IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Assessment of Bayside Council's Rockdale Contributions Plan 2016 – Urban Renewal Area

Local Government — Assessment
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1 Executive Summary

1.1 Introduction

The NSW Government has asked the Independent Pricing and Regulatory Tribunal (IPART) to review contributions plans that have been prepared by councils under section 94 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and which propose contribution rates above a capped amount.[1]

Rockdale City Council (RCC) submitted the *Rockdale Contributions Plan 2016 – Urban Renewal Area* (RCP 2016) to IPART for assessment in July 2016. On 9 September 2016, the local government areas (LGAs) of Rockdale and Botany Bay were amalgamated to form the LGA of Bayside, governed by a new council – Bayside Council (BC).[2]

This is the first time IPART has assessed a contributions plan for the former Rockdale or new Bayside LGAs. It is also the first time IPART has assessed a contributions plan for an infill development area. Previous contributions plans have been for greenfield development areas in the Sydney's North West Growth Centre and Wollongong LGA.

RCC estimated the total costs of the contributions plan to be around $256 million, and that the maximum contribution payable under the proposed contributions plan is $39,698 per residential lot.[3] This is above the maximum contribution cap of $20,000 per lot set by the NSW Government that applies to the contributions plan.[4]

We make 32 recommendations across the assessment criteria, for cost reductions and other items to review that could reduce the total cost of RCP 2016 by up to $66.5 million or 26% in the short term.

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1 See the Terms of Reference in Appendix A.

2 Local Government (Bayside) Proclamation 2016 [NSW], 9 September 2016. In this report, we refer to Rockdale City Council (RCC) for any action undertaken before the formation of the new council, including the preparation of RCP 2016. However, for any action thereafter, including responses to our information requests after 9 September and for future recommended action, we refer to Bayside Council (BC).

3 RCP 2016, p 6. This is the rate for a dwelling with three or more bedrooms.

4 Minister for Planning and Infrastructure, *Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012*, 21 August 2012, cl 6 (3) and sch 2, cl (15).

The final impact of our recommendations on costs in the plan over the longer term would depend on the outcome of responses to a range of our recommendations. As an example, we recommend that $33.1 million in stormwater infrastructure costs be removed from RCP 2016 until Bayside Council undertakes further flood modelling studies to demonstrate nexus between the proposed infrastructure and the new development in the Wolli Creek precinct. Once these studies are completed, we anticipate that the reasonable cost of stormwater infrastructure would be included in RCP 2016, aligned to the recommended objectives in the new studies.

1.2 IPART's role in reviewing contributions plans

The *Revised Local Development Contributions Practice Note: For the assessment of Local Contributions Plans by IPART*[5] requires a council to submit a plan to IPART for assessment if it wishes to seek alternative funding sources to fund the gap between development contributions and infrastructure costs in the plan (see Box 1.1).

IPART is required to assess the contributions plan and report our findings to the Minister for Planning and the council.

5 Department of Planning & Infrastructure, *Revised Local Development Contributions Practice Note: For the assessment of Local Contributions Plans by IPART*, February 2014 (Practice Note).

Box 1.1 IPART's role in reviewing contributions plans

In 2010 the NSW Government introduced caps on the amount of section 94 development contributions that councils can collect. Unless the Minister for Planning exempts the development area,[a] councils can levy development contributions to a maximum of:

- $30,000 per dwelling or residential lot in greenfield areas, and
- $20,000 per dwelling or residential lot in all other areas.

The NSW Government also conferred to IPART the function of reviewing certain plans with contribution rates above the relevant cap. Our terms of reference are in Appendix A of this report.

The NSW Government provides funding for councils where the cost of delivering essential infrastructure is greater than the amount the council can collect from capped contributions.[b] Councils can also apply for a special rate variation to meet the funding shortfall that results from the imposition of caps. Councils must have their plans reviewed by IPART to be eligible for government funding or to apply for a special rate variation.

Since October 2011 IPART has assessed 12 contributions plans from The Hills Shire Council, Blacktown City Council and Wollongong City Council. Reports on these contributions plans were presented to the Minister for Planning and the councils, and are available on our website.

RCP 2016 is the first contributions plan IPART has reviewed for infill development. All previous contributions plans have been for greenfield developments.

a The Minister for Planning exempted all developments where, as of August 2010, the amount of development that had already occurred exceeded 25% of the potential number of lots. The Department of Planning and Environment has advised that developments subject to this exemption were assessed on application from relevant councils.

b Currently through the Local Infrastructure Growth Scheme (LIGS).

1.3 How does IPART assess a contributions plan?

IPART assesses plans in accordance with the criteria set out in the Practice Note. The criteria require us to assess whether:

- the public amenities and public services in the plan are on the essential works list
- the proposed public amenities and public services are reasonable in terms of nexus[6]
- the proposed development contribution is based on a reasonable estimate of the cost of the proposed public amenities and public services
- the proposed public amenities and public services can be provided within a reasonable timeframe

6 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.

- the proposed development contribution is based on a reasonable apportionment of costs
- the council has conducted appropriate community liaison and publicity in preparing the contributions plan, and
- the plan complies with other matters IPART considers relevant.

As outlined in Box 1.1, this assessment is required if a council wishes to seek State Government[7] or special variation funding sources to fund the gap between development contributions and infrastructure costs in the plan. The Practice Note therefore limits the scope of availability for this additional funding. Councils may still provide public amenities and public services beyond the criteria in the Practice Note,[8] however additional funding beyond the capped contributions is not available for these purposes.

We based our assessment of RCP 2016 on information provided by the council, and have consulted further with RCC and BC, including during a site visit and meetings. BC has also provided comment on a draft of this report. In addition, we consulted with the Department of Planning and Environment (DPE) throughout our assessment process, including on a draft of this report.

To assist with our assessment of transport infrastructure in the plan, we engaged an independent transport engineering consultant, ARRB Group Ltd (ARRB). Appendix D is ARRB's report on specific matters relating to whether:

- the proposed transport facilities are on the essential works list
- the proposed transport facilities are reasonable in terms of nexus, and
- the estimated costs of the proposed transport facilities are reasonable.[9]

To assist with our assessment of stormwater infrastructure in the plan, we engaged an independent stormwater consultant, J. Wyndham Prince (JWP). Appendix E is JWP's report on specific matters relating to whether:

- the proposed stormwater facilities are on the essential works list
- the proposed stormwater facilities are reasonable in terms of nexus, and
- the estimated costs of the proposed stormwater facilities are reasonable.[10]

Following our assessment, the Minister for Planning will consider our recommendations and may request Bayside Council to amend the contributions plan.

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7 State Government funding currently is provided through the Local Infrastructure Growth Scheme (LIGS).

8 This includes public amenities and public services that are not on the essential works list or that are above base level embellishment.

9 See ARRB Group Ltd, *Contract Report, Review of Transport Items in the Rockdale Contributions Plan 2016 – Urban Renewal Area*, October 2016, in Appendix D.

10 See J. Wyndham Prince, *Rockdale Contributions Plan 2016 – Urban Renewal Area, Review of Stormwater Infrastructure Items*, October 2016, in Appendix E.

1.4 Overview of RCP 2016

The Wolli Creek and Bonar Street precincts together are known as the Rockdale Urban Renewal Area (RURA). They comprise around 67.8 hectares of land located in the north west of the Bayside LGA.

Within the RURA, land use is changing from predominantly industrial and low density housing to high density, mixed use residential and employment areas. Development is planned to occur from 2004 for a period of around 25 years, until 2030.

Most development will be residential. Current assumptions provide for approximately 7,800 additional dwellings and 37,500 m^2 of retail and commercial floor space when the area is fully developed. At the end of the development period, the RURA is expected to accommodate 17,485 new residents and 1,251 workers, a net population increase of 18,736.[11] As of late 2015, approval had been granted for 63% of residential and 38% of non-residential development.

1.4.1 Cost of land and facilities in RCP 2016

The total proposed cost in RCP 2016 to be recovered through development contributions is around $256 million, of which 59.5% represents the construction of facilities, 39.5% land acquisition, with 1.0% for plan preparation and administration. Social infrastructure facilities costing $3.0 million are also included in the plan, but the council is not able to recover funding for this amount through development contributions as the facilities do not fall within the Essential Works List (EWL) (see Table 1.1 and Appendix B).

[11] RCP 2016 shows that the expected final net increase in population of 15,685 residents and 3,051 workers, a total of 18,736 (p 11). However, supporting information provided by the former RCC confirmed that while the total new population is as stated, the correct mix is 17,485 residents and 1,251 workers.

Table 1.1 RCP 2016 – Total proposed cost of land and facilities ($Sept 2015)

	Land	Facilities	Total
Transport	30,920,062	65,682,459	96,602,521
Stormwater management	0[a]	71,391,080	71,391,080
Open space	68,863,921	15,252,523	84,116,444
Community facilities	1,436,631	0	1,436,631
Administration			2,473,261
Total costs to be recovered through development contributions	**101,220,614**	**152,316,062**	**256,019,937**
Non-essential social infrastructure	*n/a*	*2,978,872*	*2,978,872*
Total plan costs	101,220,614	155,294,934	258,998,809[b]

[a] Bayside Council does not need to acquire more land to provide the necessary stormwater infrastructure: see section 4.1.

[b] The total cost in the plan to be met from development contributions is $256,019,937 because non-essential social infrastructure is not on the essential works list and therefore the costs ($2,978,872) cannot be recovered through development contributions.

Source: RCP 2016, Table 1, p 5 and IPART calculations.

1.4.2 Contribution rates

Table 1.2 sets out the proposed contribution rates in RCP 2016 for different dwelling types. All residential contribution rates are above the contributions cap of $20,000 per dwelling or lot set by the NSW Government.[12] The plan states that the maximum contribution that the council can impose is $20,000.

The contribution per resident or worker is $13,664. For residential development, the per person rate is used to determine contributions based on the number of persons per dwelling. For non-residential development, the plan assumes an average worker occupancy of one worker per 30 square metres of gross floor area to calculate contributions. In each case, contributions can be levied on development which creates a net increase in demand for relevant works and infrastructure.

[12] See Minister for Planning and Infrastructure, *Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012*, 21 August 2012, cl 6 (3) and sch 2, cl (15). The maximum contribution of $20,000 applies as the RURA has not been declared a greenfield site.

Table 1.2 Proposed residential development contributions in RCP 2016 ($Sept 2015)

Dwelling type	Occupancy rate (persons)	Contribution rate
0 or 1 bedroom dwelling	1.70	23,297
Per 2 bed dwelling	2.39	32,681
Per 3 or more bed dwelling	2.91	39,698

Note: The contribution rate per person is $13,664.
Source: RCP 2016, Table 2, pp 3 and 6.

1.5 Summary of our assessment

Our assessment of RCP 2016 against each of the criteria in the Practice Note is summarised in Table 1.3. All our findings and recommendations are listed in section 1.7.

1.5.1 Essential Works List

As this is the first infill development plan we have reviewed, we considered a number of new issues regarding whether certain items are on the Essential Works List (EWL). We took the view that if the purpose of the work was primarily to improve the aesthetics of the public amenity, such as certain undergrounding of power lines or plant verges, then the work should not be considered 'essential'. Where the infrastructure addressed another need, such as traffic calming in the case of indented on-street parking, we considered that it should be 'essential'. However, in acknowledging that we have applied our judgement in interpreting the EWL, we suggest that DPE clarify whether certain public domain works and indented on-street parking are on the EWL because they do increase the cost in the plan.

1.5.2 Nexus

We found that nexus was established for most transport and open space infrastructure. Our consultant, ARRB, advised that nexus did not extend to streetscape improvements for aesthetic purposes only (being plant verges), or when the work was outside the RURA. We also considered that public domain works should only be included where nexus for the item as open space or transport is established, which we do not consider was achieved for the SWSOOS-located pedestrian link and open space area.

In preparing RCP 2016, the council has rolled over much of the infrastructure proposed for the RURA from the previous 2004 plan for the former Rockdale LGA. For some of this infrastructure there were gaps in supporting information to establish nexus between the new development and the infrastructure included in the plan.

In particular, we found that nexus was not established for the proposed stormwater works for flood mitigation purposes in the Wolli Creek precinct, which altogether represent a significant cost ($33.1 million) in the plan. While the council established the need for flood mitigation work in principle, it did not establish the need for the particular configuration of works in light of the new development. We recommend that Bayside Council commission further flood modelling work to determine what infrastructure is essential to achieve its objective to mitigate the flood impact on the public domain,[13] and that these costs be excluded in the interim to expedite this critical step in the process.

We also recommend that the council undertake a needs-based assessment of the open space requirements for the additional population to better inform the priorities for open space, although we found that the nexus criterion was met for most of the open space proposed.

Although the planning process can be quite different in infill areas compared with greenfield areas, this type of analysis is still important when determining the reasonable provision of open space for infill developments. Land is at a premium, and the specific active and passive open space needs of the demographic should be clear to properly consider how much open space is required. It would also assist in determining whether the council needs to find alternative options to local greenspace, including other public domain areas within the precincts, or other greenspaces outside the local area.

1.5.3 Reasonable cost

In assessing cost, we found the general approach to estimating land acquisition costs for all infrastructure in the plan, based on a recent, independent valuation, is reasonable. However, we identified a potential mismatch between a significant cost of land to be acquired for transport ($28.4 million) and the policy in the plan for land for roadwork to be dedicated free of cost by a developer. We understand that the possibility of land dedication is not certain at this stage and accordingly, we have requested that these costs be reviewed by the council, as relevant.

We found most of the capital works estimates reasonable, but made a number of recommendations to adjust individual cost estimates for transport and stormwater items to better reflect the actual scope of the works. We also found that the estimated cost of embellishment for the Bonar Street Community Park exceeded the reasonable cost for base level embellishment, and that this cost be removed until a more reasonable cost estimate is provided. Similarly, we recommend that BC review the costs for the Wolli Creek Town Park, which are high, but to a lesser extent. We consider these costs should remain in the plan while they are under review.

[13] The public domain includes roads, footpaths, parks and other public areas.

The magnitude of the additional factors (indirect costs, margin and client on-costs) and contingencies applied in a number of the more recent cost estimates for transport, stormwater and open space, inflated the overall estimates to unreasonable levels. Therefore, we recommend revisions to reduce these costs.

1.5.4 Apportionment

In general, we found that the approach to apportioning the costs in RCP 2016 is reasonable. Some work on the Princes Highway, as a state road, might be funded by the Roads and Maritime Service (RMS), and this still needs to be clarified. If funding will be provided by RMS, the cost (up to $10.7 million) should be removed from the plan.

We also consider that the equal apportionment of costs to residents and workers in the RURA is reasonable for transport and stormwater, given the similar demand for these works. On the other hand, workers will likely use open space and community facilities much less than residents. As such, we recommend that BC apportion costs to a worker one third of the costs that are apportioned to a resident.[14] This would increase the contributions rates for residential development relative to the rate for commercial development.

1.5.5 Timing

RCP 2016 does not provide any timeframes for when the council plans to acquire land and provide the infrastructure upon which the contributions are based. The delays in acquiring land appear to be the most significant barrier to timely infrastructure provision in the RURA.

We acknowledge the difficulties the council has encountered in acquiring land but consider that, for the purpose of the contributions plan, renewed effort is required to expedite the land acquisitions. In particular, with 63% of residential development already approved, new RURA residents have raised concerns with the council about the lack of open space.[15]

We recommend that BC commit to timetables for delivery, prioritise its expenditure options, and deliver some open space amenity in the short term. This would require the council to be proactive in acquiring land for infrastructure purposes.

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14 This is based on our estimate of the maximum potential usage of the average worker compared with the average resident. For the average worker this is limited to meal breaks on five days each week, compared with twice each work day and a number of times on weekends or days off work for residents. Workers' use of parks is also likely to be limited to parks closest to the commercial areas in the Wolli Creek precinct. See section 5.5.1.

15 During public consultation on the draft RCP, RCC received written submissions from two RURA residents setting out their concerns about the delay in delivering open space. RCC also advised us of a community group which has been active in lobbying for open space facilities to be provided. See section 6.1.

1.5.6 Consultation and other matters

Finally, we found that RCC had adequately liaised with the community concerning the plan, and that it generally complied with the other requirements under EP&A legislation, notwithstanding the need for some clearer presentation of information in the plan.

Table 1.3 Summary of IPART's assessment of RCP 2016 ($Sept 2015)

Infrastructure type and criterion	Assessment against criteria of the Practice Note
1. Transport	
Essential works	▾ Most transport infrastructure items are on the Essential Works List (EWL), but BC should remove the cost of undergrounding 33kV State Rail power lines that are for public amenity improvement (-$4.7 m). ▾ RCP 2016 includes indented on-street parking for streetscape and traffic calming purposes, which we have assessed as essential work. DPE should review and clarify in the Practice Note whether public domain works for amenity improvement only and indented on-street parking are on the EWL for transport.
Nexus	There is reasonable nexus between the expected development and most transport infrastructure but BC should remove the cost of: ▾ some streetscape improvement works, including planted verges and works outside the RURA on Bonar and Booth Sts, because the need for these works has not been established (-$4.5 m) ▾ 365 m of Princes Hwy widening work outside the RURA (-$4.5 m), and ▾ a 4-leg roundabout at Bonar St and Guess Ave where splitter islands are sufficient (-$0.2 m).
Reasonable costs	▾ The general approach to estimating land acquisition costs for all infrastructure in the plan, based on a recent, independent valuation, is reasonable. However, BC should review the estimates for land to be acquired for transport ($28.4 m) in light of its policy for land to be dedicated free of cost by a developer, and reduce the land costs where it is dedicated. BC should also remove duplicated transaction costs associated with dedicated land at Marsh St (-$.03 m). ▾ Cost estimates for transport infrastructure are mostly reasonable, with the following exceptions (where identified costs should be deducted): – excessive intersection works at: Princes Hwy and Botany St (-$1.3 m); Gertrude St and Arncliffe St (-$1.5 m); and Wollongong Rd and First St (-$2.0 m) – excessive additional factors (indirect costs, margin and client costs) applied to direct construction costs for 19 transport items (-$3.5 m) – application of additional factors to IPART benchmark costs that already include these costs for two transport items (-$0.6 m), and – excessive contingency allowances for five items already 'in progress' (-$0.5 m). ▾ The cost estimate for roadworks for a one-way circuit in Wolli Creek should be increased to reflect the most recent detailed estimate (+$1.8 m). BC should also: ▾ update the capital works estimates for transport to apply the more cost-reflective ABS PPI (Road and Bridge Construction) instead of the CPI ▾ consider splitting works that are likely to be delivered in stages into sub-items to allow more accurate estimations of costs, where feasible, and ▾ include completion dates for transport works in the work schedule and

Infrastructure type and criterion	Assessment against criteria of the Practice Note
	RCP 2016.
Apportionment	The approach to apportioning the transport costs in RCP 2016 is reasonable, although some work on the Princes Hwy, as a state road, might be funded by the Roads and Maritime Service (RMS). If so, the corresponding cost from RCP 2016 (up to $10.7 m) should be removed.
2. Stormwater	
Essential works	All stormwater infrastructure items are on the EWL.
Nexus	There is reasonable nexus between the new development and stormwater infrastructure in the Bonar Street precinct and water quality improvements across both precincts. Nexus is not established for 11 remaining stormwater infrastructure items in the Wolli Creek precinct for which costs should be removed until nexus can be established (-$33.1 m). Although the need for flood mitigation work in the Wolli Creek precinct has been established in principle, BC should undertake further studies to demonstrate the nexus between the proposed flood mitigation and stormwater infrastructure and the expected development in the RURA, and then the necessary costs can be included in the plan.
Reasonable costs	Cost estimates for stormwater infrastructure are mostly reasonable, with the following exceptions (where identified costs should be deducted): ▾ excessive costs for water quality improvements where the scope of gross pollutant traps are undefined (-$0.5 m) ▾ excessive additional factors (indirect costs, margin and client costs) applied to the lower recommended direct costs for BS1.4.1 (-$3.6 m), and ▾ an excessive contingency allowance for four stormwater items which have progressed beyond the strategic review stage (-$2.5 m). BC should also update its capital works estimates for stormwater to apply the more cost-reflective ABS PPI (Road and Bridge Construction) instead of the CPI.
Apportionment	The approach to apportioning the stormwater costs in RCP 2016 is reasonable at this stage, however the approach should be reviewed when it has completed further studies to establish nexus and determine the flood mitigation and stormwater works for the RURA.
3. **Open space and community facilities**	
Essential works	All open space and community facility land and infrastructure are on the EWL. RCP 2016 includes floor space in stratum for a multi-purpose community centre, which we have assessed as essential work. DPE should review and clarify in the Practice Note whether capital costs included in the purchase of floor space in stratum for a community facility are on the EWL. Other capital works for the multipurpose community centre are separately identified in RCP 2016 as non-essential social infrastructure.
Nexus	BC should undertake a needs-based assessment of the open space and community facility requirements for the expected development. Nevertheless, there appears to be reasonable nexus between the new development and most of this infrastructure in RCP 2016, except for: ▾ a pathway and small park on top of the SWSOOS aqueduct between Arncliffe St and the Princes Hwy (-$0.9 m). Should the council establish nexus as open space or transport for this item, the cost could be included back in the plan.

Infrastructure type and criterion	Assessment against criteria of the Practice Note
Reasonable costs	The general approach to estimating land acquisition costs for open space and community facilities is reasonable. Cost estimates for the provision of open space and the community facility are mostly reasonable, with the following exceptions (where identified costs should be deducted): ▾ an excessive contingency allowance for four parks in RCP (-$0.3 m) ▾ an excessive embellishment cost for the Bonar Street Community Park (-$2.4 m), and ▾ excessive additional factors (indirect costs and council on-costs) in the base cost estimates for Wolli Creek Town Park and Thompson Street Reserve (-$0.6m). BC should also: ▾ review the embellishment cost for the Wolli Creek Town Park, which could possibly exceed the reasonable cost of base level embellishment, and ▾ update its capital works estimates for open space to apply the more cost-reflective ABS PPI (Non-Residential Building Construction) instead of the CPI.
Apportionment	The apportionment of open space and the community facility costs in RCP 2016 is reasonable except for: ▾ The equal apportionment of these costs to residents and workers in the RURA. BC should adopt an apportionment approach such that a worker is apportioned one third of the costs that are apportioned to a resident, to reflect our estimate of the lower frequency of their use of these facilities.
4. Plan administration	Plan administration costs of $2.5 m, amounting to 1.6% of capital works costs in the plan should be reduced to represent IPART's benchmark of 1.5% of the reduced capital works costs.
5. Timing	Despite the significant progress of development in the RURA to date, RCP 2016 does not identify when the council plans to acquire land and provide the infrastructure. RURA residents have raised concerns about the lack of open space and community facilities. BC should: ▾ prioritise infrastructure delivery with an indicative timetable based on known or assumed plans for development, and in tranches of three years, if necessary, ▾ place a high priority on the provision of open space and the community facility in the short term, and ▾ review the policy of no compulsory acquisition of privately-owned land and progress acquisition of publicly-owned land.
6. Consultation	Appropriate community liaison and publicity was conducted in the preparation of RCP 2016.
7. Other matters	RCP 2016 complies with most of the regulatory requirements in the EP&A legislation but could be improved to ensure it meets all requirements. BC should amend RCP 2016 to: ▾ clearly label and illustrate in maps the location and extent of all of infrastructure items, particularly stormwater, but also open space and transport ▾ more systematically demonstrate nexus for the proposed infrastructure, based on all relevant technical studies and related information, and ▾ update the work schedule with more detail about proposed infrastructure components and costs, and more specific estimates of the staging of delivery.

1.6 The impact of our recommendations

Table 1.4 shows the potential net impact of our recommendations on the reasonable cost of essential works in RCP, at least in the short term. The potential longer term impact of our recommendations is contingent on the outcome of further reviews we have recommended.

We estimated that IPART's recommendations would reduce the $256.0 million cost of RCP 2016 by $66.5 million. Therefore, based on our recommendations, the assessed reasonable cost of the plan at this stage is $189.6 million.

Table 1.4 IPART's assessment of the total reasonable cost of essential works for RCP 2016 ($Sept 2015)

Infrastructure category and recommended adjustments	Cost in plan	IPART-recommended adjustment	IPART-assessed reasonable cost
Transport land and works	**96,602,519**		
Remove undergrounding of 33kV State Rail power lines for public amenity improvement		(4,726,358)	
Remove streetscape works not on EWL		(4,473,199)	
Lower cost of Princes Hwy widening		(4,450,866)	
Lower costs of four intersection improvements		(4,921,359)	
Remove unnecessary transaction costs for dedicated transport land		(26,891)	
Increase costs for updated estimate of one-way circuit works		1,748,220	
Apply lower additional factors for 19 transport items		(3,512,464)	
Remove additional factors for two transport items		(622,700)	
Reduce contingency allowance for five 'in progress' transport items		(500,881)	
Total transport adjustment		**(21,486,518)**	**75,116,001**
Stormwater works	**71,391,079**		
Remove costs of 11 stormwater works in Wolli Creek (nexus)		(33,110,240)	
Lower cost of water quality improvements		(488,664)	
Apply lower additional factors to 'in progress' Bonar St stormwater item		(3,573,911)	
Reduce contingency allowance for four stormwater works		(2,499,238)	
Total stormwater adjustment		**(39,672,053)**	**31,719,026**

Infrastructure category and recommended adjustments	Cost in plan	IPART-recommended adjustment	IPART-assessed reasonable cost
Open space and community facility	**85,553,075**		
Remove cost of SWSOOS aqueduct pathway and embellishment		(905,981)	
Remove embellishment costs for Bonar Street Community Park		(2,377,858)	
Apply lower additional factors to two open space items		(592,987)	
Reduce contingency allowance for open space items		(257,893)	
Total open space and community facility adjustment		**(4,134,719)**	**81,418,356**
Plan administration	**2,473,261**	**(1,167,366)**	**1,305,895**
Total cost of RCP 2016	**256,019,934**		
IPART-recommended adjustments		**(66,460,657)**	
IPART-assessed reasonable costs			**189,559,277**

Note: Numbers may not add due to rounding.

Source: IPART calculations based on RCP 2016 Infrastructure schedule summary, Appendix A.

Not all of our recommendations can be quantified at this stage.

Further net savings could result from the council:

- reducing the cost of land acquisition for transport infrastructure, if it is determined that the land will be dedicated free of cost from developers
- reducing the embellishment cost for the Wolli Creek Town Park, following further review of the reasonableness of the costs for base level embellishment, or
- removing the cost of the road widening work on the Princes Highway, if Roads and Maritime Service (RMS) provides funding for it.

As noted, it is not possible at this stage to quantify the likely impacts of any of these recommendations in the longer term.

Further, a range of outcomes from our recommendations could result in additional costs being added to the final adjusted cost that we recommend, including:

- reinstating stormwater infrastructure in Wolli Creek precinct, should nexus be established via additional flood impact modelling work
- reinstating a pathway and small park on top of the SWSOOS aqueduct between Arncliffe St and the Princes Hwy ($0.9 million), should nexus be established either through a needs-based assessment of open space, or as a transport link, and
- indexing the capital works estimates with the more cost-reflective ABS PPIs instead of the CPI.

1.6.1 Impact on contribution rates

Table 1.5 shows the impact of our recommendations on the proposed residential contribution rates in RCP 2016, incorporating:

- all of our recommended cost reductions to infrastructure costs, as in Table 1.4, and
- our recommendation to reapportion open space and community facility costs (Recommendation 23) such that workers are each apportioned only one third of the cost of these facilities.

Under these assumptions, the indicative contributions rates for residential development would each decrease by around 24%.

Table 1.5 Impact of IPART's recommendations on proposed contribution rates in RCP 2016 ($ per dwelling) ($Sept 2015)

Dwelling type	Proposed contributions rate in RCP 2016	IPART assessed adjustments
0-1 bedroom dwelling	23,297	-5,694
2 bedroom dwelling	32,681	-7,988
3+ bedroom dwelling	39,698	-9,703

Note: Our adjustments are based on 26.0% lower infrastructure costs. The final rates are likely to change when BC makes more amendments to address other recommendations, including the recommendation to review the need for the Wolli Creek stormwater infrastructure through further flood impact studies.

Source: RCP 2016, p 6 and IPART calculations.

For non-residential development, the per worker contributions rate would reduce by 47% from $13,664 to $7,220.

1.7 Findings and recommendations

Transport Infrastructure

Criterion 1: Essential transport works

IPART findings

1 All transport infrastructure items in RCP 2016 are on the Essential Works List except the undergrounding of 33kV State Rail power lines (items WC1.2.1 and BS1.3.5) and plant verges (items WB1.1.1 and BS1.3.6) that are for public amenity improvement only.

2 RCP 2016 includes indented on-street parking for streetscape and traffic calming purposes, which we have considered to be 'essential works', although the Practice Note does not explicitly include or exclude this work.

Recommendations

1 Bayside Council remove from the essential works in RCP 2016 the portion of the cost of undergrounding 33kV State Rail power lines in the RURA ($4,726,358) which is for public amenity improvement only.

2 DPE review and clarify in the Practice Note whether public domain works for amenity improvement only and indented on-street parking are on the Essential Works List for transport.

Criterion 2: Nexus of transport infrastructure

IPART finding

3 There is reasonable nexus between the transport items in RCP 2016 and the expected development in the RURA except for:

- some streetscape improvement works, including planted verges and works outside the RURA on Bonar and Booth Sts (part of items WB1.1.1 and BS1.3.6) because the need for these works has not been established,
- the 365 m section of Princes Hwy widening work outside the RURA between Argyle St and Burrows St, and
- a proposed 4-leg roundabout at Bonar St and Guess Ave (item WC1.42) because splitter islands are sufficient to meet demand in the RURA.

Recommendations

3 Bayside Council remove from the cost of essential transport works in RCP 2016, works for planted verges and other streetscape works that are outside the RURA on Bonar St, Booth St and another new road (sub-item 9.1), comprising:

- $3,012,971 for item WB1.1.1, and
- $1,460,228 for item BS1.3.6.

4 Bayside Council reduce (by $4,450,886) the cost of the Princes Hwy widening work (item WC2.3.1) to reflect the work inside the RURA, between Brodie Spark Dr and Argyle St only.

5 Bayside Council reduce (by $212,469) the cost of the intersection improvement at Bonar St and Guess Ave (item WC1.4.2) to reflect an upgrade of splitter islands rather than a 4-leg roundabout.

Criterion 3: Reasonable costs of transport infrastructure

IPART findings

4 The approach to estimating land acquisition costs for transport infrastructure, based on recent advice from an independent valuer, is reasonable.

5 RCP 2016 states that land required for the new and widened roads will be dedicated free of cost to the council by the developer at the time of development, which is potentially inconsistent with the $30.9 million in land acquisition costs for transport infrastructure in the plan.

6 The other cost estimates for transport infrastructure in RCP 2016 are mostly reasonable, except the cost estimates contained in Table 3.2.

7 Five transport work items are identified by RCP 2016 as 'in progress', but their costs are still based upon strategic review stage cost estimates.

8 RCP 2016 and the work schedule do not clearly identify the year of completion for all completed transport works, which would be useful for transparency purposes.

9 The use of the CPI to escalate transport work cost estimates to current dollars is reasonable but does not represent the most cost-reflective indexation factor for transport work.

Recommendations

6 Bayside Council review the land acquisition cost estimates for transport infrastructure in RCP 2016 based on its policy for land to be dedicated free of cost by a developer, and reduce the land costs in RCP 2016 where land is dedicated free of cost without any offset contributions.

7 Bayside Council remove $7,623,606 in costs from the transport essential works in RCP 2016 in line with the recommended adjustments in Table 3.2.

8 For transport works 'in progress' and which are likely to be delivered in stages, Bayside Council consider the need to split the works items into sub-items to allow more accurate cost estimates for each item, where feasible.

9 Bayside Council include the completion dates for all completed transport works in RCP 2016 and the work schedule.

10 To index transport works estimates (but not actual costs) to current dollars, Bayside Council apply the more cost-reflective ABS PPI (Road and Bridge Construction) instead of the CPI.

Criterion 5: Apportionment of transport infrastructure costs

IPART finding

10 The approach to apportioning the transport costs in RCP 2016 is reasonable, although some road widening work on the Princes Highway might be funded by the Roads and Maritime Service (RMS) because the highway is classified as a state road.

Recommendation

11 Bayside Council seek confirmation from RMS as to whether funding will be provided for the upgrade works along the Princes Hwy (item WC2.3.1), and if funding will be provided, remove the corresponding cost (up to $10.7 million) from RCP 2016.

Stormwater

Criterion 1: Essential stormwater works

IPART finding

11 All stormwater infrastructure in RCP 2016 is on the Essential Works List.

Criterion 2: Nexus

IPART findings

12 There is reasonable nexus between the stormwater infrastructure in the Bonar St precinct (items BS1.4.1 and BS1.4.2 extending Bonar St to the SWSOOS) and water quality improvements (item WB1.2.1) in RCP 2016 and the expected development in the RURA.

13 Nexus is not established for 11 remaining stormwater infrastructure items in the Wolli Creek precinct (WC1.1.1, WC1.1.2, WC1.1.3, WC1.1.4, WC1.1.5, WC2.1.2, WC2.1.3, WC3.1.1, WC3.2.1, WC4.1.1 and WC4.1.2) because:

- the supporting flood studies only consider the impacts and mitigation works required to address the pre-development flood issues, and
- it is unclear if, and to what extent, this stormwater infrastructure will address the flood impacts and the demand for stormwater works arising from the expected development in the RURA.

Recommendations

12 Bayside Council remove $33,110,240 from the cost of essential stormwater works in RCP 2016 for 11 stormwater infrastructure items for which nexus is not established (WC1.1.1, WC1.1.2, WC1.1.3, WC1.1.4, WC1.1.5, WC2.1.2, WC2.1.3, WC3.1.1, WC3.2.1, WC4.1.1 and WC4.1.2), until it undertakes further studies to determine the stormwater works required to meet the demand arising from the new development (Recommendation 13).

13 Bayside Council undertake further studies to demonstrate the nexus between the proposed flood mitigation and stormwater infrastructure and the expected development in the RURA. These studies are required to:

- determine the base flood levels, depths and hazards that existed prior to rezoning and development
- determine the additional impacts on the flood levels, depths and hazards caused by redevelopment, and
- determine the works required to mitigate the flood levels, depths and hazards at full redevelopment to achieve acceptable targets.

Criterion 3: Reasonable cost of stormwater infrastructure

IPART findings

14 The cost estimates for stormwater infrastructure in RCP 2016 are mostly reasonable, except the cost estimates contained in Table 4.2.

15 The use of the CPI to escalate stormwater work cost estimates to current dollars is reasonable but does not represent the most cost-reflective indexation factor for stormwater work.

Recommendations

14 Bayside Council remove $6,561,813 in costs from the stormwater essential works in RCP 2016 in line with the recommended adjustments in Table 4.2.

15 To index stormwater works estimates (but not actual costs) to current dollars, Bayside Council apply the more cost-reflective ABS PPI (Road and Bridge Construction) instead of the CPI.

Criterion 5: Apportionment of stormwater infrastructure costs

IPART finding

16 The approach to apportioning the stormwater costs in RCP 2016 is reasonable at this stage, however the apportionment approach should be reviewed when Bayside Council has completed further studies to establish nexus and determine the flood mitigation and stormwater works for the RURA.

Recommendation

16 Bayside Council review the approach to apportionment of stormwater costs in RCP 2016 on completion of further studies to establish nexus and determine the flood mitigation and stormwater works for the RURA. This review should consider:

- the distribution of demand for the works arising from the development and resulting benefits across different areas of the RURA, and
- the apportionment of costs to those who create the need or demand for the stormwater works.

Open space, community facilities and plan administration

Criterion 1: Essential open space and community facility works

IPART findings

17 All open space and community facility infrastructure items are on the Essential Works List except for capital works for the fit-out of a multi-purpose community centre that RCP 2016 identifies separately as non-essential social infrastructure.

18 RCP 2016 includes the acquisition of floor space in stratum for a multi-purpose community centre, comprising combined land and capital costs. We have considered the combined land and capital costs for acquisition of floor space in stratum for a community facility to be 'essential works', although the Practice Note does not explicitly include or exclude the capital costs of in stratum acquisitions.

