessary for council to adjust the cost estimates for basins, channels and standalone biofilters when it has further information about contamination and soil classification to determine whether the assumptions underlying the Cardno base cost rates are appropriate.

5.3.3 Some basin costs are not reasonable

To estimate costs for detention basins in Leppington and Leppington North, Camden Council has applied per square metre base costs rates for three different basin types derived from Cardno's stormwater infrastructure costings for ALN.⁶⁶ Cardno's base cost rates for basins in ALN include the cost of GPTs.

We have identified two issues with Camden Council's cost estimates for basins that contribute to high overall basin costs in CGA-CP:

1. Application of a planting establishment and maintenance allowance for basins in Leppington that is inconsistent with basin costing in Leppington North and amounts to double-counting.
2. Application of the wrong base rate for costing four "Type A" basins in Leppington.

Each of these issues is outlined below.

Planting establishment and maintenance allowance for basins in Leppington

The costings for stormwater works in Leppington were prepared by PB. Camden Council has chosen to apply the Cardno base cost rates for detention basins in Leppington North to all basins in CGA-CP to achieve consistency across the plan.

⁶⁶ Cardno, Revision F costings, June 2012.

However, in Leppington, Camden Council has also applied a planting establishment and maintenance allowance per square metre to the area surrounding basins in addition to the Cardno basin cost rates. Across the 19 detention basins in Leppington, this planting allowance amounts to \$8,010,023. We consider that council's inclusion of this allowance for detention basins in Leppington is unreasonable because:

- ▼ the Cardno base cost rates for basins applied in Leppington already includes an allowance for 52 weeks of planting establishment and maintenance,
- ▼ it is inconsistent with the approach council has taken to costing basins in Leppington North, and
- ▼ the council has indicated that this land is required for uses that may not require planting, such as the provision of batters, weirs, channels, rain gardens and maintenance access.⁶⁷

We recommend that Camden Council remove the planting establishment and maintenance allowance from basin costs in Leppington. This would result in a reduction in basin costs of \$8,010,023.⁶⁸

Application of the wrong base rate to four basins in Leppington

As outlined above, Camden Council has applied the Cardno base cost rates for detention basins in Leppington North to all basins in CGA-CP. These base rates apply to three different basin types: Types A, B and C. To apply the Leppington North basin rates to basins in Leppington, council has identified the relevant basin type and applied the corresponding unit rate.

For four basins in Leppington (B2, B4, B8 and B9), Camden Council has applied the wrong cost rate for the identified basin type. Each of these basins is identified as a Type A basin, yet the cost estimates are based on a higher, unrelated base rate.

We recommend that Camden Council apply the correct Type A basin rate to basins B2, B4, B8 and B9 in Leppington that have been classified as Type A basins. This would result in a reduction in basin costs of \$3,836,517.⁶⁹

5.3.4 Some biofilter costs are not reasonable

CGA-CP includes costs for biofilters in Leppington and Leppington North, consistent with the water cycle management strategies recommended by Cardno (Leppington North) and PB (Leppington) as follows:

- ▼ **Leppington North** – 4 biofilters embedded in detention basins and 1 standalone biofilter.
- ▼ **Leppington** – 9 biofilters embedded in detention basins and 45 standalone biofilters.

⁶⁷ Camden Council, *Response to IPART Request for Information* 16 February 2018, Question 30.

⁶⁸ This reduction assumes that the 25% fill contingency has been removed (see Recommendation 8). If the fill contingency is not removed, the reduction for removing the planting establishment and maintenance allowance from basin costs in Leppington would be \$9.5 million.

⁶⁹ This reduction assumes that the 25% fill contingency has been removed (see Recommendation 8). If the fill contingency is not removed, the reduction for applying the correct basin rates in Leppington would be \$4.5 million.

Camden Council has adopted the following approaches to costing biofilters in each precinct:

▼ **Embedded biofilters:**

- Leppington North - Council has applied per square metre rates for three different biofilter types derived from Cardno's stormwater infrastructure costings for ALN, corresponding to the type of basin in which each biofilter will be located.⁷⁰
- Leppington - Council has applied an average per square metre rate derived from PB's costings of standalone biofilters in Leppington.⁷¹

▼ **Standalone biofilters:**

- Leppington North - Council has applied a per square metre rate from Cardno's separate costing of a standalone biofilter in ALN.⁷²
- Leppington - Council has applied individual costings for standalone biofilters provided by PB.⁷³

We have identified three issues with Camden Council's cost estimates for biofilters that contribute to high overall biofilter costs in CGA-CP:

1. Construction costs for embedded biofilters in Leppington are overstated because Council has estimated costs based on an average per square metre rate for construction of standalone biofilters.
2. The cost of GPTs has been double-counted in biofilter costs in Leppington.
3. Biofilter and GPT rates for the standalone biofilter in Leppington North have been incorrectly indexed.

Each of these issues is outlined below.

Construction costs for embedded biofilters in Leppington are overstated

As noted above, Camden Council has applied an average per square metre rate derived from PB's costings of standalone biofilters in Leppington to estimate the cost of embedded biofilters in Leppington. This means that the cost estimates for basins in Leppington are based on Cardno costs, but estimates for the biofilters within them are based on PB costs.

This approach leads to unreasonably high costs for embedded biofilters in Leppington because construction of a standalone biofilter includes works that are not required for an embedded biofilter, such as site preparation and earthworks. These works are included in the corresponding basin construction costs. Therefore, Council's use of the PB standalone biofilter costs to determine a base rate for embedded biofilters is unreasonable.

As Camden Council has applied the Cardno base rates for detention basins in Leppington North to basins in Leppington, we consider Council should apply the corresponding Cardno

⁷⁰ Cardno, Revision F costings, June 2012 and CGA-CP, Leppington North Work Schedule.

⁷¹ CGA-CP, Leppington S94 Plan Schedule 20170309, Drain Con Tab, Construction Cost Assumptions (Column R).

⁷² Cardno, *Austral & Leppington, Estimated Schedule of Quantities, Independent Bio-Basin, Rev A*, 7 March 2013 and CGA-CP, Leppington North S94 Revised Work Schedule_GLN changes 20170309, Con Drain Tab.

⁷³ PB 2013, Table 10 and CGA-CP, Leppington S94 Plan Schedule 20170309, Drain Con Tab, (Columns R&S).

base rates for biofilters that are embedded in these basins in the same way. An example is that a “Type A” basin would include a “Type A” biofilter in Leppington and in Leppington North, rather than having a mixture of Cardno and PB rates for construction within the same basin.

We recommend that Camden Council adjust the costs of embedded biofilters in Leppington, using the Cardno biofilter rates from its costings of stormwater infrastructure in ALN, corresponding to the relevant basin type. This would reduce the cost of embedded biofilters in Leppington by \$1,207,062.⁷⁴

GPT costs are double-counted in biofilter costs in Leppington

PB’s stormwater management strategy for Leppington provides GPTs upstream of each biofilter, at a cost of \$3,500 per GPT.⁷⁵ However, the cost of GPTs is also included in the basin rates that Camden Council has applied in Leppington. Therefore, Council’s application of different costing sources has resulted in a double-counting of GPT costs in Leppington.

For embedded biofilters in Leppington, our recommendation to adjust costs using Cardno biofilter rates would address this double-counting of GPTs. This is because Cardno’s biofilter rates do not include GPT costs.

For standalone biofilters in Leppington, Camden Council should remove the cost of GPTs. This would reduce the cost of standalone biofilters in Leppington by \$207,900.⁷⁶

Biofilter and GPT rates for standalone biofilter BA1 in Leppington North are based on incorrect base rates

Camden Council has estimated the cost of standalone biofilter BA1 in Leppington North using Cardno’s per square metre rate for an independent bio-basin in ALN and Cardno’s rate for a GPT, however it has relied on incorrect base rates to calculate this estimate.

We recommend that Camden Council recalculate the cost of biofilter BA1 using Cardno’s base rates for an independent bio-basin (7 March 2013) and GPT (14 June 2012). This would reduce the cost of biofilter BA1 by \$35,244.

5.3.5 Some channel costs are not reasonable

Camden Council has estimated the cost of constructing channels in Leppington and Leppington North using Cardno’s per square metre rates for four different channel types in ALN. The council also applied an additional allowance for planting maintenance and establishment costs.

⁷⁴ This reduction assumes that the 25% fill contingency has been removed (see Recommendation 8). If the fill contingency is not removed, the reduction from adjusting the embedded biofilter costs in Leppington would be \$1.4 million.

⁷⁵ Email from WSP (PB) to IPART, 14 July 2017.

⁷⁶ This reduction assumes that the 25% fill contingency has been removed (see Recommendation 8). If the fill contingency is not removed, the reduction for removing the cost of GPTs in standalone biofilters in Leppington would be \$0.25 million.

It has included this allowance in each precinct, as follows:

- ▼ In Leppington North, the council has applied:
 - an indexed unit rate for a drainage channel (C10) that includes an additional 15% on the relevant Cardno channel rates, and
 - the indexed rate for “Drainage Corridor Bank Stabilisation” (\$74.04/m²) to the total area of existing watercourses to be used for drainage in the precinct (C1, C2, C4, C5 and C6).
- ▼ In Leppington, the council has applied:
 - an indexed unit rate for drainage channels that includes an additional 15% on the Cardno channel rates (although it has incorrectly indexed the channel rates from June 2014 rather than June 2012), and
 - the indexed rate for “Drainage Corridor Stabilisation” (\$74.04/m²) to the total area of riparian land along and around channels.⁷⁷

Camden Council has imposed a similar planting maintenance and establishment allowance for parks (open space works items) in CGA-CP. This allowance was included in response to a recommendation from WT Partnership, which was engaged by DPE to review the relevant consultant costings for open space and other public infrastructure in CGA-CP.⁷⁸

In relation to open space costings, WT Partnership recommended a rate of “10-15% additional to the cost of soft landscaping”.⁷⁹ However, CGA-CP includes a planting establishment and maintenance allowance for open space parks and stormwater channels at a rate of 15% of the total costs of construction or \$74.04/m² of the total relevant land. By calculating the allowance in relation to total costs or total relevant land, rather than just the costs of soft landscaping, Camden Council has included an unreasonably high allowance for planting establishment and maintenance.

For stormwater channels, there is insufficient information in the underlying costings for us to identify the soft landscaping costs to which the planting establishment and maintenance allowance should apply. We therefore recommend that Camden Council remove the allowance from all stormwater channel costs in CGA-CP at this stage. We also recommend that council correct the indexation error for channel rates in Leppington. This would reduce channel costs overall in CGA-CP by \$2,969,805, comprising:

- ▼ \$812,736 for channel costs in Leppington North,⁸⁰ and
- ▼ \$2,157,069 for channel costs in Leppington.⁸¹

For its next amendment of CGA-CP, Council should review the stormwater channel costings to identify the soft landscaping component. It will then be able to calculate a reasonable planting establishment and maintenance allowance based only on the soft landscaping component of channel costs.

⁷⁷ The additional 15% has been applied to channel Types 1 and 2, 3 and 4. It has not been applied to Type 5 channels.

⁷⁸ WT Partnership, *Austral and Leppington North Precincts, Review of costs for section 95 contributions plan*, Draft Report, 30 March 2012 (WT Partnership).

⁷⁹ WT Partnership, p 12.

⁸⁰ This reduction assumes that the 25% fill contingency has been removed (see Recommendation 8). If the fill contingency is not removed, the channel adjustment for Leppington North would be \$1.0 million.

⁸¹ This reduction assumes that the 25% fill contingency has been removed (see Recommendation 8). If the fill contingency is not removed, the channel adjustment for Leppington would be \$2.6 million.

5.3.6 Cost estimates are indexed by the CPI

Camden Council has indexed the cost of stormwater works to December 2016 using the *CPI (All Groups) for Sydney*. We consider indexing costs by the CPI is not unreasonable, however we recommend the council consider using a relevant Producer Price Index (PPI) published by the Australian Bureau of Statistics (ABS), which would be more cost-reflective for the type of infrastructure. The most suitable PPI for the cost of stormwater works is the PPI (Road and Bridge Construction) NSW.⁸²

Our preferred approach of indexing costs for stormwater works by the PPI (Road and Bridge Construction) NSW is consistent with IPART's recommendations regarding the Rockdale Contributions Plan 2016 – Urban Renewal Area and the Draft West Dapto Contributions Plan.⁸³ We note that this change would have a minimal impact on the cost of stormwater works because the PPI (Road and Bridge Construction) NSW has tracked closely to CPI in recent years.

5.4 Criterion 5: Apportionment

In assessing apportionment of stormwater costs in CGA-CP, we have considered:

- ▼ the Water Sensitive Urban Design (WSUD) strategy recommended by Cardno for Leppington North and the Water Cycle Management (WCM) strategy recommended by PB for Leppington, and
- ▼ Camden Council's statements about the demand for stormwater infrastructure in the plan arising from the expected development inside and outside the Leppington North and Leppington precincts.

We found that Camden Council's approach to apportionment of stormwater costs in Leppington is reasonable, however the same approach is unreasonable in the Leppington North Precinct where the Development Control Plan imposes different stormwater management requirements on developments in that precinct.

Recommendation

- 18 Before applying for LIGS funding, Camden Council review and amend its approach to apportionment of stormwater costs in Leppington North to reflect the Liverpool Growth Centre Precinct Development Control Plan's different stormwater management requirements for developments in the precinct.

5.4.1 Apportionment of stormwater costs in CGA-CP on an area basis

Camden Council apportions stormwater costs to both residential and non-residential development in CGA-CP on an area (ie, per hectare of Net Developable Area (NDA)) basis.

⁸² ABS, 6427.0 Producer Price Indexes, Australia, Table 17, Index No 3101 Road and bridge construction New South Wales.

⁸³ See IPART, *Assessment of Bayside Council's Rockdale Contributions Plan 2016 – Urban Renewal Area*, December 2016, p 72, and IPART, *Assessment of Wollongong City Council's Draft West Dapto Section 94 Development Contributions Plan*, October 2016, p 20.

For Leppington North, CGA-CP explains that in addition to the stormwater works provided in the plan, a range of stormwater management works will be required for developments in the precinct as conditions of development consent.⁸⁴ These may include on-site detention basins, private domain biofiltration for commercial and industrial land use, rainwater tanks, construction of kerb, gutter and piping in local roads, installation of drainage pits and grates, and pipe connections to the trunk drainage network.⁸⁵

Additional objectives apply to the planning and design of facilities and private development in the Leppington Major Centre (in Leppington North), including:

- ▼ integrating stormwater controls into the private domain to mimic the natural water cycle and improve the amenity of commercial, business, retail and industrial zones and
- ▼ the use of 'green roofs' so that air quality, ambient air temperature, aesthetics and the quality of roof runoff is improved.⁸⁶

The Liverpool Growth Centre Precincts Development Control Plan, which applies to the Leppington North precinct, provides that on-site detention of stormwater is required for all development in the precinct.⁸⁷ However, further WSUD controls are required for industrial development and development in the business zones (B3, B4, B5 and B7) in the Leppington Major Centre.⁸⁸ As these developments are required to provide additional stormwater management controls through conditions of development consent compared with medium density residential development (R3) in the precinct, it is not reasonable for stormwater costs in CGA-CP to be apportioned equally on a per hectare of NDA basis. The apportionment of stormwater management costs in Leppington North should reflect the relative demand for stormwater works from different development types.

We recommend that, before applying for LIGS funding, Camden Council review and amend its approach to the apportionment of stormwater costs in Leppington North to reflect the Development Control Plan's different stormwater management requirements for developments in the precinct.

For Leppington, CGA-CP similarly explains that a range of 'non-trunk' reticulation works will be required for developments as conditions of development consent.⁸⁹ In this precinct, most development will be residential, with only 4.8 hectares of the total NDA of 453.7 hectares being non-residential (zoned for a Neighbourhood Centre). While this Neighbourhood Centre may be required to provide additional on-site stormwater management works compared with residential development within the precinct, we consider in the interests of consistency and simplicity, it is reasonable for Camden Council to apportion stormwater costs to all development within Leppington on a per hectare of NDA basis.

⁸⁴ Under section 80A(1)(f) of the *Environmental Planning and Assessment Act 1979*.

⁸⁵ CGA-CP Technical Document, pp 16-20.

⁸⁶ CGA-CP Technical Document, p 18.

⁸⁷ Liverpool Growth Centre Precincts Development Control Plan, Schedule 2, section 6.5, pp 153-154.

⁸⁸ Liverpool Growth Centre Precincts Development Control Plan, Schedule 2, section 6.5, pp 153-154 and section 5.4 p 76.

⁸⁹ CGA-CP Technical Document, p 63.

6 Open space

This chapter presents our assessment of the open space infrastructure in CGA-CP against the essential works list, nexus, reasonable cost (works only) and apportionment criteria in the Practice Note.

The total cost of open space land and embellishment in CGA-CP is \$261.52 million (approximately 39% of total costs), comprising \$171.77 million for land and \$89.75 million for works.⁹⁰

Our findings and recommendations are summarised in Table 6.1. We recommend that before it applies for LIGS funding, Camden Council make adjustments to the plan which we estimate would reduce the cost of open space embellishment by \$12.58 million (14.0%).

Table 6.1 Summary of IPART-recommended adjustments to open space embellishment

Criterion	Finding	Recommendation	Leppington North (\$Dec2016)	Leppington (\$Dec2016)
Total cost in plan			\$22.12m	\$67.62m
Essential Works List	All items are on the Essential Works List, except for plans of management	Remove cost of plans of management	-\$0.11m	-\$0.21m
Nexus	Nexus is established for all items			
Reasonable costs	Calculation errors for several parks in Leppington	Revise and include correct costs for these parks		-\$0.72m
	Cost of maintenance and establishment is not reasonable	Remove planting establishment and maintenance allowance	-\$2.83m	-\$8.71m
Apportionment	Apportionment of costs is reasonable			
Total IPART recommended cost adjustment			-\$2.94m	-\$9.64m
Total IPART assessed reasonable cost			\$19.18m	\$57.98m

Note: Columns may not add due to rounding.

⁹⁰ CGA-CP also includes costs for non-essential works in each precinct, but these costs are not included in the calculation of contribution rates

6.1 Criterion 1: Essential Works List

CGA-CP includes the cost of:

- ▼ Nine parks for passive recreation (local, district and channel), a sports field and two basin pathways in Leppington North.
- ▼ Thirty-one parks for passive recreation (local, district and channel), four sports fields in Leppington, and the apportioned costs of district-level sports field facilities to be located in the Rossmore Precinct.⁹¹

We found the items of embellishment for the parks and sports fields are consistent with the Essential Works List (EWL) in the Practice Note, with the exception of plans of management (Table 6.2). The plan identifies non-essential open space embellishment but in accordance with the Practice Note, does not include any costs for these in the amounts to be funded by local infrastructure contributions.