Recommendation

17 DPE review and clarify in the Practice Note whether the capital costs included in the acquisition of floor space in stratum for a community facility are on the Essential Works List, and if so, whether this applies to infill development sites only.

Criterion 2: Nexus of open space and community facilities

IPART findings

19 RCP 2016 does not establish nexus for the open space infrastructure with a needs-based assessment of the open space requirements for the additional population of the RURA.

20 There appears to be reasonable nexus between most open space in RCP 2016 and the expected development in the RURA because:

- the proposed rate of open space provision in the RURA (0.65 ha/1,000 people) is low, reflecting the constraints of the infill development, and
- the proposed open space should be accessible to the residents and workers of the RURA.

21 Nexus is not established in RCP 2016 for open space items WC4.2.2 and WC4.2.1, comprising a pathway on top of the SWSOOS aqueduct between Arncliffe St and the Princes Hwy and embellishment of a small section along this path, at Argyle St.

22 There are options for open space provision, other than the proposed open space in RCP 2016, which could be considered further by Bayside Council if the rate of provision were considered inadequate to meet the demand from the RURA, as informed by a needs-based assessment.

23 Nexus is evident between the proposed multi-purpose community facility and the proposed development in the RURA.

Recommendations

18 Bayside Council establish the open space requirements in the plan based on a needs-based assessment of the RURA which considers:

- the demands of the demographic for accessible active and passive open space, and
- the options to meet the demands with an audit of existing and accessible open space, both inside and outside the RURA.

19 Bayside Council remove $905,981 for SWSOOS aqueduct pathway and embellishment between Arncliffe St and the Princes Hwy (items WC4.2.1 and WC4.2.2) from the plan unless the need for this work can be established:

- to provide transport infrastructure in the RURA, or
- as part of a broader needs-based assessment of the open space requirements in the RURA.

Criterion 3: Reasonable cost of open space and community facilities

IPART findings

24 The approach to estimating land acquisition costs for open space and the community facility in RCP 2016, based on recent advice from an independent valuer, is reasonable.

25 The cost of open space embellishment in RCP 2016 is reasonable, except for:

- the embellishment cost for the Wolli Creek Town Park, which could exceed the reasonable cost of base level embellishment, although this is not clear from the information provided
- the embellishment cost for the Bonar Street Community Park, which exceeds the reasonable cost of base level embellishment
- the allowance of 15% for indirect costs and 11% council on-costs as additional factors in the base cost estimates for open space embellishment at four parks, and
- the contingency allowance of 20% for the cost estimates for four parks where the projects have progressed beyond the strategic review stage.

26 The use of the CPI to escalate open space embellishment cost estimates to current dollars is reasonable but does not represent the most cost-reflective indexation factor for open space embellishment.

Recommendations

20 Bayside Council review the cost of open space embellishment for the Wolli Creek Town Park to ensure that only base level embellishment is included for the park, but in the interim retain the cost in RCP 2016, with adjustments required by Recommendations 22 and 23.

21 Bayside Council remove the embellishment costs for the Bonar Street Community Park ($2,377,858) from RCP 2016 and review the reasonable cost of base level embellishment for this park.

22 Bayside Council remove $592,987 from the cost of open space embellishment in RCP 2016 for reduced additional factors (12% indirect costs and 10% council on-costs) in the base cost estimates for Wolli Creek Town Park and Thompson Street Reserve.

23 Bayside Council remove $257,893 from the cost of open space embellishment in RCP 2016 for a lower contingency allowance of 15% in the cost estimates for Wolli Creek Town Park and Thompson Street Reserve.

24 To index open space embellishment estimates (but not actual costs) to current dollars, Bayside Council apply the more cost-reflective ABS PPI (Non-Residential Building Construction) instead of the CPI.

Criterion 5: Apportionment of open space and community facility costs

IPART finding

27 The approach to apportioning the cost of open space and the community facility in RCP 2016 is reasonable, except for:

- the equal apportionment of these costs to residents and workers because the average worker will not utilise the range of open space and community facilities at the same frequency as the average resident.

Recommendation

25 Bayside Council adopt an approach to apportionment of open space and community facility costs in RCP 2016 such that a worker is apportioned one third of the costs that are apportioned to a resident.

Criterion 3: Reasonable cost of plan administration

IPART finding

28 Plan administration costs of $2,473,261 in RCP 2016 equate to 1.6% of capital works costs, which is slightly above the IPART benchmark rate of 1.5%.

Recommendation

26 Bayside Council reduce plan administration costs in RCP 2016 to equate to 1.5% of the reduced capital costs which results from this assessment.

Criterion 4: Timing

IPART findings

29 Despite the significant progress of development in the RURA to date, RCP 2016 does not identify when Bayside Council plans to acquire necessary land and

provide the infrastructure to support the needs of the existing and future population.

30 RURA residents have raised concerns with the council about the lack of progress on planning for and delivering proposed open space facilities and the community centre for the new population in the RURA.

31 There are barriers to the timely provision of infrastructure in RCP 2016. These include:

- the former Rockdale City Council's policy not to compulsorily acquire privately-owned land
- the delay in securing a site within a new non-residential development for the community centre, and
- delays in acquiring publicly-owned land.

Recommendations

27 Bayside Council prioritise infrastructure delivery within the RURA, setting out in RCP 2016 and the work schedule an indicative timetable for infrastructure provision based on known or assumed plans for development, and in tranches of three years, if necessary.

28 As part of this process, Bayside Council in the short term place a high priority on the provision of open space and the community facility.

29 Bayside Council review the policy of no compulsory acquisition of privately-owned land for infrastructure in the RURA, and adopt a proactive approach to land acquisition.

30 Bayside Council seek to secure a suitable site for the community centre.

31 For the publicly-owned land where considerable delay has occurred in negotiating the transfer, Bayside Council approach:

- the Land and Housing Corporation Department of Family and Community Services to progress the purchase, and
- should the matter not be satisfactorily resolved within six months, the Minister for Social Housing to assist with finalising the purchase.

Consultation and other matters

Criterion 6: Consultation

IPART finding

32 Rockdale City Council conducted appropriate community liaison and publicity when preparing RCP 2016.

Criterion 7: Other matters and compliance with the EP&A Regulation

IPART finding

33 RCP 2016 complies with most of the information requirements in the *Environmental Planning and Assessment Act 1979* and the *Development Contributions Practice Notes (2005)*, however the provision of information in the plan could be improved to fully comply with the *Environmental Planning and Assessment Regulation 2000.*

Recommendation

32 Bayside Council revise RCP 2016 to present its contents in a way that more fully complies with the requirements of the *Environmental Planning and Assessment Regulation 2000*, particularly in relation to:

- clearly labelling and illustrating in maps the location and extent of all of infrastructure items, particularly stormwater, but also open space and transport
- more systematically demonstrating nexus for the proposed infrastructure, based on all relevant technical studies and related information, and
- updating the work schedule with more detail about proposed infrastructure components and costs, and more specific estimates of the staging of delivery.

1.8 Structure of this report

The remainder of this report explains our assessment in more detail. Chapter 2 provides an overview of RCP 2016 and Chapters 3 to 7 explain our assessment against the criteria in the Practice Note in detail.

Appendices and supporting information for our assessment are attached:

- Appendix A, the Terms of Reference for our review of contributions plans
- Appendix B, an explanation of infrastructure items on the EWL
- Appendix C, the assessment of RCP 2016 against the information requirements in clause 27 of the *Environmental Planning and Assessment Regulation 2000*
- Appendix D, the report of the consultants ARRB Group Ltd
- Appendix E, the report of the consultants J. Wyndham Prince Pty Ltd
- Glossary.

2 Overview of Rockdale Contributions Plan 2016 – Urban Renewal Area

The former Rockdale City Council (RCC) recently prepared the *Rockdale Contributions Plan 2016 – Urban Renewal Area* (RCP 2016) for the Wolli Creek and Bonar Street precincts.[16] The precincts together are known as the Rockdale Urban Renewal Area (RURA) and comprise around 67.8 hectares of land located in the north west of the local government area (LGA).

Within the RURA, land use is changing from predominantly industrial and low density housing to a high density, mixed use residential and employment area. Development will occur over a period of around 25 years, by 2030.

Most development will be residential. Current assumptions provide for approximately 7,800 additional dwellings and 37,500 m^2 of retail and commercial floor space when the area is fully developed. It will accommodate 17,485 new residents and 1,251 workers, a net population increase of 18,736.[17] As of late 2015, approval had been given for 63% of residential and 38% of non-residential development.

RCC estimated infrastructure costs of around $256 million in RCP 2016, which includes $3.0 million for non-essential infrastructure. Contribution rates in the plan for all types of residential development exceed the Government's current cap of $20,000 per lot or dwelling that applies to the RURA. RCC's preferred option is to apply for NSW government funding under the Local Infrastructure Growth Scheme (LIGS) to meet the shortfall.

The following sections summarise the status of the plan and further details related to planning and staging, the development mix, infrastructure costs and contribution rates.

2.1 Status of RCP 2016

RCC submitted RCP 2016 to IPART for assessment following its exhibition between December 2015 and February 2016. The council did not amend the plan

[16] Bayside Council (Bayside), comprising the former City of Botany Bay and Rockdale City councils, was proclaimed on 9 September 2016.

[17] RCP 2016 shows that the expected final net increase in population of 15,685 residents and 3,051 workers, a total of 18,736 (p 11). However, supporting information provided by the former RCC confirmed that while the total new population is as stated, the correct mix is 17,485 residents and 1,251 workers.

following the exhibition period. RCP 2016 was adopted on 30 March 2016 as a specific plan relating to the urban renewal area that was previously covered by the *Rockdale Section 94 Contributions Plan 2004* (CP 2004).[18]

The council states that the new plan is appropriate as the two precincts of Wolli Creek and Bonar Street are contiguous, with similar infrastructure needs. The costs of new infrastructure in both precincts are combined, and contribution rates are determined by spreading total costs equally across all new development within the RURA. It was prepared after a review of infrastructure delivery responding to the:

- evolution of the scope of works
- increases in the costs of land and works, and
- changes to development assumptions and population projections for the RURA.

2.1.1 Urban renewal areas in Rockdale City Council's CP 2004

CP 2004 came into effect on 1 June 2004, applying to development across the entire Rockdale LGA,[19] and was amended on several occasions, most recently in November 2010.[20] The Wolli Creek urban renewal area was first identified in the original CP 2004, and the Bonar Street precinct was identified under the third amendment to CP 2004 in October 2008.

Within CP 2004, infrastructure provision and contribution rates in the Wolli Creek and Bonar Street precincts were treated separately from the remainder of the LGA, given that they both would be comprehensively redeveloped over an extended timeframe. The approach in each precinct differs slightly, as their infrastructure planning was undertaken at different times.

The maximum contribution payable under CP 2004 (Amendment 5, 2010) was:

- $17,304 per residential lot in the Wolli Creek precinct, and
- $20,000 per residential lot in the Bonar Street precinct.[21]

2.1.2 RCP 2016 (submitted to IPART)

RCC recently adopted a separate contributions plan for the two precincts subject to urban renewal.[22]

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18 CP 2004 remains in force and applies to all other areas of the Rockdale LGA.

19 As outlined in section 1.1, the Rockdale LGA was amalgamated with Botany Bay to form the LGA of Bayside.

20 See CP 2004 p 7.

21 CP 2004 sets a maximum contribution in the Bonar Street precinct of $28.250.70 per residential lot but notes that contributions would be adjusted to comply with the $20,000 per dwelling cap provided by a Ministerial Direction issued pursuant to section 94E of the EP&A Act. See CP 2004, p 9.

The cost of infrastructure and land acquisition to which the plan applies has increased from $111 million to $260 million,[23] predominantly a result of escalating costs rather than increased scope. Development contributions are calculated based on upgraded assumptions about the mix of residential and non-residential development and, consequentially, updated population projections for the net additional residents and workers.

In preparing a separate plan for these two precincts, RCC has taken the opportunity to implement a different approach to the format and contents of the plan which covered the entire LGA. The 2016 plan shows some significant differences in a number of areas, including the following:

- Infrastructure costs apportioned across the whole RURA – rather than for each precinct separately.
- Revised work scope and schedule – to account for infrastructure that has since been delivered, changed demand arising from changed circumstances, and to reflect technical studies undertaken since 2010.
- Less detail about the timeframes for delivery of infrastructure.
- Revised method for calculating plan administration costs – IPART benchmark adopted to replace projected expenditure.
- Amended basis for calculation of contributions for non-residential development – per worker demand for facilities now assumed to be similar to the per resident demand, based on one worker per 30 m^2 rather than on a range of assumed occupancy levels for different commercial and industrial uses.
- More exemptions from development contributions – the list of development that will be exempt from contributions has been expanded beyond the previous plan, which only provided for exemptions where the Minister for Planning had issued a direction (see section 2.4.1).[24]

Overall, RCP 2016 contains less detail than CP 2004 about matters such as an implementation strategy, establishing nexus and underlying principles. For the specific items of proposed infrastructure, RCP 2016 presents information in generalised terms. It does not include information such as mapped locations linked to work schedules which prioritise and indicate timing of delivery of each item, as was included in CP 2004.

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22 See RCC, Council meeting 2 December 2015, General Report Item ORD13, and CP 2004 and RCP 2016 and Council meeting 16 March 2016, General Report Item ORD13.

23 The council business paper for 2 December 2015 states that the increase is $139 million, rather than the increase of $149 million which IPART calculates.

24 See RCC, Council meeting 2 December 2015, General Report Item ORD13, and CP 2004 and RCP 2016.

2.2 Development in the Rockdale Urban Renewal Area

Figure 2.1 shows the boundaries of the Rockdale Urban Renewal Area (Wolli Creek precinct shaded purple and Bonar Street precinct shaded red). Figures 2.2 and 2.3 show the structure plans for the Wolli Creek and Bonar Street precincts, respectively.

The RURA is situated either side of the Illawarra railway line, and south of Wolli Creek and the Cooks River. Much of the land is low-lying and liable to flood.

Prior to its rezoning and commencement of redevelopment, the entire urban renewal area was a traditional industrial area with factories and warehouses. Wolli Creek has been identified for some time as an area of high density development to take advantage of the airport rail link constructed in the 1990s. Wolli Creek was rezoned in the early 2000s from industrial and related use to mixed use urban renewal, and Bonar Street was rezoned for higher density residential development in 2008.

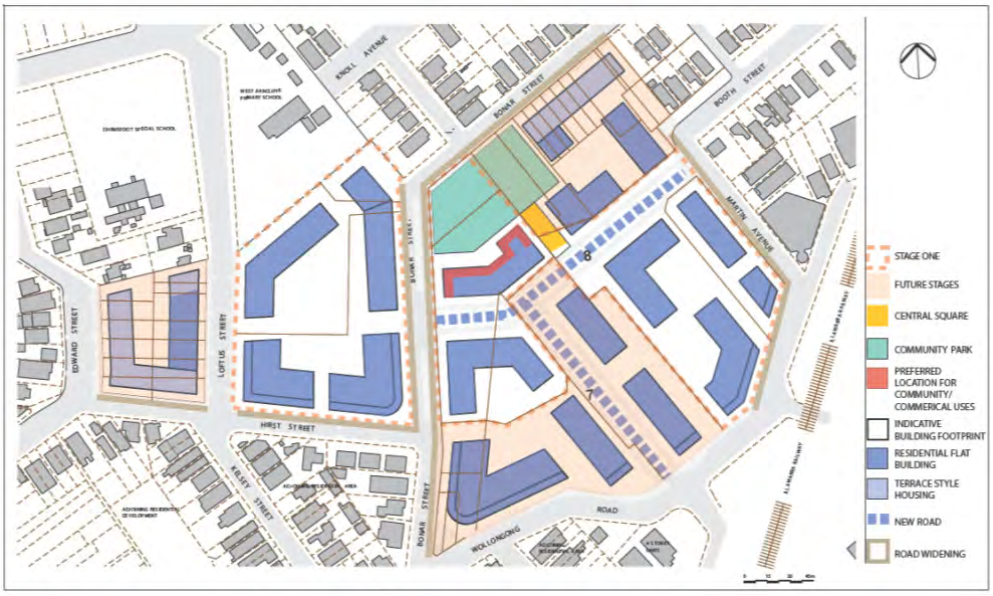
Figure 2.1 Location of Rockdale Urban Renewal Area

Source: RCP 2016, p 4.

Figure 2.2 Wolli Creek precinct structure plan

Source: RCP 2016, p 8.

Figure 2.3 Bonar Street precinct structure plan



Source: RCP 2016, p 9.

Development in the two precincts has been planned to occur over a period of about 25 years, up to 2030, with a net increase of 18,736 residents and workers.[25] A summary of the expected development in the two precincts is in Table 2.1.

- Most of the development will be residential. When fully developed, the area is expected to have approximately 7,822 more dwellings, which will accommodate a projected population of 17,485.
- The total maximum development potential for non-residential development (retail and commercial) is 37,542 m^2, with 1,251 workers expected.

Table 2.1 Expected development in the RURA

Precinct	Dwellings	Residents	Workers	Total
Bonar Street	1,363	3,049	2	3,051
Wolli Creek	6,459	14,436	1,249	15,685
RURA	7,822	17,485	1,251	18,736

Source: RCP 2016 and BC, Email to IPART 23 September 2016.

To date, development approval has been given for more than half of the total residential development, and more than one-third of retail and commercial development, as shown in Table 2.2.

[25] RCP 2016, pp 10-11. RCP 2016 shows that the expected final population of the RURA as 15,685 residents and 3,051 workers for a total of 18,736 (p 11). However, supporting information provided by the former RCC confirmed that while the total new population is as stated, the correct mix is 17,485 residents and 1,251 workers.

Table 2.2 Approved development in the RURA

	Approved development	Maximum development potential	Percentage of potential development approved, June 2015
Bonar Street precinct			
Retail & commercial floor area (m^2)	60	60	100
Net dwelling increase	864	1,363	63.4
Wolli Creek precinct			
Retail & commercial floor area (m^2)	14,244	37,482	38.0
Net dwelling increase	4,078	6,459	63.1
Urban Release Area			
Retail & commercial floor area (m^2)	14,304	37,542	38.1
Net dwelling increase	4,924	7,822	63.0

Source: RCP 2016, Tables 3 and 4, p 10 and IPART calculations.

2.3 Cost of land and facilities in RCP 2016

The total proposed cost in RCP 2016 to be recovered through development contributions is around $256 million, of which 59.5% represents the construction of facilities, 39.5% land acquisition, and 1% plan preparation and administration[26] (see Table 2.3). Some non-essential social infrastructure facilities for fit-out of the community centre, costing around $3 million are also included in the plan, but the council acknowledges that it is not able to recover funding for this amount through development contributions as the facilities do not fall within the Essential Works List (EWL).

[26] Plan preparation and administration costs are stated to be calculated at 1.5% of the capital costs in the plan: RCP, Table 9, p 26.

Table 2.3 RCP 2016 – Total proposed cost of land and facilities ($Sept 2015)

Infrastructure type	Land	Facilities	Total
Transport	30,920,062	65,682,459	96,602,521
Stormwater management	0[a]	71,391,080	71,391,080
Open space	68,863,921	15,252,523	84,116,444
Community facilities	1,436,631	0	1,436,631
Administration			2,473,261
Total costs to be recovered through development contributions	**101,220,614**	**152,316,062**	**256,019,937**
Non-essential social infrastructure	*n/a*	*2,978,872*	*2,978,872*
Total plan costs	101,220,614	155,294,934	258,998,809[b]

a The council does not need to acquire more land to provide the necessary stormwater infrastructure: see section 4.1.

b The total cost in the plan to be met from development contributions is $256,019,937 because non-essential social infrastructure is not on the essential works list and therefore the costs cannot be recovered through development contributions.

Source: RCP 2016, Table 1, p 5 and IPART calculations.

2.4 Contribution rates in RCP 2016

Table 2.4 sets out how RCC calculated the contribution rates proposed in RCP 2016. The council has assumed that each resident or worker will give rise to a similar level of demand for additional infrastructure. Assumptions for the increase in residents are based on census and prior dwelling approvals in the LGA, which have been used to determine the expected mix of new residential development.

Table 2.4 Contribution rates in RCP 2016 ($Sept 2015)

	Per resident or worker	Per 0 or 1 bed dwelling	Per 2 bed dwelling	Per 3 or more bed dwelling
Composition of new residential development		30%	61%	9%
Dwelling occupancy rate		1.70	2.39	2.91
Roads, traffic, parking and streetscape				
Land	1,650	2,814	3,947	4,794
Works	3,506	5,977	8,384	10,185
Flood mitigation and stormwater management				
Works	3,810	6,496	9,113	11,070
Social infrastructure[a]				
Land	3,752	6,397	8,974	10,901
Works	814	1,388	1,974	2,365
Plan management and administration	132	225	316	384
Total development contributions	**13,664**	**23,297**	**32,681**	**39,698**

Source: RCP 2016, Table 2, p 6 and Table 5, pp 10-11.

2.4.1 Exemptions from contribution rates

Certain developments are, or can be, exempted from payment of development contributions. The plan specifies exemptions apply to:

- development subject to a direction from the Minister for Planning under Section 94E of the EP&A Act[27]
- development proposed on or behalf of the council
- seniors housing development (other than self-contained dwellings within a seniors housing development), and
- public schools, hospitals and emergency services.[28]

[27] Relevant development exempted from s 94 contributions by the Minister includes development or disabled access or for the sole purpose of affordable housing and seniors living under SEPP Seniors Housing 2004 by a Social Housing provider.

[28] RCP 2016, p 4. We note that the current LEP does not zone any land within the RURA for seniors housing or the types of public infrastructure which would be exempt from contributions.

2.4.2 Indexing contribution rates

RCP 2016 proposes to index the contribution rates in the plan as follows:

- by the Consumer Price Index (All Groups Index) for Sydney, as published by the Australian Bureau of Statistics for contribution rates for works and for land that has already been acquired by the council in anticipation of development, and
- by the Established House Price Index for Sydney, as published by the Australian Bureau of Statistics for contribution rates for land that is yet to be acquired by the council.

Amounts of monetary contributions required as a condition of development consent will be indexed between the date of the grant of the consent and the date on which the contribution is paid in accordance with quarterly movements in the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Bureau of Statistics.[29]

2.4.3 Revenue and expenditure associated with the plan

Until the end of 2015, all contributions and expenditure related to the RURA were aggregated within RCC's accounting for CP 2004, therefore it is difficult to calculate the amount of contributions revenue the council has received and its expenditure on infrastructure associated with the newly adopted plan.

RCP 2016 outlines that the expected contributions will not fund the full cost of infrastructure in the plan:

> This is because the estimated cost of the infrastructure has increased significantly since the predecessor contributions plan was prepared. In excess of 60 percent of the expected development in the Urban Renewal Area is subject to contributions calculated under the predecessor plan. As a result, Urban Renewal Area development contributions will be insufficient to meet the cost of Urban Renewal infrastructure. Council will therefore find other sources to fund the contributions shortfall.[30]

RCP 2016's work schedule indicates expenditure of about $21.0 million on completed land acquisition and works (although some have been delivered as works-in-kind by developers) and another $3.6 million on works in progress.

29 RCP 2016, p 37.
30 RCP 2016, p 16.

3 Assessment of RCP 2016 - transport

We assessed the transport elements of RCP 2016 against the criteria in the Practice Note. Our assessment is based on the contents of the plan, RCC's application and supporting documentation, and responses to our requests for information.

To assist with our assessment of transport infrastructure, we engaged consultants ARRB Group Ltd (ARRB).[31] ARRB examined the proposed land and facilities for roads, intersections, and public transport works in RCP 2016 and advised on their:

- consistency with the essential works list
- reasonableness in terms of nexus
- reasonableness in terms of cost, and
- cost apportionment to reflect the underlying demand for the facilities.

This chapter provides the context for transport facilities in the RURA and summarises our assessment of the transport elements of RCP 2016 against the criteria.

3.1 Transport facilities in the RURA

Before the redevelopment of the RURA commenced in 2004, the existing industrial area had a road network that was appropriate for industrial uses, with fewer movements of mostly heavier vehicles. However, this road network did not meet the needs of the new mixed use commercial and residential development, with more frequent movements of lighter vehicles, bicycles and pedestrians.

[31] See ARRB Group Ltd, *Review of Transport Items in the Rockdale Contributions Plan 2016 – Urban Renewal Area*, November 2016 (ARRB Report) in Appendix D.

A new or upgraded road network across the RURA was required to meet the different needs of the new population, including accommodating more vehicles and improving traffic flow from an increased population. RCP 2016 outlines that the traffic needs of the new development include:

- new roads (including roads to provide access to new developments)
- upgrading existing roads
- widening of some existing roads
- improved linkages to the arterial road system, including the Princes Hwy and Marsh St, with additional signalised intersections and upgrading of others
- new and adjusted traffic management facilities, such as traffic signals and signs
- provision and management of the supply of on-street parking by appropriate signage and line marking, and integrated into the streetscape design
- accommodation of additional alternative transport modes on roadways, such as bicycles, bus priority and the provision of bus stops and bus shelters, and
- safety improvements to the two existing road underpasses beneath the Illawarra Railway.[32]

The redevelopment of the transport facilities in the RURA to meet the needs of the new population is different from the planning and funding of new road networks in greenfield developments. This difference is described in Box 3.1.

[32] RCP 2016, p 14.

Box 3.1 Difference in road funding – greenfield and infill developments

Road funding for greenfield developments

In greenfield developments **local roads** within subdivisions are usually provided by developers. These developers pay for roads, street-lighting, footpaths and parking bays. If a local road divides developments of different developers, the construction costs are divided between the developers. Councils are then responsible for maintenance of local roads.

Collector (sub-arterial) roads link subdivisions to other subdivisions in a precinct and link a precinct to major **arterial roads and highways**.[a] The provision and maintenance of collector roads is the responsibility of councils. The provision and maintenance of arterial roads or their upgrade is the responsibility of the State and can be either funded from consolidated revenue or by means of Special Infrastructure Contribution (SIC) funding.[b]

Collector roads provide a benefit to all developments within a precinct. Therefore, the most efficient way to fund them is through development contributions levied on all developers through a development contributions plan.

Even within a greenfield development, there can be some ambiguity as to whether a road is a local or collector road, or whether it is a collector road or an arterial road.

Road funding for infill developments

Funding arrangements for local roads in infill developments can often be complicated by the fragmented ownership of development sites. Where ownership is fragmented, the provision or upgrade of a local road cannot realistically be the responsibility of one particular developer. Instead, it may be more efficient to collect all the funding for both local roads and collector roads in an infill development through a development contributions plan.[c]

a The Princes Hwy in Rockdale and Windsor Rd in the North West of Sydney are examples of major arterial roads and highways.

b The Special Infrastructure Contributions (SIC) levy exists in designated growth areas to recover 50% of the cost of some of the NSW Government infrastructure for the area, such as emergency services and limited transport infrastructure.

c Where there is a $20,000 cap on development contributions per dwelling and all the developments are above the cap (as in RCP 2016), if the council applies for LIGS funding, this means that the NSW Government is helping to fund the cost of local roads that are usually provided by developers elsewhere. This contrasts with greenfield developments, where contributions are capped at $30,000 per dwelling and developers are responsible for the costs of local roads, over and above the cap.

3.2 Criterion 1: Essential Works List

We are required to assess whether the infrastructure included in RCP 2016 is on the Essential Works List (EWL) outlined in the Practice Note (see Appendix B). Only 'essential works' are to be included in a plan when the council is seeking external funding for the infrastructure costs above the revenue provided for by the capped contributions.[33]

3.2.1 Summary of our assessment

IPART findings

1 All transport infrastructure items in RCP 2016 are on the Essential Works List except the undergrounding of 33kV State Rail power lines (items WC1.2.1 and BS1.3.5) and plant verges (items WB1.1.1 and BS1.3.6) that are for public amenity improvement only.

2 RCP 2016 includes indented on-street parking for streetscape and traffic calming purposes, which we have considered to be 'essential works', although the Practice Note does not explicitly include or exclude this work.

Recommendations

1 Bayside Council remove from the essential works in RCP 2016 the portion of the cost of undergrounding 33kV State Rail power lines in the RURA ($4,726,358) which is for public amenity improvement only.

2 DPE review and clarify in the Practice Note whether public domain works for amenity improvement only and indented on-street parking are on the Essential Works List for transport.

Table 3.1 summarises our assessment of transport infrastructure in the plan against the EWL. We found that most of the transport infrastructure items in the plan are on the EWL, except:

- the undergrounding of 33kV State Rail power lines throughout the RURA, where these works are to improve public amenity and are unrelated to an essential transport function, and
- plant verges as part of streetscape items where the purpose of the verges is for public amenity improvement only.

The sections below explain our findings and recommendations on these items.

[33] Department of Planning & Infrastructure, *Revised Local Development Contributions Practice Note: For the assessment of Local Contributions Plans by IPART*, February 2014. The EWL does not apply where councils levy contributions below the cap, so other capital works not on the EWL, such as community facilities, can be included in s 94 contributions plans where the maximum rate is below the cap.

Table 3.1 Summary of IPART's assessment of transport infrastructure in RCP 2016 against the Essential Works List (EWL)

Included on the EWL	Not included on the EWL
Road upgrades and new roads Signalised intersections Roundabouts Bus stops Cycleways Safety improvements to railway underpass Land for essential transport infrastructure	Undergrounding 33kV State Rail power lines to improve public amenity (contrasted with underground installation required for road widening) Plant verges as part of streetscaping, for public amenity improvement only

3.2.2 Undergrounding State Rail 33kV power lines

RCP 2016 includes works to underground State Rail 33kV power lines in areas of the Wolli Creek and Bonar Street precincts. These works are identified as streetscape and public domain improvements.[34]

The purpose of undergrounding powerlines in the Bonar Street precinct was considered by MvK and Associates (MvK) for the Department of Planning in February 2010. This formed part of a review of developer contributions and infrastructure requirements for a proposed Meriton development at Bonar and Loftus streets in the RURA. MvK noted that RCC was "keen to underground these lines for aesthetic/urban design purposes".[35]

ARRB has distinguished undergrounding power lines to improve public amenity from undergrounding that is required for road widening. In RCP 2016, there is one item for improvement work on the Princes Hwy (WC2.3.1) for which the overhead lines are located very close to the edge of the existing carriageway and the undergrounding forms an integrated part of the road widening. ARRB considered this undergrounding to be essential work.

For two other work items at Bonar and Lusty Sts (WC1.2.1) and Bonar and Hirst Sts (BS1.3.5), the undergrounding of powerlines is to improve public amenity. ARRB advised that these works, costing $4.7 million, are not on the EWL.

Bayside Council has advised that undergrounding of powerlines in the Wolli Creek precinct was completed before an assessment of the work was required against the EWL criterion. As such, it considers that the cost of this completed work should remain in the plan.[36] However, assessment against the criteria established by the Practice Note (including the EWL) is required if a council wishes to seek State Government[37] or special variation funding sources to fund the gap between development contributions and infrastructure costs in the plan.

34 RCP 2016, p 15.

35 MvK and Associates, *Review of Developer Contributions and Infrastructure Requirements: 12-38 and 40 Bonar Street and 5 Loftus Street, Arncliffe*, 16 February 2010.

36 Email from Bayside Council, 5 December 2016.

37 State Government funding currently is provided through the Local Infrastructure Growth Scheme (LIGS).

This assessment applies to all elements of a contributions plan, not just works yet to be completed or land yet to be acquired. Bayside Council officers also advised that the costs of undergrounding powerlines in the Bonar Street precinct can be removed from RCP 2016 once it is confirmed that it is safe to retain the powerlines in this location.[38]

We agree with ARRB's assessment of works to underground powerlines, and recommend that the cost of the work be removed from RCP 2016. If Bayside Council wishes to provide these improvements for residents in the RURA, it should fund them from other revenue sources.

3.2.3 Planted verges in streetscape improvements

We considered whether planted verges in streetscape improvements for items in the Wolli Creek precinct (WB1.1.1)[39] and the Bonar Street precinct (BS1.3.6)[40] should be included as 'essential' roadwork.

As discussed in section 3.3.1 below, ARRB also found that planted verges included in some streetscape items did not meet the nexus criterion on the basis that it did not fulfil a transport movement function. Therefore, it considered that this item exceeded the development's demand for roadwork.

On balance, we consider that the planted verge items are more for aesthetic public amenity purposes and so they exceed the definition of 'essential' works. However, we recommend that the cost of this be removed as part of our assessment of nexus in Recommendation 3, in line with ARRB's advice. The council can fund these items from other revenue sources.

We acknowledge that this is our interpretation of the intent of the Practice Note, and consider that DPE should review and clarify whether public amenity works of this type are on the EWL for infill developments.

38 Email from Bayside Council, 5 December 2016.
39 Sub-items 2.1.9, 3.1.14, 4.1.14, 5.1.14, 6.1.14, 7.1.14 and 8.1.14 (ARRB Report, p 11).
40 Sub-item 7.1.9 (ARRB Report, p 18).

3.2.4 Indented on-street parking

RCP 2016 includes indented on-street parking for non-arterial roads.[41] BC advised that indented on-street parking in the RURA is intended to:

- provide improved streetscape, with trees and garden beds placed in between car spaces, and
- narrow the street to assist with traffic calming and maintaining a local character for residential streets.

It is unclear how indented on-street parking should be assessed under the Practice Note, which provides that the following public amenities or services for transport are considered essential works:

- Land and facilities for transport (for example road works, traffic management and pedestrian and cyclist facilities) but not including car parking.[42]

We asked ARRB to provide advice on the purpose of indented on-street parking in relation to its inclusion as essential works under the Practice Note. ARRB advised that, in a residential road environment or a high pedestrian activity area, indented parking is more appropriate than full length kerbside parking for the following reasons:

- Indented parking formed where the trafficable carriageway is narrowed with kerb extensions is considered a horizontal traffic calming device. It contributes to the development of a lower speed environment and is one of the most commonly used Local Area Traffic Management devices by local government authorities in Australia and New Zealand.
- By creating a narrow section of road the kerb extensions facilitate improved pedestrian safety and amenity and in this way, support the non-vehicle transport modes, such as walking and cycling and the public transport modes by improving accessibility to designated stops.
- Space reallocation of the area between parking spaces (from road pavement to footpath, berm and landscaping) contributes to the plan function and urban amenity.[43]

ARRB concluded that works associated with indented on-street parking in RCP 2016 should be considered essential transport works from a traffic management perspective.

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41 These are labelled as main streets, residential streets and lane ways on the Proposed Road Upgrades/ Street Hierarchy map at Attachment B to RCP 2016.

42 Practice Note, section 3.4.2. We have previously interpreted this section of the Practice Note to mean that on-street car parking is on the essential works list, but off-street car parking is not, and have highlighted this as a matter that could be clarified in the Practice Note by DPE.: see IPART, *Assessment of Wollongong City Council's Draft West Dapto Section 94 Developer Contributions Plan*, October 2016, pp 39-42.

43 ARRB Report, p 6.

However, we note that the Practice Note does not explicitly include or exclude indented on-street parking. Given the additional costs of providing indented on-street parking and that it is being provided, at least in part, to improve the aesthetics in the public amenity, we recommend that DPE review the Practice Note and clarify whether it is included on the EWL for transport.

3.3 Criterion 2: Nexus

IPART must advise 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.

In assessing the nexus of transport items in RCP 2016, we considered whether it is sufficient to meet the demand from the additional population in the RURA.

ARRB outlines that the nexus between the redevelopment in the RURA and the proposed transport items in RCP 2016 has generally been established through the council's rezoning process. It notes the publicly available council documents (eg, LEP, DCP, public domain plan and manual) verify and substantiate this connection between the increased demand for transport facilities generated by the anticipated development at Wolli Creek and Bonar Street and the essential infrastructure works, including:

- Rockdale Local Environmental Plan 2011
- Rockdale Development Control Plan 2011, and
- Wolli Creek and Bonar Street Precinct Public Domain Plan (PDP) and Technical Manual, May 2011.[44]

RCC also commissioned Bitzios Consulting to undertake a traffic study for the RURA in 2013.[45] The Bitzios traffic study provides a technical analysis of the existing road and transport network against the land use planning strategy to identify transport infrastructure improvements in the RURA.

Our findings on the nexus of transport items in RCP 2016 are outlined below.

[44] ARRB Report p 7.

[45] Bitzios Consulting, *Wolli Creek and Bonar Street Precinct Traffic Study*, Final Report, August 2013.

IPART finding

3 There is reasonable nexus between the transport items in RCP 2016 and the expected development in the RURA except for:

- some streetscape improvement works, including planted verges and works outside the RURA on Bonar and Booth Sts (part of items WB1.1.1 and BS1.3.6) because the need for these works has not been established
- the 365 m section of Princes Hwy widening work outside the RURA between Argyle St and Burrows St, and
- a proposed 4-leg roundabout at Bonar St and Guess Ave (item WC1.42) because splitter islands are sufficient to meet demand in the RURA.

Recommendations

3 Bayside Council remove from the cost of essential transport works in RCP 2016, works for planted verges and other streetscape works that are outside the RURA on Bonar St, Booth St and another new road (sub-item 9.1), comprising:

- $3,012,971 for item WB1.1.1, and
- $1,460,228 for item BS1.3.6.

4 Bayside Council reduce (by $4,450,886) the cost of the Princes Hwy widening work (item WC2.3.1) to reflect the work inside the RURA, between Brodie Spark Dr and Argyle St only.

5 Bayside Council reduce (by $212,469) the cost of the intersection improvement at Bonar St and Guess Ave (item WC1.4.2) to reflect an upgrade of splitter islands rather than a 4-leg roundabout.

While ARRB found that the supporting documents establish the overarching need for transport infrastructure to cater for population and traffic growth in the RURA, its detailed assessment found that nexus had not been established for:

- streetscape improvement works, including planted verge and improvement works outside the RURA on Bonar and Booth Streets and for another new road outside the plan (part of WB1.1.1 and BS1.3.6), and
- a proposed 4-leg roundabout at Bonar St and Guess Ave (WC1.42) as the Bitzios technical study instead recommended an upgrade of splitter islands.

These items are examined in further detail below.

ARRB also found that nexus was not established to upgrade the eastern section of Lusty St on the basis that it will serve a limited number of developments and continue operating as a cul-de-sac.[46] We agree that the road will only serve a limited number of developments on the cul-de-sac. However, we do not recommend that the cost of this local road be removed from the plan because all other local roads are included in RCP 2016.

[46] ARRB suggested that the upgrade of Lusty St East should be funded by individual developers: ARRB Report, p 12. This is possible under section 80A of the *Environmental Planning and Assessment Act 1979* if there is a direct benefit to the development from doing so.

As noted in Box 3.1 above, where there is fragmented ownership of development sites within infill developments, it may be more efficient to collect all funding for local roads through a development contributions plan. This is the case in the RURA where all other local and collector roads are funded through RCP 2016. Therefore, the developers of sites on the eastern side of Lusty St are contributing to the cost of other local roads in the RURA through development contributions. It would not be equitable to require them to separately fund their own local road because it is a cul-de-sac.

3.3.1 Streetscape improvements

RCP 2016 includes costs for streetscape improvements and explains that the proposed streetscape works are to:

- provide reasonable landscaping to the frontage of new development
- upgrade and widen footpaths to allow for the greater population
- mitigate the impact of increased traffic, and
- provide streets and public domain of a standard that is suitable as an additional recreation resource for the additional population.[47]

ARRB identified two different functions of road networks:

- a movement function – to move people and goods, and
- a place function – as a destination for street and social activities.

It advised that:

> Streetscape improvements contribute to road network planning and management by creating and enhancing the place function of an urban street primarily for non-motorised users….In the context of the transit-oriented development of the high-density Wolli Creek and Bonar Street precinct, a streetscape improvement will support the aim of encouraging the use of active and public transport. Such activity will improve walkability and road users' experience in accessing public transport facilities.[48]

The streetscape improvements in RCP 2016 are predominantly provided through two transport work items: WB1.1.1 and BS1.3.6. In undertaking its assessment of nexus for these items, ARRB evaluated the scope and costing information provided by RCC that detail the precise nature of these improvements, against the supporting documents that establish the demand from an increased population and traffic growth.

47 RCP 2016, pp 15-16.
48 ARRB Report, pp 5-6.

ARRB found that many sub-items within the items for streetscape improvement (such as footpaths and street lighting) are necessary transport works for the RURA for which nexus is established. However, it found that nexus was not established for other sub-items that do not meet an essential transport need for the RURA, including:

- planted verges
- streetscape works outside the RURA and between precincts (ie, western side of Thompson St (sub-item 3.1), southern side of Innesdale Rd (sub-item 6.1), Bonar St (sub-item 10.1) and Booth St (sub-item 11.1)), and
- streetscape work for a new road (sub-item 9.1) which is also otherwise not included in the plan.

We support ARRB's findings and recommend that BC remove $3.0 million from item WB1.1.1 and $1.4 million from item BS1.3.6 for which nexus is not established.

3.3.2 Scope of Princes Highway widening work

RCP 2016 includes $10.7 million for the cost of widening the western side of the Princes Hwy, from Burrows St and Brodie Spark Dr (item WC2.3.1). BC advised that these works are mainly to create slip lanes for safe access to the developments within the RURA.[49]

ARRB reviewed the scope of the proposed works over 880 m and identified that 515 m of the works are within the RURA, and 365 m are outside the RURA.

The scope of the item and costing information allows for an 880 m upgrade, which is the distance between Brodie Spark Dr and Burrows St. RCC provided further advice that the transport item is primarily for a road widening from Brodie Spark Dr to Argyle St inside the RURA, approximately 515 m in length.

Therefore, nexus has not been established for the remaining 365 m of the roadwork, which is outside the RURA, and we recommend that this cost ($4,450,886) be removed from the plan. BC should also update the scope of the item to reflect the work between Brodie Spark Dr and Argyle St only.

3.3.3 Intersection improvement – Bonar St and Guess Ave

RCP 2016 includes the cost of $230,000 for a 4-leg roundabout at Bonar St and Guess Ave (item WC1.4.2).

[49] Email from Bayside Council, 23 September 2016.

ARRB notes that this work is situated at a T-intersection without any driveway nearby. As such, the demand for a 4-leg roundabout in this location is not established. Rather than a roundabout, ARRB recommends an upgrade of splitter islands, as suggested by the Bitzios traffic study.[50]

We support ARRB's finding and recommend that BC reduce (by $212,469) the cost of this intersection improvement to reflect an upgrade of splitter islands rather than a 4-leg roundabout.

3.4 Criterion 3: Reasonable Costs

In this section, we assess whether the proposed development contributions are based on a reasonable estimate of the cost of the proposed transport infrastructure.

We considered the approach in RCP 2016 to cost the capital works and land requirements for transport infrastructure in the context of whether the estimates in the plan are reasonable and up to date. We then considered the reasonableness of the cost estimates and the choice of indices to escalate cost estimates to current dollars.

IPART findings

4 The approach to estimating land acquisition costs for transport infrastructure, based on recent advice from an independent valuer, is reasonable.

5 RCP 2016 states that land required for the new and widened roads will be dedicated free of cost to the council by the developer at the time of development, which is potentially inconsistent with the $30.9 million in land acquisition costs for transport infrastructure in the plan.

6 The other cost estimates for transport infrastructure in RCP 2016 are mostly reasonable, except the cost estimates contained in Table 3.2.

7 Five transport work items are identified by RCP 2016 as 'in progress', but their costs are still based upon strategic review stage cost estimates.

8 RCP 2016 and the work schedule do not clearly identify the year of completion for all completed transport works, which would be useful for transparency purposes.

9 The use of the CPI to escalate transport work cost estimates to current dollars is reasonable but does not represent the most cost-reflective indexation factor for transport work.

[50] ARRB Report, pp 10 and 12.

Recommendations

6 Bayside Council review the land acquisition cost estimates for transport infrastructure in RCP 2016 based on its policy for land to be dedicated free of cost by a developer, and reduce the land costs in RCP 2016 where land is dedicated free of cost without any offset contributions.

7 Bayside Council remove $7,623,606 in costs from the transport essential works in RCP 2016 in line with the recommended adjustments in Table 3.2.

8 For transport works 'in progress' and which are likely to be delivered in stages, Bayside Council consider the need to split the works items into sub-items to allow more accurate cost estimates for each item, where feasible.

9 Bayside Council include the completion dates for all completed transport works in RCP 2016 and the work schedule.

10 To index transport works estimates (but not actual costs) to current dollars, Bayside Council apply the more cost-reflective ABS PPI (Road and Bridge Construction) instead of the CPI.

Table 3.2 IPART's recommended adjustments to transport costs ($Sept 2015)

Reasonable cost issue	Cost in RCP 2016	Recommended adjustment
Intersection works at the Princes Hwy and West Botany St where the cost is for a new intersection installation, rather than intersection improvements (WC4.5.2)	$1,572,810	-$1,269,890
Intersection works at Gertrude St and Arncliffe St, where the cost of a 4-leg signalised intersection has been included for a T intersection (WC2.4.3)	$1,726,002	-$1,480,911
Intersection works at the Wollongong Rd and First St, where the cost of a 4-leg signalised intersection has been included, rather than an upgrade to the existing 3-leg intersection (BS1.3.2)	$2,189,998	-$1,958,089
Road works for a one-way circuit in Wolli Creek, where the costs do not reflect the most recent detailed cost estimate (WC2.5.1)	$2,451,389	+$1,748,220
Resale of the residual land should not include remediation costs and legal fees associated with the land transaction (WC3.3.6)	$26,891	-$26,891
Additional factors (indirect costs, margin and client costs) should be reduced from 47% to 35% and applied to the lower recommended direct construction costs across 19 transport items.	$9,252,553	$3,512,464
Additional factors should be reduced from 47% to zero where the construction cost estimate for two items uses an IPART benchmark cost which already includes direct costs, indirect costs, the margin and client costs.	$622,700	-$622,700
Project contingency of 20%, not 30%, should be applied to five transport work items in progress.	$1,502,644	-$500,881
Total recommended cost reductions		**-$7,623,606**

Source: RCP 2016, Appendix A, Infrastructure schedule summary and IPART calculations.

3.4.1 RCC's approach to costing transport facilities

RCP 2016 includes $65.7 million in capital costs and $30.9 million in land costs for transport infrastructure.

ARRB noted that these costs cover 45 transport items that are at various implementation stages:

- 'Not started' – 25 transport items
- 'In progress' – five transport items
- Completed' – 15 transport items.[51]

[51] ARRB Report, p 19.

RCC employed the following approaches to estimate the cost of these items in the plan:

- Cost of completed transport land and works is based on actual CAPEX, indexed by CPI.
- Cost estimate of other transport works is based on consultant, Evans & Peck[52] (2014) estimates, dated May 2014 and October 2015.
- For the 'Not started' and 'In progress' transport items, the cost estimate is indexed to September 2015 dollars using the CPI.
- The land value estimates for transport works were provided by an external valuer, Southern Alliance Valuation Service (SAVS), in January 2015, with contributions for land costs to be indexed by the Established House Price Index – Sydney.

Our findings and recommendations on these approaches and the reasonableness of certain cost estimates are explained below.

3.4.2 Land acquisition costs for transport infrastructure

As shown in Table 3.3, the majority of the $30.9 million in land for transport needs in the RURA is still to be acquired by the council ($28.4 million).

Table 3.3 RCP 2016 land acquisitions for transport infrastructure ($Sept 2015)

Land acquired		Land to be acquired	
Pt 22 Guess Ave, Wolli Creek	$2,488,509	Pt 55-93 Princes Hwy	$19,994,137
32 Marsh St, Wolli Creek	nil	Pt 34-38 Arncliffe St	$8,338,233
36 Marsh St, Wolli Creek	nil	32 Levey St, Wolli Creek	$99,183
Total	**$2,488,509**		**$28,431,553**

Note: 32 and 36 Marsh St, Wolli Creek were dedicated to RCC at no cost; the cost estimate for 32 Levey St, Wolli Creek include potential transaction costs only. This property will also be dedicated to Bayside Council at no cost.

Source: RCP 2016, Appendix A, Infrastructure schedule summary and Email from Bayside Council, 29 September 2016.

BC engaged SAVS in January 2015 to estimate the cost of acquiring land for transport infrastructure, and other land needs, in RCP 2016. We consider that this approach is reasonable as it relies on recent, independent valuation advice. We also reviewed SAVS' commercial-in-confidence reports and found them to be internally consistent and reflective of recent sales in the area.

The cost of land already acquired by the council ($2.5 million) is reasonable because it reflects the actual costs incurred by RCC.

[52] Evans & Peck are now part of Advisian.

BC has also taken a reasonable approach to indexing the cost of land already acquired at CPI (Sydney) and land to be acquired for transport infrastructure, as reflected in the contributions rates, by the Established House Price Index – Sydney.[53]

For these reasons, we found that the cost estimates for the land for transport infrastructure in RCP 2016 are reasonable. However, there is also a risk that the land acquisition costs might not be realised. RCP 2016 states that:

> Land required for the new and widened roads will be dedicated free of cost to the Council by the developer of land at the time of development. Dedication without cost is reasonable as the value of the land has been accounted for in the transfer of development rights from the dedicated portion of the site to the residual or development portion of the site.[54]

It appears that the council is seeking to gain the land needed for transport infrastructure at no cost, where possible. The council might offset the land dedication against other contributions payable by a developer, which would mean that the costs can be retained in the plan. But the likelihood of this occurring is unclear, as is the amount of land identified for transport purposes in the plan where such dedications would apply.

Therefore, we recommend that BC review the land acquisition cost estimates for transport infrastructure in RCP 2016 based on this policy for land to be dedicated free of cost by a developer and, when land is dedicated free of cost without any offset, to reduce the costs in the plan accordingly.

In response to a draft of our assessment report, BC officers advised that RCP 2016 should be updated to reflect the land dedication policy.[55]

Conveyancing fees for resale of residual land

ARRB also found that RCP 2016 includes $26,891 in costs for a land transaction which is to involve the resale of some residual land. The council advised that "there may be some remediation costs and legal fees"[56] associated with the land transaction but ARRB considered that this should be a net credit in the plan if any transaction is recorded, rather than a cost.

We agree with this position and understand that the land is to be dedicated to the council at no cost as part of a broader land transaction. We consider these costs are unlikely to be incurred and therefore recommend that they be removed from the plan.

53 RCP 2016, p 37.
54 RCP 2016, p 16.
55 Email from Bayside Council, 5 December 2016.
56 ARRB report, p 36.

3.4.3 Capital work costs for transport

Our assessment also found that most of the capital work estimates in RCP 2016 are reasonable. However, we identified a number of issues concerning some estimates which amount to a total cost reduction of $7,623,606 in RCP 2016.

Costs for some intersection works

RCP 2016 includes various upgrades to intersections to accommodate the traffic growth in the RURA from the new development. The cost estimates for these upgrades were prepared in 2014 for the council by external consultant, Evans & Peck.

ARRB reviewed the cost estimates of proposed transport works at intersections in the RURA, and identified four that are unreasonable based on the required scope of work. These are outlined below.

Intersections at Princes Hwy and West Botany St (item WC4.5.2) and Wollongong Rd and Bonar St (item BS1.3.2)

The cost estimates for these intersection upgrades are for new signalised installations. ARRB noted that the intersections are already signalised, therefore only upgrades are required, not new installations.

We recommend that the cost of the intersection upgrades be adjusted to reflect the work required, as follows:

- by -$1,269,890 for WC4.5.2, and
- by -$1,958,089 for BS1.3.2.

In response to a draft of our assessment report, BC provided a lower alternative cost estimate for WC4.5.2.[57] BC might wish to adopt this alternative cost estimate when it next amends RCP 2016.

Intersection at Gertrude St and Arncliffe St (item WC2.4.3)

Once created, the new Gertrude St extension will intersect at Arncliffe St as a T-intersection. ARRB notes that the cost estimate for this intersection work includes the cost of a new 4-leg signalised intersection that is not required.

We recommend that the cost of the intersection work at this location be adjusted by -$1,480,911 to reflect the work required.

[57] Email from Bayside Council, 5 December 2016.

Updated costs for one-way circuit works

RCP 2016 includes roadwork for a one-way circuit through the Wolli Creek precinct, along Arncliffe St, Guess Ave, Mt Olympus Blvd and Magdalene Tce (WC2.5.1). RCP 2016's work schedule shows the cost of these works as $2,451,389.

The Evans & Peck cost estimate from 2014, taking into account a detailed schedule of works, differs from the cost identified in RCP 2016.

We recommend that BC update the cost of roadwork for the one-way circuit to reflect the most recent cost estimate from Evans & Peck. This would increase the cost in the plan by $1,748,220.

3.4.4 Cost estimates for 'in progress' works

ARRB found that the cost estimates of 'in progress' works were based on a strategic cost estimate rather than a business case estimate or competitive tender rate.[58] BC advised that many of the works have sub parts where some of the work is in progress and past the strategic cost estimate stage, but other parts are not yet commenced. ARRB recommended that if a work item consists of multiple stages, it may be appropriate to divide it into separate sub-items to enable a more accurate cost estimate. This applies to the following cost items:

- Lusty St road improvements (item WC1.4.1) estimated to cost $0.7 million.
- New link road Levey St (opposite Gertrude St) to Marsh St (item WC3.3.1) estimated to cost $1.6 million.
- Internal access roads around precinct (Bonar St, Wollongong Rd, Martin Ave and Booth St) (item BS1.2.1) estimated to cost $2.1 million.
- Widen existing streets (Bonar St, Hirst St, Martin Ave and Wollongong Rd) (item BS1.3.1) estimated to cost $2.4 million.
- Install new roundabouts, traffic lights and intersections (Bonar St, Hirst St, Martin Ave and Wollongong Rd) (item BS1.3.2) estimated to cost $2.2 million.[59]

We acknowledge that there are practical considerations for the council to consider when making cost estimates for works in progress in the plan, but this would be a reasonable step when a project is significant and extends over a relatively long period of time. In response to a draft of our assessment report, BC identified that it was not feasible or in the community's interest to split the individual work items within the plan.[60] We acknowledge this feedback but maintain that it could still be desirable to help ensure that contributions reflect actual costs. Therefore, we recommend that the council consider this approach for 'in progress' works, but only where feasible.

58 ARRB Report, p 19.
59 ARRB Report, p 19 and RCP 2016, Appendix A.
60 Email from Bayside Council, 5 December 2016.

In addition, where works are in progress, a lower contingency to cover unforeseen risk (20% not 30%) would be warranted. This is discussed in section 3.4.7 below.

3.4.5 Cost of completed works

The completion date of the transport and other work in RCP 2016 determines the application of the Consumer Price Index (CPI) to the actual capital expenditure amount.

As part of the work schedule, RCP 2016 includes a list of completed works items across the LGA. In reviewing this information, ARRB found that the date of completion for some of the completed transport works appeared to be missing.[61]

We note that years of completion were included for some of the items in the work schedule. Nonetheless, for clarity and transparency, we recommend that the council ensure that it has updated both the work schedule and RCP 2016 with the date of completion for all relevant works.

3.4.6 Additional factors in the cost estimates

Additional factors refer to a contractor's indirect costs including site establishment costs and project design costs, their margin and council on-costs which, together with the direct costs for materials and labour, form part of the base cost estimate for a capital work project.

The transport cost estimates, which have been provided by Evans & Peck for RCP 2016, include allowances for additional factors. Table 3.4 breaks down the build-up of cost components for the base costs for transport items in RCP 2016, with the additional factors and associated percentages allowed for in the Evans & Peck estimates. This excludes the contingency allowance for unforeseen risks, which represents a percentage amount applied to the base cost estimate.

61 ARRB Report, p 25.

Table 3.4 Build-up of base cost transport estimates in RCP 2016 with additional factors (excluding contingencies)

Cost component	Calculation of the cost component
Direct costs	$ estimate for materials & labour
Contractors' site establishment & management costs[a] (a)	18% of direct costs
Design costs[b] (b)	8% of direct costs
Contractor overhead and profit (margin) (c)	10% of direct costs plus other indirect costs (a) and (b)
Total construction cost	Direct costs plus (a) (b) and (c)
Client (council) on-costs[c]	11% of total construction costs
Base cost	**Total construction cost plus client on-costs**

[a] Contractor site establishment and management costs include those associated with the physical activities required before construction works begin and usually relate to site equipment mobilisation costs. Site establishment is a one off cost and may be considered to be disproportionate when undertaking smaller quantities of work.

[b] Design costs are for project design by the contractor (if applicable).

[c] Client on-costs include internal staff costs, professional fees, regulatory compliance costs, levies and other government charges, insurance costs taken out on behalf of the project owner, and design costs.

Note: This costing approach applies to 24 transport items in RCP 2016.

Source: RCP 2016 S94 Works Database.

In its assessment of the additional factors applied in the base cost estimates, ARRB questioned the magnitude of them, and a potential issue of double counting. ARRB noted how the increase due to the calculation method in applying the additional factors, and then the contingency to the direct cost, results in an amount that is almost twice (plus 96%) the direct costs.

As is evident from Table 3.4 above, the proposed percentages for the additional factors in the estimates sum to 47%. This is made up of 18% site establishment fees plus 8% design fees, 10% margin and 11% client on-costs.

This compares with amounts recommend for roadwork cost estimates in IPART's benchmark report, which sum to 40%, comprising 20% indirect costs (including site establishment and design fees) plus 10% margin and 10% client on-costs. These amounts were considered to represent averages across different site and contracting situations.[62]

We understand that one of the main drivers for the higher site establishment costs by Evans & Peck for the transport work in RCP 2016 is the possible congestion at the sites, as it is infill development. We also acknowledge that the amounts provided for by additional factors are a matter of judgement, and that consultants can have different opinions on the appropriate amounts.

Our transport consultant, ARRB considered the issues in both the context of RCP 2016 and IPART's benchmark report. It advised that the additional factors be

62 IPART, *Local Infrastructure Benchmark Costs - Costing Infrastructure in Local Infrastructure Plans - Final Report* (IPART Benchmark Report), April 2014, pp 29-31.

reduced based on its recent market experience in costing transport work, the overall impact on the final cost of the roadwork and its understanding of the site specific factors involved. ARRB instead recommended a maximum of 35% for additional factors made up of 15% indirect costs (site establishment fees and design fees), 10% overhead and profit (margin) and 10% design and project management (council on-costs).

We agree that the total additional factors amounting to 47% appear high in the context of the cost estimates for the transport work in the RURA, and the supporting information for the estimates. In response to a draft of our assessment report, Bayside Council reiterated that the indirect cost estimates were based on the consideration of site specific factors. However, ARRB also assessed the site specific factors in the context of the overall costs. Therefore, without further evidence to support the reasonableness of the Evans & Peck cost estimates, we recommend that 35%,[63] as recommended by ARRB, be applied to direct costs for the relevant transport items (19 in total). This would reduce the costs in RCP 2016 by $3,512,464.

ARRB also found that for five transport items (WC1.4.2, WC2.5.4, WC3.3.2, WC4.5.2 and BS1.3.2), the Evans & Peck estimates applied the IPART benchmark base cost as the direct cost.

The IPART benchmark cost is a base cost, which already covers the direct costs, contractor indirect costs, margin and council on-costs, and so when it is used, only the contingency amount should be applied to the IPART benchmark rate. All other additional factors should be set to zero.

Therefore, for these five items, the additional factors have been double-counted. We recommend setting these amounts to zero which would reduce costs in the plan by $622,700.[64]

3.4.7 Contingency allowances

The Evans & Peck cost estimates for transport items all include a project contingency of 30%. As stated in section 3.4.4, five of these 37 items are 'in progress' and are therefore beyond the strategic cost estimate stage. Therefore, we consider that a lower contingency of 20% is more reasonable for these works.

In response to a draft of our assessment report, Bayside Council advised that although it has indicated that this work is 'in progress', it has not necessarily progressed these works beyond the strategic planning stage.[65]

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63 This is made up of 15% indirect costs (including site establishment and design fees) plus 10% margin and 10% client on-costs.

64 We have already made adjustments to WC1.4.2, BS1.3.2 and WC4.5.2 for issues relating to nexus and reasonable cost. Therefore, to avoid double-counting, we have only calculated these reductions for WC2.5.4 and WC3.3.2.

65 Email from Bayside Council, 7 December 2016.

We reconsidered the reasonable contingency level for these works, but the weight of evidence (eg, in scope, design and costing information) suggests that the council has progressed these works past this stage. Also, we do not accept the argument that these base costs would likely increase even when a lower contingency is applied because the timing of the base cost estimates (2015) suggests that they were prepared when the projects were past this stage. This suggests that the risk was already lower. For these reasons, we maintain our recommendation to reduce the contingency levels from 30% to 20% for 'in progress' items only. This would reduce the costs in the plan by $500,881.

3.4.8 More cost-reflective indexation factor for transport capital costs

The council has escalated the cost of transport works and other capital work estimates in RCP 2016 using the CPI (All groups) Sydney. This is not unreasonable but we recommend instead that it use a relevant Producer Price Index (PPI) published by the Australian Bureau of Statistics (ABS). This would be more cost-reflective for the relevant infrastructure categories. The recommended PPI for transport costs is the ABS PPI (Road and Bridge Construction).[66]

The implication of the use of the PPI instead of the CPI is that estimates for transport works would likely increase because based on historical data, the PPI generally tracks higher than the CPI.

3.5 Criterion 5: Apportionment

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 developments. Full cost recovery from contributions should only occur where the infrastructure is provided to meet the demand arising from new development.[67]

In assessing apportionment of transport costs in RCP 2016, we have taken into account:

- demand for infrastructure in the plan, arising from the expected development inside and outside the RURA
- the capacity of existing infrastructure and the needs of the existing population, and
- the demand generated by different types of development that will occur in the RURA.

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

67 Practice Note, p 3.

3.5.1 Summary of our assessment

IPART finding

10 The approach to apportioning the transport costs in RCP 2016 is reasonable, although some road widening work on the Princes Highway might be funded by the Roads and Maritime Service (RMS) because the highway is classified as a state road.

Recommendation

11 Bayside Council seek confirmation from RMS as to whether funding will be provided for the upgrade works along the Princes Hwy (item WC2.3.1), and if funding will be provided, remove the corresponding cost (up to $10.7 million) from RCP 2016.

RCP 2016 apportions the full cost of transport infrastructure (ie, 100% of the proposed works in the plan) to the RURA on the basis that the need for it is generated by the expected development in the RURA and not from an outside population. We consider the approach to apportionment of transport costs in RCP 2016 is reasonable because it is the new development which has determined the need for the roadwork.

Road widening work on the Princes Hwy and RMS funding

One exception could be the apportionment of the cost of the road widening work along the western side of the Princes Hwy between Brodie Spark Dr and Burrows St (item W2.3.1). These works are estimated to cost $10.7 million and are mainly to create slip lanes for safe access to the developments within the RURA.[68]

ARRB identified that in the case of state classified roads, improvements may attract financial assistance from RMS since there is significant regional demand for the road.[69]

BC has advised that:

> RMS will not take financial responsibility in this area, and will always require Council through the s94 or developer to directly fund and construct these works.[70]

BC has requested confirmation of this position from RMS, however this advice has not been received in time for our assessment.

Should funding be forthcoming, RCP 2016 should apportion only the remaining cost of the work, if any, to the RURA. If not, the full costs can be retained in the plan. We have not recommended that a share of the cost be otherwise apportioned to residents in the Bayside LGA because of the localised benefits of the work.

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68 Email from Bayside Council, 23 September 2016.
69 ARRB Report, p 34.
70 Email from Bayside Council, 23 September 2016.

Apportionment of Bonar Street precinct transport costs outside the RURA

ARRB considered how transport infrastructure in the Bonar Street precinct will benefit residents outside the RURA. ARRB contended that the existing lower-density residential catchment within a 30 metre buffer surrounding the Bonar Street precinct (44 properties) will gain a service benefit from the transport upgrades in roadwork item BS1.3.1. For this reason, it recommended a proportional reduction to the cost of this work item in RCP 2016 to reflect the benefit to surrounding properties.

We acknowledge that there is likely to be some existing demand for the roads generated by surrounding properties to the Bonar Street precinct. However, the scope of the transport work, including widening existing streets within and around the precinct, is required to meet the new demand from development within the RURA. The benefit to existing residents from improved roads outside the RURA is incidental. Therefore, we consider that the apportionment of all of the costs of this work to the RURA is reasonable.

Equal apportionment of transport costs between residents and workers

In RCP 2016, the transport costs are shared between residents and workers on a 1:1 basis as residential demand for the infrastructure is assumed to be the same as employment demand. The new workers in the area will likely use many of the roads quite frequently, potentially twice a day when commuting to and from work. Although their demand for the roads might be less than residents' demand, it is likely to be sufficient to warrant a 1:1 apportionment for roadwork costs in the interests of simplicity.

4 Assessment of RCP 2016 - stormwater

This chapter provides the context for stormwater management in the RURA and summarises our assessment of the stormwater management infrastructure in RCP 2016 against the criteria.

We engaged consultants J. Wyndham Prince Pty Ltd (JWP) to assist with our assessment of stormwater infrastructure.[71] JWP examined the proposed facilities for stormwater management in RCP 2016 and advised on their:

- consistency with the essential works list
- reasonableness in terms of nexus
- reasonableness in terms of cost, and
- cost apportionment to reflect the underlying demand for the facilities.

4.1 Stormwater management in the RURA

RCP 2016 notes that the RURA is low lying and flood liable and that these were key factors in its historical development as an industrial area. Most of the land in the Bonar Street precinct is on higher land that drains towards the Wolli Creek precinct.[72] Our consultants, JWP, acknowledged the complexities of stormwater management in the RURA, noting that the RURA:

> …is impacted by flooding from upstream overland flows, riverine flooding from Wolli Creek and Cooks River, as well as tidal flooding from these watercourses. It may also on occasion be affected by a combination of these sources.[73]

71 See J. Wyndham Prince Pty Ltd, *Rockdale Contributions Plan 2016 – Urban Renewal Area: Review of Stormwater Infrastructure Items,* November 2016 (JWP Report).
72 RCP 2016, p 18.
73 JWP Report, p 4.

RCP 2016 includes $71.4 million for flood mitigation and stormwater management works in the RURA. It provides that the objectives for this work are to:[74]

- provide adequate flood protection to the area which is appropriate to the scale, value and intensity of the development that is likely to occur
- implement appropriate strategies to ensure safety and minimise damage to property as a result of a pre-existing flood risk
- ensure existing floodplain users do not experience any increase in flood level as a result of development in the RURA
- ensure that development sites in the area are satisfactorily drained, and
- implement water management strategies to minimise the effect of stormwater pollution on nearby waterways, encourage water conservation and reduce stormwater runoff to minimise flooding.

RCP 2016 does not include any land for flood mitigation or stormwater infrastructure as the proposed infrastructure will be provided underground, as part of roadworks and within open spaces in the RURA.

The upgrade and redesign of the stormwater infrastructure in the RURA to meet the needs of the new population involves quite different issues from the planning of new stormwater infrastructure in greenfield developments for which IPART has previously assessed contributions plans. This is described in Box 4.1.

74 RCP 2016, pp 17-18.

Box 4.1 Stormwater management issues – comparing greenfield sites with the RURA as an infill development site

Stormwater management in greenfield sites

Greenfield sites assessed by IPART have generally comprised former farmland with large areas of open ground and only natural drainage. When development at a greenfield site occurs, at least half the land becomes impervious to water from the roofs, driveways, roads and carparks of the development. This increases runoff and causes flooding in lower lying areas that would not have occurred prior to development. Given that all new development in a greenfield site contributes to the stormwater impact in the area, it is fair and reasonable that all development contribute to the cost of stormwater management.

Stormwater management in the RURA

In infill developments, sites are often already impervious. The redevelopment may bring little or no increase in impervious area and may result in improvements in water quality. Therefore a different nexus between the development and the need for additional stormwater infrastructure must be demonstrated.

The RURA was an industrial and commercial area for more than 50 years with a functioning stormwater system. While most of the original development was single storey, it was nearly all impervious ground with factory roofs, roads and car parks. The redevelopment of a single storey textile factory or a car yard into a multi-storey apartment building may generate no additional stormwater run-off.

While redevelopment of the RURA may not generate any additional stormwater run-off, the liability of the area to flood has a greater impact on residential development than on industrial development. The demand for flood mitigation work in the RURA is therefore a key stormwater management issue in RCP 2016.

4.2 Criterion 1: Essential Works List

As with transport, we are required to assess whether the stormwater infrastructure included in RCP 2016 is on the Essential Works List (EWL) outlined in the Practice Note (see Appendix B).[75]

RCP 2016 submitted by RCC contains expenditure for stormwater management infrastructure but does not include expenditure on land for stormwater purposes.

4.2.1 Summary of our assessment

IPART finding

11 All stormwater infrastructure in RCP 2016 is on the Essential Works List.

[75] Department of Planning & Infrastructure, *Revised Local Development Contributions Practice Note: For the assessment of Local Contributions Plans by IPART*, February 2014. The EWL does not apply where councils levy contributions below the cap, so other capital works not on the EWL, such as community facilities, can be included in s 94 contributions plans where the maximum rate is below the cap.

Table 4.1 summarises our assessment of stormwater infrastructure in the plan against the EWL. We found that all of the stormwater infrastructure items in the plan are on the EWL. This was also confirmed by our consultants, JWP.[76]

Table 4.1 Summary of IPART's assessment of stormwater infrastructure in RCP 2016 against the Essential Works List (EWL)

Included on the EWL	Not included on the EWL
Trunk drainage	
Levees	
Amplification of stormwater channel	
Gross pollutant traps	

JWP reviewed the stormwater infrastructure proposed in RCP 2016 and noted that 'stormwater management' encompasses the management of both stormwater quality and quantity. JWP outlined that:

> It is current best practice to include water quality control devices in drainage systems to ensure appropriate functioning of the system. An example is the removal of gross pollutants and course sediment to reduce the risk of blockage of the drainage system and outlet.[77]

This is consistent with our findings on assessment of contributions plans in greenfield developments, where gross pollutant traps have been accepted as essential stormwater works.[78]

JWP also considered that the flood mitigation works proposed in RCP 2016 are an essential part of the overall stormwater quantity management strategy for the RURA and are therefore on the EWL.[79]

4.3 Criterion 2: Nexus

In assessing the nexus of stormwater items in RCP 2016, we considered whether it is sufficient to meet the demand arising from the additional population in the RURA.

RCC provided a number of supporting stormwater and flood studies with its application for assessment of RCP 2016, including:

- *Wolli Creek, Bardwell Creek, Bonnie Doon Channel and Eve Street/Cahill Park Catchments Floodplain Risk Management Plan*, March 1998, Webb McKeown & Associates Pty Ltd
- *Bonnie Doon Pipe & Overland 2D Flood Study*, December 2011, WMA Water

76 JWP Report, p 13.
77 JWP Report, p 13.
78 For example, Assessment of The Hills Shire Council's Section 94 Contributions Plan No 15: Box Hill Precinct, December 2014, p 7 and Assessment of Blacktown City Council's Section 94 Contributions Plan No 20, July 2016, pp 25-30.
79 JWP Report, p 13.

- *Bonar Street Upgrade Project – Design Options Assessment*, February 2014 Cardno
- *Draft Bonar Street Development Precinct Drainage Study*, February 2014, Rockdale City Council
- *Bonar Street Flood Modelling – Peer Review*, April 2014, BMT WBM Pty Ltd, and
- *Bonar Street Upgrade Drainage Design*, July 2014, Cardno.

In response to queries from JWP, BC provided a further drainage study: *North Arncliffe Drainage Study*, draft report, May 2000, Willing & Partners.

Our findings on the nexus of stormwater infrastructure in RCP 2016 are outlined below.

4.3.1 Summary of our assessment

The RURA was flood-prone prior to its rezoning from industrial to high density and mixed use development. RCC conducted flood and drainage studies that confirm the flood prone nature of the area and works required to address pre-development flood issues.

To date, over 60% of potential development in the RURA has been constructed or approved. However, RCC did not undertake studies to determine the flood mitigation and stormwater infrastructure required to address the flood impacts and demands arising from the expected development in the RURA.

To establish nexus for stormwater and flood mitigation works in the plan, BC should undertake further studies to determine the works required to meet the demand for stormwater works arising from the new development.

IPART findings

12 There is reasonable nexus between the stormwater infrastructure in the Bonar St precinct (items BS1.4.1 and BS1.4.2 extending from Bonar St to the SWSOOS) and water quality improvements (item WB1.2.1) in RCP 2016 and the expected development in the RURA.