Recommendation

- 19 Before applying for LIGS funding, Camden Council remove the cost of plans of management for the reserves in each precinct. This would reduce open space embellishment costs by \$111,011 in Leppington North and \$214,000 in Leppington.

⁹¹ CGA-CP Summary Workbook Tabs LN Con OS and (Lep) OS Con

Table 6.2 Our assessment of open space embellishments in CGA-CP against the EWL

Items on the Essential Works List	Items NOT on the Essential Works List
▼ Local parks: Construction (ie, site preparation, planting and turf), furniture, playground, plaza paving, walkways/cycleways	▼ Plans of management
▼ District parks: Construction, furniture, picnic facilities, outdoor courts, parking, playground, lighting and electricals, amenities building, carparking	
▼ Local sporting fields: Construction, furniture, picnic facilities, exercise equipment, multi-purpose playing field with irrigation, cricket practice nets, informal courts, formal courts, amenities building, formal court lighting, playing field lighting, local sports parking	
▼ District sporting fields: Construction, furniture, picnic facilities, fitness equipment, multi-purpose playing field with irrigation, cricket practice nets, informal courts, formal courts, amenities building, formal court lighting, playing field lighting, district sports parking	
▼ Channel parks: Construction (riparian embellishment), shared pedestrian/cycleway	
▼ Basin pathways: Shared pedestrian/cycleway	
▼ General: Maintenance and establishment, demolition	

Source: CGA-CP Summary Workbook Tabs LN Con OS and (Lep) OS Con

6.1.1 Plans of management are not essential works

Plans of management are not consistent with the EWL. The total cost for these plans in CGA-CP is \$325,011:

- ▼ \$111,011 for Leppington North, and
- ▼ \$214,000 for Leppington.

We recommend Camden Council remove these costs from the plan or make it clear that they are non-essential and remove the costs from the amounts to be funded by local infrastructure contributions (ie, ensure they are not included in the calculation of contribution rates).

6.1.2 Non-essential works are not included in the calculation of contribution rates

The plan also identifies non-essential open space embellishment:

- ▼ For Leppington North a dog off-leash area, a skate park and a BMX track (\$1,176,939).
- ▼ For Leppington Precinct two dog off-leash areas and a skate park (\$726,588).⁹²

In accordance with the Practice Note, CGA-CP does not include these costs (or related plan administration costs) in the works to be funded by local infrastructure contributions.

⁹² Camden Growth Areas CP, Leppington North S94 Plan Revised Schedule, Tab LN Con OS. and Leppington S94 Plan Schedule 20170309, Tab OS Con.

6.2 Criterion 2: Nexus

In assessing whether there is nexus between the open space land and works in CGA-CP and development in the precincts, we considered whether the infrastructure is sufficient to meet, but not exceed, the demand from the anticipated new residents and workers in the Leppington North and Leppington precincts. We assessed nexus separately for each precinct in CGA-CP.

We found nexus has been established for open space for both Leppington North and Leppington.

The area in the plan for open space, and the specific facilities to be provided in each precinct, are appropriate to meet the demand arising from the new development expected to occur within them, and consistent with that recommended in the technical studies and industry benchmarks. For Leppington North, these studies and the subsequent precinct planning considered demand and land requirements across the entire Austral and Leppington North Precinct. The majority of the total area is in the Liverpool LGA, and Leppington North (Camden) is a relatively small area.

As to the overall rate of provision of land for open space:

- ▼ In Leppington North (Camden) the rate of 3.8ha/1,000 residents exceeds the commonly used benchmark of 2.83ha/1,000 residents. We consider this is not unreasonable given that precinct planning resulted in an overall rate of provision of 2.49ha/1,000 residents for Austral/Leppington North, and recognising that demand for open space will also arise from non-residential development in Leppington North.
- ▼ The overall rate of provision for Leppington of 2.41ha/1,000 residents is low compared with the benchmark of 2.83ha/1,000 residents, but reasonable.

Table 6.3 lists the technical studies relied on by Camden Council.

Table 6.3 Technical studies for open space in CGA-CP

Report	Author, date	Referred to as
Leppington North		
<i>Austral and Leppington North Precincts – Demographic and Social Infrastructure Assessment</i>	Elton Consulting, July 2011	Leppington North Social Infrastructure Assessment
<i>Austral and Leppington North Precincts – Addendum to the Demographic and Social Infrastructure Assessment</i>	Elton Consulting, July 2012	Addendum, Leppington North Social Infrastructure Assessment
<i>Leppington Major Centre Public Domain Strategy</i>	AECOM Australia Pty Ltd, 2012	
<i>Austral and Leppington North Precinct Plan, Post-exhibition Planning Report</i>	Department of Planning and Infrastructure, December 2012	Leppington North Precinct Planning Report
Leppington		
<i>Leppington Precinct Study – Final Report</i>	SGS Economic and Planning Pty Ltd, 2012	Leppington Social Infrastructure Assessment
<i>Leppington (Stage 1) Finalisation Report</i>	DPE, October 2015	

Source: CGA-CP Main Document, pp 38 and 78.

6.2.1 Nexus is established for open space in Leppington North

When considering only the residential population of Leppington North, the rate of provision of 3.9ha/1,000 residents exceeds the commonly used benchmark of 2.83ha/1,000. However, we consider that this is not unreasonable when taking into account:

- ▼ Demand for open space facilities was established in the context of precinct planning for the combined Austral/Leppington North precincts, for which the rate of provision is 2.49ha/1,000, and it is not appropriate to assess the rate of provision for Leppington North residents in isolation.
- ▼ The amount and location of land zoned for open space in Leppington North that makes use of the extensive creek networks which would not be suitable for other, more substantial, types of use and development.
- ▼ In the technical studies and precinct planning, it was accepted that demand for open space will also arise from non-residential development (retail, commercial and civic land uses) in Leppington North.⁹³

In the Leppington North Social Infrastructure Assessment, Elton Consulting calculated the total area of local and district open space land required to meet the combined needs of the Austral and Leppington North precincts (located across Camden and Liverpool LGAs). The total additional local and district open space provision across the two precincts is approximately 2.49ha/1,000.

The Indicative Layout Plan provided for 19.4 hectares of open space in Leppington North (Camden), which for the estimated projected residential population in Leppington North

⁹³ CGA-CP Technical Document, pp 30-31.

(Camden) of 4,816, reflects a rate of 3.9ha/1,000.⁹⁴ An active-use park (with playing fields and hard-surface courts) is located within the area zoned residential, providing the number of fields and courts consistent with population benchmarks for such facilities.

The remainder of open space in Leppington North (13.74 hectares or 72%), being local and channel parks, will serve passive uses. The majority of this land (11.6 hectares) is riparian or below the 100 ARI⁹⁵ level, designated as channel parks located around waterways, in part because of the extensive creek networks that traverse the precinct.

The Leppington North Social Infrastructure Assessment, Leppington Major Centre Public Domain Strategy and the Leppington North Precinct Planning Report all considered it reasonable to assume that the many workers and visitors to the Major Centre would demand some of the open space and recreation facilities which were proposed, and are included in CGA-CP. Taking this demand into account, the high rate of provision for residential development compared with typical rates in greenfield areas is not unreasonable.

6.2.2 Nexus is established for open space in Leppington

CGA-CP indicates 62.26 hectares of land is included for open space in Leppington (representing an overall rate of provision of 2.41ha/1,000, based on a population of 25,919).⁹⁶ We consider this is reasonable, given that most of the precinct will consist of low density residential development, ie, single dwellings.⁹⁷ This will provide more private open space for the occupants compared with the higher density of residential development in Leppington North. In addition, CGA-CP notes that there are substantial areas of riparian corridor land which could serve a passive recreation function, such as some of the 27 hectares of land to be used for drainage channels.⁹⁸

We consider the area in CGA-CP is reasonable even though the Leppington Social Infrastructure Assessment recommended a smaller area (56.60 hectares). This is because the study:

- ▼ assumed a lower projected population (24,000 new residents) than the current projected population
- ▼ assumed that less land would be required for sports grounds which, at the time the study was prepared, were expected to be co-located with schools for shared use

⁹⁴ There is a discrepancy between the Work Schedule and the Technical Document for the estimated new population for Leppington North Precinct. The rate of provision is 3.9ha/1,000 using the estimate of 4,816 in the Work Schedule (Tab NDA and Population G8), and 4.1ha/1,000 using the estimate of 4,659 in the Technical Document, p 23).

⁹⁵ Annual Recurrence Interval.

⁹⁶ CGA-CP Technical Document Table B8 and pp 70-71. The work schedule for Leppington indicates that only 59.56 hectares will be acquired for open space, which would reduce the rate of provision to 2.30/ha per 1,000.

⁹⁷ CGA-CP Technical Document Table B3 p 48.

⁹⁸ CGA-CP Technical Document pp 70-71.

- ▼ did not include any area for linear or linkage open spaces, although it acknowledged these spaces would likely be provided, and
- ▼ did not include any allowance for Leppington's share of district sports fields outside the precinct, which it acknowledged residents would require.⁹⁹

Precinct planning acknowledged a shortfall in the area of open space would occur if higher population estimates (27,900 to 31,600 residents) were adopted, and that Leppington residents would access district and regional level open space outside the precinct. It envisaged an apportionment in the contributions plan of four hectares of facilities in the Rossmore Precinct (which is included in the plan) and 2 hectares in Leppington North (which is not included in CGA-CP).¹⁰⁰

In practice, the precinct planning process takes many factors into consideration to determine the amount and location of land to be zoned RE1. These include the recommendations of the technical study's demand assessment, the topography and natural features of the precinct, and principles such as ensuring all residents have a park within walking distance and co-sharing the public land with schools (eg, the area of the school site was reduced and open space land increased, with the intent that adjoining public open space will be co-shared for passive play). In Leppington much of the open space area is located in the two creek corridors traversing it, and is located where existing vegetation is to be retained, on environmentally constrained land or where there is existing active or passive open space. To the extent that some drainage channel land could be available for passive recreation uses, the rate of provision would be higher. However at this stage, we are not able to determine the extent of land that may be available and its quality for meeting the recreational needs of future residents.

6.3 Criterion 3: Reasonable costs of open space works

In assessing the reasonableness of Camden Council's approach to costing the capital works for open space infrastructure in CGA-CP, we considered:

- ▼ costing advice provided to the council by consultants
- ▼ the use of council's own cost rates, and
- ▼ the choice of indices to escalate cost estimates to the base period of the plan.

Overall we found the costs are reasonable, except for the cost of landscaping maintenance and establishment. We also found that the cost of the amenities building in DP1 in Leppington may be high.

Additionally, the use of a Producer Price Index (PPI) to index the cost of embellishment to the base period of the plan would be more cost-reflective than the CPI the council has applied.

⁹⁹ SGS Economic and Planning, *Leppington Precinct Study – Final Report*, October 2012, p 5 and Table 67, p 128.

¹⁰⁰ DPE, *Leppington (Stage 1) Finalisation Report*, October 2015, p 18.

Recommendations

- 20 Before applying for LIGS funding, Camden Council remove the 15% allowance for maintenance and establishment from the cost of all parks in Leppington North Precinct (an amount of \$2,828,313) and Leppington Precinct (an amount of \$8,712,702) and re-calculate it based on the cost of soft landscaping only.
- 21 Before applying for LIGS funding, Camden Council correct calculation errors for the costs of local parks LP20 and LP21, and channel parks CP12, CP13, CP14, CP15 in Leppington, and reduce the costs in the plan by \$716,740.
- 22 Before January 2020 Camden Council:
 - revise the costs of the amenities buildings in DP1 Leppington North and DP1 Leppington so that they are commensurate with meeting the needs of users of those parks
 - consider applying the more cost-reflective *ABS Producer Price Index (Non-Residential Building Construction) NSW* instead of *the Consumer Price Index (All Groups) Sydney* to index the estimated cost of open space embellishment to the base period of the plan.

6.3.1 The method for estimating open space embellishment costs is reasonable

Box 6.1 explains the council's approach to estimating the base cost rates in CGA-CP.

Box 6.1 Camden Council's approach for estimating open space capital costs in CGA-CP

The council used three sources of information:

1. Indicative costings provided by Elton Consulting in July 2011 to support its technical study of the social infrastructure required in Leppington North.^a A quantity surveyor was not engaged, and these are generic costs for specific items of embellishment, but the advice also indicates the cost build-up for typical types of passive and active parks, including an estimation of the site coverage required for items such as groundworks, planting, turf, playing fields, courts, pavements and parking.
2. A review of the Elton cost report prepared in March 2012 by WT Partnership (WTP)^b for the department, which advised where costs should be varied, and in most cases, increased.
3. Council's own cost rates for plaza paving, shared pedestrian/cycleway, some lighting and riparian management. CGA-CP states the council consulted with officers of Liverpool City Council who were preparing costs for the Austral/Leppington North contributions plan.

^a Elton Consulting, *Austral and Leppington North Precincts – Addendum to the Demographic and Social Infrastructure Assessment* (Elton cost report), July 2011, pp 4-8.

^b WT Partnership, *Austral and Leppington North Precincts, Review of Costs for Section 94 Contributions Plan* (WTP Review), March 2012

The WT Partnership (WTP) Review recommended that the rates of numerous items of embellishment should be increased, including for pavements, formal and informal courts, playing field irrigation and lighting, cricket practice nets and parking, all of which the council adopted. Camden Council did not follow through with WTP's suggestions to

increase the 25% allowance for professional fees (ie, all on-costs other than a contingency allowance), or that a contingency allowance in the order of 10% would be more appropriate than the assumed 7%.

We are satisfied that it was reasonable to maintain the Elton rates where WTP recommended lower rates in relation to:

- ▼ topsoil and turf, where the WTP rate was about 5% lower than the Elton rate, and
- ▼ riparian management, where the plan maintained the Elton rate of \$58/m². (WTP assumed the range was \$20 to \$80/m².)

For each type of embellishment we have been unable to determine the components and cost build-up, so are not in a position to determine whether the Elton rates were unjustifiably higher. In any event, such costs will inevitably be revised as a result of our recommendation to recalculate the allowance for maintenance and establishment (Recommendation 20). This exercise will require the council to separate out the components of their rates for what CGA-CP terms variously as local and district park, sporting field and riparian open space ‘construction’ or ‘embellishment’. In essence, this represents the costs of preparing the sites for recreational use, and would include any costs of soft landscaping as well as clearing and levelling the site.

We also note that the total cost of open space embellishment is not excessive on a per person basis when compared to other plans we have assessed.

6.3.2 Calculation errors in the overall costs of open space in Leppington

We have identified some errors in Camden Council’s works schedules relating to the cost of open space works in Leppington, specifically for:

- ▼ Local parks LP20 and LP21
- ▼ Channel parks CP12, CP13, CP14, CP15.

We recommend Camden Council adjust the cost estimates in CGA-CP to correct these errors. This would reduce the cost in CGA-CP of open space embellishment in Leppington by \$716,740.

6.3.3 Cost of maintenance and establishment is not reasonable

The WTP review recommended including costs for “the watering and maintenance of soft landscaped areas for a period of 12 months”, as this was common practice in landscape contracts with councils. The proposed rate was “10 - 15% additional to the cost of soft landscaping”.¹⁰¹ In CGA-CP “maintenance and establishment” is calculated at 15% of the total costs of all other items in each park, such as playgrounds, playing fields, lighting as well as groundworks for site preparation, planting and turf.¹⁰²

¹⁰¹ WTP Review p 12.

¹⁰² Elton, pp 5-8.

By calculating the allowance in relation to total costs, rather than just the costs of soft landscaping, Camden Council has included an unreasonably high allowance for planting establishment and maintenance.

We therefore recommend that Camden Council remove the maintenance and establishment allowance from open space costs in CGA-CP at this stage. This would reduce open space costs by \$11.54 million, comprising:

- ▼ \$2.83 million in Leppington North, and
- ▼ \$8.71 million for open space costs in Leppington.

For its next amendment of CGA-CP, Council should review the open space costings to identify the soft landscaping component. It will then be able to calculate a reasonable planting establishment and maintenance allowance based only on the soft landscaping component of open space embellishment.

6.3.4 Cost of amenities buildings in district parks may be excessive

CGA-CP provides for an amenities building and parking in a district park in the Leppington precinct (DP1 Leppington), which is a 4-hectare area of passive open space. Similar facilities are included in the cost of DP1 in Leppington North, which is a 6-hectare park located alongside the eastern side of Scalabrini Creek. This level of embellishment has not usually been included in passive reserves in other plans we have reviewed, and we sought an explanation from the council.

The Social Infrastructure Assessments for Leppington North and Leppington each indicate that the precinct should have a district (key suburb) level park, offering more extensive facilities than in the smaller and more numerous local parks. The council advised that as DP1 in Leppington is a district facility servicing a much larger catchment than local parks, it assumed parking and amenities facilities would be required to increase the useability of the space.¹⁰³

We accept that designated carpark areas are required. The council advised some users will travel by car to make use of DP1 in Leppington, and on-street car parking alone would not be able to meet all the parking needs associated with the district-level facilities. We note also that DP1 in Leppington is a substantial size (4 hectares) and only about one-third of the park boundary has a street frontage. Similarly, it is likely many users of DP1 in Leppington North will need some car parking given its restricted street frontage, location away from the precinct's main residential area, and it also serves the commercial development in the Leppington Town Centre.

We accept that the council's intention to provide an amenities building (ie, a toilet block) is reasonable for parks of this size. The current cost in CGA-CP is the Elton-based cost for an amenities building for a sports field, which would include changing rooms and other accommodation such as a canteen area necessary for hosting team competitions.¹⁰⁴ A district-level passive park without playing fields does not need facilities as extensive as these, and we recommend the council revise its plans and reduce the scale, and therefore the

¹⁰³ Camden Council, *Response to IPART Request for Information*, 16 February 2018.

¹⁰⁴ CGA-CP Summary Workbook Tab (Lep) OS Con.

cost, of the amenities building. It is open to the council to provide a building of the scale currently in the plan, but the contributions rate should include only the cost of a more modest structure.

Similarly, we recommend that the council also review the required size, and therefore cost, of an amenities building for users of DP1 in Leppington North.