13 Nexus is not established for 11 remaining stormwater infrastructure items in the Wolli Creek precinct (WC1.1.1, WC1.1.2, WC1.1.3, WC1.1.4, WC1.1.5, WC2.1.2, WC2.1.3, WC3.1.1, WC3.2.1, WC4.1.1 and WC4.1.2) because:

   – the supporting flood studies only consider the impacts and mitigation works required to address the pre-development flood issues, and

   – it is unclear if, and to what extent, this stormwater infrastructure will address the flood impacts and the demand for stormwater works arising from the expected development in the RURA.

Recommendations

12 Bayside Council remove $33,110,240 from the cost of essential stormwater works in RCP 2016 for 11 stormwater infrastructure items for which nexus is not established (WC1.1.1, WC1.1.2, WC1.1.3, WC1.1.4, WC1.1.5, WC2.1.2, WC2.1.3, WC3.1.1, WC3.2.1, WC4.1.1 and WC4.1.2) until it undertakes further studies to determine the stormwater works required to meet the demand arising from the new development (Recommendation 13).

13 Bayside Council undertake further studies to demonstrate the nexus between the proposed flood mitigation and stormwater infrastructure and the expected development in the RURA. These studies are required to:

- determine the base flood levels, depths and hazards that existed prior to rezoning and development
- determine the additional impacts on the flood levels, depths and hazards caused by redevelopment, and
- determine the works required to mitigate the flood levels, depths and hazards at full redevelopment to achieve acceptable targets.

4.3.2 Demand for flood mitigation and stormwater infrastructure from development in the RURA

The nature of the demand for flood mitigation and stormwater infrastructure arising from the new development in the RURA is complex.

RCP 2016 outlines that redevelopment of the RURA involves the conversion of a flood-liable and historically industrial area to housing. With this conversion, the community has an expectation that the areas where people live, and the safe evacuation routes, will be flood free.[80] The council considers that flood mitigation work is essential if the RURA is to be developed for residential, commercial or other non-industrial purposes.[81]

The council's building design requirements have ensured that homes in the RURA are flood free without requiring new or upgraded stormwater infrastructure. JWP notes that recent development consents require that new developments have the habitable floor level and the entry to basement car parking areas at the 0.5% AEP (annual exceedance probability) plus 500 mm freeboard level.[82]

As the design of new developments in the RURA provides flood protection, the residual demand for flood mitigation and stormwater infrastructure arising from the expected development is therefore to improve stormwater management and flood mitigation for the public domain. This also includes providing safe, flood-free evacuation routes from the RURA.

80 RCP 2016, p 18.
81 RCP 2016, p 18.
82 JWP Report, p 27.

RCP 2016 also notes that the existing stormwater drainage system in the RURA is substandard, which results in frequent overland flows and ponding of stormwater.[83]

4.3.3 Stormwater infrastructure for which nexus is established

We found that there is reasonable nexus between the expected development in the RURA and the following stormwater infrastructure:

- trunk drainage upgrade works in the Bonar Street precinct from Bonar St to the SWSOOS (BS1.4.1 and BS1.4.2), and
- infrastructure for water quality improvements in the RURA (WB1.2.1).

Trunk drainage upgrades in the Bonar Street precinct

JWP noted that the trunk drainage upgrade works in the Bonar Street precinct are consistent with the technical studies submitted with RCP 2016 for assessment.

These trunk drainage works are intended to address flooding caused by the inadequacy of the pre-existing piped stormwater system to cater for stormwater run-off. JWP found that the technical studies establish that flooding is an existing issue in the Bonar Street precinct with a low point at Wollongong Rd and with the Illawarra railway line, SWSOOS and Princes Hwy acting as barriers to overland flooding.[84]

JWP found that trunk drainage upgrade works are consistent with the technical studies and related to the demand for stormwater management. On this basis, we consider that nexus has been sufficiently demonstrated for the Bonar Street precinct stormwater works. However, it also found inconsistencies and anomalies in the studies that make it difficult to clearly understand the benefits of the proposed works, including downstream of the Illawarra railway line.[85]

JWP suggested that flood difference mapping (before and after the proposed upgrade works) is required to clearly demonstrate the benefits of the proposed works.[86] This work should form part of the flood mitigation and stormwater studies for the RURA we have recommended, and should consider the flood impacts of the infrastructure downstream of the Illawarra railway line.

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83 RCP 2016, p 18. JWP also suggested that the substandard condition of existing stormwater infrastructure may be a reason to discount the proportion of stormwater costs payable by new development in the RURA. It advised that the extent and cost of the stormwater infrastructure would not be as significant if the existing system was of a contemporary standard (JWP Report, p 30). We support a sharing of cost where the scope of infrastructure is determined by joint demand, but on this occasion, we consider that it is reasonable to assume that the new development has established the need for the stormwater infrastructure upgrade.

84 JWP Report, p 15.

85 JWP Report, pp 19-20.

86 JWP Report, pp 17-19.

Water quality control devices in the RURA

JWP reviewed the demand for water quality control in the RURA arising from the expected development. It noted that the redevelopment of the RURA involves the conversion of old industrial sites with limited water quality control and potentially hazardous substances, to contemporary residential and commercial sites with compliant water quality control systems. Redevelopment also involves a conversion from car parking areas for industrial uses to roof areas in multi-storey residential and mixed use development. JWP also noted that roads and car parking areas have a significantly higher suspended solids pollutant rate than roof areas. Therefore, this aspect of the redevelopment is likely to have a positive impact on water quality control.

However, redevelopment of the RURA will also result in a significant increase in vehicle and pedestrian activity from an increased population. JWP outlined that this is likely to result in an increase in pollution such as litter, sediment and oils from the roads and footpaths. JWP advised that the increase in pollutants from the roads and footpath will likely far exceed the benefits of any water quality improvements from the conversion of the car parking area to a roof area.[87]

Water quality control devices are therefore required to address the increase in pollution from the expected development. While nexus has been established for water quality control devices, it is not possible to assess at this stage whether the scope of these devices and the rate of provision will be consistent with the final stormwater works in the Wolli Creek precinct. This is because we found that nexus has not been established for all other flood mitigation and stormwater works in this precinct. Therefore, Bayside Council will need to review the scope of water quality control devices as part of its studies to establish nexus and determine the flood mitigation and stormwater works in the Wolli Creek precinct. This would ensure that water quality control is integrated with the final works in this precinct.

4.3.4 Stormwater infrastructure for which nexus is not established

We found that reasonable nexus is not established for 11 stormwater infrastructure items in the Wolli Creek precinct, as:

- the supporting flood studies only consider the impacts and mitigation works required to address the pre-development flood issues, and
- it is unclear if, and to what extent, this stormwater infrastructure will address the impacts and demands arising from expected development in the RURA.

RCC provided the following stormwater study and plan that relate to the Wolli Creek precinct:

- 1998 Webb McKeown Floodplain Management Plan (FMP), and
- 2000 Willing & Partners North Arncliffe Drainage Study.

[87] JWP Report, p 27.

In responding to a draft of our assessment report, BC noted that the 1998 FMP was completed to support the original rezoning of Wolli Creek. BC argued that, with the rezoning of the Wolli Creek precinct, the Department of Planning had:

- recognised that Wolli Creek was flood prone
- acknowledged that the FMP had been prepared, and
- provided implicit agreement that the stormwater works as recommended within the FMP are to be funded from development contributions.[88]

JWP reviewed the proposed stormwater infrastructure for the Wolli Creek precinct against the FMP and drainage study for the precinct and found that some of the works appear to originate from the studies. However, there are inconsistencies between the studies and some proposed works, and other works are not proposed by the studies at all, including:[89]

- WC1.1.4 – Construct levee on east side of SWSOOS
- WC2.1.2 – Provide enhanced stormwater drainage for sub-precinct (Wolli Creek sub-precinct 2)
- WC2.1.3 – Provide drainage for Magdalene Terrace
- WC4.1.1 – Amplify Bonnie Doon Channel, and
- WC4.1.2 – Provide enhanced stormwater drainage for sub-precinct (Wolli Creek sub-precinct 4).

JWP acknowledged that the flood mitigation and stormwater infrastructure proposed in RCP 2016 for the Wolli Creek precinct is likely to provide improved flooding outcomes for the area. However, insufficient mapping and assessment has been undertaken to demonstrate the benefits of the proposed works.[90]

JWP considered that further comprehensive flood studies are necessary to demonstrate the nexus between the proposed flood mitigation and stormwater management works and the impacts of the redevelopment of the RURA. These additional studies must articulate and address the outcomes that the mitigation works are intended to achieve. If they include flood free evacuation routes, then those routes must be identified to enable the direction of the mitigation works.[91]

In our view, the rezoning did not provide implicit agreement to the precise stormwater works (in nature or extent) provided in the FMP and we note that the stormwater works in RCP 2016 differ from the FMP. The flood prone nature of the RURA and the need for flood mitigation or stormwater works, as established by the FMP, is not disputed. However, as JWP has advised, the FMP and subsequent drainage study for the Wolli Creek precinct do not establish nexus between the specific proposed works and the impacts of the redevelopment, nor address the outcomes that the works are intended to achieve.

88 Email from Bayside Council, 5 December 2016.
89 JWP Report, p 14.
90 JWP Report, p 15.
91 JWP Report, pp 28-29.

We recommend that the costs of the 11 stormwater items for which nexus has not been established ($33.1 million) be removed from RCP 2016 until further studies are undertaken and the precise nature of stormwater works to meet the demand arising from the new development is determined. These further studies should:

- determine the base flood levels depths and hazards that existed prior to rezoning and development
- determine the additional impacts on the flood levels, depths and hazards caused by redevelopment, and
- determine the works required to mitigate the flood levels, depths and hazards at full redevelopment to achieve acceptable targets.

4.4 Criterion 3: Reasonable Costs

In this section, we assess whether the proposed development contributions are based on a reasonable estimate of the cost of the proposed stormwater infrastructure.

We considered the approach in RCP 2016 to cost the capital works for stormwater infrastructure in the context of whether the estimates in the plan are reasonable and up to date. We then considered the reasonableness of the cost estimates and the choice of indices to escalate cost estimates to current dollars.

IPART findings

14 The cost estimates for stormwater infrastructure in RCP 2016 are mostly reasonable, except the cost estimates contained in Table 4.2.

15 The use of the CPI to escalate stormwater work cost estimates to current dollars is reasonable but does not represent the most cost-reflective indexation factor for stormwater work.

Recommendations

14 Bayside Council remove $6,561,813 in costs from the stormwater essential works in RCP 2016 in line with the recommended adjustments in Table 4.2.

15 To index stormwater works estimates (but not actual costs) to current dollars, Bayside Council apply the more cost-reflective ABS PPI (Road and Bridge Construction) instead of the CPI.

Table 4.2 IPART's recommended reasonable cost adjustments to stormwater costs (Sept $2015)

Reasonable cost issue	Cost in RCP 2016	Recommended adjustment
Gross pollutant traps for water quality improvements, where the council's internal estimate of costs is in excess of IPART's benchmark costs for these items (WB1.2.1)	$1,073,919	-$488,664
Additional factors (indirect costs, margin and client costs) should be reduced to 40% and applied to the lower recommended direct construction costs for BS1.4.1	$10,238,300	-$3,573,911
Project contingency of 20%, not 30%, should be applied to four stormwater work items which have progressed beyond the strategic review stage.	$8,092,562	-$2,499,238
Total recommended reasonable cost reductions		**-$6,561,813**

Source: RCP 2016, Infrastructure schedule summary, Appendix A and IPART calculations.

4.4.1 RCC's approach to costing stormwater facilities

RCP 2016 includes $71.4 million in capital costs for stormwater infrastructure.

These costs cover 14 stormwater items that are at various implementation stages:

- 'Not started' – seven stormwater items
- 'In progress' – four stormwater items
- Completed' – three stormwater items.[92]

RCC employed the following approaches to estimate the cost of these items in the plan:

- Cost of completed stormwater works is based on actual CAPEX, indexed by CPI.
- Cost estimate of most stormwater works is based on consultant, Evans & Peck (2014) estimates, dated May 2014.
- Four stormwater cost estimates are based on internal estimates.
- For the 'Not started' and 'In progress' stormwater items, the cost estimate is indexed to 2016 dollars using the CPI.

Our findings and recommendations on these approaches and the reasonableness of certain cost estimates are explained below.

4.4.2 Capital work costs for stormwater

Our assessment found that most of the capital work estimates in RCP 2016 are reasonable. However, we identified an issue concerning one estimate which amounts to a total cost reduction of $6,561,813 in RCP 2016.

92 RCP 2016, Infrastructure schedule summary, Appendix A.

Costs for water quality devices (WB1.2.1)

RCP 2016 includes water quality improvement works in the Wolli Creek precinct (WB1.2.1). However, no supporting cost estimate was provided for this work.

Bayside Council has advised that the works include construction of four gross pollutant traps (GPTs) and that the cost estimate was undertaken by council officers in 2004, when the predecessor plan was prepared. The estimated cost for each GPT in 2004 is $200,000. The cost in RCP 2016 for this item ($1.07 million) is a CPI-adjusted rate of the 2004 cost estimate ($800,000).[93]

JWP reviewed this estimate and noted that the Local Infrastructure Benchmark Costs for a proprietary GPT system with a 370l/s design flow has a benchmark base cost of $118,560 each. JWP argued that as no detail on the required size of GPTs is provided in RCP 2016 or supporting documents, the cost of four GPTs should be based on the benchmark cost.

We recommend that the cost of water quality improvement works be reduced by $488,664 to the benchmark rate for GPTs until Bayside Council has adequately scoped and costed this work.

4.4.3 Additional factors in the cost estimates

As with transport, the stormwater cost estimates, which have been provided by Evans & Peck for RCP 2016, include allowances for additional factors. Table 4.3 breaks down the build-up of cost components for the base costs for stormwater items in RCP 2016.

Table 4.3 Build-up of base cost stormwater estimates in RCP 2016 with additional factors (excluding contingencies)

Cost component	Calculation of the cost component
Direct costs	$ estimate for materials & labour
Contractors' site establishment & management costs(a)	18-24% of direct costs
Design costs (b)	8% of direct costs
Contractor overhead and profit (margin) (c)	10% of direct costs plus other indirect costs (a) and (b)
Total construction cost	Direct costs plus (a) (b) and (c)
Client (council) on-costs	11% of total construction costs
Base cost	**Total construction cost plus client on-costs**

Note: This costing approach applies to s stormwater items in RCP 2016. See Table 3.4 for explanatory notes on the nature of the costs involved.

Source: RCP 2016 Infrastructure schedule summary, Appendix A.

[93] Email from Bayside Council, 31 October 2016.

The additional factors proposed by JWP total 47% to 53% when the individual percentages are aggregated. In its assessment of the additional factors applied in the base cost estimates, JWP considered that the amounts appeared high based on the quantum of the direct costs. It recommended an allowance of 15% for indirect costs (including a 5% allowance for site establishment and a 10% allowance for design fees) plus 10% client on-costs. These percentages sum to 25%. It did not recommend including any additional allowance for the contractor's margin because it considered that the direct costs already appeared to be sufficiently inflated to cover the margin.[94]

We considered similar issues concerning the choice of additional factors for the stormwater cost estimates, as we had for the transport cost estimates. We agree that the total additional factors appear high in the context of the cost estimates for the stormwater work in the RURA, and the supporting information for the estimates.

In response to a draft of our assessment report, the council provided an example of an agreed cost with a developer to undertake stormwater augmentation works at Wollongong Rd and Martin Ave (item BS1.4.1) which was similar to, but less than, the Evans & Peck cost estimate. It also provided additional external advice for the costing information for culvert work to demonstrate that the costs were again, similar to, but less than, the cost estimates proposed in RCP 2016.[95] On this basis, the council disagreed with JW Prince's recommendations for lower additional factors which they considered would have resulted in a lower cost estimate than the agreed cost for this work item.

We reconsidered the different recommendations from the two consultants (ie, Evans & Peck and JWP) regarding the magnitude of the additional factors in light of the additional costing information provided by the council. We note that an agreed cost with a developer to undertake works in kind can be driven, to some extent, by the original cost estimates proposed by the council. However, on this occasion, we recommend that the most reasonable approach is for the council to apply the additional factors as we recommended in our benchmark report, totalling 40%,[96] to the direct costs of BS1.4.1. This would result in additional factors being applied to the direct cost estimates more akin to the averages for this type of work. Using this approach, the cost of BS1.4.1 would be $3,573,911 lower.[97]

In the future, should the council find that actual costs incurred support higher or lower cost estimates, it should then seek to amend all the relevant costs accordingly.

94 JWP, Report, pp 20-21.
95 Email from Bayside Council, 7 December 2016.
96 This is made up of 20% indirect costs (including site establishment and design fees) plus 10% margin and 10% client on-costs.
97 This adjustment does not affect BS1.4.2 as the work is completed.

This recommendation would also apply to the costs of the other Wolli Creek precinct stormwater work (WC1.1.1, WC1.1.2, WC2.1.2, WC4.1.1 and WC1.1.3 and WC1.1.4) but we have already recommended that the costs for these items be removed completely until nexus is established.

4.4.4 Contingency allowances

The Evans & Peck cost estimates for stormwater items all include a project contingency of 30%. JWP recommended that for projects that have progressed beyond the strategic review stage a lower 20% contingency allowance is more reasonable to apply to the base cost estimates for these works. We agree that 20% is the more reasonable contingency allowance for such works.

Similar to the discussion in section 4.4.3 on additional factors, because of our recommendation to exclude all but one of the Wolli Creek projects from the plan due to nexus, it is only BS1.4.1 to which this recommendation currently applies. Reducing the contingency allowance from 30% to 20% reduces the cost of BS1.4.1 in the plan by $2,499,238.[98]

4.4.5 More cost-reflective indexation factor for stormwater capital costs

As with transport, the council has escalated the cost of stormwater works in RCP 2016 using the CPI (All groups) Sydney. This is not unreasonable, but we recommend instead use of the ABS PPI (Road and Bridge Construction), which is the more cost-reflective index.[99] Once again, the implication of the use of the PPI instead of the CPI is that the estimates for stormwater works would likely increase.

4.5 Criterion 5: Apportionment

In assessing apportionment in RCP 2016, we have taken into account:

- need for stormwater infrastructure in the plan, arising from the expected development inside and outside the RURA
- the capacity of existing infrastructure and the needs of the existing population, and
- the demand generated by different types of development that will occur in the RURA.

98 BS1.4.2 is not affected because it is completed and WB1.2.1 is not affected because it is still at the strategic review stage.

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

4.5.1 Summary of our assessment

IPART finding

16 The approach to apportioning the stormwater costs in RCP 2016 is reasonable at this stage, however the apportionment approach should be reviewed when Bayside Council has completed further studies to establish nexus and determine the flood mitigation and stormwater works for the RURA.

Recommendation

16 Bayside Council review the approach to apportionment of stormwater costs in RCP 2016 on completion of further studies to establish nexus and determine the flood mitigation and stormwater works for the RURA. This review should consider:

- the distribution of demand for the works arising from the new development and resulting benefits across different areas of the RURA, and
- the apportionment of costs to those who create the need or demand for the stormwater works.

BC has noted that the RURA sits within multiple catchment areas that are interconnected because of:

- flooding arising from the Cooks River
- installation of trunk drainage across catchments, and
- the artificial barriers created by large infrastructure such as the Princes Hwy, SWSOOS and railway line, that modify flood behaviour and cause flood waters or infrastructure to cross catchments.[100]

RCP 2016 apportions the full cost of stormwater infrastructure (ie, 100% of the cost of proposed works in the plan) to the RURA on the basis that the need for it is generated by the expected development in the RURA and not from an outside population. We consider the approach to apportionment of stormwater costs in the plan is reasonable at this stage because it is the new development which has created the need for stormwater and flood mitigation works. The key principle is that cost should be apportioned to those who create the need for the infrastructure.

JWP considered that the need for stormwater works may vary across the RURA. In particular, it is not clear how the proposed works outside the western precinct of Wolli Creek benefit that area and vice versa, nor how the works within the Wolli Creek precinct benefit the Bonar Street precinct.[101]

[100] Email from Bayside Council, 5 December 2016.
[101] JWP Report, p 30.

We therefore consider that the apportionment approach should be reviewed on completion of further studies to establish nexus and determine the flood mitigation and stormwater works for the RURA. This review should consider the distribution of demand for the works arising from the new development and resulting benefits across different areas of the RURA and the apportionment of costs to those who create the need or demand for the stormwater works.

Apportionment of levee at Henderson Rd

JWP considered how the proposed levee at Henderson St, Turella (WC1.1.1), will benefit residents outside the RURA. It noted that the proposed levee is located outside the RURA and that its installation is likely to provide some protection to properties between the levee and the RURA. JWP estimated that the additional land that would gain some protection from the levee is approximately 5% of the area of the RURA. For this reason, it recommended a proportional reduction to the cost of this work item in RCP 2016 to reflect the benefit to surrounding properties.

As outlined in section 4.3.2, this levee is one of the stormwater works for which nexus has not been established. BC must undertake further studies to demonstrate the need for the levee and the outcome it will achieve. If these studies show that the scope of the levee is required to meet the additional need arising from development within the RURA, the benefit to surrounding properties from the levee would be incidental. However, if the scope of the levee is increased beyond the additional need arising from development within the RURA, a proportional reduction to the cost of this work item in RCP 2016 to reflect the benefit to surrounding properties would be reasonable.

Equal apportionment of stormwater costs between residents and workers

In RCP 2016 the stormwater costs are shared between residents and workers on a 1:1 basis as residential demand for the infrastructure is assumed to be the same as employment demand. As the demand for flood-free housing has been addressed through council's building design requirements, the residual need is for flood-free public domain and safe evacuation routes. We consider that the new workers in the area will have the same need for a flood free public domain and safe evacuation route. Therefore, a 1:1 apportionment for stormwater costs in RCP 2016 is reasonable.

5 Assessment of RCP 2016 – open space, community facilities and plan administration

This chapter provides the context for open space and community facilities in the RURA and RCP 2016 and summarises our assessment of these elements of the plan against the criteria of the Practice Note. Our assessment of the proposed costs for plan preparation and administration is presented separately at the end of the chapter.

5.1 Open space and community facilities in RCP 2016

The open space and community facilities in RCP 2016 include a combination of local, district and regional level parks and a multi-purpose community facility. They are outlined in Table 5.1 below.

RCP 2016 uses the classification 'social infrastructure' for "all local infrastructure required to sustain the social life of, and community wellbeing in, the Urban Renewal Area".[102] It includes open space and recreation facilities, and community facilities that are both essential and non-essential. The plan identifies the proposed fit-out of a multi-purpose community centre in the Wolli Creek precinct as non-essential social infrastructure.[103]

[102] RCP 2016, p 20.

[103] The Practice Note outlines the public services and amenities that are on the Essential Works List. Only 'essential works' are to be included in a plan when the council is seeking external funding for the infrastructure costs above the revenue provided for by the capped contributions. See Appendix B.

Table 5.1 Open space and community facilities in RCP 2016

Location	Name	Nature of facility	Area (m^2)
Wolli Creek precinct	Cahill Park	Existing district level park with some land extension in RCP 2016, providing both active and passive open space	84,126
	Wolli Creek Town Park, Guess Ave	New town park for passive recreation use close to the commercial centre of Wolli Creek	7,765
	Thompson Street Reserve	A new local park expanding on some existing, unembellished open space around the SWSOOS heritage item	6,270
	Multi-purpose community centre	New 400 square metre multi-purpose facility within a mixed use development in the Wolli Creek precinct – exact location yet to be determined	400
	Pathway and embellishment on top of SWSOOS aqueduct between Arncliffe St and Princes Hwy	New public domain embellishment providing pedestrian access between Arncliffe St and the Princes Hwy and to the SWSOOS heritage item	4,000
Bonar Street precinct	Bonar Street Community Park	New local park for passive recreation use	1,800
Outside RURA	Cook Park, Botany Bay	Existing passive open space foreshore park	250,000

a Thompson Street Reserve is referred to in some RCC documents as Ray Oxford Reserve and Lusty Street Reserve. We use the name 'Thompson Street Reserve' to refer to the planned open space around Lusty and Thompson Streets at the south western corner of the Wolli Creek precinct.

b The area of Cook Park has been estimated by IPART based on a width of 50 m and length of 5 km.

c The area of the Pathway on top of the SWSOOS and the associated park has been estimated by IPART based on available information.

Source: Emails from Bayside Council, 23 September and 31 October 2016.

In addition to the open space included in RCP 2016, there is further open space in the RURA at Discovery Point. While this open space is privately owned by the strata schemes that make up the Discovery Point development, an easement on title provides conditional public access.

The location of open space in the RURA is shown in Figure 5.1.

Figure 5.1 Location of open space in the RURA

5.2 Criterion 1: Essential Works List

RCP 2016 submitted by RCC contains expenditure for open space and community facility infrastructure, including capital and land. We assessed whether the infrastructure included in RCP 2016 is on the Essential Works List (EWL), as outlined in the Practice Note (see Appendix B).

5.2.1 Summary of our assessment

IPART findings

17 All open space and community facility infrastructure items are on the Essential Works List except for capital works for the fit-out of a multi-purpose community centre that RCP identifies separately as non-essential social infrastructure.

18 RCP 2016 includes the acquisition of floor space in stratum for a multi-purpose community centre, comprising combined land and capital costs. We have considered the combined land and capital costs for acquisition of floor space in stratum for a community facility to be 'essential works', although the Practice Note does not explicitly include or exclude the capital costs of in stratum acquisitions.

Recommendation

17 DPE review and clarify in the Practice Note whether the capital costs included in the acquisition of floor space in stratum for a community facility are on the Essential Works List, and if so, whether this applies to infill development sites only.

Table 5.2 Summary of IPART's assessment of open space and community facility infrastructure in RCP 2016 against the Essential Works List (EWL)

Infrastructure type	Included on the EWL	Not included on the EWL
Open space	Sports parks Cycleways Playgrounds Local parks Town Centre Park Land for essential open space infrastructure	
Community	Land for essential community services	Capital works for fit out of a new multi-purpose community centre.

5.2.2 Building costs for the multi-purpose community centre

RCP 2016 includes provision for a new multi-purpose community centre comprising approximately 400 square metres of floor space in a mixed use development in the Wolli Creek precinct. The plan states that a multi-purpose facility that can be adapted for a broad range of purposes will best address the demands of the whole population, across all age groups. The exact location of this development has not yet been determined.[104]

RCP 2016 provides that the cost to acquire the land in stratum is $1,436,631. This cost was determined by an independent valuer engaged by the former RCC to provide an estimate of the hypothetical property, based on the purchase of floor space (by strata title or stratum) and any associated car parking. This valuation includes the purchase cost of floor space (land cost plus capital costs), and not just land costs. However, BC noted that it is not possible for it to separately acquire floor space in stratum on a land or capital basis only. The council also advised that the acquisition of land for a community centre in the RURA would cost significantly more than the proposed purchase of floor space in stratum.[105]

We found that the proposed purchase of floor space for a community centre appears to be an efficient use of land in an infill area given the relatively high value of land in the RURA. The Practice Note allows for the cost of land purchases for community facilities only, but does not explain whether floor space in stratum should be considered land or capital work in this context.[106] The strata option for community facilities is more likely to apply in infill development areas than greenfield developments, where land is at a premium. It is not possible to separately acquire floor space in stratum on a land and capital basis, but it is possible to estimate the land and building costs from

[104] RCP 2016, p 22.
[105] Email from Bayside Council, 5 December 2016.
[106] See Practice Note, February 2014, Section 3.4.2, p 8.

the estimated acquisition cost.[107] As outlined below, the council has already separated the fit-out capital costs from the cost of acquiring the floor space.

Given the efficiency of purchasing floor space in stratum for a community centre in an infill development, we recommend that the cost of acquiring the floor space in stratum for the proposed 400 square metre community facility in the Wolli Creek precinct remain in RCP 2016, subject to a review of the Practice Note by DPE. As part of this review, DPE should clarify in the Practice Note whether the capital costs included in the purchase of floor space in stratum for a community facility are on the EWL, and whether this applies to infill development sites only.

5.2.3 Fit-out of the multi-purpose community centre

The EWL applies to infrastructure that is eligible for gap funding under the LIGS.

RCP 2016 includes capital works for the fit-out of the multi-purpose community centre in the Wolli Creek precinct and identifies these works as non-essential social infrastructure. As such, they are not on the EWL, and as RCP 2016 provides, are not to be funded from development contributions.

We acknowledge that the council has already distinguished these non-essential works for the proposed fit-out of the multi-purpose community centre from other essential works in the plan. We have not assessed the reasonableness of the proposed costs ($2,978,872) for these non-essential capital works.

5.3 Criterion 2: Nexus

In assessing the nexus of open space and community facility infrastructure in RCP 2016, we considered whether it is sufficient to meet the demand from the additional population in the RURA.

In our previous assessments of open space in greenfield plans, we have been guided by the benchmark of 2.83 hectares per 1,000 residents widely-used in NSW, or a specific rate of provision established by a needs analysis for the additional population, usually informed by a technical study.

The benchmark of 2.83 hectares per 1,000 residents is not appropriate for infill developments that are constrained by the complexity of existing infrastructure and development and the integration of the area within the regional infrastructure network.[108] This usually means there is less land available for

[107] We calculated the land component of the proposed community centre as $723,338 based on an inflated per square metre rate for the B4 Mixed Development High Density land and a FSR ratio of 3:1. The base value is from Southern Alliance Valuation Services *Rockdale Section 94 Contributions Plan 2004 Land Acquisitions- Road Works and Community Facilities* p 7 and *Open Space Acquisitions* p 12.

[108] In the RURA's case, approximately 63% of the total land area would be required as open space to meet the greenfield development benchmark. This approach is clearly impractical for more densely populated infill developments.

open space than in greenfield sites. Therefore, the provision of open space in infill development areas needs to be considered on a case-by-case basis, taking into account the demands of the additional population and the options available to meet the demand.

With the constraints of an infill development in mind, we considered:

- the needs of the RURA population for open space
- the options available for provision of open space in the RURA
- how RCP 2016 meets the needs for open space of the community in light of the options, and
- whether the proposed open space is accessible to the additional population expected by the new development.

Our assessment of the nexus of open space and community facilities in RCP 2106 is outlined below.

IPART findings

19 RCP 2016 does not establish nexus for the open space infrastructure with a needs-based assessment of the open space requirements for the additional population of the RURA.

20 There appears to be reasonable nexus between most open space in RCP 2016 and the expected development in the RURA because:

  – the proposed rate of open space provision in the RURA (0.65 ha/1,000 people) is low, reflecting the constraints of the infill development, and

  – the proposed open space should be accessible to the residents and workers of the RURA.

21 Nexus is not established in RCP 2016 for open space items WC4.2.2 and WC4.2.1, comprising a pathway on top of the SWSOOS aqueduct between Arncliffe St and the Princes Hwy and embellishment of a small section along this path, at Argyle St.

22 There are options for open space provision, other than the proposed open space in RCP 2016, which could be considered further by Bayside Council if the rate of provision were considered inadequate to meet the demand from the RURA, as informed by a needs-based assessment.

23 Nexus is evident between the proposed multi-purpose community facility and the proposed development in the RURA.

Recommendations

18 Bayside Council establish the open space requirements in the plan based on a needs-based assessment of the RURA which considers:

- the demands of the demographic for accessible active and passive open space, and
- the options to meet the demands with an audit of existing and accessible open space, both inside and outside the RURA.

19 Bayside Council remove $905,981 for the SWSOOS aqueduct pathway and embellishment between Arncliffe St and the Princes Hwy (items WC4.2.1 and WC4.2.2) from the plan until the need for this work can be established:

- to provide transport infrastructure in the RURA, or
- as part of a broader needs-based assessment of the open space requirements in the RURA.

5.3.1 Open space in the RURA

The open space proposed for the RURA includes a combination of upgrades to existing and new facilities. The land area of open space proposed for the RURA is presented in Table 5.3.

Table 5.3 Area of open space proposed for the RURA

Location	Name	Nature of proposed facility	Area (m^2)
Wolli Creek precinct	Cahill Park	Existing district level park with some additional land provided by RCP 2016	84,126
	Town Park, Guess Ave	New	7,765
	Thompson Street Reserve	Mostly new local park – expanding on some existing, unembellished open space around the SWSOOS heritage item	6,270
	Discovery Point	Privately owned by the Discovery Point Strata, with an easement on title that provides conditional public access	17,843
	Pathway and embellishment on top of SWSOOS aqueduct between Arncliffe St and Princes Hwy	New public domain embellishment providing pedestrian access between Arncliffe St and Princes Hwy, and to the SWSOOS heritage item	4,000
Bonar Street precinct	Bonar Street community park	New local park	1,800
Total			**121,804**

[a] The area of the Pathway on top of the SWSOOS and the associated park have been estimated by IPART based on available information.

Source: Email correspondence from Bayside Council, 23 September and 31 October 2016.

The total area of the RURA is 67.79 hectares.[109] RCP 2016 provides open space within the RURA at a rate of provision of 0.65 hectares per 1,000 residents. The plan notes that, with mainly high density residential and mixed use development in the RURA, and around three quarters of the existing and anticipated population being young working age residents and their very young children, there is strong demand for open space. RCP 2016 also notes that rates of car ownership amongst residents of the RURA are low compared with Greater Sydney, which creates demand for open space within reasonable walking distance of residents' homes.[110]

RCC did not provide a contemporary technical study to establish the demand for open space and community facilities from the new population of the RURA.[111] Instead, the open space demands for the RURA were assessed as part of the studies that informed the predecessor contributions plans, including an LGA-wide Open Space Strategy (OSS), prepared for RCC in 2001 by Don Fox Planning.[112] RCP 2016 outlines that the open space requirements were refined and updated in versions of the development control plan (DCP) for the area, from which detailed implementation documents were prepared, including a public domain plan and technical manual.[113]

An overview of the OSS, relevant to an assessment of open space within the RURA, is provided in Box 5.1.

109 Email from Bayside Council, 23 September 2016.

110 RCP 2016, p 12.

111 RCP 2016 notes that the anticipated open space demands for the RURA were assessed as part of the studies that informed the predecessor contributions plans, including an Open Space Strategy prepared in 2001: RCP 2016, p 21. This study, prepared by Don Fox Planning, was not provided by the former RCC as part of the application for assessment of RCP 2016.

112 Don Fox Planning. *Rockdale Section 94 Contributions Plan: Open Space Strategy*, prepared for Rockdale City Council (OSS), November 2001.

113 RCP 2016, p 21.

Box 5.1 2001 Rockdale Open Space Strategy

The Open Space Strategy (OSS) was prepared before, but in contemplation of, redevelopment of the RURA. It identifies the Arncliffe area (including Arncliffe, Turella and Bardwell Valley, and incorporating the RURA) as having 99 ha of open space at a rate of 8.22 ha/1,000 people in 2001. The broader Rockdale LGA had a rate of provision of open space of 4.04 ha/1,000 people.

The OSS classifies open space land within the following categories:

- **Local open space** – Predominantly used by the residents of a neighbourhood-sized residential area and therefore accessible within walking distance (ie, within 500 metres) to most potential park users. Includes small parks and children's play spaces.
- **District open space** – Predominantly used by residents within the former Rockdale LGA. Users would not typically travel more than 15-20 minutes to get there. Accessible to most potential users by motor vehicle, public transport and bicycle. Includes playing fields with amenities, tennis courts, basketball courts and large parks with picnic facilities.
- **Regional open space** – Used by residents from within and outside Rockdale. Accessible to potential users by motor vehicle, public transport and bicycle. May include high quality sporting facilities, large parklands within a natural setting incorporating picnic facilities, and informal recreation facilities such as walkways and large bushland areas (eg, Bardwell Valley and Cooks Park).

According to this classification, most of the open space in the Arncliffe area is district open space, with only small areas of local and regional open space. The provision of local open space in Arncliffe in 2001 was only 0.24 ha/1,000 people. The OSS notes:

> Critical in determining the needs of open space for the community is the number of parks by category within each planning precinct. Allocation of open space should be directed to the majority of the residential population being within an acceptable walking distance of 500 metres or 1-2 km by car. In this respect the local parks should be the greatest number of parks to support the needs of local residents.

The OSS contemplates an increase in the population of the Arncliffe area between the years 2000 and 2011 of around 5,500 people, primarily from redevelopment of the RURA. It highlights the importance of providing this new population with appropriate open space land and facilities, aimed at households residing in multi-unit housing. The OSS includes the acquisition of land for new parklands, including properties identified in RCP 2016 for the Thompson Street Reserve.

Source: Don Fox Planning. *Rockdale Section 94 Contributions Plan: Open Space Strategy*, prepared for Rockdale City Council, November 2001 (OSS).

The estimated increase in population in the RURA will far surpass the 5,500 people contemplated by the OSS in 2001. The final population of the RURA is estimated to be 18,736 (17,485 residents and 1,251 workers). RCP 2016 also notes that land use planning strategy for the RURA has evolved since its inception, altering the mix of residents and workers with significantly more residents now anticipated than when planning first began.

The OSS is 15 years old and does not provide an adequate needs-based assessment of the open space required for the anticipated final population of the RURA. A review of the literature and best practice on green and open space planning for urban consolidation in 2010 by Byrne and Sipe highlights the different factors that should be considered when planning for increased density and open space use.[114] Some relevant findings from their study are presented in Box 5.2.

Box 5.2 Findings – green and open space planning for urban consolidation

Byrne and Sipe noted the following findings in their research:

- We should not assume that just because people live in denser environments with little access to private green space they necessarily use neighbourhood public parks and other green spaces more frequently. Indeed, a paradox of urban consolidation is that it may actually stimulate leisure-based travel, as city dwellers seek to escape to the countryside or other places for leisure and recreational experiences.
- Children living in higher density housing have a greater need for publicly-accessible green spaces for play, mental health and social and physical development.
- Urban open spaces can include communal space around apartment buildings, cemeteries, rock walls, street verges and medians, school grounds, rooftop parks, stormwater channels, surplus parking lots, and open-air and publicly accessible shopping malls that provide opportunities for passive recreation.
- A 'needs-based' assessment is the preferred technique for forecasting and supplying urban greenspace, considering the characteristics of a given population, forecasts population change based on socio-demographic surveys and focus groups, and then estimating the likely greenspace requirements for that population.

Source: J Byrne and N Sipe, *Green and open space planning for urban consolidation – A review of the literature and best practice*, March 2010, pp 2-5 and 21-22.

Without an assessment of the needs of the anticipated population of the RURA, nexus has not been properly established for all open space infrastructure proposed in RCP 2016. BC should undertake this assessment to clearly establish the needs of the RURA population for open space. This should not be an onerous exercise, as it would build on the OSS and RCC's assessment of the likely characteristics of the future RURA population that is summarised in RCP 2016.[115]

[114] J Byrne and N Sipe, *Green and open space planning for urban consolidation – A review of the literature and best practice*, March 2010.

[115] RCP 2016, pp 11-12.

However, based on the background information provided in the OSS and RCP 2016, there appears to be reasonable nexus between **most** open space in the plan and the expected development in the RURA because:

- the proposed rate of open space provision (0.65 ha/1,000 residents) is low, reflecting the constraints of the infill development, and
- the proposed open space appears accessible to most residents and workers of the RURA, being within walking distance and relatively evenly distributed across both precincts.

We note that the new open space provided in RCP 2016 (Thompson Street Reserve, Bonar Street Community Park and the Wolli Creek Town Park) would be classified as local open space under the OSS classification, addressing the under-provision of local open space identified in 2001.

RCP 2016 also apportions 41% of the costs of upgrading the facilities at Cook Park, on the Botany Bay foreshore, to the RURA population.[116] Cook Park is a passive open space foreshore park that runs the length of General Holmes Drive from Kyeemagh to Dolls Point. Although it varies in distance from three to eight kilometres from the RURA, we consider it is reasonable to apportion these costs to RCP 2016 on the basis that:

- the nature of Cook Park, being a foreshore area, is different from all other open space provided in the RURA
- it is the closest beach area for residents of the RURA, and
- for these reasons the residents of the RURA are likely to use Cook Park and should contribute to the costs of upgrading its facilities.

There are other options for open space provision, other than the proposed open space in RCP 2016, which Bayside Council could consider further if its assessment of the open space needs of RURA residents indicates that additional open space is required. These options include:

- providing additional open space within the RURA, and
- providing improved access to open space in surrounding areas.

We understand that the council has undertaken some preliminary work on the costs and benefits of providing a more direct bridge to improve access to Waterworth Park. This park provides approximately 10 ha of active and passive open space in the Canterbury-Bankstown LGA and is currently accessible by a 1,100 metre journey across the Cooks River Bridge from the RURA.[117]

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116 This is based on the RURA's contribution to anticipated population growth in the LGA between the commencement of development in the RURA (2004) and 2031: RCP 2016, p 23.

117 We note that Bayside Council has undertaken some design work on a bridge and pedestrian and bicycle path over Wolli Creek that would connect Waterworth Park with a pedestrian and bicycle path on the eastern side of the Cooks River Bridge. This work appears to be consistent with a regional cycle way, linking a number of LGAs. The estimated cost of this bridge is $3.79 million (Email from Bayside Council, 23 September 2016).

A coordinated approach to open space within and across LGAs, including local and district open space, may need to be considered and facilitated by a state authority, such as the Greater Sydney Commission.

Public domain works over the SWSOOS – Arncliffe St to Princes Hwy

RCP 2016 includes, as part of 'social infrastructure', the costs of a pathway on top of the SWSOOS aqueduct between Arncliffe St and the Princes Hwy and embellishment of a small section along this path, at Argyle St.[118] The plan does not include a map showing the location and nature of these works (which is discussed further in Chapter 7), however the *Wolli Creek and Bonar Street Precinct Public Domain Plan* (PDP) provides further detail about the nature of the work proposed. As the PDP outlines:

> The Southern and Western Suburbs Ocean Outfall Sewer was constructed in 1896 to transport sewage from the southern and western suburbs to the sewage plant and outfall at Long Bay. As a significant infrastructural achievement of its time the SWSOOS aqueduct exists as a heritage feature within the district…The SWSOOS is listed as a heritage item in Draft Rockdale LEP 2011.[119]

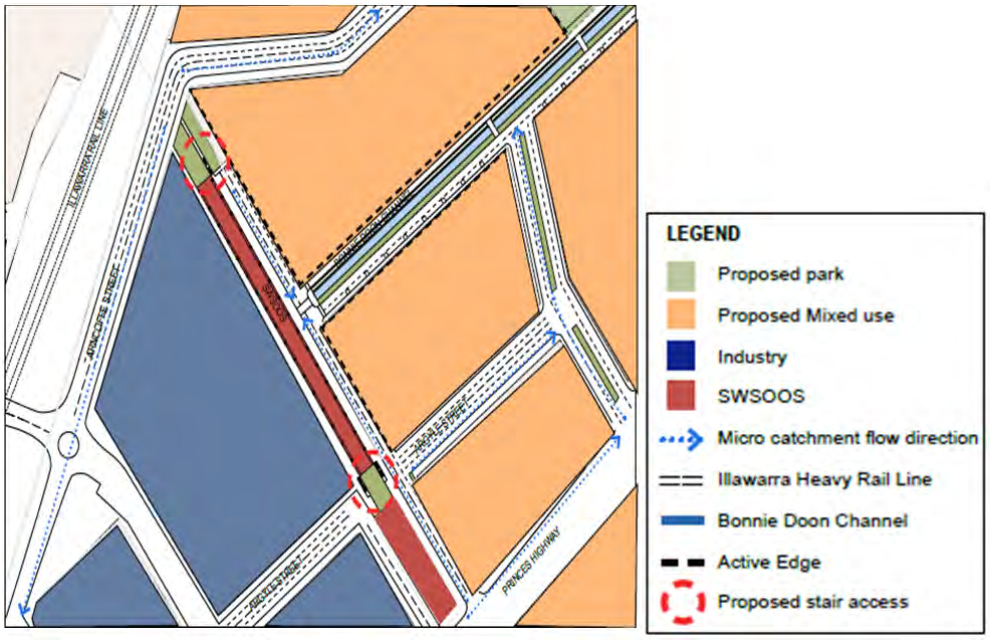
In the section between Arncliffe St and the Princes Hwy covered by the proposed works, the PDP describes the current state of the SWSOOS and the proposed works as follows:

> Currently the SWSOOS runs between light industry with very little visible from public streets. Through the proposed redevelopment the SWSOOS will become an urban feature with a road along the northern side…By inserting a new road on the northern side of the SWSOOS an opportunity exists to extend this access and form a pedestrian connection through the area linking with the linear park along Bonnie Doon Channel.[120]

These works are represented in Figure 5.1.

[118] Work items WC4.2.2 and WC4.2.1.
[119] Rockdale City Council, *Wolli Creek and Bonar Street Precinct Public Domain Plan* (PDP), May 2011, p 41.
[120] PDP, p 41.

Figure 5.2 Location of proposed works at the SWSOOS – Arncliffe St to Princess Hwy



Source: PDP, p 42

As noted in the Byrne and Sipe literature review (see Box 5.2), urban open spaces may encompass spaces beyond the conventional parks and sportsfields such as plazas, parts of streets and other communal space. However, any need for public domain works to meet the open space demands of a population must be established and clearly articulated in a contributions plan to satisfy the nexus criterion. Otherwise, it is unclear whether the extent of public domain work exceeds the demand for cost-efficient open space in the relevant areas of the RURA.

RCP 2016 does not explain the connection between the proposed works at the SWSOOS and the demand for open space created by the additional population in the RURA. As such, RCC has not established nexus for the works and the costs ($905,981) should be removed from the plan. Should demand for the work as an open space facility be established, then the cost can be reinstated in the plan.

We note that, at least in part, these works appear to have a transport-related function in improving pedestrian access and connectivity. BC should consider the function of the public domain over the SWSOOS between Arncliffe St and the Princes Hwy when undertaking its needs-based assessment of open space for the RURA, including whether this area primarily provides a transport function and therefore should be considered as transport infrastructure.

5.3.2 Community facilities in the RURA

As outlined in section 5.2.2, RCP 2016 includes a new multi-purpose community centre comprising approximately 400 square metres of floor space in a mixed use development in the Wolli Creek precinct. The plan outlines that a multi-purpose facility that can be adapted for a broad range of purposes will best address the demands of the whole population, across all age groups.[121]

We consider that there is reasonable nexus between the proposed community facility and the expected development in the RURA.

5.4 Criterion 3: Reasonable Costs

In this section we assess whether the proposed development contributions are based on a reasonable estimate of the cost of the proposed open space and community facilities.

We considered the approach in RCP 2016 to costing the embellishment work and land requirements for open space and community facility infrastructure in the context of whether the estimates in the plan are reasonable and up to date.

IPART findings

24 The approach to estimating land acquisition costs for open space and community facilities in RCP 2016, based on recent advice from an independent valuer, is reasonable.

25 The cost of open space embellishment in RCP 2016 is reasonable, except for:

- the embellishment cost for the Wolli Creek Town Park, which could exceed the reasonable cost of base level embellishment, although this is not clear from the information provided
- the embellishment cost for the Bonar Street Community Park, which exceeds the reasonable cost of base level embellishment
- the allowance of 15% for indirect costs and 11% council on-costs as additional factors in the base cost estimates for open space embellishment at four parks, and
- the contingency allowance of 20% for the cost estimates for four parks where the projects have progressed beyond the strategic review stage.

26 The use of the CPI to escalate open space embellishment cost estimates to current dollars is reasonable but does not represent the most cost-reflective indexation factor for open space embellishment.

[121] RCP 2016, p 22.

Recommendations

20 Bayside Council review the cost of open space embellishment for the Wolli Creek Town Park to ensure that only base level embellishment is included for the park, but retain the cost in RCP 2016 in the interim with adjustments required by Recommendations 22 and 23.

21 Bayside Council remove the embellishment costs for the Bonar Street Community Park ($2,377,858) from RCP 2016 and review the reasonable cost of base level embellishment for this park.

22 Bayside Council remove $592,987 from the cost of open space embellishment in RCP 2016 for reduced additional factors (12% indirect costs and 10% council on-costs) in the base cost estimates for Wolli Creek Town Park and Thompson Street Reserve.

23 Bayside Council remove $257,893 from the cost of open space embellishment in RCP 2016 for a lower contingency allowance of 15% in the cost estimates for Wolli Creek Town Park and Thompson Street Reserve.

24 To index open space embellishment estimates (but not actual costs) to current dollars, Bayside Council apply the more cost-reflective ABS PPI (Non-Residential Building Construction) instead of the CPI.

5.4.1 Land acquisition for open space and community facility needs

RCP 2016 includes $70.3 million for the acquisition of land for open space and the community facility. Table 5.4 indicates that the vast majority of land for these purposes is still to be acquired by the council, at an estimated cost of $66.6 million.

Table 5.4 RCP 2016 land acquisitions for open space and the community facility ($Sept 2015)

Land acquired		Land to be acquired	
To enhance Cahill Park	$3,698,210	Bonar Street Community Park	$7,189,753
		Thompson Street Reserve	$13,724,177
		Wolli Creek Town Park	$44,251,781
		Multi-purpose community facility	$1,436,631
Total	**$3,698,210**		**$66,602,342**

Source: RCP 2016, Appendix A, Infrastructure schedule summary.

As previously noted, the council engaged Southern Alliance Valuation Service (SAVS) in January 2015 to estimate the cost of acquiring land for infrastructure, including for open space and the community facility, to include in RCP 2016.[122] We consider that this approach is reasonable.

RCP 2016 states that the Established House Price Index for Sydney, as published by the ABS, will be used to update the contribution rates for land that is yet to be acquired.[123] We consider that this is a reasonable, cost-reflective approach.

We also found that the cost of land already acquired by the council ($3.7 million) is reasonable because it reflects the actual costs incurred by RCC, indexed by the CPI.

5.4.2 Open space embellishment cost

The open space embellishment costs in RCP 2016 are presented in Table 5.5, together with our calculated cost rate per square metre for each facility.

Table 5.5 Embellishment costs for open space in RCP 2016 ($Sept 2015)

Name/Location	Area (m^2)	Embellishment cost in RCP ($)	Effective embellishment rate ($/$m^2$)
Wolli Creek Town Park	7,765	5,810,719	748
Thompson Street Reserve	6,270	713,815	114
Cahill Park (41% of total park costs apportioned to RURA)	84,126	5,038,322	145
SWSOOS aqueduct and Argyle St	4,000	905,981	227
Bonar Street Community Park	1,800	2,377,858	1,321
Cook Park (41% of total park costs apportioned to RURA)	250,000	405,828	4
Total	**15,835**	**15,252,523**	

Note: The effective embellishment rates for Cahill Park and Cook Park have been calculated based on the total park embellishment costs. For example, the total embellishment cost for Cahill Park is $12,198,901. With an area of 84,126 m^2, the effective embellishment rate is $145/$m^2$. However, only 41% of the total park embellishment costs ($5,038,322) are apportioned to RCP 2016. This is based on the RURA's contribution to anticipated population growth in the LGA between the commencement of development in the RURA (2004) and 2031: RCP 2016, p 23.

Source: RCP 2016, Appendix A, Infrastructure schedule summary, and IPART calculations.

[122] As outlined in section 5.2.2, RCP 2016 includes the SAVS' estimated cost of acquiring 400 m^2 of floor space. This cost included land cost plus capital cost for one floor of a commercial building, not just the land cost.

[123] RCP 2016, p 37.

As with many of the transport and stormwater costings, RCC engaged Evans & Peck to provide advice on the cost of providing open space embellishment. Detailed cost estimates by Evans & Peck were provided to us for:

- Wolli Creek Town Park
- Thompson Street Reserve
- SWSOOS aqueduct and Argyle St, and
- Bonar Street Community Park.

The council did not provide detailed costing information for the embellishment of Cahill Park or Cook Park. As shown in Table 5.5, there are significant differences in costs for embellishing different parcels of open space within the RURA.

In assessing base level embellishment costs for passive open space areas in greenfield developments, we have generally accepted cost rates of $52 to $60 per square metre.[124] However, it is not appropriate to use this greenfield comparison for infill development like the RURA. This is because the large fixed cost components of a park, such as the cost of playground equipment, an amenity block and barbeque area, are spread over larger areas of passive open space in greenfield sites, resulting in a lower average embellishment rate ($/m^2). Also, there can be more remediation work involved in preparing sites in infill development areas, further increasing the average cost rate.

Nevertheless, the rates per square metre for embellishment of open space in the RURA appear particularly high for base level embellishment work for the Bonar Street Community Park ($1,321/m^2) and to a lesser extent, for the Wolli Creek Town Park ($748/m^2).

The costs of embellishment for Cook Park and Cahill Park are relatively low by comparison, and therefore, although we do not have a detailed cost estimate for these items, we consider these cost estimates to be reasonable. The costing for the SWSOOS located item is similarly reasonable, noting nexus as open space has not been established for this infrastructure (section 5.3.1).

Embellishment costs for Wolli Creek Town Park

The cost of embellishment at the Wolli Creek Town Park is $5.8 million.[125]

[124] IPART, *Assessment of The Hills Shire Council's Section 94 Contributions Plan No 15: Box Hill Precinct*, December 2014, p 39.

[125] RCP, Appendix A, Infrastructure schedule summary.

BC advised that the level of service to be provided at the Town Park reflects its importance in the precinct.[126] We note that the costs for amenities and facilities account for around $2.8 million or 81% of the direct costs (excluding indirect costs and contingencies), which suggests that the level of service proposed for the park is the main cost driver.

It could be argued that as there is limited new open space in RCP 2016, it is reasonable for the council to make up for a lack of quantity of open space with quality of embellishment. However, the Practice Note only allows for contributions above the cap to fund base level embellishment. If councils wish to provide a higher level of amenity, such as artistic features or expensive landscaping work, then these embellishments should be funded through other revenue sources.

We also compared the cost estimates for open space embellishment for Wolli Creek Town Park in RCP 2016 with the costs in the 2004 Rockdale plan. We found that after we had indexed the cost estimates to the dollars in RCP 2016 ($September 2015), the costs were considerably lower in the 2004 plan. The embellishment costs for the Wolli Creek Town Park were $429/m^2 in the 2004 plan, 43% less than the rate in RCP 2016 ($748/m^2).

It is difficult to determine whether the scope of work in the costings exceed base level embellishment, because the costs are bundled eg, hard landscaping bundles the cost for footpaths, pavements and low level walls and accounts for $1.1 million of the total cost at a unit rate of $230/m^2.

However, in light of the significant overall cost involved, we recommend that BC review the cost estimate of this embellishment work to ensure that only base cost embellishments are included. A review would consider our recommendations for lower additional factors and contingency allowance in the cost estimates as outlined below.

Embellishment costs for Bonar Street Community Park

In RCP 2016 the embellishment cost rate for Bonar Street Community Park, at $1,321/m^2 for a total cost of $2.4 million, is considerably higher than that for the Wolli Creek Town Park.

[126] Email from Bayside Council, 16 November 2016.

We do not consider that this cost is reasonable for base level embellishment for several reasons:

- The per square metre embellishment rate for Thompson Street Reserve ($114/m²), which is a comparable local park in a high density residential area, is only 9% of the cost rate of the Bonar Street Community Park.
- The council advised that site remediation work and import fill have contributed to the cost, but the site enabling works amount to $185,000 (including $50,000 to remove the petrol tank) and earthwork and retaining walls around $173,000 of the total cost of $2.4 million.[127]
- Other specific cost elements appear particularly high, particularly the hard landscaping unit rate of $431/m² for paving, for a total cost of $410,821. By comparison, our benchmark report suggested that the cost of paving with polished concrete was $88/m² and sandstone $206/m² respectively. In the Wolli Creek Town Park cost estimate, footpaths, paving and walls together cost $230/m².
- As part of the application, RCC submitted two lower cost options for embellishment of the same park, totalling $766,709 and $1,676,018 respectively. These costings have fewer facilities, but demonstrate that lower cost embellishment options are available.[128]

For these reasons, we recommend that BC remove the embellishment costs for the Bonar Street Community Park ($2,377,858) from RCP 2016 pending a review to determine the reasonable cost of base level embellishment. In response to a draft of our assessment report, BC advised that the park embellishment option costing $766,709 represents the base level provision and should be included in the plan if the existing cost is considered excessive.[129] We acknowledge that this option is available to BC but recommend that it review the costing in more detail to determine the necessary inclusions. Once a more reasonable cost is established, the council can reinstate this cost in the plan. If the council wishes to provide above base level embellishment for the park, it can fund these works from other revenue sources.

Additional factors in the cost estimates

As with transport and stormwater, the open space embellishment cost estimates, which have been provided by Evans & Peck, include allowances for additional factors. Table 5.6 breaks down the build-up of cost components for the base costs for open space embellishment items in RCP 2016.

[127] Evans & Peck, *Wolli Creek and Bonar Street Precinct: 47 to 49 Bonar Street Open Space Embellishments, Report – Canberra Estates Consortium No.42 – Design Proposal*, p 3.

[128] *Revision 4 BS1.1.1 Option 2 – PART A & B Overview and Scope)* and *(Revision 4 BS1.1.1 Option 3 – PART A & B Overview and Scope.*

[129] Email from Bayside Council, 5 December 2016.

Table 5.6 Build-up of base cost open space embellishment estimates in RCP 2016 with additional factors (excluding contingencies)

Cost component	Calculation of the cost component
Direct costs	$ estimate for materials & labour
Contractors' site establishment & management costs (a)	12% of direct costs
Design costs (b)	5% of direct costs
Contractor overhead and profit (margin) (c)	8% of direct costs plus other indirect costs (a) and (b)
Total construction cost	Direct costs plus (a) (b) and (c)
Client (council) on-costs	11% of total construction costs
Base cost	**Total construction cost plus client on-costs**

Note: This costing approach applies to four parks in RCP 2016. See Table 3.4 for explanatory notes on the nature of the costs involved.

Source: RCP 2016 and Infrastructure schedule summary, Appendix A.

In reviewing the additional factors in the context of the overall embellishment cost rates, we consider that the 17% for indirect costs (including site establishment and design fees) is too high and should be 12%. We also consider that the council on-cost component should be reduced to 10%. We do not recommend any change to the proposed margin (8% in the costings).

These revised factors are commensurate with the amounts recommended in our benchmark report.[130] These adjustments would reduce the costs in RCP 2016 for two parks (Wolli Creek Town Park and Thompson Street Reserve) by $592,987.

We have already recommended that the costs for the Bonar Street Community Park and the embellishment work at the SWSOOS aqueduct and Argyle St be removed from the plan, subject to further work to establish reasonable cost and nexus by the council respectively. The adjustments outlined in this section would, otherwise, apply to these costs.

5.4.3 Contingency allowances

The Evans & Peck cost estimates for open space mostly include a project contingency of 20% of the base cost. We consider that this allowance is not reasonable given that the projects are beyond the strategic review stage, and detailed costings are available. We recommend a lower contingency of 15% be applied to the base cost estimates for the two parks (Wolli Creek Town Park and Thompson Street Reserve), which would reduce the cost in the plan by $246,252.

[130] IPART Benchmark Report, p 30.

As with the additional factors, the lower contingency would also apply to the costings for the Bonar Street Community Park and the embellishment work at the SWSOOS aqueduct and Argyle St, but we have already recommended that these costs be removed from the plan, subject to further review.

5.4.4 More cost-reflective indexation factor for open space capital costs

As with transport and stormwater, the council has escalated the cost of open space works in RCP 2016 using the CPI (All groups) Sydney. This is reasonable but we recommend instead that it use the ABS PPI (Non-Residential Building Construction Index) which is the more cost-reflective index.[131] Once again, the implication of the use of the PPI instead of the CPI is that open space works estimates would likely increase.

5.5 Criterion 5: Apportionment

We identified one issue with apportionment of costs between residential and non-residential development in the RURA, in relation to the costs of open space and the community facility.

5.5.1 Summary of our assessment

IPART finding

27 The approach to apportioning the cost of open space and the community facility in RCP 2016 is reasonable, except for:

- the equal apportionment of these costs to residents and workers because the average worker will not utilise the range of open space and community facilities at the same frequency as the average resident.

Recommendation

25 Bayside Council adopt an approach to apportionment of open space and community facility costs in RCP 2016 such that a worker is apportioned one third of the costs that are apportioned to a resident.

[131] ABS, 6427.0 Producer Price Indexes, New South Wales, Australia.

RCP 2016 apportions open space and community facility costs in these ways:

- all local open space land and embellishment costs to RCP 2016
- 41% of land and embellishment costs for Cahill Park (a district level park) to RCP 2016
- all community facility land costs to RCP 2016
- 41% of embellishment costs to upgrade facilities at Cook Park (a regional level park outside the RURA on the Botany Bay foreshore) to RCP 2016, and
- between residents and workers on a 1:1 basis.[132]

RCP 2016 identifies that Cahill Park is an existing district level park that attracts users from the broader LGA. As such, it proposes that the costs of land acquisitions and embellishments at Cahill Park be met by the anticipated population growth in the LGA between the commencement of development in the RURA (2004) and 2031. On this basis, 41% of land and embellishment costs for Cahill Park are allocated to the RURA.[133]

As outlined in section 5.3.1, Cook Park, is existing regional open space on the Botany Bay foreshore that will attract users from within the RURA. RCP 2016 indicates that the council plans to augment the facilities at Cook Park to cater for the future population growth in the LGA. It similarly proposes that the costs of this augmentation be met by the anticipated population growth in the LGA between the commencement of development in the RURA (2004) and 2031, with 41% allocated to the RURA.[134]

We consider that the proposed apportionment of open space and community facility costs within and outside the RURA is reasonable. In the case of Cook Park, we note that:

- as a foreshore area, it is different from all other open space provided in the RURA,
- it is the closest beach area for residents of the RURA, and
- for these reasons the residents of the RURA are likely to use Cook Park and should contribute to the costs of upgrading its facilities.[135]

132 RCP 2016 and Email from Bayside Council, 23 September 2016.
133 RCP 2016, p 23.
134 RCP 2016, p 23.
135 This is supported by the findings of an Open Space User Needs Survey for the Rockdale LGA, presented at p A-13 of the 2001 OSS: 42% of respondents stated Beaches and Waterfront Parks are the most preferred recreational setting.

However, we do not agree with allocating open space and community facility costs on a 1:1 basis between residents and workers. We do not consider that workers will have equal opportunity to use the open space and community facility as residents. The potential use of these facilities by the average worker is limited to meal breaks on five days each week (five uses per week), compared with greater potential use by residents, twice on each work day and a number of times on weekends or days off work.

We also consider that workers are unlikely to utilise all parks within the RURA – their use is more likely to be limited to parks closest to the commercial areas in the Wolli Creek precinct near the train station, being the Wolli Creek Town Park and Cahill Park. These parks comprise 77% of the area of open space and community facilities provided by RCP 2016 in the RURA.[136]

The council did not provide information on the probable usage patterns of open space and the community facility by residents and workers in the RURA. As such, we have used our estimate of maximum potential usage to determine a more equitable division of costs between these two groups. Therefore, on balance we recommend that each worker is allocated only one third of the cost of open space and the community facility that is allocated to each resident.

This will not change the amount of revenue BC receives in total but a greater percentage will come from residents, and a smaller percentage from workers.

5.6 Plan administration in RCP 2016

IPART finding

28 Plan administration costs of $2,473,261 in RCP 2016 equate to 1.6% of capital works costs, which is slightly above the IPART benchmark rate of 1.5%.

Recommendation

26 Bayside Council reduce plan administration costs in RCP 2016 to equate to 1.5% of the reduced capital costs which results from this assessment.

The Practice Note provides that plan administration costs may include:

- background studies, concept plans and cost estimates that are required to prepare the plan, and/or
- project management costs for preparing and implementing the plan (eg, the employment of someone to co-ordinate the plan).[137]

[136] This calculation includes 41% of the area of Cahill Park (34,491.66 m²), based on the apportionment of 41% of Cahill Park embellishment costs to RCP 2016. (Cahill Park - 34,491.66 m² + Wolli Creek Town Park - 7,765 m²)/ Total area open space and community facility in RCP 2016 for RURA x 100 = 77.21%.

[137] Practice Note, p 9.

RCP 2016 details the range of administration costs that might be incurred by the council, which is within this definition. It includes $2.5 million in plan administration costs,[138] equal to 1.6% of $152.3 million in capital works for essential items in the plan. This is slightly higher than the IPART benchmark rate of 1.5%.[139]

On the basis of the recommended reductions to the cost of essential works in this assessment (amounting to around $66.5 million), we estimate that the quantum of administration costs should be reduced by approximately $1.2 million, to align with the 1.5% benchmark rate.

[138] RCP 2016, pp 5, 24-25.

[139] RCP 2016 states that the $2,473,261 equals 1.5% of capital costs in the work schedule (p 26), but we have calculated that this amount equals 1.6% of capital costs in the plan.

6 Assessment of RCP 2016 – Criterion 4: timing

IPART is required to assess whether the proposed public amenities and services can be provided within a reasonable timeframe. The timing of the proposed public amenities and services is important as it helps to:

- determine the timing of the council's expenditure
- demonstrate that the council has the capacity to provide the infrastructure, and
- demonstrate that the council can provide the infrastructure to meet the demand for those services within a reasonable timeframe.

This chapter presents our assessment of the timing of infrastructure provision in RCP 2016, including our recommendations for the council to prepare a timetable for delivery which prioritises its infrastructure provision, and to address the main barriers to delivery in the RURA associated with the need for the council to acquire land.

6.1 Timeframe for infrastructure delivery in RCP 2016

IPART findings

29 Despite the significant progress of development in the RURA to date, RCP 2016 does not identify when Bayside Council plans to acquire necessary land and provide the infrastructure to support the needs of the existing and future population.

30 RURA residents have raised concerns with the council about the lack of progress on planning for and delivering proposed open space facilities and the community centre for the new population in the RURA.

Recommendations

27 Bayside Council prioritise infrastructure delivery within the RURA, setting out in RCP 2016 and the work schedule an indicative timetable for infrastructure provision based on known or assumed plans for development, and in tranches of three years, if necessary.

28 As part of this process, Bayside Council place a high priority on the provision of open space and the community facility in the short term.

Residential development began in the RURA following rezoning of Wolli Creek in 2000, and Bonar Street in 2008. To the end of 2015, 63% of residential and 38% of non-residential development had been approved, and development contributions levied on it. Remaining development in the RURA is expected to occur over a period of around 15 years, to 2030.[140]

Appendix A of RCP 2016 is an Infrastructure schedule summary which indicates the timeframe and triggers for delivery of infrastructure in general terms, eg, that the infrastructure is either "completed", "ongoing" or will be commenced "when land becomes available" or when "adjacent redevelopment" is completed. In summary:

- Two of the total of 16 items of land to be acquired are marked as "completed", and most are to be acquired "when land becomes available".
- Only work on the Bonar Street Community Park has commenced, with all other open space works to occur "when land becomes available" or following redevelopment.
- The majority of stormwater works will be delivered at a time "TBD" although two are completed.
- Of the 37 items of transport works, many are dependent on completion of "adjacent redevelopment" or when "land becomes available", although six are "ongoing" and four are "completed".

RCP 2016's work schedule indicates that the council has spent around $21 million on land acquisition and completed works to date and another $3.6 million on works currently in progress.[141] The total value of infrastructure in RCP 2016 is $259 million, so current expenditure represents around 11% of the total proposed works.

Since Appendix A was compiled for RCP 2016, the council has progressed some of the works for Bonar Street Community Park, and there is likely to have been further expenditure on works. However, significant amounts of infrastructure remain to be delivered, many dependent on land first being acquired.

In our view, RCP 2016 does not adequately demonstrate that the council has a plan to provide the remaining infrastructure within a reasonable timeframe. With more than half of the expected development in the RURA already approved, the council has delivered a much lower proportion of the servicing infrastructure (around 10%) and has not indicated when it will deliver the remaining facilities to meet the demand.

By way of example, in the original CP 2004 the timeframe for delivery of the Wolli Creek Town Park was scheduled to be "in 2005-06".[142] In the 2010 revision of this plan the time frame was 'in the short term'. [143] RCP 2016 indicates that the

[140] Based on phone advice from Bayside Council, 9 November 2016.
[141] Some of these works have also been delivered as works-in-kind by developers.
[142] CP 2004, 1 June 2004, p 74.
[143] CP 2004, 4 November 2010, p 83.

timeframe is 'when land becomes available'.[144] BC has advised that, in accordance with its long term practice to not compulsorily acquire private land, the purchase of the privately-owned site for this park will occur "when the owner decides it is suitable to sell".[145]

For infrastructure requiring land acquisition, the council has identified that work will occur "when land becomes available", rather than taking a proactive approach to land acquisitions. We understand that the provision of transport infrastructure, and to a lesser extent some stormwater infrastructure, optimally occurs in conjunction with development. As such, the timing is outside the council's control as it will depend on when specific sites are developed. However, the council should still establish a program and timetable for delivering the associated infrastructure that it can apply once it is clear that a development is likely to occur.

The delay in delivering open space in the RURA has been raised as a concern by RURA residents. During public consultation on the draft RCP, RCC received written submissions from two RURA residents setting out in detail their concerns. During our assessment, the council also advised us of a community group which has been active in lobbying for open space facilities to be provided,[146] in light of the fact that:

- Since the commencement of redevelopment, no completed embellished open space or community facility has been provided in the RURA to meet the demands of this increased population.
- In addition to delays in acquiring some properties for open space and the community facility, to date, the council has not commenced the embellishment of existing open space in the RURA, including Cahill Park and large sections of Thompson Street Reserve.

For these reasons, we recommend that BC prioritise infrastructure delivery across the proposed remaining development life, in tranches of three years if necessary, and set this out in an indicative timetable in the plan. The timetable should be based on assumptions about the likely timing of land acquisitions and development. As part of this process, we recommend that the council place a high priority on providing open space facilities, and acquiring floor space for the multi-purpose community centre, to meet the needs of the residents and workers already awaiting these facilities in the short term.

Such an approach would demonstrate a commitment by the council to provide the facilities for the community for which it has collected contributions and would inform developers' decisions about potential investment.

In responding to a draft of our assessment report, BC noted that it prefers to use thresholds for the delivery of infrastructure rather than an indicative timetable. However, officers advised that the plan can use a time-based delivery schedule

144 RCP, Appendix A, Infrastructure Schedule, item WC2.6.2.
145 Email from Bayside Council, 31 October 2016.
146 As advised by Bayside Council during site visit on 29 August 2016.

where possible upon review of individual work items.[147] We consider that a timetable for delivery of infrastructure could still be desirable to help ensure that contributions reflect actual costs.

In order for the council to commit to the timely provision of infrastructure, it would need to address one of the main reasons for the delays in providing infrastructure to date associated with its approach to the acquisition of land, which is discussed below.

6.2 Land acquisition barriers to infrastructure delivery

IPART finding

31 There are barriers to the timely provision of infrastructure in RCP 2016. These include:

- the former Rockdale City Council's policy not to compulsorily acquire privately-owned land
- the delay in securing a site within a new non-residential development for the community centre, and
- delays in acquiring publicly-owned land.

Recommendations

29 Bayside Council review the policy of no compulsory acquisition of privately-owned land for infrastructure in the RURA, and adopt a proactive approach to land acquisition.

30 Bayside Council seek to secure a suitable site for the community centre.

31 For the publicly-owned land where considerable delay has occurred in negotiating the transfer, Bayside Council approach:

- the Land and Housing Corporation, Department of Family and Community Services to progress the purchase, and
- should the matter not be satisfactorily resolved within six months, the Minister for Social Housing to assist with finalising the purchase.

RCP 2016 requires land to be acquired for transport works, and for several parks and recreation facilities. The council has also identified the need to secure floor space in a yet-to-be-determined mixed use development where it will locate the multi-purpose community centre.[148]

A major impediment to delivery of local infrastructure in RCP 2016, open space in particular, is that the council has not acquired the necessary land from the current private or public owners. This has contributed to residents' concerns noted in section 6.1 about the council's delay in providing recreational facilities.

[147] Email from Bayside Council, 5 December 2016.
[148] RCP 2016, p 22.

We recommend that BC review the approach taken by the former RCC to acquiring land so that there is no undue delay in providing open space facilities for RURA residents.