6.3.5 Cost estimates are indexed by the CPI

CGA-CP uses the *Consumer Price Index (All Groups) for Sydney* to escalate open space embellishment cost estimates. We consider indexing costs by the CPI is not unreasonable, however we recommend the council consider using a relevant Producer Price Index (PPI) published by the Australian Bureau of Statistics (ABS) which would be more cost-reflective for the type of infrastructure. The most suitable PPI for the cost of open space embellishment is the PPI (Non-Residential Building Construction) NSW.¹⁰⁵

Our preferred approach to indexing costs for open space embellishment by the PPI (Non-Residential Building Construction) NSW is consistent with our recommendations in relation to the Rockdale Contributions Plan 2016 – Urban Renewal Area and the Draft West Dapto Contributions Plan.¹⁰⁶ We note that this change would have a minimal impact on the cost of open space embellishment because the PPI (Non-Residential Bridge Construction) NSW has tracked closely to CPI in recent years.

6.4 Criterion 5 Apportionment

In assessing apportionment of open space costs in CGA-CP, we have taken into account:

- ▼ the demand for open space in Leppington North and Leppington arising from the expected development inside and outside the precincts
- ▼ the capacity of existing open space, and
- ▼ the demand generated by different types of development that will occur in the precincts (in particular non-residential development in Leppington North).

We found Camden Council's approach to apportionment of open space costs in CGA-CP to be reasonable. Specifically, we consider that apportioning costs to some non-residential development in Leppington North Precinct is reasonable in the particular circumstances of anticipated development.

¹⁰⁵ ABS, 6427.0 Producer Price Indexes, New South Wales, Australia, Table 17 Index No 3020 Non-residential building construction New South Wales.

¹⁰⁶ See IPART, *Assessment of Bayside Council's Rockdale Contributions Plan 2016 – Urban Renewal Area*, December 2016, p 93 and IPART, *Assessment of Wollongong City Council's Draft West Dapto Section 94 Development Contributions Plan*, October 2016, p 20 respectively.

6.4.1 Apportionment of open space costs in Leppington North is reasonable

Unusually for a greenfield plan, CGA-CP apportions a substantial amount (34%) of open space costs to non-residential development.

Our assessment is that it is reasonable for the council to make this apportionment, and accept as reasonable its assumption about which non-residential land uses will create demand, and the approach adopted to determine the allocation of costs between residential and non-residential development.

Open space costs are allocated to both residential non-residential development

As discussed in section 6.2.1 above, the Leppington North Social Infrastructure Assessment, Leppington Major Centre Public Domain Strategy and the Leppington North Precinct Planning Report all considered it reasonable to assume that the many workers and visitors to the Major Centre would demand some of the open space and recreation facilities which were proposed.¹⁰⁷

While these reports established nexus, they provided no guidance to the council for calculating the appropriate apportionment. In the absence of data estimating the relative levels of demand by residential and non-residential development, CGA-CP uses an approach similar to that in the Strathfield plan (see section below), albeit tailored to the specific circumstances of Leppington North. This takes into account the investigations underpinning and the outcomes of precinct planning which was done for the Austral/Leppington North Precincts as a whole. The council's approach is explained in Box 6.2.

¹⁰⁷ See Elton, *Austral and Leppington North Precincts – Demographic and Social Infrastructure Assessment*, July 2011 pp 56-57; AECOM Australia Pty Ltd, *Leppington Major Centre Public Domain Strategy*, 2012, pp 55-56; Department of Planning and Infrastructure, *Austral and Leppington North Precinct Plan, Post-exhibition Planning Report*, December 2012, p 15.

Box 6.2 Camden Council's methodology to determine apportionment of open space costs in Leppington North Precinct

Camden Council calculated the relative apportionment of the costs of open space between residential and non-residential development in Leppington North in this manner.

Base data and assumptions:

- ▼ 19.4 hectares of land in Leppington North are zoned for open space
- ▼ 4,816 is the estimated net additional residential population in Leppington North
- ▼ 2.49ha/1,000 residents is the rate of provision for open space facilities across the whole of the Austral/Leppington North precinct
- ▼ 944,280m² is the projected Gross Floor Area (GFA) of non-residential use comprising:
 - 724,005m² in zones B3, B4, B5 and B7 (business and commercial use)
 - 220,275m² zone IN2 (light industrial)^a

Basis for calculating contributions

- ▼ per person for residential development
- ▼ per square metre basis for non-residential development (whether or not that development also comprises residential development)
- ▼ nil for development in land zoned IN2 Light Industrial^b
- ▼ the sum of the contributions from each component for development where there is both residential and non-residential GFA

Calculation of apportionment

1. The rate of provision of open space facilities for new residents in Leppington North (Camden) should be consistent with the rate applying across the whole of the Austral/Leppington North Precinct.
2. Of the 19.4 hectares zoned for open space, 12.8 hectares are required to make the rate of provision for residents consistent across the whole precinct (or 66% of the total open space land).
3. The balance of land zoned for open space is 5.6 hectares (34% of the total).
4. Assuming the residential demand is satisfied by complying with the required rate of 2.49ha/1,000 residents, then residential development should meet this share of overall costs, and non-residential development should account for the remainder.
5. Accordingly, the costs of open space infrastructure in CGA-CP should be attributed:
 - ▼ 66% to residential development
 - ▼ 34% to non-residential development

^a The business and commercial zones are B3 Commercial Core, B4 Mixed use, B5 Business development and B7 Business Park.

^b CGA-CP is not explicit about why no contributions are levied on development in land zoned IN2 Light Industry.

Source: CGA-CP Technical Document, A 2.4.9 to A2.4.11, pp 29-31.

Councils adopt various approaches to apportioning open space costs to non-residential development

With the exception of the plan for the Rockdale Urban Renewal Area, none of the plans we have reviewed to date has apportioned open space costs to non-residential development. In most cases the expected development in the catchment areas is predominantly residential, with only small amounts of non-residential. In CP21 – Marsden Park the large industrial precinct was assumed not to give rise to any demand for open space.

However, we have identified plans for several councils in the Sydney metropolitan area which consider such demand and make an apportionment appropriate to their circumstances. They include North Sydney, Manly, Northern Beaches (Warriewood), the (former) Leichhardt and Strathfield councils, and the City of Sydney.

There is no standard method, and no benchmarks, for determining an appropriate apportionment. In the absence of such guidance, these councils assess demand in the particular context of the proposed open space infrastructure and their assumptions about the anticipated use by non-residents relative to residents.

Where data is available, plans refer to the results of surveys of existing usage to estimate the likely use of the specific local facilities and the nature of the resident and non-residential populations. Others make assumptions about usage patterns in general to base their assumptions and estimates of demand from non-residential in their specific location.¹⁰⁸

6.4.2 Apportionment of open space costs in Leppington is reasonable

The cost of all open space facilities located in Leppington are apportioned to the new residents of the precinct. The only non-residential development expected in Leppington is a neighbourhood level retail/commercial development of 4.81 hectares, which represents less than 1% of total NDA. In these circumstances it is reasonable to apportion all open space costs to residential development.

CGA-CP provides for apportionment to Leppington of the costs of an out-of-precinct district level sports facility. The council proposes at this stage that it be located in the yet to be released Rossmore Precinct to the north-west of Leppington. This facility is expected to serve a population of 60,000. The cost is apportioned 43.12% to the 25,919 population of Leppington. We consider this approach is reasonable.

¹⁰⁸ See for example Rockdale Urban Release Area: IPART, *Assessment of Bayside Council's Rockdale Contributions Plan 2016 – Urban Renewal Area*, December 2016, pp 99-101; Elton Consulting, *Sydney Olympic Park Master Plan 2030 (2016 Review) (Draft)*, June 2016, pp 41-42; and *Strathfield Council Section 94 Direct Development Contributions Plan 2010 – 2030*, p 47.

7 Community services

This chapter presents our assessment of the provision for community services facilities in CGA-CP against the essential works list, nexus and apportionment criteria in the Practice Note. Our assessment of the reasonable cost of land for community services facilities is in Chapter 9.

CGA-CP includes a total of \$6.62 million for the cost of acquiring land for community services: \$0.92 million in Leppington North and \$5.69 million in Leppington.¹⁰⁹

We found that:

- ▼ CGA-CP includes only land, consistent with the EWL
- ▼ nexus has been established for the proposed land for community services in both Leppington North and Leppington, and
- ▼ apportionment of the costs of land for community services facilities in both Leppington North and Leppington is reasonable.

7.1 Criterion 1: Essential Works List

CGA-CP includes only the cost of land for community services, which is consistent with the Essential Works List.

As shown in Table 7.1, the cost of acquiring land in the plan comprises:

- ▼ 0.25 hectares in Leppington North for an 'interim' multi-purpose community centre to be located in the Civic Precinct to the north of the Leppington Major Centre
- ▼ 1.87 hectares in Leppington for three sites to provide two local level community facilities and a co-located district level community centre and youth centre, and
- ▼ proportionate shares for each precinct of 2.33 hectares in the Civic Precinct required for district/regional level community and cultural facilities designed to serve the needs of about 120,000 future residents in the SWGA (0.09 hectares for Leppington North and 0.50 hectares for Leppington).¹¹⁰

Consistent with the EWL, although cost estimates for capital works for these facilities are included in the plan they are not included in council's calculation of the contributions rates.

¹⁰⁹ The Work Schedules contain estimates for the cost of construction of local and regional facilities on this land, as well as for public art, but CGA-CP does not include these costs when calculating contributions.

¹¹⁰ CGA-CP Technical Document, pp 32-36 and 73-77.

Table 7.1 Land for community services in CGA-CP (ha)

	Land for local community facilities	Land for regional community facility (apportioned)
Leppington North	0.25	0.09
Leppington	1.87	0.50
Total	2.12	0.59

Note: The total area (2.33ha) and cost (\$5.60 million) of land for the Regional community facility is apportioned among several precincts, based on the relative share of the projected 120,000 population it will serve. Leppington North's share is 4.01% and Leppington's share is 21.6%.

Source: CGA-CP Technical Document, Leppington North Precinct Land and Works Summary Schedule and Leppington Precinct Land and Works Summary Schedule, pp 36 and 77.

7.2 Criterion 2: Nexus

Camden Council's proposals for community and cultural facilities reflect the approach to service delivery and the extent of facilities recommended in the Social Infrastructure Assessments prepared for each precinct.¹¹¹ In neither precinct were existing facilities considered to have excess capacity to serve the new residents.

The land in CGA-CP will accommodate the following local community facilities:

- ▼ In Leppington North, the interim multi-purpose community centre (750m²), which is considered adequate to meet the demand from the small additional population in Leppington North. As the population within the regional catchment grows, this interim centre has the capacity to expand into the major multipurpose community centre which will occupy the remainder of the Civic precinct.
- ▼ In Leppington, three local community facilities, comprising two local community centres (each 500m²) and a co-located district level multi-purpose community centre and youth centre (1,500m²).

In addition, residential development in both precincts will contribute to the cost of proposed district and regional level facilities in the Leppington Major Centre. Camden Council proposes to provide a multi-purpose community centre (2,500m²), a central library (4,500m²) and a performing arts cultural facility (5,000 m²) to serve the regional catchment of approximately 120,000 residents in five precincts in the SWGA.¹¹²

¹¹¹ Elton Consulting, *Austral and Leppington North Precincts - Demographic and Social Infrastructure Assessment*, July 2011; SGS Economics and Planning, *Leppington Precinct Study – Final Report*, prepared for NSW Department of Planning and Infrastructure, 2012.

¹¹² Camden Council, Application Form. CGA-CP Technical Document, pp 34-35 and 74-75.

7.3 Criterion 5: Apportionment

Apportionment of the costs of land for community services in both Leppington North and Leppington is reasonable.

Camden Council apportions the cost of land for local community facilities to residential development within each of the precincts, on a per person basis.

The council apportioned the cost of land for a multi-purpose community centre to be located in the Leppington Major Centre among a number of surrounding precincts, on the basis of expected populations:

- ▼ 4.01% of the cost is apportioned to Leppington North residents
- ▼ 21.6% of the cost is apportioned to Leppington residents.¹¹³

CGA-CP assumes that there is no excess capacity in existing open space facilities in either precinct and gives demand credits for existing residential development, which we accept as reasonable.

¹¹³ CC–CGA Technical Document, pp 35 and 75.

8 Plan preparation and administration

CGA-CP contains \$5.00 million for plan preparation and administration costs. Plan preparation and administration costs are on the Essential Works List.

Council has estimated the costs using IPART's benchmark of an allowance equivalent to 1.5% of the cost of works in the plan. We consider this is reasonable. However, because our recommendations result in a net reduction in the cost of works for each infrastructure category, we recommend that plan preparation and administration costs are reduced by \$0.71 million to \$4.29 million (See Table 8.1). This would result in plan preparation and administration based on 1.5% of the total *reasonable* cost of works.

Table 8.1 Summary of IPART-recommended adjustments to plan administration costs

Criterion	Finding	Recommendation	Leppington North (\$Dec2016)	Leppington North (\$Dec2016)
Total cost in plan			\$1.18m	\$3.81m
Reasonable costs	Costs are calculated using IPART benchmark of 1.5% of capital costs of infrastructure	Reduce administration costs to be 1.5% of the revised cost of works	-\$0.09m	-\$0.61m
Total IPART recommended cost adjustment			-\$0.09m	-\$0.61m
Total IPART assessed reasonable cost			\$1.09m	\$3.20m

8.1 Criterion 1: Essential works list

Plan preparation and administration costs are on the Essential Works List. The Practice Note explains:

Plan administration costs are those costs directly associated with the preparation and administration of the contributions plan. These costs represent the costs to a council of project managing the plan in much the same way as the project management costs that are incorporated into the cost estimates for individual infrastructure items within a plan.

Plan administration costs may include:

- background studies, concept plans and cost estimates that are required to prepare the plan
- project management costs for preparing and implementing the plan (e.g. the employment of someone to co-ordinate the plan).¹¹⁴

¹¹⁴ Department of Planning and Environment, *Local infrastructure Contributions Practice Note*, January 2018, p 16.

CGA-CP outlines the types of activities required to prepare and administer a contributions plan:

- ▼ The costs of Council staff time to prepare and review contributions plans, account for contributions receipts and expenditure, and coordinate the implementation of works programs, including involvement in negotiating works-in-kind and material public benefit agreements.
- ▼ The costs of consultant studies that are commissioned by Council from time to time in order to determine the value of land to be acquired, the design and cost of works, as well as to review the development and demand assumptions in the contributions plan.
- ▼ The costs of Council engaging the services of legal professionals to provide advice on implementing the plan.¹¹⁵

We consider these activities are consistent with the description of plan preparation administration in the Essential Works List.

8.2 Criterion 2: Nexus

We consider there is nexus between these plan preparation and administration activities outlined in the plan and the development in the Leppington North and Leppington Precincts.

8.3 Criterion 3: Reasonable cost

CGP-CP includes \$4,996,360 for plan preparation and administration costs. This comprises \$1,183,192 for Leppington North and \$3,813,168 for Leppington.

To estimate plan preparation and administration costs, Camden Council used IPART's benchmark of an allowance equivalent to 1.5% of the cost of works in the plan.¹¹⁶ We consider this is reasonable. However, we recommend Camden Council reduce the cost of plan administration by \$707,715 (\$92,191 in Leppington North and \$615,524 in Leppington) to maintain the amount at 1.5% of our assessment of reasonable works costs (see Table 8.2).

Table 8.2 Summary of IPART's assessment of cost of plan administration in CGA-CP

	Cost in plan (\$Dec2016)	Recommended adjustment (\$Dec2016)	Reasonable cost (\$Dec2016)
Leppington North	1,183,192	-92,191	1,091,001
Leppington	3,813,168	-615,524	3,197,644
Total	4,996,360	-707,715	4,288,645

Source: CGA-CP Technical Document, Appendices A.3 and B.3

¹¹⁵ CGA-CP Main Document, pp 9-10.

¹¹⁶ IPART, *Local Infrastructure Benchmark Costs – Final Report*, April 2014.



Recommendation

- 23 Before applying for LIGS funding, Camden Council adjust the cost of plan administration so that it is 1.5% of the cost of works in each precinct, (an estimated \$92,191 in Leppington North and \$615,524 in Leppington).

8.4 Criterion 5: Apportionment

CGP-CP apportions plan preparation and administration costs across all development in each precinct. The contribution rate is \$5,264 per hectare of NDA in Leppington North and \$8,732 per hectare of NDA in Leppington. The difference between the rates in each precinct is due to the difference in the total cost of works in the precincts.

9 Cross category considerations

This chapter presents our assessment on a number of criteria which apply across all infrastructure categories. It considers two aspects of Criterion 3 Reasonable costs which apply across all infrastructure categories: the cost of land and indexation of contribution rates. It also considers the timeframe for delivery of infrastructure (Criterion 4) and the council's consultation when preparing CGA-CP (Criterion 6).

Our findings and recommendations in relation to each criterion are summarised in Table 9.1.

Only our recommendation in relation to the cost of land in the plan will have an impact on the costs in CGA-CP. We recommend Camden Council make adjustments to the plan before it applies for LIGS funding, which we estimate would reduce the cost of land in the plan by \$7.58 million (2.3%).

Table 9.1 Summary of IPART's assessment of reasonable land costs

Criterion	Finding	Recommendation	Leppington North (\$Dec2016)	Leppington (\$Dec2016)
Total cost in plan			85,631,035	248,114,087
Reasonable costs	Land value categories in CGA-CP are too broad and unclear	Update with unit cost rates provided by MJ Davis, as follows:		
		Land for transport	700,000	-400,000
		Land for stormwater	700,000	-3,200,000
		Land for open space	1,200,000	-8,000,000
		Land for community services	-	-100,000
	Incorrect calculation	Include land for stormwater basin B19		1,370,264
		Include correct costs of land for regional community facility		145,084
Total IPART recommended cost adjustment			2,600,000	-10,184,652
Total IPART assessed reasonable cost			88,231,035	237,929,435

9.1 Cost of land

As part of our assessment of costs, we considered the reasonableness of Camden Council's approach to estimating the cost of land for all infrastructure categories.

We considered:

- ▼ the costing methodology used by council to estimate land costs
- ▼ the average values for each land value category identified in the plan
- ▼ council's application of the average values, including its assumptions about underlying zonings and the extent of any constraints, and
- ▼ the estimated cost of just terms compensation.

CGA-CP includes \$333.75 million for land acquisition. Camden Council will acquire 44.0 hectares of land in Leppington North and 126.4 hectares of land in Leppington. The areas and cost of land to be acquired in each precinct are shown at Table 9.2.

Camden Council had not acquired any of the land when it submitted the plan to IPART for assessment.

Table 9.2 Land to be acquired for local infrastructure in CGA-CP

Infrastructure category	Leppington North Precinct		Leppington Precinct	
	Area (ha)	Cost (\$Dec 2016)	Area (ha)	Cost (\$Dec 2016)
Transport	9.1392	\$21,296,736	6.2739	\$13,979,224
Stormwater	15.1112	\$24,068,009	58.0154	\$96,008,703
Open space	19.3972	\$39,342,688	59.5654	\$132,431,374
Community services	0.3436	\$923,602	2.3785	\$5,694,785
Total	43.9912	\$85,631,035	126.2332	\$248,114,086

Source: CGA-CP Work Schedules for Leppington North and Leppington, Tabs Road Acq Cost, Drain Acq Cost, OS Acq Cost & Com Fac Acq Cost.