We also recommend that BC seek to secure a suitable site for the community centre, to ensure that this infrastructure can be delivered for the community.

6.2.1 Acquiring privately held land

The land for transport works and some open space, and floor space for the community centre will be acquired from private owners.

It is reasonable that the council acquire land for road widening and the new link road when adjacent development occurs and the relevant works are to be delivered. Transfer of the land is typically by dedication as a condition of development consent.

Different considerations apply to the land for parks and other open space, and a site for the community centre. The council's approach to acquiring the land required for the infrastructure in the plan is that there should be no compulsory acquisition. Instead, the council will deliver the infrastructure when "land becomes available", ie when the owner decides that it is a suitable time to sell. This compromises the council's capacity to deliver the required infrastructure in a reasonable timeframe.

Further, property values in the RURA have increased significantly since the commencement of redevelopment in 2004, and consistent with increases across Sydney,[149] the cost of land acquisition in RCP 2016 has also increased over time.

Once land has been rezoned for a public purpose, there should be no practical impediment to BC seeking to acquire the land by agreement or compulsory acquisition, in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (Just Terms Act).

To date, there have been preliminary negotiations with the owners of the site for the Wolli Creek Town Park, and so we understand that the council is not yet in a position to use the provisions of the Just Terms Act. The council indicated that its progress on location and construction of the community centre is awaiting IPART's review of RCP 2016.

To overcome this significant barrier to infrastructure provision in the RURA, at a minimum, we recommend that BC should review the policy of no compulsory acquisition, and adopt a proactive approach to land acquisition. This would allow the council to have greater control over providing the infrastructure necessary to meet the demands and expectations of the residents and workers in the RURA.

[149] The Established House Price Index – Sydney increased by 36% from March 2004 to the end of the September quarter 2016.

BC has advised that the Bayside community would be "severely financially disadvantaged" if council were to incur the compensatory costs associated with compulsory acquisition. It argues that only a portion of the costs to deliver the Wolli Creek Town Park can be raised from remaining development in the RURA. This will be exacerbated by the additional costs of compulsory acquisition that would end up being be borne by the Bayside community.[150]

We acknowledge that, with 63% of residential development in the RURA already approved or constructed,[151] the costs of delivering the Wolli Creek Town Park cannot be fully recovered from remaining development, and that this situation may be exacerbated by utilising the Just Terms Act. However, RCP 2016 should include the reasonable costs of providing the infrastructure upon which contributions will be recovered from remaining development. BC must ensure it can deliver the proposed infrastructure within a reasonable timeframe. If it is unable to deliver the proposed infrastructure, it should review the plan accordingly.

Regarding the site for the community centre, the BC should also seek to secure a site in a suitable location in order to ensure that this facility can be delivered, as proposed in RCP 2016.

6.2.2 Acquiring publicly held land

Acquisition of land currently owned by a state agency or state-owned corporation is more problematic. There has been a long delay in acquiring at least one parcel of land, owned by the former Department of Housing. Our recommendation is intended to expedite the process in this specific situation, and to suggest a course of action should there be continued delays regarding the acquisition of publicly held lands in the future.

Three sites on which parks are to be located are publicly owned.[152]

- The site owned by the former Department of Housing, now zoned for a local park, has been the subject of discussions and negotiation since at least 2002. This site would form part of Thompson St Reserve. Although the council resolved in 2007 to purchase it based on the presumption that a price had been agreed, the sale has not concluded. The agency has advised that it is willing to pursue the sale should the council reactivate negotiations, and propose the price and conditions for purchase.

150 Email from Bayside Council, 5 December 2016.

151 See Table 2.2 in Chapter 2.

152 The Department of Housing (now Family & Community Services, Land & Housing Corporation) is the owner of 56 Walker St, Turrella, the Water Resources Commission owns 4-6 Guess Ave, Wolli Creek and Sydney Trains owns 25 Lusty St, Wolli Creek.

- Property NSW and the RCC have been discussing the sale of the Water Resources Commission site, also rezoned, for about two years. This site would form part of the Wolli Creek Town Park. Progress was hampered first by a delay in deeming the land surplus to agency requirements, and now by resolving the impact of contamination on its value. It appears that the purchase could be concluded in the near future.
- The council indicated it was willing to discuss a potential purchase should Sydney Trains initiate discussions about its site, which has not yet been rezoned.[153] This site would also form part of Thompson St Reserve.

We have considered the options available to councils to assist in expediting such transfers, but recognise that councils and agencies have different interests. When a council seeks to purchase state-owned property, it must negotiate a sale with the agency. Agencies must observe due diligence when disposing of assets, including being mandated to achieve the highest value. They need to comply with Premier's Memorandum M2012-20 which sets out principles for property management, and NSW Treasury's *Total Asset Management Guideline: Asset Disposal and Strategic Planning* (TAM06-4, June 2006).

A council has limited authority when it seeks to acquire land from a NSW government agency. While the *Land Acquisition (Just Terms Compensation) Act 1991* provides for councils to compulsorily acquire land owned by the Crown, councils do not have a delegation to initiate such action. It can only proceed with the approval of the Minister for Local Government, who requires consent from the State agency with control of the Crown land.[154] This means that, in practice, councils must agree with the State agency as to the acquisition and the compensation payable.

Negotiations for the land for open space owned by the Department of Housing at the Thompson St Reserve had first occurred in 2002, and the council resolved to purchase it in 2007, nine years ago. Therefore, the time it has taken BC to acquire this land has been protracted. For the other two parcels of land, the delays have not been unreasonable in the circumstances. In the case of the Water Resources Commission site, we understand that the council may be able to acquire the land very soon, and for the Sydney Trains land, it is not yet rezoned.

Where there are delays in negotiations regarding the rezoned parcels of public land for open space, the implication is that the RURA community is not provided the recreation facilities as intended in RCP 2016.

Assuming that the need for the open space is retained in the plan, the process would be expedited by both the agencies and the council being diligent in pursuing the required processes, within the boundaries of the applicable policies outlined above.

---

153 Response from Bayside Council, 31 October 2016.

154 Department of Local Government, *Guidelines for the Compulsory Acquisition of Land by Councils*, June 2006, 1.21 and 3.8.1.

In the case of the Department of Housing site at 56 Walker St, Turrella, which has already been the subject of extended delays, we recommend that Bayside Council approach the Department of Family and Community Services (FACS), Land and Housing Corporation to progress the acquisition. If a satisfactory result is not achieved within a reasonable time period, say six months, then we consider that BC should make representations to the Minister for Social Housing, as the relevant portfolio Minister, seeking his assistance in concluding the transaction. This approach is consistent with advice we received from FACS about the council's best course of action to expedite the process.[155]

[155] Department of Family and Community Services, Advice to IPART, 21 November 2016.

7 Assessment of RCP 2016 – consultation and other matters

7.1 Criterion 6: Consultation

IPART finding

32 Rockdale City Council conducted appropriate community liaison and publicity when preparing RCP 2016.

IPART must assess whether the council has conducted appropriate community liaison and publicity in preparing the contributions plan.

IPART's assessment of Rockdale City Council's consultation

Overall, we found that RCC's consultation on the proposed contributions plan for the RURA was reasonable, and complied with clause 28 of the *Environmental Planning and Assessment Regulation 2000*.

RCC publicly exhibited a draft of the *Rockdale Contributions Plan 2016 – Urban Renewal Area* from 10 December 2015 to 19 February 2016.[156] The exhibition process included:

- public notices in the local press
- Have Your Say, including FAQ, on the council website
- hard copies at the council offices and Arncliffe public library, and
- an information kiosk for developers and the community.

The council also made available reference documents supporting the plan, including the technical studies and cost estimates used for the plan, the 2004 Rockdale contributions plan and IPART's Local Infrastructure Benchmark Costs Report, for information. This was intended to improve transparency in the consultation process.

Approximately 200 development industry representatives were invited to the information kiosk, which was also publicised through the website and community networks with the assistance of the Wolli Creek Forum.

[156] A full report on the consultation process is in RCC, Business Paper, Meeting of 16 March 2016.

The council reported that no comments were made that "require consideration or alteration of the draft plan" by either the development industry attendee, or the two community members who attended the information kiosk.

Two written submissions were received on the existing contributions plan.[157] The concerns focused on the council's delay in delivering open space and community infrastructure in the 2004 Rockdale contributions plan, for which contributions had been collected. Specifically, the issues were:

- the council's record on delivery of infrastructure in accordance with the 2004 plan, notably provision of open space and the Wolli Creek Town Park, and
- the need for the council to actively plan in order to secure a location for the proposed community facility.

After consideration of these submissions, the council did not amend the draft contributions plan.

In general, these steps demonstrate that the council did undertake adequate consultation on RCP 2016. However, we note that the community views echo IPART's assessment of the council's approach to timing of delivery of the proposed infrastructure, which was discussed in relation to criterion 4 in Chapter 6.

7.2 Criterion 7: Other matters and compliance with the EP&A Regulation

IPART finding

33 RCP 2016 complies with most of the information requirements in the *Environmental Planning and Assessment Act 1979* and the *Development Contributions Practice Notes (2005)*, however the provision of information in the plan could be improved to fully comply with the *Environmental Planning and Assessment Regulation 2000.*

[157] BC advised that the reference in the Business paper to three submissions was incorrect: BC, Email to IPART, 23 September 2016.

Recommendation

32 Bayside Council revise RCP 2016 to present its contents in a way that more fully complies with the requirements of the *Environmental Planning and Assessment Regulation 2000*, particularly in relation to:

- clearly labelling and illustrating in maps the location and extent of all of infrastructure items, particularly stormwater, but also open space and transport
- more systematically demonstrating nexus for the proposed infrastructure, based on all relevant technical studies and related information, and
- updating the work schedule with more detail about proposed infrastructure components and costs, and more specific estimates of the staging of delivery.

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

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

We found that the information provided in RCP 2016 complies with most of the information requirements of the Regulation (see Appendix B), and in general, we found that RCP 2016 is set out in a manner that is consistent with the guidelines in the 2005 Practice Notes.

When preparing RCP 2016 as a stand-alone contributions plan for the Wolli Creek and Bonar Street precincts in the RURA, the council adopted a different format from that of CP 2004 applying to the whole of the Rockdale LGA. Information is presented in a more streamlined way, and the structure and formatting was designed to provide more clarity and improved accessibility.

Overall, RCP 2016 contains less detail about matters such as an implementation strategy, establishing nexus and underlying principles. For the specific items of proposed infrastructure, RCP 2016 presents information in more generalised terms. It does not include information such a mapped locations linked to work schedules which prioritise and indicate timing of delivery of each item, as was included in CP 2004.

While the revised format does not mean the plan breaches the requirements of the EP&A Regulation, the changes have been, to some degree, at the expense of transparency for stakeholders. We recommend that RCP 2016 be revised to remedy this.

Mapping is one area which should be improved. The maps for stormwater infrastructure identify one work item (BS 1.4.1 – Bonar St to SWSOOS trunk improvements) and the location of gross pollutant traps and no other stormwater works. CP 2004 provides further information about the location of some other stormwater infrastructure, but not the complete list for the RURA.[158] We also note that the various maps in RCP 2016 show different precinct boundaries.[159] BC should review and update the mapping in RCP 2016 to ensure:

- precinct boundaries are correctly identified, and
- the locations of infrastructure items for each category of works are identified.

Further, RCP 2016 could better explain the relationship between expected development and demand for facilities, which is required by clause 27(1)(c) of the EP&A Regulation. It also does not reference all the technical studies on which RCC relied to determine the necessary infrastructure. As noted in section 4.3 in relation to stormwater infrastructure, and section 5.3 in relation to open space, we recommend that Bayside Council undertake further studies or needs analysis to establish the nexus between proposed infrastructure and the expected development in the RURA. When complete, these studies should be referenced in RCP 2016 and the relationship between their findings and the proposed infrastructure explained.

RCP 2016's work schedule is a high-level list of works, providing limited information for each item about the scope of work and staging of delivery. No information is provided in the work schedule about the components of each item, the date of completion (where relevant), or how the costs have been calculated, or to any documents which contain this detail.

Our transport and stormwater consultants have identified various issues relating to the lack of clarity about the scope of infrastructure items and completion dates.[160] This information is important to provide transparency for stakeholders and for the purposes of our assessment.

158 See JWP Report, p 12.

159 For example, Figures 1 and 2 (RCP 2016, pp 4 and 8) show different boundaries for the Wolli Creek precinct.

160 See for example, ARRB Report, October 2016 pp 12 and 25 and JWP Report, p 21.

Appendices

A Terms of Reference

Premier of New South Wales

RECEIVED
6 OCT 2010

30 SEP 2010

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

Dear Mr Sims Rod,

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.

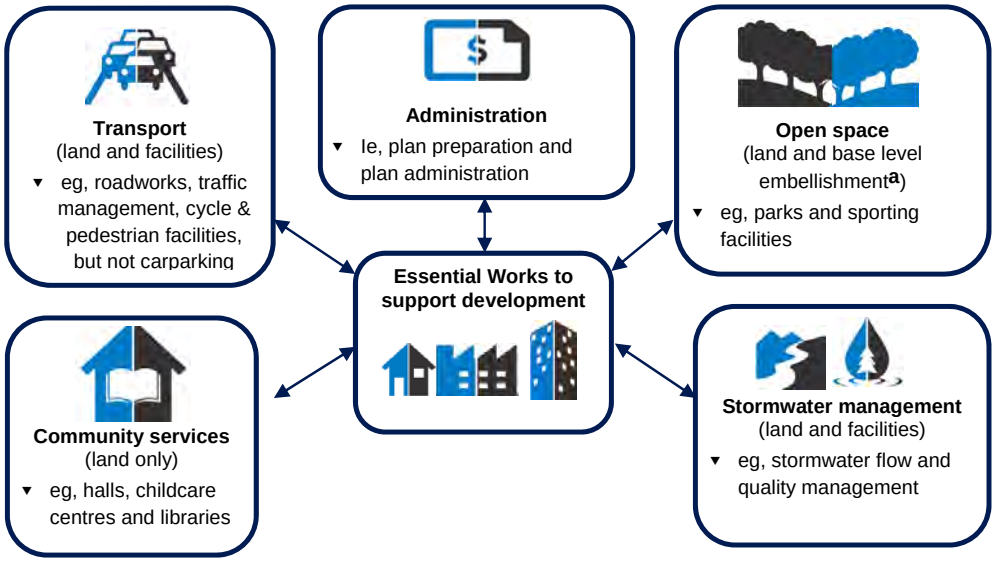
If your officers wish to discuss this matter, they should contact Mr Tim Hurst, Executive Director, Infrastructure, Environment and Economic Development Policy, Department of Premier and Cabinet on (02) 9228 5493.

Yours sincerely

Kristina Keneally MP
Premier

B Infrastructure items on the Essential Works List

Box B.1 Infrastructure items on the Essential Works List



The Essentials Works List **does not include** buildings for community services. It also **does not include** land and works for environmental purposes eg, bushland regeneration or riparian corridors, **unless** it serves a dual purpose with one of the categories on the Essential Work List.

a Base level embellishment are defined as works required to bring open space up to a level where it is secure and suitable for passive or active recreation (eg, site regrading, utilities servicing, basic landscaping, drainage and irrigation, basic park structures, lighting and outdoor courts).

Source: Department of Planning & Environment, *Revised Local Development Contributions Practice Note- For the Assessment of Local Contributions Plans by IPART*, February 2014, pp 8-9.

C Assessment of RCP against the information requirements in Clause 27 of the EP&A Regulation

Table C.1 Assessment of RCP against the information requirements in Clause 27 of the EP&A Regulation

Subclause		Location in CP
1(a)	Purpose of the plan.	Section 2.3
1(b)	Land to which the plan applies.	Section 2.4
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.	Section 3.1
1(d)	The formulas to be used for determining the section 94 contributions required for different categories of public amenities and services.	Section 3.2
1(e)	The section 94 contribution rates for different types of development, as specified in a schedule in the plan.	Section 2.7 Table 2
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 5.1 & 5.2
1(h)	A map showing the specific public amenities and services proposed to be provided by the council, supported by a work schedule that contains an estimate of their cost and staging (whether by reference to dates or thresholds).	Appendix A & Appendix B
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 work schedule.	Section 6.4
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.	Sections 4.7.1 & 5.1
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 *Local Government Act 1993*.	N/A
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.	N/A

D Review of transport items in RCP 2016, ARRB Group Ltd

CONTRACT REPORT

Review of Transport Items in the Rockdale Contributions Plan 2016 – Urban Renewal Area

Project No: PRS-16-192

by Dr Auttapone Karndacharuk

for Independent Pricing and Regulatory Tribunal

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- Systems

TC-423-1-3-2

Review of Transport Items in the Rockdale Contributions Plan 2016 – Urban Renewal Area

IPART Reference: 16/27

for Independent Pricing and Regulatory Tribunal

	Reviewed
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PRS-16-192-2
November 2016

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REVIEW OF TRANSPORT ITEMS IN THE ROCKDALE CONTRIBUTIONS PLAN 2016 – URBAN RENEWAL AREA

SUMMARY

ARRB Group (ARRB) has been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to review transport items in the Rockdale Section 94 development contributions plan (the Plan) submitted by Rockdale City Council (RCC).

The review scope involved the three assessment criteria of the nexus, reasonable costs and apportionment in accordance with the revised local development contributions practice note (the Practice Note) from the NSW Department of Planning and Infrastructure. The report also covered the review of essential works for transport as it affects the nexus, cost and apportionment consideration.

The essential works review against the Practice Note's definition in Section 2.1 resulted in a recommendation to remove the undergrounding transport items from the Plan and to include streetscape improvements only if the works contribute to the transport movement function for road users.

The consideration of nexus (Section 2.2) was to ensure there is a clear and logical relationship between the infrastructure included in the Plan and the increased demand for transport facilities from the proposed land use development. The majority of the transport items and associated facilities can be supported, with outstanding nexus matters documented in Section 2.3.

The review of cost and apportionment reasonableness (Section 3) drew upon the outcome of the nexus review. The main review issues involved evidence of scope, cost and status of transport items at various implementation stages (from 'Not started' to 'In progress' and 'Completed'). The outstanding matters regarding the cost reasonableness are listed in Table 3.2. Cost implication of each transport item and potential cost savings from the nexus and reasonable cost review is outlined in Section 4 with the review finding and recommendations presented in Table 5.1.

This final version of the review report has been revised to incorporate the Council responses to the ARRB interim findings and comments documented in a draft review report, dated 30 September 2016. The Council response is included in Appendix A.

CONTENTS

TABLES

FIGURES

1 INTRODUCTION

ARRB Group (ARRB) was commissioned by the Independent Pricing and Regulatory Tribunal (IPART) to review transport items in the draft Rockdale Contributions Plan (the Plan) (Rockdale City Council 2016) for the Urban Renewal Area (the Area) against the assessment criteria of the revised local development contributions practice note (Practice Note) from the NSW Department of Planning and Infrastructure (2014).

The Plan proposes a maximum residential contribution of $39 698 per dwelling, which exceeds the $20 000 contribution cap for established areas as specified in the Section 94E Ministerial Direction. The Plan is to be valid for approximately 15 years from mid-2015, subject to the timing of development activity.

It is acknowledged that Rockdale City Council (RCC) has been amalgamated since 9 September 2016 with the City of Botany Bay to form the new local government area of Bayside. This report, nevertheless, continues referring to the Rockdale City Council for ease of reference.

1.1 Study Objective and Scope

In accordance with the project terms of reference, the aim of the review is to determine whether:

1. The proposed transport facilities are reasonable in terms of nexus.
2. The estimated costs of the proposed transport facilities are reasonable, and if the costs are not reasonable, recommend the alternative costs.
3. The cost of the proposed transport facilities are apportioned reasonably to the needs of the additional population in the Area.

The above objectives match Criteria 2, 3 and 5 listed in the Practice Note, respectively, for the assessment of the local contributions plan. Although the project brief does not specifically require an assessment of whether the proposed facilities are deemed essential works for transport as defined in the Practice Note, the essential works status of the proposed transport items in the Plan will be assessed as it affects the nexus, cost and apportionment consideration.

1.1.1 Primary Review Documentation

The following technical documents have been reviewed:

- Infrastructure cost estimate – part C (Evans & Peck 2014)
- Infrastructure cost estimate – part A and part B (Rockdale City Council 2014)
- Wolli Creek and Bonar Street Precinct traffic study (Bitzios 2013)
- Extension of the Cooks River cycleway extension: feasibility study (GTA Consultants 2012)
- Cooks River pedestrian and cycle path improvement study: pathway development strategy (Cooks River Foreshores Working Group 2006)
- North Arncliffe development area traffic and car parking study (Masson Wilson Twiney 1998)

The main independent technical transport document is the 2013 Bitzios traffic report that provides a basis for assessing the nexus of the transport items in the Plan. The infrastructure costing information (including schedule of works, base rates and contingencies) initially received was incomplete with the cost estimate of a few transport items and land values missing. ARRB sought clarification on 12 September 2016 for further information. On 23 September 2016 the responses

from the Council, included in Appendix B, were reviewed, and subsequently incorporated into the final version of this report.

1.1.2 Supplementary Council Documentation

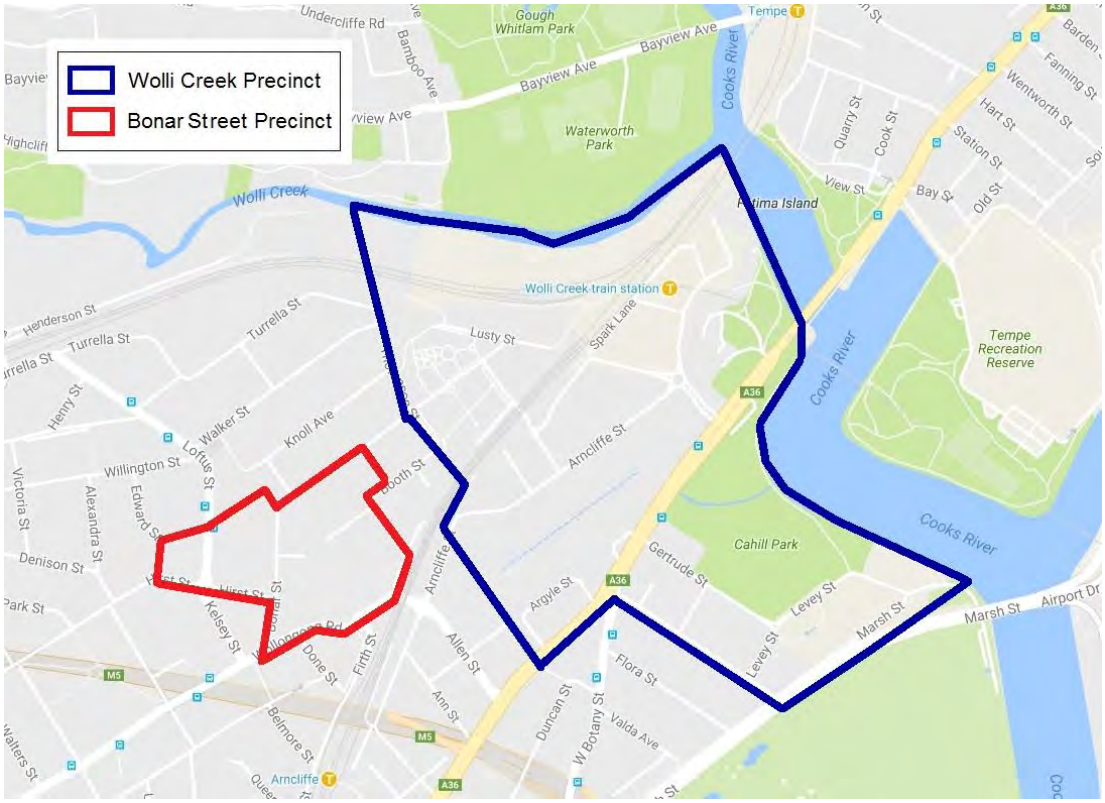
The following RCC documents have also been reviewed as part of the assessment process.

- On the go! Your comprehensive guide + map for cycling, walking & public transport in the city of Rockdale (Rockdale City Council 2013)
- Rockdale development control plan (Rockdale City Council 2011a)
- Rockdale local environmental plan (Rockdale City Council 2011b)
- Rockdale technical specification, traffic parking and access (Rockdale City Council 2011c)
- Wolli Creek and Bonar Street public domain plan (Rockdale City Council 2011d)
- Wolli Creek and Bonar Street public domain technical manual (Rockdale City Council 2011e)
- Rockdale section 94 contributions plan 2004, incorporating amendments 1–5 (Rockdale City Council 2010).

1.1.3 Review Scope

In accordance with the Plan and the application for assessment of the Plan submitted to IPART, the Area, consisting of Wolli Creek and Bonar Street precincts, can be illustrated in Figure 1.1.

Figure 1.1: Urban renewal area covered in the Plan



Source: Nearmap 2016 (modified by the author)

The two precinct areas are not contiguous, but are subject to a common vision of being transformed to a high-quality, high-density environment as reflected in the Council plans and guidelines (Rockdale City Council 2011d, 2011e).

1.2 Methodology

The method for the transport-related review of the Plan involves two analysis steps. The first step is the assessment of the proposed transport facilities with respect to the review objectives (i.e. nexus, costs and apportionment) and the essential works list consideration using the descriptions and questions in the Practice Note, and its appendices in particular. The second step involves reviewing each transport item in detail at the nexus analysis stage and, subsequently, an assessment of outstanding items in the cost and apportionment considerations. The reasonableness of any scope and cost deviations from the recommendation of the supporting technical studies is assessed based on available sources and engineering judgement.

Transport items that do not necessarily meet the assessment criteria or divert from the recommendations in the technical studies are specially evaluated in order to determine the cost impact from any recommended adjustment to the infrastructure provisions in the Plan. The evaluation process, adopted by ARRB, adheres to the following principles:

- Timing: A recommendation from a more recent study has priority over an older one. This applies when multiple transport studies are undertaken for the same or overlapping development areas.
- Level of detail: More detailed design and assessment supersedes a strategic investigation. For example, the detailed investigation of the pedestrian and cycle facilities in the Bitzios (2013) study has more weight than a generic requirement in the RCC (2011d) public domain plan.
- Relevance: Output from an assessment specific to the Plan usually precedes generic information or industry standards. Nonetheless, the two factors above (i.e. timing and level of detail of the study) also play a key role in determining the relevance of the information being reviewed.

A site visit was undertaken on 9 September 2016 in good weather conditions to observe the progress of transport infrastructure improvements in the Area and the proposed extent of the improvement works, especially those located on the precinct boundary.

1.3 Structure of the Report

The organisation of this report follows the review sequence as per the objectives:

- Section 2 presents an assessment of the essential works and nexus of the transport items identified in the Plan.
- Section 3 provides a reasonableness review of the cost and apportionment of the proposed transport facilities.
- Section 4 documents the cost implication analysis of the recommended adjustment to the infrastructure and costing provisions.
- Section 5 offers a conclusion of the review with findings and recommendations.

2 ESSENTIAL WORKS AND NEXUS FOR TRANSPORT

This section contains an analysis of the Plan against the essential works and nexus criteria. It is important to assess whether the proposed transport items, taken at face value, are on the essential works list (EWL) as identified in Section 3.4.2 of the Practice Note (Department of Planning and Infrastructure 2014). This is because the EWL assessment outcome could have flow-on effects to the subsequent stages of the review process, including a nexus assessment as documented in Section 2.2 and Section 2.3.

2.1 Assessment of Essential Works for Transport

The majority of the proposed transport infrastructure, listed in Appendix A of the Plan, are considered essential works as per the following definition in the Practice Note (Department of Planning and Infrastructure 2014):

> Land and facilities for transport (for example, road works, traffic management and pedestrian and cyclist facilities), but not including car parking.

A discussion is offered in the following subsections to critique the EWL nature of the transport-related items included in the Plan as they are carried out within the road corridor. The validity of improvement work for the transport items in question is also documented in Section 2.3 under the detailed review of nexus.

2.1.1 Undergrounding Overhead Powerlines

The benefit of undergrounding overhead powerlines can be considered from a road transport management perspective where the existing poles pose safety and operational hazards to the road users (e.g. non-frangible poles, poles located too close to travelling vehicles or positioned in a location that compromises an effective footpath width to an unacceptable level). However, in this instance, the transport benefit is indirect, and is derived from modifying the pole characteristics not the undergrounding itself.

As a consequence, the need to underground a utility service is primarily to improve public amenity. As described in the development control plan (DCP) (Rockdale City Council 2011a), the urban quality of the precinct can be enhanced through improved landscaping, street furniture and the undergrounding of utility services.

From the above, it can be determined that placing overhead powerlines underground on its own merits (i.e. items WC1.2.1 and BS1.3.5 in the Plan) is not essential works for transport and as such not on the EWL for assessing the contributions plan. Additionally, as advised by IPART in terms of a precedent, the cost of the undergrounding of the powerlines along the site frontage at 12–40 Bonar Street and 5 Loftus Street is payable by the developer and separate to the development contributions (Department of Planning 2010).

Yet, an exception exists when the underground installation is proposed as part of overhead powerline relocation required for widening a road carriageway in an urban road environment. This is the case for transport item WC2.3.1 where the overhead lines are located very close to the edge of the existing carriageway (and are non-frangible) and the undergrounding forms an integrated part of the road widening on Princes Highway.

2.1.2 Streetscape Improvements

Streetscape improvements contribute to road network planning and management by creating and enhancing the place function of an urban street primarily for non-motorised users. In the NSW road planning framework (Transport for NSW 2016), the role of the road space as a destination (place function) is recognised in addition to the significance of the road to move people and goods (movement function).

The two roles reflect the movement and place model that has been developed as a way to manage the challenges presented by multifunctional arterials in urban areas (Jones, Boujenko & Marshall 2007). A number of transport agencies have applied these movement and place principles to the planning and management of road networks. A guide to traffic management in activity centres (Austroads 2015) identified movement and place assessment as a contemporary practice for road use prioritisation. The concept of utilising the road space as a place for street and social activities in addition to providing movement and access functions is becoming more widely accepted, according to Karndacharuk, Wilson and Dunn (2014).

As shown in Figure 2.1, the role and character of each road varies depending on the strategic importance of its movement and place functions within the NSW road network. With higher pedestrian activity and lower levels of vehicle movement, the streets in the Area (except Princes Highway and Wollongong Road) can be classified as 'places for people' in the matrix.

Figure 2.1: Movement and place matrix for NSW road planning

Source: NSW Roads Plan (Transport for NSW 2016)

Similar to a bus or light rail stop for public transport users or an on-street parking space for a motor vehicle, street furniture and streetscape provisions enable a better-quality place for road users to dwell and interact. As such, streetscape improvements in general contribute to improved road network performance of the place function of multifunctional urban streets.

In the context of the transit-oriented development of the high-density Wolli Creek and Bonar Street precinct, a streetscape improvement will support the aim of encouraging the use of active and public transport. Such activity will improve walkability and road users' experience in accessing public transport facilities.

Nevertheless, the EWL assessment criterion, applying a strict interpretation of the definition of the essential works for transport, does not allow for other functions of a public street space. Unless the definition can be interpreted to extend beyond the movement (transport) function, streetscape improvement activities, proposed in the Plan, are in-principle considered non-essential transport works. It was suggested as an interim recommendation to IPART that the streetscape works for items WB1.1.1 and BS1.3.6 were considered under another EWL category. However, this recommendation was not supported. The extent to which the two transport items contribute to the essential transport works in the Plan is, therefore, investigated further under the detailed nexus assessment in Section 2.3.

2.1.3 Indented On-street Parking

ARRB was asked by IPART to specifically comment on the provision of indented parking in the Area against the essential transport work definition. According to the Plan, indented on-street parking is proposed only in non-arterial roads (i.e. main streets, residential streets and lane ways). In a residential road environment or a high pedestrian activity area, indented parking is more appropriate than full length kerbside parking for the following reasons:

- Indented parking formed where the trafficable carriageway is narrowed with kerb extensions is considered a horizontal traffic calming device. It contributes to the development of a lower-speed environment, and is one of the most commonly used Local Area Traffic Management devices by local government authorities in Australia and New Zealand (Austroads 2016).
- By creating a narrow section of road, the kerb extensions facilitate improved pedestrian safety and amenity and in this way supports the non-vehicle transport modes, such as walking and cycling, and the public transport modes by improving accessibility to designated stops.
- Space reallocation of the area between parking spaces (from road pavement to footpath, berm and landscaping) contributes to the plan function and urban amenity.

Works associated with the indented parking in the Plan are therefore deemed essential for transport from a traffic management perspective. It is considered unlikely that the local road network in the Area will require the removal of the indented parking spaces over the long-term for additional vehicle lanes, primarily due to the built environment and the increased mode shift to public and active transport, as per the Council's forecast and targets.

2.1.4 Upgrade of Low-volume Local Streets and Classified Roads

The approach in determining development contributions of upgrading low-volume, local streets that cater for a limited catchment and classified roads that have a network significance differs from what applied to normal Council controlled local roads. This is because the upgrade of low-volume

local roads that will continue to perform a limited road function in the future (e.g. a cul-de-sac), is typically funded by individual developers as part of the redevelopment of adjacent sites (on the site frontage to the centre of the road reserve). Upgrade works to part of Lusty Street (WC1.2.1 in the Plan) can be considered a 'low-volume, local street' in this context.

In the case of classified roads, improvements made to the Princes Highway (state road) may attract financial assistance from Roads and Maritime Services (RMS). Partial funding is provided for maintenance but capital works funding depends on applications commonly based around road safety and capacity. Consideration to discount the contribution rate may be appropriate if funding from state government is made available.

The Council response in September 2016 to the further information request relating to the classified roads (refer to Appendix B) indicates that 'RMS will not take financial responsibility in this area, and will always require Council through the s94 or developer to directly fund and construct these works'. If this is the case, the observation about the reduced contribution rate mentioned above will not be applicable to the transport items of Princes Highway and Wollongong Road.

Evidence of the RMS position is required to confirm this.

2.2 Main Nexus Assessment against IPART Practice Note

The nexus between the redevelopment in the Area and the proposed transport items in the Plan has been established through the Council's rezoning process from a predominantly industrial precinct into a high-quality, high-density urban environment. A number of publicly available Council documents verify and substantiate this connection between the increased demand for transport facilities generated by anticipated development and the essential infrastructure works. These include the 2004 development contributions plan (Rockdale City Council 2010), development control plan (Rockdale City Council 2011a), local environmental plan (Rockdale City Council 2011b), public domain plan (Rockdale City Council 2011d) and technical manual (Rockdale City Council 2011e). None of independent technical studies in support of the upgrade requirements have been supplied and reviewed as part of this project as this is not within its scope. Consequently, the extent of the need for the transport recommendations (as identified in the Council documents) is largely taken at face value and, where it is considered unreasonable based on the methodology discussed in Section 1.2 in the context of the Plan, an alternative for a corresponding transport item is suggested in a detailed assessment in Section 2.3.

The traffic study, undertaken subsequently by Bitzios (2013), provides a technical analysis of the existing road and transport network against the land use planning strategy in order to identify transport infrastructure improvements in the Wolli Creek and Bonar Street precincts. Walking, cycling and public transport form an integral part of the nexus considerations for the Area. The report identifies a number of implementation recommendations both within and outside of the study area. It is, nonetheless, important to note that the extent of the traffic simulation models in the study excludes both the area east of Princes Highway as well as the new local road links in the block bounded by Arncliffe Street to the north and west and Princes Highway to the east in the Wolli Creek precinct. A detailed description of nexus discussion relevant to the proposed transport items in the Plan is presented in Section 2.3.

Given that the overarching need and nexus for transport infrastructure to cater for population and traffic growth in the Area have been established through the supporting documents mentioned above, the focus of this nexus review is therefore:

1. to identify any scope deviation in infrastructure provision from the recommendations in the supporting technical and council documents.
2. to determine whether the deviation is reasonable in terms of its benefit to a wider network (rather than only to adjoining land uses) and whether such activity should be funded via the proposed s94 contributions.

As set out in Section 1.2, the first step of the nexus review is to consider the information provided in the Plan against the assessment criteria and guidance in the Practice Note (Department of Planning and Infrastructure 2014).

Table 2.1 presents the outcome of the main assessment with ARRB review comments.

Table 2.1: Assessment of nexus between development and proposed transport facilities

IPART Practice Note		RCC Contributions Plan		ARRB Comment
Item	**Consideration**	**ARRB Review**	**Ref.**	
N1	What are the types of transport facilities for which the proposed development will create demand?	Existing road and intersection upgrade and new road construction, including road and footpath widening, on-street parking, traffic signs, pavement marking, road drainage and street lights.	pp. 12–16, 28	Besides non-essential works issues discussed in Section 2.1, the types of the proposed transport facilities are appropriate.
N2	On what basis have the estimate of demand for the transport facilities been established? Is there a needs assessment?	The transport demand and needs for transport facilities are established based primarily on the rezoning process, the outputs of which are the Council documents identified in Section 1.1.2. The needs of certain transport facilities are further substantiated in the Bitzios (2013) traffic study.	pp. 12–13	Review of the technical studies in support of the Council's rezoning process is not within the scope of this study. The needs and extent of many key facilities such as new road links and existing road widening are taken at face value as they are evident in the Council's planning and design guiding documents (e.g. 2011 DCP and Public Domain Plan.
N3	Has the Council assessed the implications of the expected types of development catered for by the Plan based on the demographic structure of the development area?	Yes, anticipated mix of employment and residential development and assumptions have been assessed based on the 2011 census and Council database.	pp. 9–12	Satisfactory.
N4	Is there a clear and acceptable methodology for estimating population change arising from the expected types of development?	Yes, there is a clear and acceptable methodology for estimating future characteristics of the population change (of both residents and workers) in the Area.	pp. 9–12	Satisfactory.
N5	Is the information on demand both reliable and up-to-date?	Yes, population (and traffic) growth generates demand for the transport facilities. The demand information is up-to-date.	pp. 12–13	Satisfactory.

IPART Practice Note		RCC Contributions Plan		ARRB Comment
Item	Consideration	ARRB Review	Ref.	
N6	Can the new demand be accommodated, in whole or in part, within existing public amenities and public services?	The existing (before the early 2000s) transport network was developed in most part to cater for industrial land use. The urbanisation of the area necessitates an extensive upgrade of the primary movement network in the area.	pp. 1–9	The existing transport network can cater for some of the new demand, but with lower (and presumably unacceptable) levels of service and potential adverse road safety performance. From the network safety and operational perspective, the proposed upgrade in general is required to address the new demand, especially for increased pedestrian activities.
N7	Are the transport facilities appropriately located for the expected types of development in the area to which the plan applies?	Yes, except for some road widening activities on Princes Highway in item W2.3.1, which are outside of the Area and not identified in the Bitzios technical report.	Appendix A of the Plan.	The proposed transport facilities are generally consistent with the supporting documents. Refer to Section 2.3 for a detailed assessment of each transport item.
N8	If the expected development did not occur, would the transport facilities still be required?	The increased demand for transport facilities, particularly for pedestrians and cyclists, is created by the expected development.	pp. 7–12	Without the anticipated development, the transport facilities to the proposed standards (e.g. wider footpath, bus stop and intersection upgrade) will not be required.

2.3 Detailed Nexus Assessment of Transport Items

A detailed nexus assessment involves evaluating each transport item in Appendix A of the Plan against the supporting documents listed in Section 1.1. The itemisation of transport facilities is in accordance with the Plan, with additional reference to the 2004 contributions plan (CP) and the 2011 DCP. The transport items under review, both land and works, are reorganised based on their location in the two precinct areas – Wolli Creek and Bonar Street.

The assessment outcome is presented in Table 2.2 with outstanding items recapped as follows:

2.3.1 Wolli Creek Precinct

- WB1.1.1 (Entire precinct)
  - Many sub items under this streetscape improvement item are deemed necessary for the transport movement function for the Area.
  - Improvement works outside the Area on Bonar and Booth Streets and planted verge are not considered to be essential and they should be excluded from the Plan.
- WC1.2.1 (Bonar and Lusty Street)
  - The undergrounding of overhead powerlines is considered non-essential transport works and as such should be excluded from the Plan.
- WC1.4.1 (Lusty Street)

- The nexus for upgrading the eastern section of Lusty Street is not supported as the section, servicing a limited number of developments, will continue operating as a cul-de-sac during the time period covered by the Plan.

- WC1.4.2 (Bonar Street/Guess Avenue)
  - Given the existing T-intersection without any driveway nearby, creating a four-leg roundabout, as suggested in the cost estimate information, is unreasonable and as such its nexus is not supported. An upgrade of splitter islands as per the technical study (Bitzios 2013) is recommended.
- WC2.3.1 (Princes Highway)
  - Even though the nexus of the road upgrade work on the western side of Princess Highway can generally be supported, there are cost and apportionment issues due to the scope of works.
  - The costing information allows for an 880 m upgrade, which is the distance between Brodie Spark Drive and Burrows Street whereas a confirmation from RCC (see Appendix B) reveals that this transport item is primarily for a road widening from Brodie Spark Drive to Argyle Street, approximately 515 m in length.
  - The inclusion of the underground powerlines as an integrated part of the required road widening is considered acceptable in this location.
- WC2.4.3 (Arncliffe Street/Gertrude Street extension)
  - Albeit a scope inconsistency in the review documents, the nexus of a new intersection installation is verified. There is, nonetheless, a costing issue with the IPART benchmark rate used to upgrade this T intersection.
- WC3.3.6 (New road link between Levey Street and Marsh Street)
  - The resale of the residual land should incur a credit to the Plan or otherwise a nil consideration.
- WC4.5.2 (Princes Highway/West Botany Street/Argyle Street)
  - While the nexus of the intersection improvements can be verified, the full cost for a full signalised intersection upgrade, claimed in the Plan, is not reasonable.

2.3.2 Bonar Street Precinct

- BS1.3.3 (Wollongong Road, Bonar Street)
  - Although the nexus for intersection improvements in general is supported, the IPART benchmark rate of a new four-leg signalisation used for an upgrade to the existing three-leg Wollongong Road/First Street intersection is considered to be unreasonable.
- BS1.3.5 (Bonar and Hirst Street)
  - The undergrounding of overhead powerlines is considered non-essential transport works and as such should be excluded from the Plan.
- BS1.3.6 (Entire precinct)
  - Similar to item WB1.1.1, certain sub items are deemed necessary for the transport movement function. Improvement works outside the Area and planted verge should be excluded from the Plan.

Table 2.2: Detailed nexus assessment of transport items

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
Wolli Creek							
WB1.1.1	Table 10.11	–	Not started	Wolli Creek precinct	Streetscape improvement	▪ As discussed in Section 2.1.2, it is considered that streetscape improvements for place-making are generally not on the EWL for transport. Upon a detailed investigation of the costing information, it is found that many sub items can be considered an essential transport work, including pavements, kerb & gutter, footpath, linemarking, signs, lighting and associated temporary traffic & site management and earthworks. These works are required to address the level of service issues e.g. lack of footpath, substandard footpath width and poor road asset conditions) when transforming a predominantly industrial zone to a high-density urban environment. ▪ There are, nevertheless, certain aspects and activities in the cost estimate (Evans & Peck 2014) that do not fundamentally contribute to the movement function in the Area and should be excluded from the Plan. These include: – Improvement works outside the Area and between precincts: western side of Thompson St (item 3.1), southern side of Innesdale Rd (item 6.1), Bonar St (item 10.1) and Booth St (item 11.1). – New Road 4 (item 9.1). As a new road, this road is not included in the Plan. Any streetscape work should be integrated into a new road construction not as a separate item. – Planted verge for works within the Area (items 2.1.9, 3.1.14, 4.1.14, 5.1.14, 6.1.14, 7.1.14, 8.1.14) ▪ The proposed extent of landscaping is considered acceptable for this transport item and is consistent with other road improvement works in the Area.	Rockdale City Council 2010
WC1.2.1	Table 10.11	–	Completed	Bonar and Lusty St	Undergrounding of 33kV overhead powerlines	▪ As discussed in Section 2.1.1, the undergrounding is not on the EWL for transport and as such this transport item should be excluded from the Plan.	Rockdale City Council 2010

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
WC1.2.2	–	–	Not started	Lusty St Reserve	Cycle connection over Southern & Western Suburbs Ocean Outfall Sewer (SWSOOS) to Thomson St	▪ The scope and location of this transport item was initially unclear. As per RCC further information in Appendix B, Council officer provided the cost estimate with no cost breakdown available. ▪ There is an existing path through the reserve between Lusty Street and Thomson Street, but the path is indirect and may not be on a desire line for cyclists. Council's response in October 2016 confirms the scope of the widening of the existing path. ▪ Its nexus is supported as there is a demand for improved street connectivity, especially for active modes in the Area.	Rockdale City Council 2010
WC1.4.1	RT9	Lusty St	In progress	Lusty St	Road improvement	▪ The original scope for this transport item in the 2004 CP (RT9) was to construct vehicle turning bays at both ends of the street (refer to Table 9.1 and Figure 9.1 in the 2004 CP). ▪ The currently proposed works as per the DCP and the cost estimate information amends the scope to include a 2 m widening of the road reserve on the northern side, including a 1.8 m wide footpath. ▪ While the nexus of the road widening can be supported for the section west of Bonar St as it forms an identified cycle route (Rockdale City Council 2010), the eastern section of Lusty St will continue to operate as a cul-de-sac (unless a rail crossing is provided). As discussed in Section 2.1.4, the upgrade of Lusty St East should be funded by individual developers.	Rockdale City Council 2010, 2011a
WC1.4.2	RT20	–	Not started	Bonar St / Guess Ave	Intersection improvement	▪ This transport item is identified in the previous 2004 CP with the detail unknown. The scope of the costing document (Part B) indicates an upgrade to a four-leg roundabout. ▪ However, the 2013 Bitzios study identifies the need for a less expensive option of splitter islands, which are to prevent vehicles cutting corners when turning. A map on p. 84 of the report misidentifies a roundabout upgrade (A10) of the Bonar St/Thompson St intersection in this location. ▪ Given a current T-intersection formation without vehicular accessway(s) existing nearby, the implementation of a four-leg roundabout is unreasonable.	Bitzios 2013, Rockdale City Council 2010

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
WC1.4.3	PC2	–	Completed	SWSOOS between Thompson and Lusty St	Underpass improvement	▪ The nexus for this transport item to provide an underpass underneath the SWSOOS section next to Thompson Street can be verified as it is in keeping with the aim to improve walking and cycling facilities in the Area. ▪ The 2004 CP (p.167) indicates the SWSOOS underpass forms an important cycling (and walking) route for the Wolli Creek redevelopment.	Rockdale City Council 2010,
WC2.3.1	RT10	Princes Hwy	Not started	Princes Hwy between Brodie Spark Dr and Burrows St	Road improvement (west side)	▪ The need (nexus) for this upgrade is identified in the 2004 CP and the 2011 DCP. The scope of works specified in the cost estimate document is as per the 2004 CP, which is extended to the south beyond the Area. ▪ There is a discrepancy in the scope of works. The CP mentions that the upgrade is between Brodie Spark Dr and Burrow St (880 m) whereas the DCP indicates the 4.5 m widening of the western side is between 47 and 123 Princes Highway (515 m), i.e. from Brodie Spark Dr to Argyle St (within the Area). ▪ The need for carriageway widening (to improve vehicle capacity) is not identified in the technical study (Bitzios 2013) and only footpath widening (and converted to a shared path) is required. Therefore, the improvement works outside the Area is not supported. This then triggers a need to consider a reasonable apportionment of costs. ▪ The cost estimate contains a sub item for 33kV powerline undergrounding, which is considered reasonable in this context as per the discussion in Section 2.1.1.	Bitzios 2013, Rockdale City Council 2010, 2011a
WC2.4.1	RT1	New road 2	Not started	Between Princes Hwy and Arncliffe St	New road construction	▪ The nexus of this transport item is supported as it extends Gertrude St to the north in order to provide an improved network connectivity. ▪ The new road link is identified in the 2004 CP and the 2011 DCP, but not in the 2013 technical Bitzios report.	Rockdale City Council 2010, 2011a
WC2.4.2	RT1A		Not started	Princes Highway / Gertrude St	Intersection improvement	▪ This transport item can be considered part of item WC2.4.1, which is to improve the existing signalised intersection. Its nexus can therefore be verified. ▪ The use of the IPART benchmark for a new installation of a signalised intersection was originally considered unreasonable because this intersection has been signalised. However, the Council points out in the October 2016 response that the intersection needs realignment and road widening and as such a new traffic system is appropriate.	

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
WC2.4.3	RT1B		Not started	Arncliffe St / new road	Intersection improvement	▪ There is a scope inconsistency in the review documents. The 2004 CP describes a new intersection of the new road with Arncliffe St whereas a diagram in the costing information indicates the upgrade at the Princes Highway signalised intersection. ▪ It is considered the former is more reasonable (or otherwise the scope would overlap with item WC2.4.2) and that its nexus is accepted. Nonetheless, there is a costing issue with the IPART benchmark rate used.	Rockdale City Council 2010, 2011a
WC2.4.4	RT5	–	Completed	Brodie Spark Dr between Magdalene Tce and Princes Hwy	Road widening	▪ As mentioned in the 2004 CP, this transport item was completed in 2003. Its nexus is supported as the demand for the works is generated by the development in the Area.	Rockdale City Council 2010
WC2.5.1	–	–	Not started	Arncliffe St, Guess Ave, Mt Olympus Blvd, Magdalene Tce	One-way traffic circulation	▪ The one-way arrangement is identified in the 2013 Bitzios study as an important measure in the preferred option. ▪ While there are methodological issues in the process of developing, testing and assessing the improvement options in the report (including problem with simulation scope discussed on page 6), the nexus is supported as the works will reallocate road space for cycle lanes, wider footpath and street furniture. ▪ It is noted that the cost estimate ($4 151 316) in the costing information differs significantly from what is identified in the Plan ($2 451 389).	Bitzios 2013
WC2.5.2	PT1	–	Not started	Wolli Creek	Public transport improvement	▪ This transport item for public transport improvements is identified in the 2004 CP. Its nexus is supported as the demand for the works is generated by the development in the Area.	Rockdale City Council 2010
WC2.5.3	RT3	–	Completed[1]	Mt Olympus Blvd	Public transport improvement	▪ As mentioned in the 2004 CP, this transport item was completed in 2008. Its nexus is supported as the demand for the works is generated by the development in the Area.	Rockdale City Council 2010, 2011a

[1] Item WC2.5.3 is considered 'Completed' as per a note in the 2004 CP despite the fact that (a) it is identified as 'In progress' in the Status column in the Plan and (b) street lighting is to be installed as indicated in the Council response to ARRB further information request in Appendix A .

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
WC2.5.4	–	–	Not started	Bonar St / Thomson St	Roundabout upgrade	▪ The upgrade of this intersection from Give Way control to roundabout is identified in the technical study (Bitzios 2013). ▪ While the existing residents outside of the Area will benefit from the upgrade, the demand for a roundabout is created by the development in the Area. Its nexus is therefore supported.	Bitzios 2013
WC2.5.6	RT17B	–	Not started	Guess Ave	Underpass improvement	▪ Pedestrian and cycleway improvements to railway underpass are identified in both the 2004 CP and the 2013 Bitzios study. The nexus of this transport item is supported.	Bitzios 2013, Rockdale City Council 2010
WC2.5.7	RT3	–	Completed[2]	Mt Olympus Blvd	Land acquisition	▪ As mentioned in the 2004 CP, this transport item was completed in 2008. Its nexus is supported as the demand for the works is generated by the development in the Area.	Rockdale City Council 2010
WC2.5.8	RT4	–	Completed	Magdalene Tce (west of Arncliffe St)	Road widening		
WC2.5.9	RT11	–	Completed	Princes Hwy / Brodie Spark Dr	Intersection improvement	▪ As mentioned in the 2004 CP, this transport item was completed in 2003. Its nexus is supported as the demand for the works is generated by the development in the Area.	
WC2.5.10	RT12	–	Completed	Brodie Spark Dr / Arncliffe St / Magdalene Tce	Intersection improvement		
WC3.3.1	RT2	New road 1	In progress	Between Levey St and Marsh St	New road construction	▪ The new road link is identified in the 2004 CP and the 2011 DCP. ▪ Its nexus between the demand for a new road connection and mixed use development is verified.	Rockdale City Council 2010, 2011a
WC3.3.2	RT2A		Not started	Marsh St / new road	Intersection improvement	▪ It is proposed to signalise this intersection. As the nexus of the main works of a new road (WC3.3.1) is supported, the nexus for this transport item can be verified.	

[2] Item WC2.5.7 is considered 'Completed' as per a note in the timeframe column even though it is identified as 'In progress' in the Status column in the Plan.

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
WC3.3.4	RT1C	Gertrude St	Not started	Gertrude St between Princes Hwy and Levey St	Road widening	▪ The transport item is identified in both the 2004 CP and the 2011 DCP. ▪ The nexus for the road widening on the northern side of Gertrude St is supported.	Rockdale City Council 2010, 2011a
WC3.3.5	RT2	New road 1	Not started	New road 1	Land acquisition	▪ The nexus of this land acquisition is supported.	
WC3.3.6			Not started		Resale of residual land	▪ The resale of the residual land should result in a credit to the development contributions budget or a nil consideration similar to item WC3.3.9.	
WC3.3.7			Completed		Land acquisition	▪ The nexus is supported, but with nil consideration, there is no impact on the assessment of the Plan.	
WC3.3.8			Completed				
WC3.3.9			Completed		Resale of residual land		
WC4.3.1	RT6	Arncliffe St	Completed	Arncliffe St between Magdalene Tce and SWSOOS	Road widening	▪ This completed transport item is identified in both the 2004 CP and the 2011 DCP and as such its nexus is supported. ▪ However, there is a discrepancy in scope between the two plans. While only certain parts of Arncliffe St require the road widening upgrade (refer Section 7.1.5 of the DCP), the works indicated in the CP cover an entire section of Arncliffe St within the Area. ▪ The completed works as per the site observations and aerial photograph seem to primarily include only the northern end of the street towards Magdalene Tce/Brodie Spark Dr. ▪ This was further complicated by the inclusion of item WC4.3.3 in the Plan for a similar scope of upgrading works for Arncliffe St. However, Council in its response in October 2016 that this transport item refers to the completed works outside 35 Arncliffe St and that there is no overlap with item WC4.3.3	Rockdale City Council 2010, 2011a
WC4.3.2	RT17A	Wollongong Rd	Completed	Wollongong Rd	Underpass improvement	▪ Pedestrian, cycleway and safety improvements to railway underpass are identified in the 2004 CP, 2011 DCP and 2013 Bitzios documents. The nexus of this transport item is supported.	Bitzios 2013, Rockdale City Council 2010, 2011a

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
WC4.3.3	RT6	Arncliffe St	Not started	Arncliffe St between Guess Ave and SWSOOS (south side)	Road widening	▪ The scope of this transport item seems to have been included in item WC4.3.1 as per the 2004 CP. ▪ The 2011 DCP (p. 7|12) indicates that Arncliffe St is required to be widened between 34 and 94 Arncliffe St, which is similar to the extent of this transport item. ▪ Council has subsequently confirmed that this works item for a street upgrade between Guess Ave and the SWSOSS separate from item WC4.3.1.	Rockdale City Council 2010, 2011a
WC4.3.4	–	–	Not started	Arncliffe St between SWSOOS and Allen St (south side)	Road widening	▪ This transport item, described in the Plan, involves street widening and embellishment for a section of Arncliffe St, which is located outside of the Area. ▪ However, as pointed out by the Council in the October response, the works along this section of Arncliffe St will provide an essential pedestrian and cycle link between the two precincts as supported in the public domain plan (Rockdale City Council 2011d) and the Bitzios (2013) report.	Bitzios 2013, Rockdale City Council 2011d
WC4.5.1	RT14	New road 3	Not started	New road 3	New road construction	▪ The new road link is identified in the 2004 CP and the 2011 DCP. ▪ Its nexus between the demand for a new road connection and mixed use development is verified.	Rockdale City Council 2010, 2011a
WC4.5.2	RT13	–	Not started	Princess Hwy / West Botany St / Argyle St	Intersection improvement	▪ This transport item is identified in the 2004 CP for improvements to the existing signalised intersection due to the new road formation (new road 3). ▪ While its nexus can be supported, the full cost claimed in the Plan for implementing a new signalised intersection is not accepted. Without a design justification, New Road 3 (WC4.5.1), incorporating the existing section of Argyle St, is unlikely to alter the intersection layout and alignment.	Rockdale City Council 2010
WC4.5.3	RT1	New road 2	Not started	New road 2	Land acquisition	▪ The nexus of the land acquisition is supported.	Rockdale City Council 2010, 2011a
WC4.5.4	RT14	New road 3	Not started	New road 3			
Bonar Street							
BS1.2.1	BN1	New road 7	In progress	New road 7	New road construction	▪ The nexus of these two transport items are supported as they are identified in all three key supporting documents (i.e.2004 CP, 2011 DCP and 2013 Bitzios report).	Bitzios 2013, Rockdale City Council 2010, 2011a
BS1.2.2	BN1	New road 8	Completed	Bidjigal Rd East			

Transport Item			Status	Description		ARRB Comment	Reference
2016 CP	2004 CP	2011 DCP		Location	Scope		
BS1.3.1	BN2	Bonar St, Hirst St, Martin Ave, Wollongong Rd	In progress	Bonar St, Hirst St, Martin Ave, Wollongong Rd	Road widening	▪ The transport item is identified in both the 2004 CP and the 2011 DCP. ▪ The nexus for the road widening on the streets is supported.	Rockdale City Council 2010, 2011a
BS1.3.2	BN3	–	In progress	Wollongong Rd, Bonar St	Intersection and road improvement	▪ The transport item is identified in the 2004 CP and the 2013 Bitzios report. The nexus for transport improvements at the Wollongong Rd/Bonar St intersection and the surrounding area is supported. ▪ The benchmark rate for a 4-leg signalisation upgrade at the existing 3-leg intersection of Wollongong Rd with Firth St is unreasonable.	Bitzios 2013, Rockdale City Council 2010
BS1.3.3	BN6	–	Completed	Bonar St precinct (and nearby streets)	Road improvement	▪ The transport item is identified in the 2004 CP and the 2013 Bitzios report. ▪ The nexus for transport improvements to walking and cycle facilities in the precinct is supported.	Bitzios 2013, Rockdale City Council 2010
BS1.3.4	BN8	–	Not started	Loftus St, Hirst St, Wollongong Rd	Bus stop improvement	▪ The transport item is identified in the 2004 CP. ▪ The nexus of bus stop improvements in the precinct is supported.	Rockdale City Council 2010
BS1.3.5	BN12	–	Not started	Bonar St, Hirst St	Undergrounding of 33kV overhead powerlines	▪ As discussed in Section 2.1.1, the undergrounding is not on the EWL for transport and as such this transport item should be excluded from the Plan.	Rockdale City Council 2010
BS1.3.6	BN14	–	Not started	Bonar St precinct	Streetscape improvement	▪ This transport item is for streetscape works along the existing streets on the perimeter of the precinct on the opposite sides of the Area. Applying the same principles as for item WB1.1.1, the following sub items should be excluded from the Plan: – Improvement works outside the Area: Bonar St (item 2.1), Hirst St (item 3.1) and Edward St (item 6.1). – Planted verge for works within the Area (item 7.1.9).	Rockdale City Council 2010
BS1.3.7	BN3, BN4	–	Not started	Wollongong Rd / Bonar St	Intersection improvement	▪ The transport item is identified in the 2004 CP and the 2013 Bitzios report. ▪ The nexus for a right-turn ban from Bonar St onto Wollongong Rd is supported.	Bitzios 2013, Rockdale City Council 2010

3 REASONABLE COSTS AND APPORTIONMENT

The proposed development contribution shall be based on a reasonable estimate of the cost of the proposed transport facilities and a reasonable apportionment between existing and new demands, taking into account different types of development. Section 3.1 provides a high-level discussion of the costs and apportionment described in the Plan. Section 3.2 sets out the first review step of considering the questions as outlined in the appendices of the Practice Note. Where there are issues of cost reasonableness or deviation from the recommendations in the supporting information, the outstanding, cost-related matters are assessed and documented in Section 3.3.

3.1 Overview

In support of the Plan, the Council supplied the tripartite cost estimate information – the first two parts (Parts A and B), prepared by RCC, provide an overview and scope of a transport item and the other (Part C) is a strategic cost estimate, prepared by Evans & Peck (2014). As discussed and presented in Section 2.3, the 45 transport items are at various implementation stages, including:

- 'Not started' – 25 transport items.
- 'In progress' – 5 transport items.
- 'Completed' – 15 transport items.

Ascertaining the development status of a transport project is important because it affects how reasonable costs are to be assessed. While the Council has confirmed the figures identified in Appendix A of the Plan for the completed transport items are the actual capital expenditure (CAPEX), the completion date of the items is required so that an appropriate indexation can be applied. For the five transport projects (involving six transport items), their dates of completion are identified in the 2004 CP (p.114), and are used accordingly in the reasonable cost assessment. It is unclear why the strategic cost estimate (rather a business case estimate or with competitive tender rates) is applied to the 'In progress' transport items given their advanced stages of implementation.

From the cost apportionment perspective, the Plan has accounted for the existing community within the Area and the different types of land uses. By calculating the total residential and work population (18 736) based on the maximum development potential of retail and commercial floor area in square metres (37 542) and net dwelling increase (7 822), the transport infrastructure costs can be shared among the expected development. With a lifespan of 15 years (2015–2030), the Plan is expected to cater for 38% development yet to occur (as identified in the IPART application).

Through this apportionment method it can, therefore, be observed that approximately 38% of the total cost for transport infrastructure is and can be deemed relevant to the Plan. Assuming all the proposed transport items meet the assessment criteria in the Practice Note (which, as demonstrated earlier, is not the case), the total apportioned cost for the transport facilities during the 15-year during of the Plan can be calculated as follows:

Net person increase = net resident increase + net worker increase

= 2 880 net dwelling increase x (29.95% x 1.7 resident per one-bed + 61.16% x 2.39 residents per two-bed + 8.89% x 2.91 resident per three-bed plus) + (23 238 m^2 net retail and commercial floor area increase/30 m^2)

= 6 421.2 + 774.6 = 7 196 persons (rounded)

Apportioned total cost = (net person increase/total person increase) x total cost for transport

= (7 196/18 736) x $96 602 521

= $37 102 463

It is noted that the land use and population assumptions employed above are as per the expected development and population described on pages 10–11 of the Plan.

3.2 Main Cost and Apportionment Assessment against IPART Practice Note

As demonstrated in Table 3.1, the reasonable cost review involves considering the information provided in the application for assessment of the Plan prepared by RCC against the assessment criteria and guidance in the Practice Note.

Table 3.1: Assessment of reasonable costs and apportionment

IPART Practice Note		RCC Contributions Plan		ARRB Comment
Item	Consideration	ARRB Review	Ref.	
Reasonable estimate of the cost				
C1	How were the Plan and cost estimates for the land and works prepared?	▪ Cost of completed transport land and works is based on actual CAPEX as advised by Council (see Appendix B). ▪ Cost estimate of other transport works is based on the Evans & Peck (2014) estimates, dated May 2014 and October 2015. ▪ Land value estimate for transport works is provided by Southern Alliance Valuation Service (2016).	p.26, costing document and further info from RCC	▪ The date of the Evans & Peck estimates is either May 2014 (but in June 2013 dollars) or October 2015. ▪ Given the scope of a strategic estimate, the detailed cost breakdown prepared by Evans & Peck (2014) is considered reasonable within a ±20% tolerance subject to other comments raised in this column. ▪ The 'In progress' transport items should be based on actual construction or tender rates (if available) and/or different costing contingency assumptions. ▪ For the six completed transport items, CAPEX information and date of completion, indicated in the 2004 CP (pp.111, 114), is used to determine the reasonable cost. ▪ Evidence of land valuation, prepared by Southern Alliance Valuation Service (2016), is verified.

IPART Practice Note		RCC Contributions Plan		ARRB Comment
Item	Consideration	ARRB Review	Ref.	
C2	Are the costs up-to-date?	▪ The costs are dated differently, varying from 2003 (completed works as in the 2004 CP), 2008, 2014, 2015 and 2016 (Southern Alliance Valuation Service land valuation).	Costing document	▪ All costs can be indexed to a consistent date, say as of June 2016 to utilise the Australian Bureau of Statistics (ABS) quarterly data. ▪ For the 'Not started' and 'In progress' transport items, the cost estimate is subject to 2016 indexation using ABS Producer Price Index (PPI). ▪ Completion date of all completed transport items is required in order for the Consumer Price Index (CPI) to be applied correctly. ▪ As mentioned above, cost of the 'In progress' works is not up-to-date. It should be based on a more detailed cost estimate.
C3	Do the cost estimates include all the costs required to bring the transport facilities on the essential works list into operation (e.g. land, capital, fit-out, design and project management costs)?	▪ Yes.	Section 3.3 (p.26), costing document	▪ A potential issue of double counting for project management costs in the Evans & Peck (2014) strategic estimate is identified.
C4	Have relevant professionals (e.g. quantity surveyors, chartered surveyors, land valuers) been engaged to provide an independent assessment of the costs of the transport facilities?	▪ Yes, for the strategic cost estimate by Evans & Peck (2014) and land valuation by Southern Alliance Valuation Service (2016).	Costing document and further info from RCC	–
C5	How has the Council taken CPI into account?	▪ The CPI is used for adjusting contributions at the time of payment.	p.31	▪ As mentioned earlier, the CPI can be used to index the value of the completed transport items.

IPART Practice Note		RCC Contributions Plan		ARRB Comment
Item	**Consideration**	**ARRB Review**	**Ref.**	
C6	Are the assumptions and calculations robust?	▪ The indirect costs (36%), Council project management costs (11%) and project contingency costs (30%) are applied to the direct cost one after the other on three separate occasions. ▪ 30% project contingency is based on IPAR Infrastructure Benchmark Costs report. ▪ 1.5% plan administration cost is accepted.	pp.24–26, costing document.	▪ Cost increase due to the calculation method (i.e. contingencies applied one after the other) is almost double (96%) the indirect cost. In comparison, the increase would be only 77% (36+11+30) if the risk allowances are applied directly to the direct cost. ▪ The assumptions and calculation methods are considered further in the next section. ▪ RCC notes in the further information (see Appendix B) that the term 'Excl Client Cost' in the Evans & Peck (2014) cost estimate is a typo, and that the client (project and contract management) cost is included.
C7	Has a Net Present Value (NPV) methodology been utilised? If so, has an appropriate discount rate been used?	▪ No.	–	
C8	Does the plan seek to recoup funds?	▪ Yes.	Appendix A of the Plan	▪ The Plan seeks to recoup funds for the completed transport items.
Reasonable estimate of the apportionment				
A1	Are the transport facilities only required to meet the need of the new development or will they also serve the existing community?	▪ Yes, the proposed facilities are implemented to meet the need of the expected development in the Area.	pp.11–13, application for assessment of the Plan	▪ Within the Area, the approach to account for the existing community of both residential and non-residential is considered reasonable. ▪ Outside the Area, it is arguable whether the existing lower-density residential

IPART Practice Note		RCC Contributions Plan		ARRB Comment
Item	Consideration	ARRB Review	Ref.	
A2	How is the existing community accounted for in the apportionment of costs?	▪ Within the Area, the Plan recognises a net increase in infrastructure demand, taking into account the existing resident population with a provision for an infrastructure demand credit. ▪ However, there is no existing demand credit for the workforce 'as the future workers of the area will be an entirely new workforce with different needs and requirements'. ▪ Outside the Area, the Plan does not allow for cost apportionment of the existing residential community.	pp.11, 29, application for assessment of the Plan	community (zoned R2 and R3) located next to the precinct boundary would gain a transport benefit from the street and road improvements. ▪ Taking into account the extent of the upgrade works and the outcome of the EWL and nexus analysis discussed in Section 2, it is considered that the residential community surrounding the Bonar Street precinct is to be accounted for due to the improved level of services from the implementation of the upgrade works, particularly those on the periphery.
A3	How are costs apportioned between different types of land uses (e.g. residential and commercial)?	▪ Residential population estimates are based on the expected development potential, the 2011 census and Council database on dwelling approval in the Area. ▪ The rate of one worker per 30 m^2 gross floor area is as per the 2004 CP specific for the Area. ▪ The resident and work population from the expected development in the Area is then used to calculate a contribution rate per resident or work.	pp.10–13	▪ Cost apportionment of the different types of land uses, using contributions rates based on the entire development within the Area, is considered reasonable.

3.3 Detailed Cost Assessment of Transport Items

Taking into account the outcome of the EWL and nexus review in Section 2 and the main assessment of the cost reasonableness in Section 3.2 , the detailed assessment entails considering the outstanding transport facilities of the transport items with an aim to determine reasonable costs. As can be seen in Table 3.2 , certain assessment points are applicable to a number of transport elements whereas specific comments are made regarding individual items due to their unique circumstances. Unless specified otherwise, the costs indicated in Table 3.2 are unindexed as per the infrastructure costing information.

Table 3.2: Detailed assessment of cost reasonableness of transport items

Transport Facility	Item	Outstanding Matter	Transport Item		Reasonable Cost	
			Main	Individual	The Plan	ARRB Response
Overall	1.a	All costs are to be indexed to a consistent date. While land and property values are estimated in 2016, cost estimates of works are dated 2014 and 2015.	All		Inconsistent	June 2016 (suggested)
	2.a	For cost escalation, CPI and PPI of ABS can be applied to the completed and incomplete works, respectively. Cost adjustment for works completed in 2003 and 2008 (as indicated in the 2004 CP) is unclear.	Completed items		Unclear	Actual CAPEX plus CPI from completion date
	2.b		'In progress' and 'Not started' items		Unindexed	Unindexed plus PPI
	3.a	There is an issue with the Evans & Peck (2014) allowances in the process of calculating a base cost estimate to account for contractors and principal's costs (c.f. Department of Transport and Main Roads 2015, Raniga 2015). It is suggested that a base cost is calculated by applying a 35% increase to a direct construction cost. The 35% value includes 15% indirect costs, 10% overhead and profit and 10% design and project management.	'In progress' and 'Not started' items	Detailed cost breakdown	47% (18+8+10+11)	35%
	3.b	The IPART benchmark cost is a base cost, which covers the direct costs, contractor indirect costs and margin and council on-costs. Therefore, only the 30% contingency is to be applied to the IPART benchmark rates.		Base cost from IPART benchmarks	47%	0%
	4.a	It is suggested that project contingency (30%) is applied to a base cost, which is a total construction cost (incorporating the 25% increase to a direct construction cost) plus the client costs (10%)	'In progress' and 'Not started' items		96.3% increase (1.36x1.11x1.30)	78.8% increase (1.25x1.10x1.30)
	5.a	Cost estimate of the 'In progress' works should be based on a more detailed cost estimate. If a work item consist of multiple stages, it may be appropriate to subdivide it to separate sub-items so as to enable a proper cost estimate.	'In progress' items	WC1.4.1, WC3.3.1, BS1.2.1, BS1.3.1, BS1.3.2	Strategic cost estimate	More detailed cost estimate
Land	6.a	It is acknowledged that, as per the Council's response in Appendix B, 'there may be some remediation costs and legal fees' associated with a land transaction; however, the resale of the residual land for this transport item should incur a credit to the Plan or otherwise a nil consideration.	Wolli Creek	WC3.3.6 (RT2)	$26 891	$0

Transport Facility	Item	Outstanding Matter	Transport Item		Reasonable Cost	
			Main	Individual	The Plan	ARRB Response
Works	7.a	The powerline undergrounding as a separate item is considered non-essential transport works, and is to be excluded from the Plan.	Wolli Creek	WC1.2.1	$545 550	$0
	7.b		Bonar Street	BS1.3.5	$4 180 807	$0
	8.a	Only necessary work of streetscape improvement as a discrete item that fulfil the transport movement function is to be included in the Plan.		BS1.3.6	$2 396 770	$764 319
	8.b		Wolli Creek	WB1.1.1	$10 396 857	$6 417 053
	9.a	Date of completion for some completed transport works items is missing.	WC1.4.3, WC4.3.1, WC4.3.2, BS1.2.2, BS1.3.3		Unknown.	Council to advise
	10.a	The nexus for the eastern section (73 m) of Lusty St (233 m) is not supported. The section (excluding the Bonar/Lusty St intersection) will continue to operate as a cul-de-sac in the foreseeable future and its upgrade is to be contributed to by adjacent developments.	Wolli Creek	WC1.4.1	$723 503	31.3% reduction (73/233)
	11.a	The nexus for a four-leg roundabout upgrade is unreasonable. A T intersection upgrade with splitter islands (incorporating pedestrian cut-through) and pram crossing is recommended. The rate used is as per the IPART benchmarks (item 1.12.1).		WC1.4.2	$230 000	$18 000 (base cost)
	12.a	The cost schedule of the Princes Highway widening is to be adjusted to reflect the reduced scope of work based proportionally on the length from 880 m currently used to 515 m for a confirmed scope of works.		WC2.3.1	$10 730 904	41.5% reduction (365/880)
	13.a	The IPART benchmark cost used for a new signalised intersection installation is unreasonable as the intersection is already signalised and the works of this transport item is for intersection improvements (not a new build).		WC2.4.2	$1 726 002	$260 000 (base cost)
	14.a	The new road (Gertrude St extension), once created, will intersect Arncliffe St as a T intersection; however, the IPART benchmark rate used in the costing information ($750 000) is likely for a new 4-leg signalised intersection.		WC2.4.3	$1 726 002	$220 000 (base cost)
	15.a	The Evans & Peck (2014) cost estimate, taking into account a more detailed schedule of works, differs from the cost identified in the Plan.		WC2.5.1	2 451 389	$2 075 660 (base cost)

Transport Facility	Item	Outstanding Matter	Transport Item		Reasonable Cost	
			Main	Individual	The Plan	ARRB Response
Works	16.a	Similar to item WC2.4.2, the Princes Hwy/West Botany St intersection has been signalised and unlike WC2.4.2, the intersection layout without a design justification is unlikely to be significantly modified. The allowance for a new signalisation is unreasonable.	Wolli Creek	WC4.5.2	$1 572 810	$260 000 (base cost)
	17.a	As discussed in item A2 of Table 3.1, the benefit to the existing lower-density residential catchment (30 m buffer) surrounding the Bonar St precinct is to be accounted for in the cost apportionment of the upgrade works. 44 properties within a 30 m buffer from the precinct boundary on Bonar St, Hirst St, Martin Ave and Wollongong Rd are counted towards the proportional reduction based on the change to the resident population.	Bonar Street	BS1.3.1	$2 425 127	3.1% reduction (98/(3041+98))
	18.a	The IPART benchmark rate of a new four-leg signalisation used for an upgrade to the existing three-leg Wollongong Road/First Street intersection is unreasonable.		BS1.3.2	$750 000 (unit rate only for 4-leg signalisation)	$220 000 (base cost)

4 TRANSPORT COST IMPLICATION

The financial impact from the EWL, nexus, reasonable costs and apportionment assessment is considered in Table 4.1. Given that a further confirmation is required for the date of completion for some transport items, the values presented are unindexed and are in the context of the total cost exclusively for essential transport infrastructure works. The final cost adjustments of many items may be slightly less due to the CPI and ABS PPI indexation.