Camden Council estimated the cost of land in CGA-CP by:

- ▼ Engaging a qualified valuer (MJ Davis), to provide advice on:
 - average market values (dollars per square metre) for different categories of land in each precinct, as identified by Council (see Table 9.3), and
 - a contingency allowance to cover the amount that the council may have to pay land-owners in compensation for the acquisition of their land.^{117 118}
- ▼ Applying the average values recommended by MJ Davis to the land in the plan based on its assumptions about:
 - the underlying zoning for each parcel of land, and
 - the area of any encumbrance (or constraint).
- ▼ Applying the contingency allowance to the market value of the land.

¹¹⁷ Payable under the *Land Acquisition (Just Terms Compensation) Act 1991*.

¹¹⁸ MJ Davis, *Land Valuations for the Leppington & Leppington North Precincts*, VN16165, 1 July 2016.

Table 9.3 Average unit cost rates for land to be acquired in CGA-CP (\$Dec2016)

Precinct	Land value category	Unit cost rate per m ²
Leppington North	Riparian land	\$70
	Land below 100 year ARI ^a	\$190
	Residential land	\$225
	Commercial land	\$240
	Industrial land	\$200
Leppington	Non-developable land (Riparian corridors, constrained land) below the 1:100 year ARI event	\$80
	Riparian corridors, constrained land above the 1:100 year ARI event	\$125
	Residential prime land above the 1:100 ARI event	\$225
	Commercial land (B2 zoning)	\$240

a Annual Recurrence Interval.

Source: CGA-CP Technical Document, Tables A7 and B5, pp 10 and 55.

We found that the council’s method in CGA-CP for estimating the cost of land is mostly reasonable, except that the land value categories are too broad, some of the land value categories are inconsistent between the two precincts, and council’s application of the average values does not always reflect the underlying zoning or constraints affecting the land to be acquired.

We also found that the cost of land for stormwater basin B19 in Leppington has not been included in the plan and the cost of land for the regional community facility apportioned to Leppington is calculated incorrectly.

Recommendations

- 24 Before applying for LIGS funding, Camden Council reduce the cost of land in CGA-CP by \$9,100,000 (\$2,600,000 increase in Leppington North and \$11,700,000 decrease in Leppington) to reflect updated unit cost rates provided by MJ Davis.
- 25 Before January 2020, Camden Council review:
 - its land value classifications to ensure they accurately reflect the expected land uses in the precincts and the category names are consistent across the precincts
 - its application of average values to land in CGA-CP to ensure the average values reflect the underlying zonings and constraints on the land.
- 26 Before applying for LIGS funding, Camden Council include the cost of land for Basin B19 in Leppington. This would increase the cost by \$1,370,264.
- 27 Before applying for LIGS funding, Camden Council correct calculation errors for the cost of land for the regional community facility in Leppington. This would increase the cost by \$145,084.

9.1.1 Land value categories in CGA-CP are too broad and unclear

We have identified three issues with the land value categories used by Camden Council in CGA-CP:

- ▼ Some land value categories are too broad.
- ▼ The categories are unclear and inconsistent across the precincts.
- ▼ It is unclear which category is applied to land constrained by transmission easements which run through Leppington Precinct.

Land value categories and zonings/land use

Some of the land value categories include several zonings or land use classifications, however it is unclear which zonings or land use classification council has included in each category. It appears that different category names are used for land that is similar in each precinct (eg, “riparian land” in Leppington North appears to be equivalent to “non-developable land” in Leppington). This contributes to a lack of transparency in the calculation of land costs in the plan.

Our interpretation of how the land value categories for costing land align with land use classifications is shown at Table 9.4.

Table 9.4 Land use classifications in categories used for land costings in CGA-CP (\$Dec2016)

Precinct	Land value category	Land use/ zoning	Unit cost rate per m ²
Leppington North	Riparian land	Riparian corridors below the 1:100 year ARI ^a event	\$70
	Land below 100 year ARI	Land of any zoning above the 1:20 year ARI event but below the 1:100 year ARI event	\$190
	Residential land	R3 – Medium Density Residential	\$225
	Commercial land	B3 – Commercial Core B4 – Mixed Use B5 – Business Development B7 – Business Park	\$240
	Industrial land	IN2 – Light Industrial	\$200
Leppington	Non-developable land (Riparian corridors, constrained land) below the 1:100 year ARI ^a event	Constrained land	\$80
	Riparian corridors, constrained land above the 1:100 year ARI event	E4 – Environmental Living	\$125
	Residential prime land above the 1:100 ARI event	R2 – Low Density Residential R3 – Medium Density Residential	\$225
	Commercial land (B2 zoning)	B2 – Local Centre	\$240

^a Annual Recurrence Interval.

Source: CGA-CP Technical Document, Tables A7 and B5, pp 10 and 55; and CGA-CP *Works Schedules* – Leppington and Leppington North, tab NDA and population summary.

There is no evidence that MJ Davis has considered the proportions of each land use classification within each category in its advice on average values for land in CGA-CP. This means that the MJ Davis average values for land are not weighted averages. Therefore, Camden Council's use of broad land value categories to calculate the cost land in CGA-CP could lead to inaccurate estimated land costs. This can be seen in the example of estimating the cost of land with an underlying residential zoning in Box 9.1.

Box 9.1 Camden Council's approach to costing land with an underlying residential zoning

Camden Council uses a single unit cost rate of \$225/m², as recommended by MJ Davis, to estimate the cost of land with underlying zonings of R2 and R3 in CGA-CP. These are the land use classifications within the "Residential land" and "Residential prime land" categories in the plan. The cost rate of \$225/m² is roughly the median value from the range of recent sales identified by MJ Davis.^a

However, the development yields that can be achieved from land with these different zonings are significantly different, and are known by the market. In addition, most of the R3 land is located in the Leppington North Precinct, closer to the Leppington railway station and Leppington Town Centre. This proximity to transport and commercial facilities is also likely to increase its value relative to R2 land.

There is an approximate 90/10 split between R2 and R3 land in CGA-CP.^b With this ratio of R2 and R3 land, Camden Council's use of a median unit cost rate to estimate the cost of all unconstrained residential land in the plan results in inaccurate estimates and is therefore unreasonable.

^a MJ Davis, July 2016, p 21.

^b Based on IPART calculations from CGA-CP work schedules.

Land constrained by transmission easements in Leppington

It is also unclear from the land value categories in CGA-CP which unit rate should apply to land constrained by transmission easements in the Leppington Precinct. Our assessment of the council's application of the average values shows that Camden Council has mostly applied the Residential prime land rate to land constrained by a transmission easement. This application does not reflect the constrained nature of the land.

Additional information provided by Camden Council officers

To address these issues with respect to residential land and land constrained by a transmission easement, we requested that Camden Council engage MJ Davis to provide separate unit cost rates for R2, R3 and E4 land and a rate for land that is constrained by a transmission easement. MJ Davis provided these separate unit cost rates to Camden Council in December 2017.

Camden Council officers advised that its application of the updated average values to the land to be acquired in CGA-CP results in an approximate reduction in land costs in the plan of \$9.1 million (an increase of \$2.6 million in Leppington North and a decrease of \$11.7 million in Leppington).¹¹⁹ These adjustments are shown in Table 9.5 and Table 9.6.

Table 9.5 Proposed council adjustment to Land costs in Leppington North (\$Dec2016)

Infrastructure Category	Value of land in plan	Adjustment acknowledged by Council	Total
Transport	21,296,736	700,000	21,996,736
Stormwater	24,068,009	700,000	24,768,009
Open space	39,342,688	1,200,000	40,542,688
Community services	923,602		923,602
Total	85,631,035	2,600,000	88,231,035

Source: Camden Council, Email to IPART, 23 February 2018.

Table 9.6 Proposed council adjustment to Land costs in Leppington (\$Dec2016)

Infrastructure Category	Value of land in plan	Adjustment acknowledged by Council	Total
Transport	13,979,224	-400,000	13,579,224
Stormwater	96,008,703	-3,200,000	92,808,703
Open space	132,431,374	-8,000,000	124,431,374
Community services	5,694,785	-100,000	5,594,785
Total	248,114,086	-11,700,000	236,414,086

Source: Camden Council, Email to IPART, 23 February 2018.

We note that Council's use of broad land value categories for costing land is also likely to lead to inaccuracies in costing other land in the plan. We therefore recommend that Camden Council:

- ▼ Before applying for LIGS funding, reduce the cost of land in CGA-CP by \$9.1 million (an increase of \$2.6 million in Leppington North and a decrease of \$11.7 million in Leppington) to reflect the updated unit cost rates provided by MJ Davis.
- ▼ Before January 2020, review the land value classifications to ensure they accurately reflect the expected land uses in the precincts and the category names are consistent across the precincts.

9.1.2 Council's application of average values to land in the plan contains errors

Camden Council applied the average values for each land category to the land in the plan by making assumptions about the land's underlying zoning and the impact of any development constraints (eg, for flood affected or riparian land).

¹¹⁹ Camden Council, Email to IPART, 23 February 2018.

The council provided some mapping at our request that clearly showed the 1 in 100 year flood level and the riparian corridors through the precincts. However, the maps did not show:

- ▼ the zoning or anticipated zoning of adjoining land to facilitate our assessment of Council's assumptions about underlying zonings, or
- ▼ all the relevant land value categories.

We assessed the council's application of the average values for land to be acquired in the plan against the Indicative Layout Plan and maps provided by council. We found examples of unreasonable application of average values that demonstrate a need for the council to review its land costing. These examples include:

- ▼ In Leppington, the council has applied the rate for "Riparian corridors, constrained land above the 1:100 year ARI event" (\$125/m²) to land below the 1:100 year flood level (unit rate of \$80/m²). This error applies to all infrastructure categories in Leppington and potentially increases costs in CGA-CP by \$2.8 million.
- ▼ In Leppington North, the council has applied rates for "Commercial land" (\$240/m²)¹²⁰ and "Residential land" (\$225/m²)¹²¹ to land below the 1:100 year flood level (unit rate of \$190/m²).

We therefore recommend that, before January 2020, Camden Council review its application of average values to land in CGA-CP to ensure the average values reflect the underlying zonings and constraints on the land.

9.1.3 The allowance for compensation is reasonable at this stage of development

Camden Council's land cost estimates in CGA-CP include a contingency allowance of 12% of the estimated market value,¹²² based on advice from MJ Davis.¹²³ This allowance is included to cover the cost of any just terms compensation that the council may be required to pay a landowner under the *Land Acquisitions (Just Terms Compensation) Act 1991* (Just Terms Compensation Act). This includes compensation for matters such disturbance, relocation, legal costs, valuation fees and stamp duty associated with a compulsory acquisition.¹²⁴

We prefer that any just terms compensation costs in contributions plans are based on fixed costs rather than a percentage of the estimated market value. This is because:

- ▼ the components of the likely compensation comprise mainly fixed costs, and
- ▼ market values can vary significantly, making a percentage approach less accurate.¹²⁵

¹²⁰ CGA-CP, *Leppington North Works Schedule*, OS Acq Cost Tab, item DP1.

¹²¹ CGA-CP, *Leppington North Works Schedule*, OS Acq Cost Tab, item LP2.

¹²² CGA-CP, *Technical Document*, Tables A7 and B5, pp 10 and 55.

¹²³ MJ Davis, July 2016, p 22.

¹²⁴ See section 55 of the *Land Acquisitions (Just Terms Compensation) Act 1991*.

¹²⁵ IPART, *Information Paper: Contributions plan assessment process for land costs*, 5 April 2018, p 5.

However, we consider that the 12% contingency allowance included in CGA-CP is reasonable at this stage of development in Leppington and Leppington North, because:

- ▼ it is based on the professional opinion of an external valuer, and
- ▼ with minimal development in the precincts, Camden Council would likely have to pay the full suite of relevant compensation under the Just Terms Compensation Act.¹²⁶

We note that as development progresses in the precincts and sales prices include uplift in value from urbanisation, the 12% contingency allowance might no longer reflect the likely just terms compensation associated with acquiring land in the precincts. We expect any changes in the allowance (as well as any actual amounts of compensation paid) would flow through to the Land Value Index for each precinct, as discussed below.

9.1.4 The cost of stormwater basin B19 is not included in the plan

Camden Council did not include the cost of land for stormwater basin B19 in Leppington. The cost of this basin is \$1,370,264, including a 12% allowance for just terms compensation. We recommend that the council include this cost in the plan.

9.1.5 The cost of the regional community facility is calculated incorrectly

Camden Council has not correctly calculated the cost of land for the regional community facility apportioned to Leppington. The cost of the regional facility is \$1,354,120, including a 12% allowance for just terms compensation. Camden Council did not include the 12% allowance of \$145,084 in the plan. We recommend that the council include this cost in the plan.

9.2 Indexation of contribution rates

As part of our assessment of costs, we have also considered whether the method in CGA-CP for indexing contribution rates is reasonable.

The *Environmental Planning and Assessment Regulation 2000* allows councils to index contribution rates quarterly or annually using:

- ▼ readily accessible index figures adopted by the plan (such as a Consumer Price Index), or
- ▼ index figures prepared by or on behalf of the council from time to time that are specifically adopted by the plan.¹²⁷

¹²⁶ Compensation is limited under section 61 of the Just Terms Compensation Act where the market value of land is based on a rezoned potential use that can be achieved within a reasonable timeframe.

¹²⁷ *Environmental Planning and Assessment Regulation 2000*, cl 32(3)(b).

CGA-CP states:

Council may, without the necessity of preparing a new or amending contributions plan, make changes to the monetary section 94 contribution rates set out in this plan to reflect:

- quarterly changes to the CPI for all works schedule items in this plan apart from the items comprising land yet to be acquired
- annual changes to the LVI for works schedule items in this plan comprising land yet to be acquired.¹²⁸

We found that escalating the works component of the contributions rates is consistent with the Regulation and is reasonable.¹²⁹ We also found that the use of a LVI is reasonable, in principle, but we consider the CGP-CP lacks sufficient detail about how and when the council will calculate the LVIs, and when they apply. We are also concerned that the council does not publish the LVIs despite the plan stating that they would be on the council's website or in its Management Plan or both.

Recommendations

28 Before January 2020, Camden Council:

- provide more information in CGA-CP about how it calculates the Land Value Index for Leppington North and the Land Value Index for Leppington, or
- publish on its website a policy on how it calculates land value indexes for local infrastructure contributions plans.

29 Before January 2020, Camden Council include in CGA-CP a statement identifying when the Land Value Index for Leppington North and the Land Value Index for Leppington will be applied to the land component of the contributions rates.

30 Each year, Camden Council publish the Land Value Index for Leppington North and the Land Value Index for Leppington on its website.

9.2.1 The calculation and application of the LVI lacks transparency

Camden Council periodically engages a qualified valuer to provide it with estimates of the market value of land within areas subject to several local infrastructure contributions plans. The valuer provides estimates of the average market value per square metre for various categories of land (eg, 'riparian land', 'land below 100 Year ARI', 'residential land', 'commercial land' and so on).

The council uses the valuer's estimates for two purposes:

1. Updating LVIs for escalating monetary contribution rates from the base period of the plan to the point when the developer is required to pay a contribution amount.
2. Calculating the value of land to be dedicated free of cost to the council of any part of a development site that is land to be acquired under the plan.

¹²⁸ CGA-CP Main Document, p 22.

¹²⁹ CGA-CP does not include any land council had already acquired when the plan was adopted. Therefore, in accordance with the plan the council escalated the entire land component of the contributions rates by the LVI and the CPI escalation only applies to the works component of the contributions rates. As the council acquires land during the period when a plan is in force, the actual cost of acquiring the land will flow through to the LVI.

The council separately calculates LVIs for the Leppington North and Leppington Precincts. Based on our correspondence with council, Box 9.2 explains how the council uses the revised market values to update the LVIs. There is limited information within the plan about how the council calculates the LVIs.

The council does not publish the indices that apply to the land component of the contributions rate despite the plan stating that they would be on the council's website or in its Management Plan or both.¹³⁰ It does publish updated land values for each land use category on its website.¹³¹

There is also no information in the plan or on council's website about when (at which particular point in the year) the council would apply the index for each precinct to the contributions rates.

The lack of information about the council's approach to calculating and applying the indices could create uncertainty about the contribution amounts developers are required to pay (in the absence of any contribution caps).

To increase transparency and reduce uncertainty for developers, we recommend that the council publish its method for calculating the LVIs in the CGP-CP or on its website. We also recommend that the council publish the resulting LVIs by a specified date each year and identify in the plan when the indices will be applied to the land component of the contributions rates.

Box 9.2 Council's method for calculating the land value index

The Land Value Index (LVI) for a given period is calculated as follows:

1. Council engages a qualified valuer to prepare a valuation report with estimated average market values (\$/sqm) for each category of land use in the precinct.
2. Council recalculates the total cost of acquiring land in the contributions plan.
 - a) Council identifies all land in the plan that it has acquired. It adds together the purchase price for all acquisitions (indexed by the CPI All Groups for Sydney) to derive the total **cost of land already acquired**.
 - b) Council applies the updated average market values (from step 1) to the remaining land in the same way it did when preparing the plan to derive the total **cost of land yet to acquire**.
 - c) Council adds the total cost of land already acquired (2a) to the total cost of land yet to acquire 2(b) to obtain the **revised estimated cost of land in the plan**
3. Council compares the **revised estimated cost of land** to the estimated cost of land in the base period of the plan to calculate the LVI.

Source: IPART based on correspondence with Camden Council.

¹³⁰ CGA-CP Main Document, p 24.

¹³¹ Camden Council, Current Contribution Plans, <https://www.camden.nsw.gov.au/planning/section-94/contribution-plans/>, accessed 28 February 2018.

9.3 Timeframe for delivery of infrastructure

CGA-CP indicates that infrastructure will be generally delivered “as and when surrounding development proceeds” or “as adjoining development occurs”, with no specific timing identified.

We recognise the council has adopted this approach because it faces uncertainty about the pace and pattern of development in these precincts, given the fragmented ownership, owners’ varied aspirations and the lack of a lead developer. However, consistent with our approach in previous assessments, we found that the council could include in CGA-CP more defined indications of when infrastructure items are likely to be delivered. The council could prioritise delivery in indicative tranches, for example of five years, over the development horizon of 20 to 30 years which is currently anticipated.¹³²

Such an approach would provide more certainty to potential developers and current land owners in the precincts, and increase transparency and accountability about the council’s expenditure of contributions.

In addition, the council recognises it may need to be more proactive in acquiring land and delivering infrastructure in CGA-CP.¹³³ Making commitments to construct specific items of infrastructure may well facilitate decisions about development and thereby reduce some of the uncertainty about how it will proceed.

We recommend Camden Council review the timeframe for delivering infrastructure in CGA-CP in the context of the revised planning controls discussed in section 3.3.3, which would allow the council to predict development trends with more certainty. In summary these are:

- ▼ a review of the land use and infrastructure implementation plan for the SWGA
- ▼ a review of residential densities in Leppington North
- ▼ precinct planning for Stages 2 and 5 of the Leppington Precinct.

Recommendation

- 31 Before January 2020, Camden Council review timeframes and establish priorities for delivering infrastructure in CGA-CP.

¹³² Camden Council, Application form, Part 3 pp 16-17.

¹³³ Informal advice from council officers at site visit by IPART, 7 August 2017.

9.4 Community consultation

We found that Camden Council's consultation with its community in preparing CGA-CP was appropriate. The council:

- ▼ publicly exhibited the draft plan from 6 December 2016 to 31 January 2017
- ▼ advertised the plan's exhibition in local papers
- ▼ made the draft plan available at the council's administration building, local libraries, and on its website, and
- ▼ received three submissions.

In response to a submission, the council made a minor amendment to the plan to include the cost of half road construction for roads fronting land for educational establishments and open space, which it had unintentionally omitted from the draft plan. The other submissions raised zoning and compensation issues outside the scope of the draft plan.

10 Other matters

This chapter considers several issues that IPART considers to arise under Criterion 6, Other Matters:

- ▼ Legislative information requirements
- ▼ Consistency between Main Document and Technical Document of CGA-CP
- ▼ Indicative residential contributions
- ▼ Development exempt from contributions

10.1 Legislative information requirements

Three documents indicate the information councils should include in a contributions plan:

- ▼ the EP&A Act (sections 94 to 94EC) which sets out the provisions for the making of a contributions plan¹³⁴
- ▼ the EP&A Regulation (clause 27) which lists the particulars that must be included in the contributions plans, and
- ▼ the *Development Contributions Practice Notes (2005)*.¹³⁵

We found the information provided in CGA-CP generally complies with the requirements of the Regulation (see Appendix 10.4C) and is set out in a manner that is consistent with the guidelines in the 2005 Practice Notes.

10.2 Consistency between the Main Document and Technical Document

When reviewing the spreadsheets in the Main Document and the Technical Document, we found inconsistencies with the costs set out in the two documents. These inconsistencies have occurred in different infrastructure categories. The costs we have based our assessment on are those set out in Table 3.3 and Table 3.4 in Chapter 3 of this report, and are based on those in the Works schedules in the Technical Document.

Recommendation

- 32 Before January 2020, Camden Council ensure that the costs reported in the CGA-CP Main Document are consistent with the costs reported in the Technical Document.

¹³⁴ From 1 March 2018 the provisions applying to making of contributions plans are found in sections 7.18 and 7.19 of the EP&A Act.

¹³⁵ Department of Infrastructure, Planning and Natural Resources, *Development contributions Practice notes*, July 2005.

10.3 Indicative residential contributions

We have previously recommended that councils would improve the transparency of their contributions plans by including indicative contributions amounts for selected types of dwellings.¹³⁶

Summaries of contribution rates for Leppington North and Leppington are set out in Appendix A and Appendix B of CGA-CP. These tables specify the contribution rates for each of the open space and community services infrastructure categories, as they apply to a range of dwelling types. However for the transport and drainage infrastructure categories, the tables only show the rate per hectare of NDA, which precludes a calculation of the total contributions rates for different dwelling types.

Indicative total contributions for various dwelling types were included in the information the council submitted to us as part of its application for assessment. We recommend the council include such information in the version of the plan which is publicly available.

Recommendation

- 33 Before January 2020, Camden Council include in CGA-CP a table of Indicative contribution rates for a range of dwelling types.

10.4 Development exempt from contributions and NDA

Box 10.1 sets out the provisions in CGA-CP relating to the types of development exempted from payment of contributions. We consider these provisions are reasonable but have identified some issues with exemptions for public infrastructure which is provided by or on behalf of the State Government (ie, Crown development), to the extent that this development contributes to the demand for local infrastructure provided by the council.

The Minister for Planning may issue a Direction exempting certain developments from paying contributions for local infrastructure. At this time, there is no such Direction exempting Crown development.¹³⁷

However, a consent authority may not impose a condition of consent (including for on-site mitigation or payment of contributions) on Crown development, except with the approval of the applicant or the Minister for Planning.¹³⁸

¹³⁶ For example, CP21 – Marsden Park Industrial (2012).

¹³⁷ The only Direction currently in force exempts development carried out under *SEPP (Housing for Seniors or People with a Disability) 2004* and undertaken by a social housing provider. (Minister for Planning section 94E Direction dated 14 September 2007). Previous directions exempting certain types of development from paying contributions (for example, for the purposes of disabled access, affordable housing, and school buildings under the Building the Education Revolution) have been revoked.

¹³⁸ EP&A Act, section 4.33(1)(b).

Camden Council officers told us that the approval of the applicant or Minister to the imposition of development contributions conditions on Crown applications is, in their experience, never granted.¹³⁹

We therefore consider the exemption in the plan gives effect to the most likely outcome, recognising that the Council cannot direct Crown development to pay contributions. As a result, the council needs to decide how it will apportion any cost of servicing Crown development.

IPART has generally adopted or promoted a funding hierarchy, which we have used to guide our cost allocation and pricing decisions in other industries.¹⁴⁰ According to the hierarchy:

1. Preferably, the party that created the need to incur the cost (the impactor) should pay in the first instance.
2. If that is not possible, the party that benefits (the beneficiary) should pay. Further, it is preferable for direct beneficiaries to pay, but if that is not possible then indirect beneficiaries should pay.
3. In cases where it is not feasible to charge either impactors or beneficiaries (for example, because of social welfare policy, public goods, externalities, or an administrative or legislative impracticality of charging), the government (taxpayers) should pay.

As noted above, in the context of local infrastructure for Crown development it is unlikely that the impactor (ie, the relevant State agency) will pay. We also note that it may be difficult to identify who will benefit from the local infrastructure that services Crown development. For example, only flood-prone development may benefit from the provision of stormwater detention basins. Instead, we consider it reasonable that the council consider the beneficiaries of Crown development as a proxy for the impactor.

Given this, in terms of apportioning the costs of local infrastructure required as a result of the Crown development:

- ▼ If all beneficiaries of the Crown development are inside plan's catchment area, this is a case to spread the costs of local infrastructure required as a result of the Crown development across other development within the plan's catchment area (via local infrastructure contributions).
- ▼ On the other hand, if some of the beneficiaries are outside CGA-CP, then the council should look at whether it is practical, given the size and spread of the beneficiaries, to use alternative means, such as general rates, to cover the portion of the costs that are attributable to beneficiaries external to plan's catchment area.

¹³⁹ Camden Council, *Response to Draft Report*, 4 April 2018, Response 1. This is consistent with advice to IPART from other councils, such as Blacktown City Council.

¹⁴⁰ see for example: IPART, *Review of funding framework for Local Land Services NSW – Draft Report*, September 2013; and IPART, *Review of Rural Water Cost Shares – Issues Paper*, April 2018

Recommendation

- 34 Before January 2020, Camden Council identify whether there are any beneficiaries of the Crown development outside the plan's catchment area and, if practical, recover a proportionate share of the costs of the local infrastructure attributed to the Crown development from these beneficiaries (eg, via rates) and amend the contributions rates in CGA-CP accordingly.

Box 10.1 Development exempt from contributions in CGA-CP

CGA-CP does not apply to the following development:

- ▼ a dwelling house on a single allotment of land replacing an existing dwelling
- ▼ a dwelling house on vacant land on which a section 94 contribution has already been imposed
- ▼ secondary dwellings (1-bedroom \leq 60m²)
- ▼ affordable housing
- ▼ adaptive reuse of environmental heritage items
- ▼ public infrastructure (by or on behalf of the State Government or the council)
- ▼ public amenities or public services in this or another contributions plan prepared under section 94B of the EP&A Act
- ▼ utility undertakings carried out by water, sewer or energy providers
- ▼ residual lots (not generating demand for public amenities)
- ▼ superlots (ie, generating demand for public amenities after further subdivision), and
- ▼ development which the council considers would not result in a net increase in demand for public amenities.

Source: Camden Growth Areas CP, section 1.9, p 6.

Crown development may contribute to the demand for local infrastructure

The need for Camden Council to provide infrastructure for Crown development will depend on an assessment of demand for local infrastructure the development creates, and whether the identified demand can be met in an alternative way, ie through on-site mitigation measure required as a condition of consent.

If Crown development is required to mitigate impacts on-site, councils would not need to provide local infrastructure to service the development. However, if on-site measures are not required or there are residual impacts (ie, on-site measures only deal with part of the increase in demand), the council may need to provide local infrastructure to service the development.

Councils can recover any costs of servicing Crown development in a number of ways

Councils can recover any costs of servicing Crown development in a number of ways. They can recover the costs:

- ▼ directly through contributions from Crown development
- ▼ through contributions from other development, or
- ▼ through council rates (by obtaining a special variation to increase rates revenue, using reserves, or reducing expenditure on other services for ratepayers).

Given Camden Council officers expect that the council will be unable to secure contributions from Crown development, it has excluded land for Crown development from the contributions catchments in CGA-CP (ie, if the NDA of the catchment is lower than what it otherwise would be). This means that any costs of servicing Crown development are apportioned to other types of development in the catchments, which has the effect of making contributions payable by other development higher than would otherwise be the case.

In response to our Draft Report, Camden Council officers explained that this approach is reasonable for public schools because they are only required because of the new residential development. This is consistent with recognising the beneficiaries of the Crown development (the new residential development) as a proxy for the impactor.

The council also referred to the difficulty of funding the shortfall from rates payable by the limited number of new ratepayers in the early stages of development, and the challenge on equity grounds of using rates for existing ratepayers who do not benefit from the public services and amenities being provided.¹⁴¹

¹⁴¹ Camden Council, *Response to Draft Report*, 4 April 2018, Response 1.



Appendices



A Recommendations by priority

We have made 34 recommendations as a result of our assessment. Eighteen of these are recommendations that we consider the council should address before it applies for LIGS funding. Fourteen are recommendations that we consider the council should address before January 2020, as all caps on the contributions will be removed from 30 June 2020. The remaining recommendation is for the council to address each year.

A.1 Priority recommendations

Transport

- 1 Before applying for LIGS funding, Camden Council correct calculation errors for Intersection IN2 and Electrical Service Relocations ES2. This would increase transport works costs by \$1,234,334. 33
- 2 Before applying for LIGS funding, Camden Council adjust for correct indexation of local and collector roads, T-intersections and signalised intersections. This would increase transport works costs by \$481,292. 33
- 3 Before applying for LIGS funding, Camden Council reduce cost estimates for shared pathway creek crossings by \$3,449,210 as an interim measure until the council reviews the costing method for these items. 33

Stormwater management

- 8 Before applying for LIGS funding, Camden Council remove the 25% fill contingency allowance for stormwater works. This would reduce stormwater works costs by \$16,711,693. 46
- 9 Before applying for LIGS funding, Camden Council remove the planting establishment and maintenance allowance from basin costs in Leppington. This would reduce basin costs in Leppington by \$8,010,023. 46
- 10 Before applying for LIGS funding, Camden Council apply the correct Type A basin rate to basins B2, B4, B8 and B9 in Leppington. This would reduce basin costs in Leppington by \$3,836,517. 46
- 11 Before applying for LIGS funding, Camden Council adjust the costs of embedded biofilters in Leppington. This would reduce biofiler costs in Leppington by \$1,207,062. 46
- 12 Before applying for LIGS funding, Camden Council remove the cost of GPTs from standalone biofilters in Leppington. This would reduce biofiler costs in Leppington by \$207,900. 46

- 13 Before applying for LIGS funding, Camden Council recalculate the cost of biofilter BA1 in Leppington North. This would reduce biofilter costs in Leppington North by \$35,244. 46
- 14 Before applying for LIGS funding, Camden Council remove the planting establishment and maintenance allowance from channel costs in Leppington North (\$812,736) and Leppington (\$2,157,069). This would reduce stormwater works costs by a total of \$2,969,805. 46
- 15 Before applying for LIGS funding, Camden Council correct the indexation error for channel rates in Leppington. This would increase channel costs in Leppington by \$221,159. 46
- 18 Before applying for LIGS funding, Camden Council review and amend its approach to apportionment of stormwater costs in Leppington North to reflect the Liverpool Growth Centre Precinct Development Control Plan's different stormwater management requirements for developments in the precinct. 53

Open space

- 19 Before applying for LIGS funding, Camden Council remove the cost of plans of management for the reserves in each precinct. This would reduce open space embellishment costs by \$111,011 in Leppington North and \$214,000 in Leppington. 56
- 20 Before applying for LIGS funding, Camden Council remove the 15% allowance for maintenance and establishment from the cost of all parks in Leppington North Precinct (an amount of \$2,828,313) and Leppington Precinct (an amount of \$8,712,702) and recalculate it based on the cost of soft landscaping only. 62
- 21 Before applying for LIGS funding, Camden Council correct calculation errors for the costs of local parks LP20 and LP21, and channel parks CP12, CP13, CP14, CP15 in Leppington, and reduce the costs in the plan by \$716,740. 62

Plan preparation and administration

- 23 Before applying for LIGS funding, Camden Council adjust the cost of plan administration so that it is 1.5% of the cost of works in each precinct, (an estimated \$92,191 in Leppington North and \$615,524 in Leppington). 74

Cross category considerations

- 24 Before applying for LIGS funding, Camden Council reduce the cost of land in CGA-CP by \$9,100,000 (\$2,600,000 increase in Leppington North and \$11,700,000 decrease in Leppington) to reflect updated unit cost rates provided by MJ Davis. 77
- 26 Before applying for LIGS funding, Camden Council include the cost of land for Basin B19 in Leppington. This would increase the cost by \$1,370,264. 77
- 27 Before applying for LIGS funding, Camden Council correct calculation errors for the cost of land for the regional community facility in Leppington. This would increase the cost by \$145,084. 77

A.2 Recommendations for council to address before January 2020

Transport

- | | | |
|---|---|----|
| 4 | Before January 2020, Camden Council: | 33 |
| | – review the costing methodology for shared pathway creek crossings to ensure the costs reflect the size of crossings and bridges that are being provided in CGA-CP | 33 |
| | – consider adopting a culvert-based approach for shared pathway creek crossings, where appropriate, to reduce costs. | 33 |
| 5 | Before January 2020, Camden Council review the inclusions for all transport infrastructure cost estimates to ensure the base rates used to estimate costs reflect the work that is required to deliver the proposed infrastructure. | 33 |
| 6 | Before January 2020, Camden Council consider applying the more cost-reflective <i>ABS Producer Price Index (Road and Bridge Construction) NSW</i> instead of the <i>Consumer Price Index (All Groups) Sydney</i> to index the estimated cost of transport works to the base period of the plan. | 34 |
| 7 | Before January 2020, Camden Council review the delivery of collector roads in Leppington North to ensure a consistent approach to the delivery of all collector roads. | 38 |

Stormwater management

- | | | |
|----|--|----|
| 16 | Before January 2020, Camden Council: | 46 |
| | – review the cost of spreading or removing material excavated for stormwater works | 46 |
| | – review the cost of planting establishment and maintenance for basins and channels | 46 |
| | – review the cost estimates for all stormwater infrastructure to ensure they are consistent with the current stormwater management strategies for the precincts and the design of each component. | 46 |
| 17 | Before January 2020, Camden Council consider applying the more cost-reflective <i>ABS Producer Price Index (Road and Bridge Construction) NSW</i> instead of the <i>Consumer Price Index (All Groups) Sydney</i> to index the estimated cost of stormwater works to the base period of the plan. | 46 |

Open space

- | | | |
|----|---|----|
| 22 | Before January 2020 Camden Council: | 62 |
| | – revise the costs of the amenities buildings in DP1 Leppington North and DP1 Leppington so that they are commensurate with meeting the needs of users of those parks | 62 |
| | – consider applying the more cost-reflective <i>ABS Producer Price Index (Non-Residential Building Construction) NSW</i> instead of the <i>Consumer Price Index (All Groups) Sydney</i> to index the estimated cost of open space embellishment to the base period of the plan. | 62 |

Cross category considerations

25	Before January 2020, Camden Council review:	77
	– its land value classifications to ensure they accurately reflect the expected land uses in the precincts and the category names are consistent across the precincts	77
	– its application of average values to land in CGA-CP to ensure the average values reflect the underlying zonings and constraints on the land.	77
28	Before January 2020, Camden Council:	83
	– provide more information in CGA-CP about how it calculates the Land Value Index for Leppington North and the Land Value Index for Leppington, or	83
	– publish on its website a policy on how it calculates land value indexes for local infrastructure contributions plans.	83
29	Before January 2020, Camden Council include in CGA-CP a statement identifying when the Land Value Index for Leppington North and the Land Value Index for Leppington will be applied to the land component of the contributions rates.	83
31	Before January 2020, Camden Council review timeframes and establish priorities for delivering infrastructure in CGA-CP.	85

Other matters

32	Before January 2020, Camden Council ensure that the costs reported in the CGA-CP Main Document are consistent with the costs reported in the Technical Document.	87
33	Before January 2020, Camden Council include in CGA-CP a table of Indicative contribution rates for a range of dwelling types.	88
34	Before January 2020, Camden Council identify whether there are any beneficiaries of the Crown development outside the plan's catchment area and, if practical, recover a proportionate share of the costs of the local infrastructure attributed to the Crown development from these beneficiaries (eg, via rates) and amend the contributions rates in CGA-CP accordingly.	90

A.3 Recommendation for the council to address each year

30	Each year, Camden Council publish the Land Value Index for Leppington North and the Land Value Index for Leppington on its website.	83
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B Terms of reference



30 SEP 2010

Mr Rod Sims
Chairperson
Independent Pricing and Regulatory Tribunal
PO Box Q290
QVB POST OFFICE NSW 1230

Dear Mr Sims



I am writing about the Independent Pricing and Regulatory Tribunal undertaking work to:

- develop and publish a local government cost index and a productivity factor;
- assist with the preparation of revised contributions plan guidelines, and to assess and report on reviewable contributions plans against the guidelines and *Environmental Planning and Assessment Regulation 2000*; and
- prepare an annual report on the operation of functions delegated to it under the *Local Government Act 1993* and assistance it provides to the Minister for Planning and councils under the *Environmental Planning and Assessment Regulation 2000*.

Please find enclosed references under section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992* for the Tribunal to undertake this work.

If your officers wish to discuss this matter, they should contact Mr Tim Hurst, Executive Director, Infrastructure, Environment and Economic Development Policy, Department of Premier and Cabinet on (02) 9228 5493.

Yours sincerely



Kristina Keneally MP
Premier

TERMS OF REFERENCE

I, Kristina Keneally, Premier of New South Wales approve the provision of services by the Independent Pricing and Regulatory Tribunal (IPART) under section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992 (IPART Act)* to the Minister for Planning and the Councils for the review of Reviewable Contributions Plans in accordance with the following terms of reference.

Background

Since 4 June 2010, the NSW Government has announced changes to local council charges on new housing development including:

- (1) imposing a cap of \$20,000 per lot for council imposed charges on new development on land in established areas and a cap of \$30,000 per lot for council imposed charges on new development on land determined by the Minister for Planning as being within Greenfield areas; and
- (2) requiring IPART to review certain council Contributions Plans.

The changes will lower the cost of new housing construction and provide certainty, transparency and fairness to councils, landowners, developers and the community.

The Department of Planning, in conjunction with the Division of Local Government and IPART (overseen by the Land and Housing Supply Coordination Taskforce) are to develop guidelines for preparing Contributions Plans. Councils with contributions within their Contributions Plans that exceed the relevant cap will be required to submit them to IPART for review unless otherwise exempt by the Minister for Planning. Further, when Councils conduct a review of their Contributions Plans, they will be required to submit them to IPART for review prior to finalising those plans if the contributions within those plans exceed the relevant cap. The Minister may also refer to IPART for review any Contributions Plan that is below the relevant cap, where changes are proposed to that plan that the Minister considers merit having an independent assessment. Once IPART receives those plans, IPART is to assess them against the Guidelines and the Regulation and report to the Minister for Planning and Councils on the compliance of those plans.

Terms

In providing the services, IPART must:

- (a) assist with the preparation of revised contributions plan guidelines;
- (b) conduct an assessment of the Reviewable Contributions Plan against the Guidelines and the Regulation. As part of that assessment, IPART should consider whether:
 - (i) the infrastructure listed in the plan is essential infrastructure
 - (ii) the costs in the plan are reasonable
 - (iii) the Contributions Plan complies with the Guidelines and the Regulation;

- (c) provide a report to the Minister for Planning and the relevant Council on IPART's assessment of the Contributions Plan under paragraph (a); and
- (d) publish a copy of the report in paragraph (b) on IPART's website.

In conducting the assessment under paragraph (a), IPART is to:

- (a) consult with the Department of Planning (NSW);
- (b) consult with the relevant Council and any other person IPART considers necessary; and
- (c) consider any criteria set out in the Guidelines (in addition to any other matters IPART considers relevant).

Definitions

Cap means:

- (a) the \$20,000 cap per residential dwelling or per residential lot on land in established areas; or
- (b) the \$30,000 cap per residential dwelling or per residential lot on land determined by the Minister for Planning as being within Greenfield areas.

Contributions Plan means a contributions plan prepared and approved by the relevant Council under Part 4, Division 6 of the EP&A Act.

Council has the meaning given to that term under the EP&A Act.

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

Guidelines means the current guidelines or practice notes (as the case may be) issued by the Department of Planning on Contributions Plans under Part 4, Division 6 of the EP&A Act.

Regulation means the *Environmental Planning and Assessment Regulation 2000* relating to the Contributions Plan.

Reviewable Contributions Plan means either:

- (a) a Contributions Plan which has a contribution that exceeds the relevant Cap, other than a Contributions Plan for which a Council, as at 31 August 2010, has received (in aggregate) development applications for at least 25 per cent of potential development within that existing Contributions Plan; or
- (b) a Contributions Plan which the Minister for Planning determines from time to time should be subject to review by IPART.

Interpretation

- (a) A reference to a law or statute includes regulations, rules, codes and other instruments under it and consolidations, amendments, re-enactments or replacement of them.
- (b) A reference to an officer includes a reference to the officer who replaces him or her, or who substantially succeeds to his or her powers or functions.
- (c) A reference to a body, whether statutory or not:
 - a. which ceases to exist; or
 - b. whose powers or functions are transferred to another body,is a reference to the body which replaces it or which substantially succeeds to its powers or functions.
- (d) Words importing the singular include the plural and vice versa.
- (e) Explanatory notes do not form part of the terms of reference, but in the case of uncertainty may be relied on for interpretation purposes.

C Assessment against information requirements in the EP&A Regulation

Table C.1 Assessment against information requirements in the EP&A Regulation

Subclause		Location in CP
1(a)	Purpose of the plan.	Section 1.6
1(b)	Land to which the plan applies.	Section 1.7
1(c)	The relationship between the expected types of development in the area to which the plan applies and the demand for additional public amenities and services to meet that development.	Technical Document and Main Document Part 2
1(d)	The formulas to be used for determining the section 94 contributions required for different categories of public amenities and services.	Section 2.2
1(e)	The section 94 contribution rates for different types of development, as specified in a schedule in the plan.	Main Document Appendices
1(g)	The council's policy concerning the timing of the payment of monetary section 94 contributions, section 94A levies and the imposition of section 94 conditions or section 94A conditions that allow deferred or periodic payment.	Sections 4.1 & 4.2
1(h)	A map showing the specific public amenities and services proposed to be provided by the council, supported by a works schedule that contains an estimate of their cost and staging (whether by reference to dates or thresholds).	Technical Document
1(i)	If the plan authorises monetary section 94 contributions or section 94A levies paid for different purposes to be pooled and applied progressively for those purposes, the priorities for the expenditure of the contributions or levies, particularised by reference to the works schedule.	Section 5.4
1A	Despite subclause (1) (g), a contributions plan made after the commencement of this subclause that makes provision for the imposition of conditions under section 94 or 94A of the Act in relation to the issue of a complying development certificate must provide that the payment of monetary section 94 contributions and section 94A levies in accordance with those conditions is to be made before the commencement of any building work or subdivision work authorised by the certificate.	Section 4.1
2	In determining the section 94 contribution rates or section 94A levy percentages for different types of development, the council must take into consideration the conditions that may be imposed under section 80A (6)(b) of the Act or section 97 (1)(b) of the <i>Local Government Act 1993</i> .	
3	A contributions plan must not contain a provision that authorises monetary section 94 contributions or section 94A levies paid for different purposes to be pooled and applied progressively for those purposes unless the council is satisfied that the pooling and progressive application of the money paid will not unreasonably prejudice the carrying into effect, within a reasonable time, of the purposes for which the money was originally paid.	Section 5.4

D Cost adjustments – shared pathway creek crossings (Recommendation 3)

We have recommended that Camden Council reduce the cost estimates for shared pathway creek crossings by \$3,499,210 (\$126,956 in Leppington North and \$3,322,254 in Leppington) as an interim measure until it reviews the costing method for these items. Table D.1 provides the individual cost adjustments for the 18 crossings which were prepared by our consultant, Axess.

Table D.1 Cost adjustment for shared pathway creek crossings (\$Dec2016)

Work item	Total cost in CGA-CP	Total IPART-assessed reasonable cost	Difference
Leppington North			
PB1	136,721.39	73,243.62	-63,477.77
PB2	136,721.39	73,243.62	-63,477.77
Leppington			
SPC01	410,162.10	512,778.24	102,616.14
SPC02	410,162.10	512,778.24	102,616.14
SPC03	683,603.50	631,091.14	-52,512.37
SPC04	1,367,207.01	926,873.38	-440,333.63
SPC05	683,603.50	631,091.14	-52,512.37
SPC06	683,603.50	631,091.14	-52,512.37
SPC07	1,230,486.30	867,716.93	-362,769.38
SPC12	410,162.10	512,778.24	102,616.14
SPC13	410,162.10	512,778.24	102,616.14
SPC14	820,324.20	690,247.58	-130,076.62
SPC15	1,503,927.70	986,029.82	-517,897.88
SPC08	1,640,648.41	1,045,186.27	-595,462.14
SPC09	1,367,207.01	926,873.38	-440,333.63
SPC10	683,603.50	631,091.14	-52,512.37
SPC11	1,640,648.41	1,045,186.27	-595,462.14
SPC16	1,367,207.01	926,873.38	-440,333.63
Total	15,586,161.27	12,136,951.75	-3,449,209.52

Note: The total cost of shared pathway creek crossings in CGA-CP and the total assessed cost both include a 7% construction contingency that is applied to all transport works in CGA-CP. The total assessed cost is the total cost advised by Axess, plus the 7% contingency.

Note: bRows do not add due to rounding

Sources: Axess, *CGA-CP Cost Review Final Report*, December 2017, pp 26-27; CGA-CP, Leppington S94 Plan Schedule, Roads Con Tab; CGA-CP, Leppington North S94 Plan Revised Schedule, Roads Con Tab.

E Consultant review of transport costs



axess



**CIVIL CONSULTING
& HIGHWAY DESIGN**



**CGA-CP
TRANSPORT COST REVIEW
FINAL**

**IPART
COST REVIEW
DEC 2017**



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Disclaimer

This report is prepared solely for the use of IPART. Axa and CCHD accept no responsibility or liability in respect to any third party who uses or relies upon information contained in this report in part or whole. This report is valid only in its entire form.



Executive Summary

The purpose of this report is to review the reasonableness of the costing approach used by Camden Council for Transport Infrastructure in the Camden Growth Area-Contribution Plan (CGA-CP) and the proposed costs.

Leppington North

This cost review found that the proposed CGA-CP cost estimates for road transport infrastructure for Leppington North was generally reasonable. It is noted that the creek crossings require further information for accurate assessment and that the Leppington North cost estimates does contain some formula errors, which once rectified, would increase the estimate of road transport infrastructure costs in the CGA-CP for Leppington North by a total of \$1.63 million. Once Camden Council have provided further information on the two pedestrian crossings in the Leppington North area and rectified the formula errors, the cost estimate for Leppington North will be comparable to the findings of this cost review.

Leppington

This review could not conclusively assess whether the CGA-CP's total proposed road transportation cost estimate for Leppington is appropriate. Axxess/CCHD's cost estimate for the road transport infrastructure cost estimate in the Leppington precinct is higher than that of the Leppington CGA-CP cost estimate. Assuming that the CGA-CP would adopt a conservative approach to costing, Axxess/CCHD have analysed in detail the accuracy of our cost estimate and the assumptions and inclusions of the CGA-CP.

Axxess/CCHD found that the CGA-CP cost estimate potentially over-estimates the costs for the delivery of pedestrian creek crossings and pedestrian crossings which, together with the shared paths, account for about 15 per cent of the total road transport infrastructure cost estimate in the Leppington precinct. This represents a key opportunity for reducing the total road transport infrastructure cost estimate.

Camden Council has defined the base rate for creek crossings on a 21 metre span pedestrian bridge. With the majority of the creek crossings spanning only 3 metres to 12 metres, the appropriateness of this base rate and approach may be likely to over-estimate the actual costs for the pedestrian creek crossings. It is not clear if a box-culvert approach was considered as part of the cost build-up, rather than bespoke bridges for every creek crossing. It is recommended that Camden Council review the costs and the approach to the pedestrian creek crossings.

General observations

Given the rural setting and low levels of traffic in the Leppington North and Leppington region, the classification of new roads and upgrade of existing roads should be reviewed by Camden Council. Where road upgrades are in low trafficked areas, the Traffic Management cost should be lower than the existing road upgrade provisions.



1 Introduction

The Independent Pricing and Regulatory Tribunal (IPART) engaged Axxess Advisory and Civil Consulting & Highway Design (CCHD) to review road transportation cost estimates itemised in the Camden Growth Areas Contributions Plan (CGA-CP).

The scope of this report is to:

- 1) Review the proposed costs for road transport infrastructure within the CGA-CP and confirm if these costs are reasonable and up to date; and
- 2) To provide high-level benchmarks against comparable road transport infrastructure in Sydney new and infill development areas, including the assumptions that these cost estimates are based upon.

Specific areas where comparison cost rates (benchmarks) for transport and traffic management items are required for the CGA-CP review include:

- Sub-arterial road (New / Upgrade)
- Collector road (New / Upgrade)
- Roundabout (4 leg, 4 & 2 lane)
- T intersection
- Signalised intersections
- Pedestrian crossings
- Bus shelter
- Pedestrian bridges

The benchmarks represent baselines costs only and do not include ground conditions, land values, developer contributions, other site-specific factors or detailed proposals.

1.1 References

The following reports were relied upon in the preparation of this report.

- David Langdon, ALN Precinct: Master Road Cost Estimate, 25 July 2011
- WT Partnership, Austral and Leppington North Precincts Section 94 Infrastructure Review of Costs, March 2012
- Cardno – Road Costings spreadsheets, 2012
- Parson Brinkerhoff, Preliminary sizing and costing of basins and watercourse crossings – Leppington Precinct (Rev E), December 2013
- Camden Growth Areas – Contributions Plan, Technical Document
- Aecom, Austral and Leppington North (ALN) Precincts Transport Assessment – Draft, August 2011
- Aecom, Austral and Leppington North (ALN) Precincts Transport Assessment – Post-Exhibition Traffic Report (Addendum), August 2011
- Aecom, Leppington Precinct – Transport and Access Strategy, March 2014



2 Cost Review

2.1 Camden Council Base Rates

The base rates for traffic and transport management for Leppington North and Leppington CGA-CP provided by Camden Council have been prepared based on:

- Cost reports prepared by Davis Langdon (2011), Cardno – Road Costings (2012) with additional allowances adjusted by Camden Council
- Rates used in other contribution plans (such as Oran Park and Camden)
- Recent Camden Council tender prices
- Rawlinsons 2013 sqm rates for Demolition of Whole Structures, and
- Costs determined by Camden Council.

2.2 Axess/CCHD works costs base rates

The build-up of the Axess/CCHD base rates are derived from recent projects, contracts and tenders across the east coast of NSW. Axess/CCHD's base rates are derived from 2017 road construction projects in the following council areas:

- Camden Council
- Blacktown City Council
- Ryde City Council
- Central Coast Council
- Central Coast Council

2.3 Benchmarking and Base Rates Review

In March 2012, WT Partnerships were commissioned by the Department of Planning and Infrastructure to review the Austral and Leppington North Precincts Section 94 Review of Costs Report. The costs contained in this report were based on the Davis Langdon report, ALN Master Road Cost Estimate, 25 July 2011.

Camden Council has based a large portion of the base rates on the David Langdon report with allowances for additional council requirements. This section of the report reviews the assumptions and inclusions and comparative analysis of the base rates provided by Camden Council, WT Partnerships and Axess/CCHD.

The benchmarking approach adopted by Axess/CCHD is based upon a first principles approach of defining the quantities and unit rates (based on similar projects at 2017 rates). The quantities are taken from road cross sections (i.e. sub-arterial, collector and local road) contained in the Davis Langdon titled ALN Precinct – Master Plan Road Cost Estimate 2012.

For items where no drawings and quantities were provided, the review team applied assumptions for inclusions and quantities based on similar projects. This approach was used to determine Axess/CCHD base rates for new intersection traffic lights, roundabouts, pedestrian bridges and culverts crossings.



2.3.1 Request for Information

The level of detail provided by Camden Council for the base cost items varied for each item. For some cost items, such as the road types described above, sufficient detail in form of cross sections and lists of assumptions and inclusions was provided, allowing for assessment of the likely delivery costs of these items. For other items, such as pedestrian creek crossings, the information provided by Camden Council was limited and insufficient for conclusive assessment.

Where information was not sufficient for assessment, Axess/CCHD requested Camden Council to provide further information.. However, Camden Council was not able to provide further technical detail on pedestrian creek crossings and pedestrian road crossings¹.

2.3.2 Indexation

The Axess/CCHD estimates are based on current 2017 rates and have been indexed back to December 2016 in line with indexed base rates provided by Camden Council.

Council have used the following Consumer Price Index (CPI) Indexation:

- Indexed Rate = Index at CPI Adoption/Base Index, where:
- Index at CPI (Dec 2016) = 110.9, and
- Base Index (March 2012) = 99.9. Therefore,
- The Indexed Rate Council has used is $110.9/99.9 = 111$ per cent.

It is noted that Camden Council have applied indexation in the following manner:

- Indexation has been applied to David Langdon rates from March 2012 to December 2016, however the Davis Langdon base rates provided are accurate at 25 July 2011 and therefore the indexed base rates do not account for the eight-month gap.
- Camden Council has made additional allowances, indexing the March 2012 base rate to December 2016.
- Rawlinsons 2013 square metre rates for Demolition of Whole Structures have been indexed from June 2013 to December 2016.

IPART have indicated that the Producer Price Index (PPI) is typically used for their review. A review of PPI available on the Australian Bureau of Statistics website shows that the CPI indexation of 111 per cent may be considered conservative in comparison to PPI. For consistency of the Camden Council contribution plan, PPI has not been used as part of this evaluation.

2.4 General assumptions and exclusions

This section outlines the general assumptions and exclusions for the CGA-CP and Axess/CCHD base rates. While this represents the general approach, it is noted that culverts are included for road creek crossings.

¹ Request for Information raised 18 October 2017. Camden Council response 26 October 2017.

**Exclusions:**

- GST
- Rate escalation beyond June 2011
- Demolition
- Bulk earthworks other than pavement depth
- Contaminated ground and soft spots
- Services relocation other than rural water supply pipe
- Culverts

Assumptions:

- Road pavement construction based on 200mm thick DGB 40 sub base, 150mm thick DGB 20 base and 50mm AC14 thick asphalt wearing course
- New 250 dia. DI CL water pipe allowed where rural supply relocated
- New footpath and verge allowed when upgrading existing roads
- Developers will be responsible for installation of new services
- Lighting provisions are based on galvanised 10m high steel pole, supply and installation of 100mm diameter conduit, cable pits and cabinets, footings, lighting column, cabling and commissioning.

2.5 Sub-arterial road (new/upgrade)

The sub-arterial road provisions for new and upgraded roads are based on the Davis Langdon titled ALN Precinct – Master Plan Road Cost Estimate (2011) typical cross section (Figure 35 of extract from Transport Assessment report in Appendix A).

The Davis Langdon sub-arterial road cross sections are 2.5 metres narrower than the Council provisions. Council have used the WTP base rates from the WTP Austral and Leppington North Precincts Section 94 Infrastructure Review of Costs 2012 report. Camden Council has adjusted the sub-arterial road base rates to reflect the road width change from 26.6m to 29.1m road reserve width.

Inclusions:

- 29.1m road reserve
- 4 lanes (7m wide each with median, dual carriageway)
- Box kerb
- 2.5m shared path on both sides
- Grass verge
- Rip and remove existing pavement (for road upgrades only)
- Earthworks to pavement depth
- Installation of 600mm diameter stormwater pipe
- Relocation of existing rural water supply pipe

Additional allowances included by Council

- Signage
- Street Lighting at 40m spacing
- Low Voltage conduits



- Earthworks to pavement depth
- Mass planting and trees
- Traffic Management

Table 1: Base rates comparison

Sub-Arterial Roads	Measure	Council Base Rate (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
Upgrade existing full road width	Linear metre	\$5,125	\$4,872
Construct new full road width	Linear metre	\$4,444	\$4,385

Key Axess/CCHD findings:

- The CGA-CP cost estimate double counts Traffic Management - Camden Council has added traffic management on top of WTP rates which already account for traffic management costs. An adjustment of \$232.50 per linear metre to reduce the Council Base rate for upgrade of existing sub-arterial roads from \$5,125 to \$4,892.50 is required.
- The Council base rates do not consider Environmental Controls. WTP propose a rate of one per cent for environmental management plans. Axess/CCHD have allowed a nominal rate \$10 per linear metre for environmental controls.
- Lighting provisions by Council appear low compared to actual costs of recent projects. Axess/CCHD have allowed for a cost of \$300 per metre at 40 metre spacing for full road upgrades and \$150 for half road upgrades. This is almost double of the cost estimate of the CGA-CP for these items.
- WTP calculations for the sub-base (DGB40), 200m thick, appears incorrect. WTP allow a rate of \$95/m³. The quantity for the sub base is shown as 2.76 m³. $\$95 \times 2.76\text{m}^3 = \262.20 , not \$39.33 as shown in the WTP report. Accordingly, the Council Base rate for upgrade of existing roads needs to be increased from \$4892.50 to \$5,115.37 and the Council Base rate for new roads needs to be adjusted from \$4,444 to \$4,666.87.
- After above adjustments, the Council Base Rates for sub-arterial roads for both upgrade of existing and new roads are higher than the equivalent Axess/CCHD base rates.

2.6 Collector road (new / upgrade)

The collector road provisions for new and upgraded roads are based on the Davis Langdon report titled ALN Precinct – Master Plan Road Cost Estimate (2011) typical cross section (Figure 34 of extract from Transport Assessment report in Appendix A).

For collector roads the basis for Camden Council's rate is the Davis Langdon ALN Precincts Master Plan Road Cost Estimate (2011).

Inclusions:

- 20m wide road reserve
- 4 lanes, single carriageway, 11.0m asphalt pavement width
- Box kerb



- 2.5m shared path on both sides
- Grass verge
- Rip and remove existing pavement (for road upgrades only)
- Earthworks to pavement depth
- Installation of 600mm diameter stormwater pipe
- Relocation of existing rural water supply pipe

Additional allowances included by Council

- Signage
- Street Lighting at 40m spacing
- Low Voltage conduits
- Earthworks to pavement depth
- Traffic Management (for upgrade of existing roads half and full width)

Base rates comparison

Collector Roads	Measure	Council Base Rates (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
Upgrade existing half road width	Linear metre	\$2,145	\$2,725
Construct new half road width	Linear metre	\$1,754	\$2,196
Upgrade existing full road width	Linear metre	\$3,486	\$4,081
Construct new full road width	Linear metre	\$3,103	\$3,764

Key Axess/CCHD findings:

- WTP calculations for sub-base (DGB40), 200m thick is not correct resulting in lower base rates. This results in a shortfall for WTP rates at March 2012 (non-escalated) of \$92.05 per linear metre for half width and \$184.11 per linear metre for full width. As such the WTP rates have not been used for comparison.
- Axess/CCHD provisions of 70 per cent of full rate for half width road upgrades and 60 per cent of full rate for half width new road. The approach of deriving the apportionment of half width road upgrades and new roads based on the cost estimates for full road width appears reasonable and aligns with the Axess/CCHD approach.
- Indexation has been applied to David Langdon rates from March 2012 to December 2016. However, the Davis Langdon base rates provided are accurate as of 25 July 2011 and therefore the indexed base rates do not account for the eight-month gap.
- Axess/CCHD concludes that the CGA-CP collector road base rates are approximately 15 to 20 per cent under-priced. This may be a result of the following provisions allowed for in the Axess/CCHD base rates:
 - Stormwater drainage allowance (factor of 1.5) for road crossings and some longitudinal drainage on the other side of the road



- Lighting provisions by Council appear low compared to actual costs of recent projects. Axess/CCHD have allowed for a cost of \$300 per metre at 40 metre spacing for full road upgrades and \$150 for half road upgrades. This is almost double of the cost estimate of the CGA-CP for these items.
- The Council base rates do not consider Environmental Controls. WTP propose a rate of one per cent for environmental management plans. Axess/CCHD have allowed a nominal rate \$10 per linear metre for environmental controls.
- The Axess/CCHD Traffic Management provisions include the cost of supply and implementation of Traffic Control Plans, the cost of traffic controllers, delineation between traffic, public and workers and possible night works and the cost of temporary pavements and tie ins. For collector roads Axess/CCHD Traffic Management accounts for just under four per cent for existing road upgrades and one per cent for new roads. It should be noted that Council have made no allowance for any Traffic Management for new roads and an allowance should be considered.

2.7 Local Road (new / upgrade)

The local road provisions for new and upgraded roads are based on the Davis Langdon report titled ALN Precinct – Master Plan Road Cost Estimate (2011) typical cross section (Figure 35 of extract from Transport Assessment report in Appendix A).

Inclusions:

- 16m wide road reserve
- 2 lanes, single carriageway, 9.0m asphalt pavement width
- Box kerb
- 1.3m shared path on both sides
- Grass verge
- Rip and remove existing pavement (for road upgrades only)
- Earthworks to pavement depth
- Installation of 600mm diameter stormwater pipe
- Relocation of existing rural water supply pipe

Additional allowances included by Council

- Signage
- Street Lighting at 40m spacing
- Low Voltage conduits
- Earthworks to pavement depth
- Traffic Management (for upgrade of existing roads half and full width)

**Base rates comparison**

Local Roads	Measure	Council Base Rates (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
Upgrade existing half road width	Linear metre	\$1,818	\$2,370
Construct new half road width	Linear metre	\$1,460	\$1,904
Upgrade existing full road width	Linear metre	\$2,775	\$3,558
Construct new full road width	Linear metre	\$2,609	\$3,267

Key Axess/CCHD findings:

- WTP calculations for sub-base (DGB40), 200m thick is not correct resulting in lower base rates. This results in a shortfall for WTP rates at March 2012 (non-escalated) of \$75.90 for half width and \$151.81 for full width. As such the WTP rates have not been used for comparison.
- Axess/CCHD provisions of 70 per cent of full rate for half width road upgrades and 60 per cent of full rate for half width new road. The approach of deriving the apportionment of half width road upgrades and new roads based on the cost estimates for full road width appears reasonable and aligns with the Axess/CCHD approach.
- Indexation has been applied to David Langdon rates from March 2012 to December 2016. However, the Davis Langdon base rates provided are accurate as of 25 July 2011 and therefore the indexed base rates do not account for the eight-month gap.
- Axess/CCHD concludes that the CGA-CP local roads base rates are under-estimated by approximately 25 per cent. This may be a result of the following provisions allowed for in the Axess/CCHD base rates:
 - Stormwater drainage allowance (factor of 1.5) for road crossings and some longitudinal drainage on the other side of the road
 - Lighting provisions by Council appear low compared to actual costs of recent projects. Axess/CCHD have allowed for a cost of \$300 per metre at 40 metre spacing for full road upgrades and \$150 for half road upgrades. This is almost double of the cost estimate of the CGA-CP for these items.
 - The Council base rates do not consider Environmental Controls. WTP propose a rate of one per cent for environmental management plans. Axess/CCHD have allowed a nominal rate \$10 per linear metre for environmental controls.
 - The Axess/CCHD Traffic Management provisions include the cost of supply and implementation of Traffic Control Plans, the cost of traffic controllers, delineation between traffic, public and workers and possible night works and the cost of temporary pavements and tie ins. For local roads Traffic Management accounts for just under five per cent in upgrade areas and 1.2 per cent in new areas. It should be noted that Council have made no allowance for any Traffic Management for new roads and an allowance should be considered.



2.8 Roundabout (4 leg, 4 & 2 lane)

The CGA-CP provides limited information on roundabouts. Camden Council have based the roundabout costs on Camden Council tenders for comparable sub-arterial road roundabout projects in 2012 and escalated the base cost to December 2016. The CGA-CP does not provide a base cost for a collector road roundabout. Due to the limited information available, Axess/CCHD have applied base rates obtained from comparable 2017 projects.

Camden Council Inclusions:

- Allowance for 220m length of sub arterial road and median works

Axess/CCHD allowances:

- Sub arterial roundabout (8m in diameter) allowance for 220m length of sub arterial road and median works. Includes 150m of collector road.
- Collector road roundabout allowance for 170m length of collector road. Includes 120 length of local road.
- Box kerb
- Earthworks to pavement depth
- Turf
- Traffic management
- Environmental controls

Base rates comparison

Roundabout	Measure	Council Base Rate (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
Sub arterial roundabout (4 lanes, 4 leg)	Item	\$1,887,187	\$1,375,654
Collector road roundabout (2 lanes, 4 leg)	Item	N/A	\$943,271
Local road roundabout (2 lane, 4 leg)	Item	\$388,539	\$396,118

Key Axess/CCHD findings:

- Sub-arterial roundabout base rates provided by Camden Council appear to be overpriced by approximately 25 per cent. Axess/CCHD concludes that the pavement area allowance is reasonable. However, Camden Council have not provided sufficient detail to identify the differences. The sub-arterial roundabout is based on a recent Camden Council tender and may include allowances for site specific costs not accounted for in the Axess/CCHD base rate.
- Collector road roundabout base rate could not be assessed. The CGA-CP does not provide a base cost.
- The standard roundabout rate provided by Camden Council appears reasonable and in line with the Axess/CCHD base rate estimate.



2.9 Signallised T Intersection (Upgrade)

Camden Council has based the T Intersection costs on Aecom rates plus additional Council mark-up per traffic light set.

Camden Council Inclusions:

- Asphalt pavement
- Box kerb
- Earthworks to pavement depth
- Additional \$50,000 for traffic signal set above \$175,000 allocation by Davis Langdon

Axess/CCHD allowances:

- T-Intersection Traffic Signal Set at \$160,000
- 1,400 square meters of pavement for T-Intersections
- Footpath
- Grass verge
- Installation of 600mm diameter stormwater pipe
- Relocation of existing water supply pipe
- Traffic management
- Environmental controls

Base rates comparison

T Intersection	Measure	Council Base Rate (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
T Intersection (Upgrade)	Item	\$434,747	\$539,273

Key Axess/CCHD findings:

- Quantity for the T-intersections for the pavements is 775m². Axess/CCHD have allowed for 1,400m² of new pavement. When reviewing the T-intersection concepts from the Aecom report, Austral and Leppington North (ALN) Precincts Transport Assessment (August 2011), the T Intersection pavement provisions appear insufficient. The concepts and extent of works highlighted including provision for turning lanes suggests a greater quantity than allowed for in the Davis Langdon report.
- Davis Langdon rates do not allow for footpath, grass verge, stormwater pipe, relocation of existing water supply, traffic management or environmental controls in comparison to Axess/CCHD.
- Indexation has been applied to David Langdon rates from March 2012 to December 2016. The Davis Langdon base rates provided are accurate at 25 July 2011. The indexed base rates do not account for the eight-month gap.
- Axess/CCHD finds that the T Intersection base rate costs are not reliable and should be reviewed.



2.10 Signalised intersections

Camden Council have based the 4-way signalised intersections on the base rates from the Davis Langdon report titled ALN Precinct – Master Plan Road Cost Estimate (2011). Council has assumed a standard rate for traffic signal sets and does not differentiate between T Intersection or 4 Way Intersection traffic sets.

Camden Council Inclusions:

- Asphalt pavement
- Box kerb
- Earthworks to pavement depth
- Additional \$100,000 provision for traffic lights

Axess/CCHD allowances:

- 2,940 square meters of pavement for 4-way Intersections.
- 4-Way Intersection Traffic Signal Set at \$205,000
- Footpath
- Grass verge
- Installation of 600mm diameter stormwater pipe
- Relocation of existing water supply pipe
- Traffic management
- Environmental controls

Base rates comparison

Signalised Intersections	Measure	Council Base Rate (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
4-way intersection (New)	Item	\$925,610	\$959,729

Key Axess/CCHD findings:

- The Davis Langdon report has not accurately calculated the cost of a 4-way intersection. Only 169m² has been allowed for in comparison to 2,940m² by Axess/CCHD. The Davis Langdon report calculates the base rate for a 4-way intersection based on four sets of traffic lights at a cost of \$175,000 per set. Camden Council have added another \$100,000 to the traffic light provision for the intersection, resulting in a total cost of \$800,000 in traffic lights alone. In Axess/CCHD's opinion, this does not represent an accurate build-up of the base rate for a signalised 4-way intersection.
- Davis Langdon rates do not allow for sufficient pavement, footpath, grass verge, stormwater pipe, relocation of existing water supply, traffic management or environmental controls in comparison to Axess/CCHD.
- Indexation has been applied to David Langdon rates from March 2012 to December 2016, however the Davis Langdon base rates provided are accurate at 25 July 2011 and therefore the indexed base rates do not account for the eight-month gap.
- Axess/CCHD concludes that the 4-way Intersection base rate costs appear reasonable. As mentioned above, the build-up of the base rate cost should be reviewed by Camden Council.



2.11 Pedestrian crossings

No drawings or details were provided for pedestrian crossings. The review team raised a request for information, but did not receive further detail. Camden Council pedestrian crossing rates are based a collector road and two-lane sub arterial from the Davis Langdon report indexed to June 2014, sourced from Liverpool City Council.

There is a wide range of pedestrian crossings types, such as:

- piano key line marking
- refuge islands
- raised pavement thresholds
- mid-block signals and
- others.

Without further detail on the type of crossing that the base rates relate to, Axess/CCHD are not able to assess the base rates of the CGA-CP. Pedestrian crossings can vary in price from approximately \$3,500 for piano line marking to up to \$40,000 for mid signal blocks. The CGA-CP base rate only allows for a pedestrian crossing for a collector road or two lane sub-arterial road, which would vary from a local road pedestrian crossing.

For the purpose of assessing the overall cost estimate provided by Camden Council, Axess/CCHD have applied the CGA-CP base rate of \$28,717 per crossing. Although it is recommended that Camden Council provide further information to clarify the pedestrian crossing type, given the small number of pedestrian crossings and that the base rate is against the collector and sub-arterial roads the rate provided by Camden Council appears reasonable.

2.12 Road creek crossings

Camden Council has based the road creek crossings on Cardno Costings (2012), adjusted by Council to allow for additional provisions.

Inclusions

- Two culvert types (25m and 30m wide)
- Excavate material
- Supply bed, lay, joint, base slab, and backfill
- Pre-cast box culverts
- Pre-cast headwall to suit
- Rip rap scour protection

Camden Council Inclusions:

- Upgrade concrete ground slab to include F72 fabric reinforcement
- Polythene underlay
- W-beam guard rail

Axess/CCHD allowances:

- Environmental controls

**Base rates comparison**

Culvert Crossing	Measure	Council Base Rates (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
Culvert Crossing, Type 1 (25m wide)	Item	\$292,770	\$297,343
Culvert Crossing, Type 2 (30m wide)	Item	\$373,997	\$388,588

Key Axess/CCHD findings:

- Axess/CCHD finds the inclusions and rates for the culvert crossings to be reasonable for Type 1 and Type 2 crossing.

2.13 Pedestrian creek crossings / bridges

The CGA-CP does not provide drawings for pedestrian creek crossings, which are referred to as pedestrian bridges in the CGA-CP. The base rate for all pedestrian crossings/bridges are based on a 21 metre span bridge installed in Elderslie. Axess/CCHD base rate is based on a recently constructed pedestrian bridge installed at Wyong Road in Tumbi Umbi. This pedestrian bridge is 29 metre long and constructed in 2016.

The creek crossings in the CGA-CP vary in length from 3 metres to 12 metres. None have a span of 21 metres or 29 metres. These creek crossings are currently priced against the above bridge crossing unit rate. Axess/CCHD requested further information to determine the suitability of this type of crossing, however no further information was provided.

Camden Council Inclusions:

- Allowance for hand rails
- Soil works

Axess/CCHD allowances:

- Foundations including excavation
- Substructure including abutments
- Approach slabs
- Fabrication and installation of bridge structure
- Traffic management
- Environmental controls

**Base rates comparison**

Pedestrian bridges	Measure	Council Base Rate (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
Pedestrian bridges	Item	\$102,385	\$54,849

Key Axess/CCHD findings:

- It is recommended that Camden Council provide justification for use of the base rate for a 21-metre span bridge as a benchmark for creek crossings rather than culverts. This item may represent a significant cost saving. Whilst the use of bridge crossings may be required, a separate rate reflecting culvert based approach, even for some of the pedestrian crossings/bridges, should be provided and applied where appropriate.
- The bridges in the CGA-CP range from 3 metres to 12 metres in lengths. Due to the significant variance in lengths by a factor of up to four, a bridge unit rate should not be used. The foundations, abutments and approaches would not be the same for a 3 to 12 metre long bridge as for a 21 metre long bridge.
- Axess/CCHD concludes that the Camden Council base rate for the pedestrian bridges appears high.
- Given the current information available, Axess/CCHD are not able to assess the creek crossing item appropriately.

2.14 Bus shelter

The CGA-CP provides no detailed information on the design and construction of the bus shelters. Camden Council has provided a bus shelter rate based on the Oran Park Contribution Plan which has been adjusted by Council.

Axess/CCHD allowances:

- Fabricated galvanised steel bus shelter structure with seat
- Provision of a concrete slab and installation of the bus shelter.

Base rates comparison

Bus shelters	Measure	Council Base Rates (Dec 2016)	Axess/CCHD Base Rate (Dec 2016)
Bus shelters	Item	\$22,202	\$24,862

Key Axess/CCHD findings:

- Axess/CCHD base rates based on recently completed projects
- Camden Council base rate for the bus shelters seem reasonable



3 Review of Cost Estimates

3.1 Leppington North

The Leppington North cost review is based on specific cost items outlined in the Traffic and Transport Management section of the Leppington North Precinct Land and Works Summary Schedule contained within the CGA-CP Technical Document with CPI adoption at December 2016.

Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
LR2	Residential Park/Basin Road	\$325,573.00	\$407,782.07	Cost difference due to differences in base rate
CR1	Civic Precinct Road West	\$312,825.00	\$352,341.49	Cost difference due to differences in base rate
CR2	Civic Precinct Road East	\$1,377,692.00	\$1,644,260.28	Cost difference due to differences in base rate
CR3	Civic Road Dog Leg	\$1,438,821.00	\$1,691,239.14	Cost difference due to differences in base rate
CR4	Business Park Road	\$664,373.00	\$751,661.84	Cost difference due to differences in base rate
CR5	Byron Road Extension Half Width	\$442,170.00	\$553,653.45	Cost difference due to differences in base rate
CR6	Byron Road Extension Half Width	\$433,931.00	\$515,281.43	Cost difference due to differences in base rate
D1	Collector Road Design NS Retail Road	\$325,790.00	\$450,038.36	Design cost percentage is reasonable at 10 per cent. Cost difference due to differences in base rate
D2	Collector Road Design EW Civic Commercial Road	\$100,854.00	\$155,165.67	Design cost percentage is reasonable at 10 per cent. Cost difference due to differences in base rate
D3	Upgrade Byron Road Design EW	\$171,228.00	\$235,889.83	Design cost percentage is reasonable at 10 per cent. Cost difference due to differences in base rate



Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
D4	Southern EW Retail to Residential Road Design	\$126,286.00	\$180,043.25	Design cost percentage is reasonable at 10 per cent. Cost difference due to differences in base rate
SA1	Byron Road Extension North full width	\$915,164.00	\$902,919.38	Reasonable cost
SA2	Byron Road Extension South full width	\$1,353,555.00	\$1,335,956.72	Reasonable cost
SA3	Byron Road South upgrade existing road full width	\$6,722,537.00	\$6,398,996.90	Reasonable cost
SA4	Dickson Road South upgrade existing road full width	\$1,164,150.00	\$1,064,149.56	Reasonable cost
CC2	North South Main Street Crossing	\$365,378.00	\$371,084.06	Reasonable cost
CC4	Scalabrini Creek Crossing	\$1,702,479.00	\$1,704,796.39	Reasonable cost
CC5	Bonds Creek (West Crossing)	\$4,308,995.00	\$4,130,776.98	Reasonable cost
PB1	Scalabrini Creek Pedestrian Crossing	\$127,777.00	\$68,451.98	Council costs found to be high, based on high rate for pedestrian bridge crossing.
PB2	Scalabrini Creek Pedestrian Crossing North	\$127,777.00	\$68,451.98	Council costs found to be high, based on high rate for pedestrian bridge crossing.
CC1	Crossing Type 1	\$365,378.00	\$371,084.06	Reasonable cost
CC3	Crossing Type 2	\$466,749.00	\$484,958.12	Reasonable cost
CC7	Bonds Creek (East Crossing)	\$2,866,817.00	\$2,732,234.19	Reasonable cost



Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
IN1	Traffic Lights Byron Road Extension/Bringelly Road	\$542,564.00	\$768,678.12	Council costs appear low; note errors in Council build-up of signalised intersection base rate.
IN2	Roundabout Byron Road Existing and Extension	\$2,355,210.00	\$1,624,524.40	Axess/CCHD assesses the Council rate, which is based on a recent tender, as high.
IN3	Traffic Lights Residential/ Business Park Road	\$1,155,161.00	\$1,288,057.07	Cost appears reasonable. However, base rate and cost build-up contains errors
IN4	Roundabout Dickson Road	\$92.00	\$1,116,692.23	Error in formula of Excel spreadsheet.
IN5	Traffic Lights Dickson Road/Industrial Road/Civil Road	\$1,155,161.00	\$1,288,057.07	Cost appears reasonable. However, base rate and cost build-up contains errors
SH	Allowance for 8 bus shelters locations TBD	\$221,667.00	\$248,220.99	Reasonable cost
ES1	Byron Road Existing	\$692,709.00	\$699,642.51	Reasonable cost
ES2	Dickson Road Existing	\$105,880.00	\$565,311.15	Error in formula
	Contingency	\$1,783,625.00	\$1,861,536.19	Council contingency rate 7 per cent
	Total	\$34,218,368.00	\$36,778,809.98	

There is approximately a five per cent difference (equating to about \$1.8 million) between the Leppington North CGA-CP cost estimate and Axess/CCHD cost review. Almost half of this difference can be attributed to formula errors contained within Council's submission associated with Dickson Road Roundabout and Dickson Road. The pedestrian creek crossings could not be assessed adequately and require Camden Council to provide further information.

The remaining differences are due to different base rates, particularly for the collector road and local road cost. Given the rural setting and low levels of traffic in the Leppington North region the classification of new roads and road upgrades should be reviewed by Camden Council. Where road upgrades are in low trafficked areas, the Traffic Management cost should be lower than the existing road upgrade provisions. This represents an opportunity for cost savings on Traffic Management.



3.2 Leppington

The Leppington cost review is based on specific cost items provided by Camden Council outlined in the Traffic and Transport Management section of the Leppington Precinct Land and Works Summary Schedule contained within the CGA-CP Technical Document with CPI adoption at December 2016.

Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
LR1	Local Road	\$72,872.96	\$95,044.79	Cost difference due to differences in base rate
LR2	Local Road	\$419,019.50	\$546,507.56	Cost difference due to differences in base rate
LR3	Local Road	\$118,418.55	\$154,447.79	Cost difference due to differences in base rate
LR4	Local Road	\$63,763.84	\$83,164.19	Cost difference due to differences in base rate
LR5	Local Road	\$218,618.87	\$285,134.38	Cost difference due to differences in base rate
LR6	Local Road	\$100,200.31	\$130,686.59	Cost difference due to differences in base rate
LR7	Local Road	\$182,182.39	\$237,611.98	Cost difference due to differences in base rate
LR8	Local Road	\$610,311.01	\$796,000.13	Cost difference due to differences in base rate
LR9	Local Road	\$260,458.47	\$326,225.66	Cost difference due to differences in base rate
LR10	Local Road	\$211,622.51	\$265,058.35	Cost difference due to differences in base rate
LR11	Local Road	\$300,600.94	\$392,059.77	Cost difference due to differences in base rate
LR12	Local Road	\$382,583.02	\$498,985.16	Cost difference due to differences in base rate
LRC1	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC2	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC4	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC5	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC6	Local Road Crossing	\$596,977.75	\$648,070.95	Reasonable cost



Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
LRC7	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC8	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost.
LRC9	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC12	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC13	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC14	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC16	Local Road Crossing	\$463,049.45	\$493,418.68	Reasonable cost
LRC17	Local Road Crossing	\$662,092.37	\$729,627.36	Reasonable cost
LRC18	Local Road Crossing	\$662,092.37	\$729,627.36	Reasonable cost
CR1	CR1 Byron Road Upgrade (Ingleburn Road to Heath Road)	\$4,741,036.94	\$5,368,115.08	Cost difference due to differences in base rate
CR2	CR2 Heath Road Upgrade (CVW to Eastwood Road)	\$14,251,650.43	\$16,054,067.76	Cost difference due to differences in base rate
CR3	CR3 Philip Road Upgrade (George Road to Eastwood Road)	\$3,306,611.27	\$3,867,441.69	Cost difference due to differences in base rate
CR4	CR4 Joseph Road Upgrade (George Road to Eastwood Road)	\$4,741,036.94	\$5,368,115.08	Cost difference due to differences in base rate
CR5	CR5 Park Road Upgrade (CVW to Rickard Road)	\$3,678,837.41	\$4,165,422.63	Cost difference due to differences in base rate
CR6	CR6 Woolgen Park Road Upgrade (George Road to Rickard Road)	\$5,181,461.14	\$5,866,792.43	Cost difference due to differences in base rate
CR7	CR7 Hulls Road Upgrade (George Road to Dwyer Road)	\$2,479,620.09	\$2,903,028.49	Cost difference due to differences in base rate
CR8	CR8 George Road Upgrade (CVW to Precinct Boundary)	\$1,762,286.48	\$2,059,415.18	Cost difference due to differences in base rate



Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
CR9	CR9 Dickson Road Upgrade (Ingleburn Road to Heath Road)	\$4,786,430.97	\$5,391,774.62	Cost difference due to differences in base rate
CR10	CR10 George Road Upgrade (Philip Road to Precinct Boundary)	\$4,508,918.37	\$5,105,295.10	Cost difference due to differences in base rate
CR11	CR11 Ridge Square Upgrade (CR16 to Rickard Road)	\$2,901,618.24	\$3,285,403.76	Cost difference due to differences in base rate
CR12	CR12 Dwyer Road Upgrade (CVW to Precinct Boundary)	\$1,683,133.92	\$1,905,755.36	Cost difference due to differences in base rate
CR13	CR13 New Road (CVW to CR16)	\$2,400,789.84	\$2,912,689.64	Cost difference due to differences in base rate
CR14	CR14 Heath Road Extension (Eastwood Road to Precinct Boundary)	\$1,316,562.17	\$1,597,281.41	Cost difference due to differences in base rate
CR15	CR15 Dickson Road Extension (Heath Road to Philip Road)	\$1,839,314.80	\$2,231,496.09	Cost difference due to differences in base rate
CR16	New Road (Woolgen Park Road to Park Road)	\$1,529,535.46	\$1,855,665.17	Cost difference due to differences in base rate
CRC1	Heath Road Kemps Creek Crossing	\$466,748.51	\$484,958.12	Reasonable cost
CRC2	Dickson Road Extension Kemps Creek Crossing	\$466,748.51	\$484,958.12	Reasonable cost
CRC3	Georges Road C8 Channel Crossing	\$466,748.51	\$484,958.12	Reasonable cost
CRC4	Woolgen Road C14 Channel Crossing	\$466,748.51	\$484,958.12	Reasonable cost
CRC5	Georges Road C16 Channel Crossing	\$466,748.51	\$484,958.12	Reasonable cost
CRC6	Heath Road C20 Channel Crossing	\$365,377.52	\$371,084.06	Reasonable cost



Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
CRC7	Heath Road Bonds Creek Crossing	\$365,377.52	\$371,084.06	Reasonable cost
CRC8	Park Road C31 Channel Crossing	\$365,377.52	\$371,084.06	Reasonable cost
CRC9	Park Road Bonds Creek Crossing	\$365,377.52	\$371,084.06	Reasonable cost
CRC10	Heath Road C39 Channel Crossing	\$365,377.52	\$371,084.06	Reasonable cost
RB1	Roundabout – Cordeaux Street and Heath Road extension	\$484,896.10	\$464,422.21	Reasonable cost
RB2	Roundabout – Dickson Road and Heath Road	\$484,896.10	\$464,422.21	Reasonable cost
RB3	Roundabout – Byron Road and Heath Road	\$484,896.10	\$464,422.21	Reasonable cost
RB4	Roundabout – Philip Road and George Road	\$484,896.10	\$464,422.21	Reasonable cost
RB5	Roundabout – Joseph Road and George Road	\$484,896.10	\$464,422.21	Reasonable cost
RB6	Roundabout – Ridge Square north east	\$484,896.10	\$464,422.21	Reasonable cost
RB7	Roundabout – Ridge Square and Park Road	\$484,896.10	\$464,422.21	Reasonable cost
RB8	Roundabout – CR13 and CR16	\$484,896.10	\$464,422.21	Reasonable cost
RB9	Roundabout – Woolgen Road and CR16	\$484,896.10	\$464,422.21	Reasonable cost
RB10	Roundabout – George Road and Hulls Road	\$484,896.10	\$464,422.21	Reasonable cost
RB11	Roundabout – George Road and Woolgen Road	\$484,896.10	\$464,422.21	Reasonable cost
RB12	Roundabout – Hulls Road and Dwyer Road	\$484,896.10	\$464,422.21	Reasonable cost



Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
BS	Bus Shelters (27 in total) location subject to detailed route determination)	\$748,125.41	\$819,936.66	Reasonable cost
SPKC	Shared Pathways Kemps Creek	\$812,027.78	\$912,869.21	Difference in rates for concrete path paving
SPC01	Kemps Creek – Shared Pathway Crossing No 1	\$383,329.07	\$479,232.00	Unable to assess. Opportunity for cost savings
SPC02	Kemps Creek – Shared Pathway Crossing No 2	\$383,329.07	\$479,232.00	Unable to assess. Opportunity for cost savings
SPC03	Kemps Creek – Shared Pathway Crossing No 3	\$638,881.78	\$589,804.80	Unable to assess. Opportunity for cost savings
SPC04	Kemps Creek – Shared Pathway Crossing No 4	\$1,277,763.56	\$866,236.80	Unable to assess. Opportunity for cost savings
SPC05	Kemps Creek – Shared Pathway Crossing No 5	\$638,881.78	\$589,804.80	Unable to assess. Opportunity for cost savings
SPC06	Kemps Creek – Shared Pathway Crossing No 6	\$638,881.78	\$589,804.80	Unable to assess. Opportunity for cost savings
SPC07	Kemps Creek – Shared Pathway Crossing No 7	\$1,149,987.20	\$810,950.40	Unable to assess. Opportunity for cost savings
SPC12	Kemps Creek – Shared Pathway Crossing No 12	\$383,329.07	\$479,232.00	Unable to assess. Opportunity for cost savings
SPC13	Kemps Creek – Shared Pathway Crossing No 13	\$383,329.07	\$479,232.00	Unable to assess. Opportunity for cost savings
SPC14	Kemps Creek – Shared Pathway Crossing No 14	\$766,658.13	\$645,091.20	Unable to assess. Opportunity for cost savings



Item No.	Description	CGA-CP Works Cost	Axess/CCHD Works Cost	Comments
SPC15	Kemps Creek – Shared Pathway Crossing No 15	\$1,405,539.91	\$921,523.20	Unable to assess. Opportunity for cost savings
SPSC	Shared Pathways Scalabrini Creek	\$734,098.05	\$825,261.80	Cost difference due to differences in base rate
SPC08	Scalabrini Creek – Shared Pathway Crossing No 8	\$1,533,316.27	\$976,809.60	Unable to assess. Opportunity for cost savings
SPC09	Scalabrini Creek – Shared Pathway Crossing No 9	\$1,277,763.56	\$866,236.80	Unable to assess. Opportunity for cost savings
SPC10	Scalabrini Creek – Shared Pathway Crossing No 10	\$638,881.78	\$589,804.80	Unable to assess. Opportunity for cost savings
SPC11	Scalabrini Creek – Shared Pathway Crossing No 11	\$1,533,316.27	\$976,809.60	Unable to assess. Opportunity for cost savings
SPC16	Scalabrini Creek – Shared Pathway Crossing No 16	\$1,277,763.56	\$866,236.80	Unable to assess. Opportunity for cost savings
PC1	Pedestrian Crossing Heath Road – Kemps Creek	\$35,839.36	\$35,839.36	Reasonable cost
PC2	Pedestrian Crossing Heath Road – Scalabrini Creek	\$35,839.36	\$35,839.36	Reasonable cost
PC3	Pedestrian Crossing Park Road – Scalabrini Creek	\$35,839.36	\$35,839.36	Reasonable cost
	Contingency	\$5,483,743.91	\$5,891,517.65	Council contingency rate 7 per cent
	Total	\$103,240,051.70	\$110,900,039.45	

There is approximately a 7 percent difference (equating to about \$7.6 million) between the Leppington CGA-CP cost estimate and independent Axess/CCHD cost review. It is noted that a large portion of the CGA-CP could not be appropriately assessed. This includes key items such as the creek crossings which have been priced using a bridge base rate. Pedestrian crossings were not adequately defined. This appears to represent an opportunity for cost savings.



Overall, the majority of the higher Axess/CCHD cost estimate is made up by the local road and collector roads base rate build-up. Given the rural setting and low levels of traffic in the Leppington region the classification of new roads and road upgrades should be reviewed by Camden Council. Where road upgrades are in low trafficked areas, the Traffic Management cost should be lower than the existing road upgrade provisions. This represents an opportunity for cost savings on Traffic Management. Further differences in the collector and local road base rates are described in detail in Sections 2.6 and 2.7 of this report.

3.3 Contingency

Camden Council has applied a contingency rate of seven per cent. Given the current level of detail provided, this contingency rate appears slightly low. This comment is reflected in the WTP report, which suggests a contingency of ten per cent as more appropriate.



4 Summary

Leppington North

This cost review found that the proposed CGA-CP cost estimates for road transport infrastructure for Leppington North was generally reasonable. It is noted that the creek crossings require further information for accurate assessment and that the Leppington North cost estimates does contain some formula errors, which once rectified, would increase the estimate of road transport infrastructure costs in the CGA-CP for Leppington North by a total of \$1.63 million. Once Camden Council have provided further information on the two pedestrian crossings in the Leppington North area and rectified the formula errors, the cost estimate for Leppington North will be comparable to the findings of this cost review.

Leppington

This review could not conclusively assess whether the CGA-CP's total proposed road transportation cost estimate for Leppington is appropriate. Axess/CCHD's cost estimate for the road transport infrastructure cost estimate in the Leppington precinct is higher than that of the Leppington CGA-CP cost estimate. Assuming that the CGA-CP would adopt a conservative approach to costing, Axess/CCHD have analysed in detail the accuracy of our cost estimate and the assumptions and inclusions of the CGA-CP.

Axess/CCHD found that the CGA-CP cost estimate potentially over-estimates the costs for the delivery of pedestrian creek crossings and pedestrian crossings which, together with the shared paths, account for about 15 per cent of the total road transport infrastructure cost estimate in the Leppington precinct. This represents a key opportunity for reducing the total road transport infrastructure cost estimate.

Camden Council has defined the base rate for creek crossings on a 21 metre span pedestrian bridge. With the majority of the creek crossings spanning only 3 metres to 12 metres, the appropriateness of this base rate and approach may be likely to over-estimate the actual costs for the pedestrian creek crossings. It is not clear if a box-culvert approach was considered as part of the cost build-up, rather than bespoke bridges for every creek crossing. It is recommended that Camden Council review the costs and the approach to the pedestrian creek crossings.

General observations

Given the rural setting and low levels of traffic in the Leppington North and Leppington region the classification of new roads and road upgrades should be reviewed by Camden Council. Where road upgrades are in low trafficked areas, the Traffic Management cost should be lower than the existing road upgrade provisions. This represents an opportunity for cost savings on Traffic Management.

The pavement design for sub-arterial roads does not appear adequate. The pavement provisions for the sub-arterial road should be thicker than the allowance for local or collector roads.

Currently there is no allowance for bulk earthworks, nor any provision for new pavements in green field areas for foundation treatments. The volume of earthworks is based on topography, site conditions and extent of foundation treatments. Earthworks also attract the expense of the disposal of excess excavated material which is not accounted for in this review.

Consideration of an allowance or contingency for subsoil drainage is advised.