Table 4.1: Cost implication of ARRB recommended adjustments

Transport Item	Relevant Cost Assessment Item in Table 3.2	ARRB Recommended Adjustment	ARRB Note
Wolli Creek			
WB1.1.1	1.a, 2.b, 3.a, 4.a, 8.b	-$3 979 804	▪ ABS PPI indexation to be applied
WC1.2.1	7.a	-$545 550	–
WC1.2.2	1.a, 2.b	–	▪ ABS PPI indexation to be applied
WC1.4.1	1.a, 2.b, 3.a, 4.a, 5.a, 10.a	-$291 686	▪ Council is to provide a more detailed cost estimate ▪ ABS PPI indexation to be applied
WC1.4.2	1.a, 2.b, 3.b, 4.a, 11.a	-$206 600	▪ ABS PPI indexation to be applied
WC1.4.3	1.a, 2.a	–	▪ CPI indexation to be applied
WC2.3.1	1.a, 2.b, 3.a, 4.a, 12.a	-$1 405 088	▪ ABS PPI indexation to be applied
WC2.4.1	1.a, 2.b, 3.a, 4.a	-$331 983	▪ ABS PPI indexation to be applied
WC2.4.2	1.a, 2.b, 3.a, 4.a, 13.a	-$183 386	▪ ABS PPI indexation to be applied
WC2.4.3	1.a, 2.b, 3.a, 4.a, 14.a	-$1 440 002	▪ ABS PPI indexation to be applied
WC2.4.4	1.a, 2.a	–	▪ CPI indexation to be applied
WC2.5.1	1.a, 2.b, 3.a, 4.a, 15.a	+$1 258 853	▪ The updated Evans & Peck (2014) estimate is supported ▪ ABS PPI indexation to be applied
WC2.5.2	1.a, 2.b, 3.a, 4.a	-$26 932	▪ ABS PPI indexation to be applied
WC2.5.3	1.a, 2.a	–	▪ Street lighting to be completed (see Appendix B) ▪ CPI indexation to be applied
WC2.5.4	1.a, 2.b, 3.b, 4.a	-$80 500	▪ ABS PPI indexation to be applied
WC2.5.6	1.a, 2.b, 3.a, 4.a	-$40 186	▪ ABS PPI indexation to be applied
WC2.5.7	1.a, 2.a	–	▪ CPI indexation to be applied
WC2.5.8	1.a, 2.a	–	▪ CPI indexation to be applied
WC2.5.9	1.a, 2.a	–	▪ CPI indexation to be applied
WC2.5.10	1.a, 2.a	–	▪ CPI indexation to be applied
WC3.3.1	1.a, 2.b, 3.a, 4.a, 5.a	-$218 315	▪ Council to provide a more detailed estimate ▪ ABS PPI indexation to be applied
WC3.3.2	1.a, 2.b, 3.b, 4.a	-$524 999	▪ ABS PPI indexation to be applied
WC3.3.4	1.a, 2.b, 3.a, 4.a	-$160 540	▪ ABS PPI indexation to be applied
WC3.3.5	1.a, 2.a	–	▪ CPI indexation to be applied

Transport Item	Relevant Cost Assessment Item in Table 3.2	ARRB Recommended Adjustment	ARRB Note
WC3.3.6	6.a	-$26 891	–
WC3.3.7	–	–	–
WC3.3.8	–	–	–
WC3.3.9	–	–	–
WC4.3.1	1.a, 2.a	–	▪ CPI indexation to be applied
WC4.3.2	1.a, 2.a	–	▪ CPI indexation to be applied
WC4.3.3	1.a, 2.b, 3.a, 4.a	-$206 181	▪ ABS PPI indexation to be applied
WC4.3.4	1.a, 2.b, 3.a, 4.a	-$116 144	▪ ABS PPI indexation to be applied
WC4.5.1	1.a, 2.b, 3.a, 4.a	-$189 555	▪ ABS PPI indexation to be applied
WC4.5.2	1.a, 2.b, 3.b, 4.a, 16.a	-$1 234 810	▪ ABS PPI indexation to be applied
WC4.5.3	1.a, 2.a	–	▪ CPI indexation to be applied
WC4.5.4	1.a, 2.a	–	▪ CPI indexation to be applied
Bonar Street			
BS1.2.1	1.a, 2.b, 3.a, 4a, 5.a	-$269 472	▪ Council to provide a more detailed estimate
BS1.2.2	1.a, 2.a	–	▪ CPI indexation to be applied
BS1.3.1	1.a, 2.b, 3.a, 4.a, 5.a, 17.a	-$383 342	▪ Council to provide a more detailed estimate ▪ ABS PPI indexation to be applied
BS1.3.2	1.a, 2.b, 3.b, 4.a, 5.a, 18.a	-$1 455 498	
BS1.3.3	1.a, 2.a	–	▪ CPI indexation to be applied
BS1.3.4	1.a, 2.b, 3.a, 4a	-$90 012	▪ ABS PPI indexation to be applied
BS1.3.5	7.b	-$4 180 807	–
BS1.3.6	1.a, 2.b, 3.a, 4.a, 8.a	-$1 632 451	▪ ABS PPI indexation to be applied
BS1.3.7	1.a, 2.b, 3.a, 4a	-$44 377	▪ ABS PPI indexation to be applied
Total		**-$18 006 256**	

As a result, a revised total reasonable cost for transport infrastructure in the Area is $78 596 265 ($96 602 521 - $18 006 256). Therefore, an apportioned reasonable transport cost relevant to the Plan is $30 186 738 (38.4% x $78 596 265).

5 FINDINGS AND RECOMMENDATIONS

The findings of the review of the Plan in terms of its essential works, nexus, cost and apportionment reasonableness along with ARRB recommendations are presented in Table 5.1. They take into account the responses from the Rockdale City Council as included in Appendix A and Appendix B.

Table 5.1: Project findings and recommendations

Findings		Recommendations	
Essential Works			
1	The undergrounding of overhead powerlines as a separate transport item is considered non-essential works for transport with an exception when the underground works are required for a road carriageway widening in an urban environment.	a	The non-essential works (and cost) of the undergrounding activity should be excluded from the Plan.
2	A strict interpretation of the definition of the essential works for transport results in the non-essential work status of streetscape improvements even though the works contribute to multifunction of an urban street. Upon a detailed investigation, many sub items of the two 'streetscape improvement' items (WC1.1.1 and BS1.3.6) can be considered essential works as they contribute to the movement function and traffic management.	b	The streetscape improvement components in items WC1.1.1 and BS1.3.6 that do not contribute to the movement function are to be excluded from the transport consideration of the Plan
		c	The definition of essential transport works in the Practice Note could be improved to recognise other functions of an urban street space beyond its transport function.
3	Improvements works along Princes Highway (state road) may attract financial contributions from RMS even though the Council confirms otherwise.	d	Seek confirmation from RMS that no funding is provided for the upgrade works along Princes Highway within the Area.
Nexus			
4	There are a number of outstanding nexus issues listed in Section 2.3. Where they are related to reasonable cost consideration, those issues are addressed in the detailed review as shown in Table 2.2. The following nexus issues have subsequently been addressed by the Council in the October 2016 response (Appendix A): ▪ Scope (and cost) information for transport item WC1.2.2. ▪ Potential overlap in scope (and cost) between items WC4.3.1 and WC4.3.3.	e	The revised points about nexus, documented in Section 2.3, are adopted by IPART.
6	A cul-de-sac section of Lusty Street east of Bonar Street is likely to continue to function as a low-volume, local road.	f	This portion of the transport item (WC1.4.1) should be excluded from the Plan.
7	A four-leg upgrade to an existing three-leg intersection at the Bonar Street/Guess Avenue intersection is unreasonable.	g	The recommended T intersection improvement is adopted for transport item (WC1.4.2).
8	As per the costing information, a southern portion of the upgrade on the western side of Princes Highway is outside the Area. Further information confirms a smaller extent of the upgrade.	h	This southern portion of the transport item (WC2.3.1) should be excluded from the Plan.

Reasonable Cost			
9	As documented in Table 3.2, there are costing discrepancies between the Plan and reasonable costs, taking into account the outstanding matters from the nexus review. The Council has been asked to provide further information regarding: ▪ A more detailed cost estimate for 'In progress' items WC1.4.1, WC3.3.1, BS1.2.1, BS1.3.1 and BS1.3.2. ▪ Completion date for items WC1.4.3, WC4.3.1, WC4.3.2, BS1.2.2 and BS1.3.3.	i	IPART is to adopt ARRB's reasonable cost suggestions listed in Table 3.2.
Reasonable Apportionment			
10	The method to calculate an apportionment for the existing community and the different types of land uses that is based on the maximum development potential, and, in turn, the total person population is considered reasonable.	j	With 38.4% (7 196/18 736 persons) of the expected development yet to occur, the apportioned cost relevant to the Plan (and any reduction thereof due to ARRB recommendations) is equal to 38.4% of the total reasonable cost for transport.
Cost Implication			
11	The cost impact based on the assessments in this report is presented in Table 4.1.	k	IPART is to adopt ARRB' cost impact assessment in Table 4.1.

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APPENDIX A COUNCIL RESPONSE IN OCTOBER 2016

ARRB Interim Findings		ARRB Interim Recommendations		Council Response
Essential Works				
1	The undergrounding of overhead powerlines as a separate transport item is considered non-essential works for transport with an exception when the underground works are required for a road	a	The non-essential works (and cost) of the undergrounding activity should be excluded from the Plan.	The poles are extremely close to the kerb, particularly at the intersection of Hirst and Bonar The works in Bonar St within the Wolli Creek have already been completed and is in cost recovery phase.
2	A strict interpretation of the definition of the essential works for transport results in the non-essential work status of streetscape improvements even though the works contribute to multi functions of an urban street.	b	The streetscape improvements are to be excluded from transport consideration of the Plan, and to be considered under another category of the essential	The EWL needs to reflect the in-fill development and the primary function in for the movement of people.
		c	The definition of essential transport works in the Practice Note could be improved to recognise other functions of an urban street space beyond	Agreed.
3	Improvements works along Princes Highway (state road) and Wollongong Road (regional road) may attract financial contributions from RMS even though the Council confirms	d	Confirmation from RMS that no funding is provided for the upgrade works along Princes Highway and Wollongong Road within the Area.	Only Princes Highway is a State road. Wollongong Rd has been downgraded is no longer a regional road. Council will provide feedback from RMS. Any traffic works can attract grants from RMS through a competitive process.
Nexus				
4	There are a number of outstanding nexus issues listed in Section 2.3. Where they are related to reasonable cost consideration, those issues are addressed in the detailed review as shown in Table 2.2.	e	Further clarification is to be sought from RCC on the following nexus issues: – Scope (and cost) information for transport item WC1.2.2. – Potential overlap in scope (and cost) between items WC4.3.1 and WC4.3.3.	WC1.2.2 refers to upgrades to the cycleway along the SWOOS connecting Lusty St to Thompson St. Cycle and pedestrian connectivity is essential for the community to identify the Thompson St Reserve as one open space. The Council designer response is as follows: *The existing gravel path is 114m long but only 1.5m wide which is only suitable as a walkway. To upgrade it to a cycleway I recommend the path be widened by 1m to a width of 2.5m and it be resurfaced with asphalt. I also recommend that linemarking and signage be included in this upgrade. Cost estimate $45,000* WC4.3.1 refers to the completed works on the Arncliffe St side of 35 Arncliffe St, Wolli Creek. WC4.3.3 refers to the street upgrade between Guess Ave and the SWOOS. There is no overlap.

6	A cul-de-sac section of Lusty Street east of Bonar Street is likely to continue to function as a low-volume, local road.	f	This portion of the transport item (WC1.4.1) should be excluded from the Plan.	For consistency, Council will prefer that these works are treated the same as all other streetscape works within the Wolli Creek Precinct.
7	A four-leg upgrade to an existing three-leg intersection at the Bonar Street / Guess Avenue intersection is unreasonable.	g	The recommended 'T' intersection improvement is adopted for transport item (WC1.4.2).	Agreed.
8	As per the costing information, a southern portion of the upgrade on the western side of Princes Highway is outside the Area. The further information confirms a smaller extent of the	h	This portion of the transport item (WC2.3.1) should be excluded from the Plan.	Agreed. Cost estimate to be revised.
9	The nexus for the street widening and embellishment of this section of Arncliffe Street is not identified in any supporting document.	i	This transport item (WC4.3.4) should be excluded from the Plan.	WC4.3.4 – Arncliffe St between SWOOS and Allen St. This work item is support in the PDP (pg. 58 & 60) and in the Bitizos (2013) report item A3 (pg. 81). Essential pedestrian and cycle link between the two precincts.

APPENDIX B COUNCIL RESPONSE IN SEPTEMBER 2016

<table>
<tr><th colspan="2">Further Information Request</th><th>Council Response</th></tr>
<tr><td colspan="3">Essential transport works</td></tr>
<tr><td>1</td><td>As discussed, the Practice Note does not specifically allow for this activity given that only ‘land and facilities for transport’ can be considered essential works. I acknowledge some road users may benefit from replacing existing overhead poles with frangible poles or relocating them to improve the effective footpath width.</td><td>The two areas of undergrounding 33kV power lines, Bonar St and Princes Highway, are located very close to the existing kerb and gutter and are non-frangible. The hazard that these poles pose are incompatible with the Urban Renewal Area that is both high density and highly trafficked (both road users and pedestrian).</td></tr>
<tr><td>2</td><td>Based on a strict interpretation of the essential works definition, a similar argument can be drawn in relation to streetscape embellishment (WB1.1.1, WC4.3.3 and WC4.3.4), particularly street furniture (decorative lighting, seating and bollards).</td><td>The Wolli Creek and Bonar St Precinct are Transport Orientated Developments, such that the main advantage of these precincts is its proximity to public transport and local attractors such as shops and jobs. The focus of transport in the precinct is focused around walkability and easy access to the public domain. The current mode share for public transport, pedestrian and cycling in Wolli Creek is over 53% and is forecast to increase to 58.5% (attached below). Whereas car use currently 36.1% and proposed to decrease to 30.6%.

Therefore, the majority of the population will utilise the existing streetscape. Council’s position is that the infrastructure identified in the streetscape embellishment, such as seating and bollards, are essential transport in the Urban Renewal Area.

Due to the high density nature of the Urban Renewal Area and the resultant utilisation rate, the cost of infrastructure per population is rather low and will not result in a material cost difference but will results in significant benefits to the community.

Table 9.1: 2031 Target Mode Shares for Option 2
<table><tr><th>Transport Mode</th><th>Current [1]</th><th>2031 Target</th></tr><tr><td>Train</td><td>51.0%</td><td>55.0%</td></tr><tr><td>Bus</td><td>0.8%</td><td>0.5%</td></tr><tr><td>Taxi</td><td>0.3%</td><td>1.0%</td></tr><tr><td>Car (driver)</td><td>33.3%</td><td>27.6%</td></tr><tr><td>Car (passenger)</td><td>2.8%</td><td>3.0%</td></tr><tr><td>Bicycle</td><td>0.2%</td><td>1.0%</td></tr><tr><td>Walk</td><td>1.7%</td><td>2.0%</td></tr><tr><td>Other</td><td>9.9%</td><td>9.9%</td></tr></table>1: Source: Australian Bureau of Statistics – 2011 Census</td></tr>
<tr><td colspan="3">Nexus – Previous traffic and transport studies</td></tr>
</table>

	Further Information Request	Council Response
3	Although it is appreciated that the majority of the transport related works are identified in the 2011 DCP, reviewing the previous traffic and transport studies mentioned on pages 7–9 of the 2013 Bitzios report will assist in verifying the nexus of the proposed transport items. Specific documents I'm keen to review are (a) GTA's (2012) Cooks River cycleway extension feasibility study, (b) Bitzios's (2011) Rockdale transport strategy implementation project, (c) RCC's On the go map – cycling, walking and public transport, (d) 2006 Cooks River pedestrian and cycle strategy and (e) Masson Wilson Twiney's 1998 North Arncliffe development area traffic and car parking strategy.	Requested files are attached.
Reasonable costs and apportionment		
4	Would you provide evidence of land values (both estimate and actual) to support the claim of land acquisition costs for projects RT1, RT2, RT3 and RT14. Without this information, cost estimates documented in the 2004 CP may be used (indexed from 2010 when the CP was updated using ABS's Producer Prince Indices) to replace the values claimed. Also, I wonder why the sale of residual land (item WC3.3.6) will utilise DC ($26 891) as in fact this should result in a revenue (negative value in the Plan), or at least for nil consideration similar to item WC3.3.9.	Land Valuation files are attached. WC3.3.6 – land is to be dedicated to Council at no cost, however, there may be some remediation costs and legal fees.
5	On 7 Sep, ARRB received costing documents (Parts A–C) for each of the works items; however, some are missing, including actual costs of the completed works. These are BS1.2.1 (Part C), BS1.2.2 (actual), BS1.3.3 (actual), WB1.1.1 (all parts), WC1.2.1 (actual), WC1.4.3 (actual), WC2.4.4 (actual), WC2.5.3 (all parts), WC2.5.8 – WC2.5.10 (actual), WC4.3.1 & WC4.3.2 (actual) and WC1.2.2 (all parts). Would you also as part of your response to our request on 12 Sep provide a comment on the level of detail for the works that are 'in progress' whether their cost estimates are at the 'strategic review' level similar to the 'not started' items or they are more at an advanced stage (e.g. business case or competitive tender process). This will certainly help with our cost review.	As discussed previously, *actual* refers to the adjusted costs incurred by Council in the provision of these infrastructure items. Therefore there were no cost estimate produced for these items. However, BS1.2.2 is current revised due to a court action. WB1.1.1 (all parts), titled 'Streetscapes to Four Precincts' BS1.2.1 (Part C) is attached. WC2.5.3 (all parts). This in a progress project. Council completed the majority of the works previously but still have to include street lighting. WC1.2.2 (all parts). Council officer provided cost estimate. No detailed breakdown available. 'In Progress' means that some portion of the works have been completed. This can be a combination of cost estimates based on 'strategic review' and of the works that have been completed by Council. This depends on if the works were completed prior to the Evans and Peck cost estimates.

	Further Information Request	Council Response
6	With respect to Evans & Peck's cost estimate, we have identified an issue with how the various contingences (of greater than 77% in total) are applied one after another rather than directly as a percentage of base cost estimate. Additionally, a total of 26% identified as contractors site establishment and management costs (18%) and design (8%) is relative high given the 30% project contingency and that the site establishment component is typically covered in 'Preliminary and general' as a lump sum. Furthermore, Items 7–9 of the consultant template indicates 'Excl Client Cost', but the 11% Council project management costs seem to have been included.	When Evans and Peck was engage to undertake cost estimates they were instructed to follow the IPART benchmark guidelines, which they wrote. Further clarification, please contact Advisian (previously Evans and Peck). Contingencies are high because there is a lack of detailed design and the high constraints of construction in the area. 'Excl Client Cost' is a typo mistake. They were removed from revision three onwards.
7	Item WC2.3.1 in the Plan involves road widening on Princes Highway between Burrows St and Brodie Spark Dr, including improvements to five signalised intersections and the undergrounding of 33KV cabling. The works obviously extend beyond the urban renewal area. Would you provide information on apportionment/costs specific to the Area? In addition, Princes Highway as a classified road, may attract financial assessment from RMS.	The majority of the road widening only extends from Brodie Spark Drive to Argyle St. This road widening is mainly to create slip lanes for the developments and therefore the benefits will be localised within the precinct. High voltage undergrounding is required to allow the road widening to occur. RMS will not take financial responsibility in this area, and will always require Council through the S94 or developer to directly fund and construct these works.
8	For Item WC2.5.2, can you describe what the $100k (direct cost) allowance will entail?	This is an estimate for the infrastructure required to support the public transport in the area. E.g. bus shelters, bike parking, bus seats and directional signage.

E Review of stormwater items in RCP 2016, J. Wyndham Prince Pty Ltd







Rockdale Contributions Plan 2016 – Urban Renewal Area

Review of Stormwater Infrastructure Items

IPART NSW

04 November, 2016

Document Control

Issue	Amendment	Author	Reviewer	Approved
A	Draft	PK	DJ	DJ
		07/10/2016	07/10/2016	07/10/2016
B	Final	PK	DJ	DJ
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LIST OF APPENDICIES

1 EXECUTIVE SUMMARY

J. Wyndham Prince has been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to assist with their review of stormwater infrastructure items in the Rockdale Contributions Plan 2016 – Urban Renewal Area (RCP 2016).

In particular, J. Wyndham Prince has been engaged to:

- Determine whether the scope and cost of proposed stormwater infrastructure items in RCP 2016 reflect the recommendations in technical studies prepared for the RCP 2016, and
- Identify where RCP 2016 deviates from consultant recommendations in scope or cost of work, and whether the deviations are reasonable.
- Assess whether the proposed stormwater infrastructure items in RCP 2016 satisfy the nexus, reasonable costs and apportionment criteria in the Practice Note.
- Estimate the cost impact from any recommended adjustment to infrastructure provision or costing in the plan.

J. Wyndham Prince has reviewed the Rockdale City Council 2004 Contribution Plan, Rockdale City Council 2016 Contribution Plan – Urban Renewal Area, the supporting technical documents, the 1998 Webb McKeown report, the draft North Arncliffe Drainage Study, prepared by Willing & Partners dated May 2000 and the 2015 Evans & Peck cost estimates. We found that:

1. The Urban Renewal Area was known to be flood affected prior to the rezoning of the area to permit higher density residential development.

2. The mapping of the flood mitigation and stormwater management (the infrastructure) in the Rockdale City Council 2016 Contribution Plan – Urban Renewal Area is incomplete.

3. All of the proposed infrastructure items are considered to fit within the definition of “Essential Infrastructure” for the purposes of a contribution plan.

4. The supporting documentation referred to in the Rockdale City Council 2016 Contribution Plan – Urban Renewal Area relate primarily to the Bonar Street precinct and not to the other precincts within the area.

5. The 1998 Webb McKeown Floodplain Management Plan the draft North Arncliffe Drainage Study, prepared by Willing & Partners dated May 2000 cover both the Bonar Street and Wolli Creek precincts, however not all RCP 2016 infrastructure items are addressed in those reports.

6. The infrastructure listed in the Rockdale City Council 2016 Contribution Plan – Urban Renewal Area are separately and/or in combination, likely to provide some degree of flood mitigation and stormwater management; however, based upon the information available, the extent and nature of the mitigation and management is unclear.

7. The various studies flood studies consider the impacts and mitigation works required to address the pre-redevelopment flood issues only. The studies do not consider the impacts of re-development on the flood levels, depths and hazards.

8. Council’s justification for the flood mitigation and stormwater management works are largely to facilitate development; not to address the impacts or demands created by the development.

9. The nexus between the impacts of the redevelopment and the need for flood mitigation works can only be inferred from the Bonnie Doon and Bonar Street studies.

10. There is a nexus between increased pedestrian and vehicle traffic due to the redevelopment resulting in an increase in pollutants and the need for additional water quality control devices; although this is not fully explained or justified in RCP 2016.

11. It is not clear to what extent the other infrastructure listed in RCP 2016 addresses the pre-rezoning flood issues and/or the impacts of the redevelopment of the Urban Renewal Area.

12. The costings in places lack detail and include costs that are not related to flood mitigation or stormwater management. The costings should be updated beyond a strategic review planning stage.

13. It is considered unreasonable for new development to fully fund the infrastructure works as the existing infrastructure was already inadequate; there was residents, workers, pedestrians and vehicle traffic in the area prior to the rezoning; and item WC 1.1.1 (the East Hills Railway embankment at Henderson Road) is likely to afford flood protection to properties outside the URA.

14. The works and the resulting flood mitigation are not distributed equally across the URA.

Further studies are required to:

- Determine the base flood levels, depths and hazards that existed prior to rezoning and prior to redevelopment.
- Determine the additional impacts on the flood levels, depths and hazards caused by the redevelopment of all of the rezoned land.
- Determine the works required to mitigate the flood levels, depths and hazards at the redeveloped state to an acceptable degree.
- Clearly articulate the acceptable flood level, depth and hazard targets that the mitigation works are designed to achieve.

Once these studies are completed, concept designs and updated cost estimates should be prepared and apportionment reassessed.

2 INTRODUCTION

Under the provisions of section 94 (s94) of the Environmental Planning and Assessment Act 1979 (EP&A Act), councils are able to obtain development contributions as a means of funding local infrastructure required as a result of new development.

The NSW Department of Infrastructure, Planning and Natural Resources states in their July 2005 development contributions practice notes that, *"s94 infrastructure should not be a 'shopping list' of desirable items based on development opportunity. Justification of the infrastructure and the level of provision must be based on the demands generated by the future population."*

J. Wyndham Prince has been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to assist with their review of stormwater infrastructure items in the Rockdale Contributions Plan 2016 – Urban Renewal Area (RCP 2016).

RCP 2016 covers Rockdale City Council's Urban Renewal Area (URA). The URA is in the northern part of the Rockdale Local Government Area on either side of the Illawarra line and immediately south of Wolli Creek and the Cooks River. See Plate 2.1 below.

Plate 2.1 - Rockdale City Council's Urban Renewal Area

(Source RPC 2016)

Rockdale City Council (the Council) adopted RCP 2016 on 16 March 2016. As the contribution rates exceed the State Government imposed cap of $20,000 per dwelling, the Council submitted an application for assessment of the RCP 2016 to IPART. If RCP 2016 is approved, the Council intends to apply for Local Infrastructure Growth Scheme (LIGS) funding for the gap between the cap and the contribution amount.

The objectives of IPART's review of the proposed stormwater infrastructure items is to determine whether:

- they are reasonable in terms of nexus (the connection between development in the URA and the demand created).
- their proposed costs are reasonable.
- their costs are apportioned reasonably to the needs of the additional population in the URA.

It is acknowledged that the preparation of a contributions plan for stormwater infrastructure facilities in this location is complex. The URA is impacted by flooding from upstream overland flows, riverine flooding from Wolli Creek and Cooks River, as well as tidal flooding from these watercourses. It may also on occasion be affected by a combination of these sources.

A further complication is that the area is already developed. It is not greenfield development site where the impacts of the new development can be readily identified and catered for in the contribution plan.

In assisting IPART with their review, J. Wyndham Prince has been engaged to:

1. Determine whether the scope and cost of proposed stormwater infrastructure items in RCP 2016 reflect the recommendations in technical studies prepared for the RCP, and
2. Identify where RCP 2016 deviates from consultant recommendations in scope or cost of works, and whether the deviations are reasonable.
3. Assess whether the proposed stormwater infrastructure items in RCP 2016 satisfy the nexus, reasonable costs and apportionment criteria in the Practice Note.
4. Estimate the cost impact from any recommended adjustment to infrastructure provision or costing in the plan.
5. Liaise as necessary with the contact officer at the Council in undertaking the assessments.

This report has been prepared based upon reviews of the following documentation:

- Wolli Creek, Bardwell Creek Bonnie Doon Channel and Eve Street/Cahill Park Catchments Floodplain Risk Management Plan, March 1998, Webb, McKeown & Associates Pty Ltd
- North Arncliffe Drainage Study draft report, May 2000, Willing & Partners.
- Bonnie Doon Pipe & Overland 2D Flood Study, December 2011, WMA Water
- Bonar Street Upgrade Project – Design Options Assessment, February 2014, Cardno
- Draft Bonar Street Development Precinct Drainage Study, February 2014, Rockdale City Council
- Bonar Street Flood Modelling – Peer Review, 1 April 2014, BMT WBM Pty Ltd
- Bonar Street Upgrade Drainage Design, July 2014, Cardno
- Rockdale Section 94 Contributions Plan 2004, amended 4 November 2010, Don Fox Planning Pty Ltd, Scott Carver Pty Ltd and Rockdale City Council
- Suite of cost estimate sheets, plans and notes for stormwater infrastructure items, 15 May 2014, by Evans & Peck
- Rockdale Contributions Plan 2016 Urban Renewal Area, GLN Planning
- Application for assessment of a section 94 development contributions plan – Rockdale City Council Rockdale Contributions Plan 2016 – Urban Renewal Area, Rockdale City Council

Staff from J. Wyndham Prince have also met with the nominated officers from the Council and carried out joint inspections of selected stormwater infrastructure items locations.

3 BACKGROUND

In 1998, Webb McKeown & Associates Pty Ltd prepared a Floodplain Management Plan on behalf of the Council for the Wolli Creek, Bardwell Creek, Bonnie Doon Channel and Eve Street/Cahill Park catchments. The Floodplain Management Plan acknowledged that it was the third stage of the flood management process. The preceding two stages, the flood study and floodplain management study, were not provided or reviewed in the preparation of this report. Whilst the Floodplain Management Plan extends beyond the URA, it notes that the floodplain management study found that *"in a 1% flood some 117 residential, industrial and commercial buildings would be inundated above floor level and the total tangible damage to buildings would be in the order of $6 million".*

Review of Figure 1 from the Floodplain Management Plan (see Plate 3.1 below) indicates that between 73 and 101 of these properties appear to fall within the URA, which is generally located in areas NA1, BD1, BD2 and EC1.

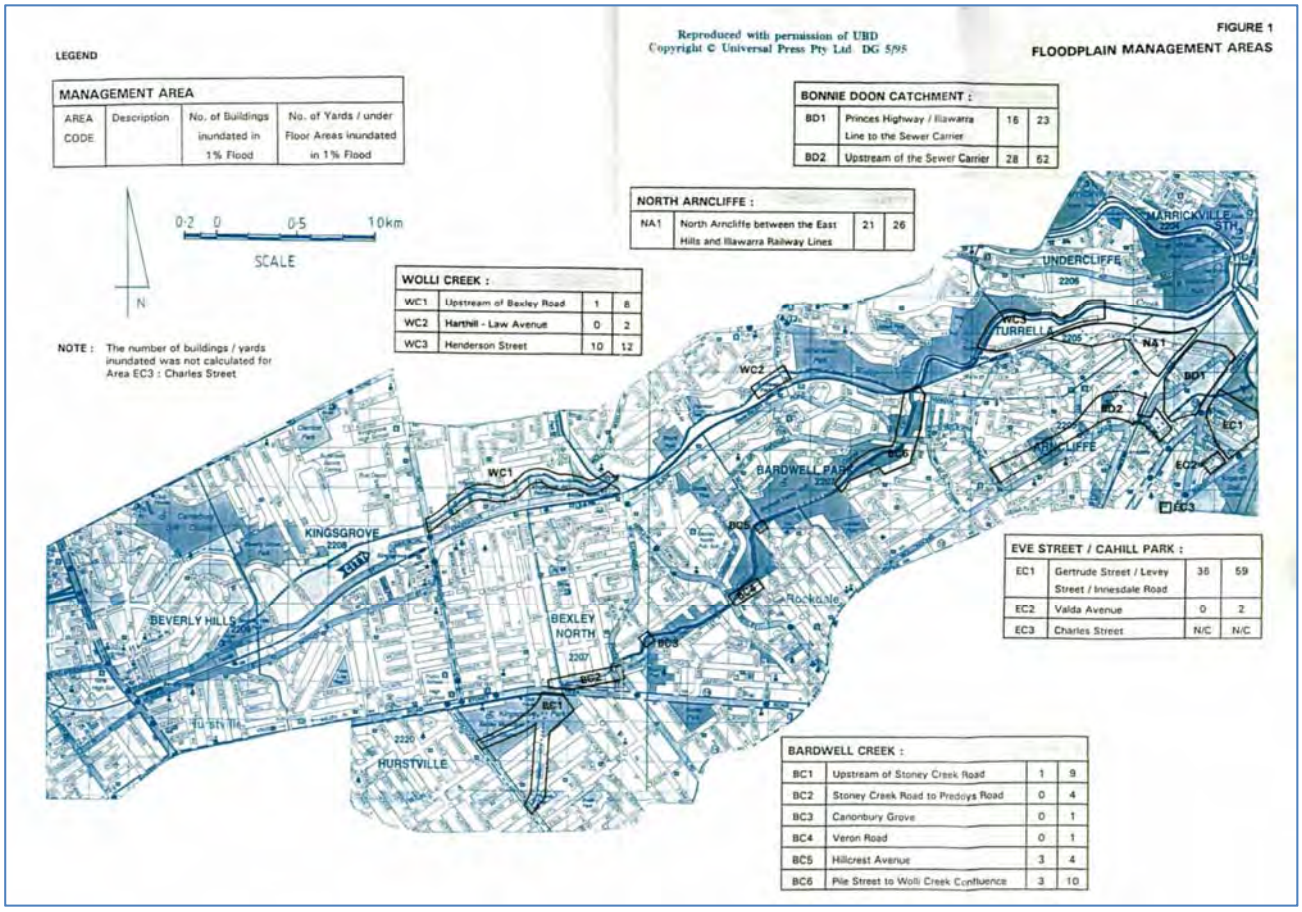


Plate 3.1 - Figure 1 – Floodplain Management Plan Areas

(Source – WMA March 1998)

In 2000, Willing & Partners prepared a draft report on the North Arncliffe Drainage Study on behalf of the Council. The study was commissioned to review flooding behaviour within the North Arncliffe Development Precinct, and to identify the preferred flood mitigation and stormwater drainage works for the area to allow a Section 94 Drainage Plan to be developed. The study area covers the RCP 2016 Bonar Street precinct and most of the Wolli Creek precinct.

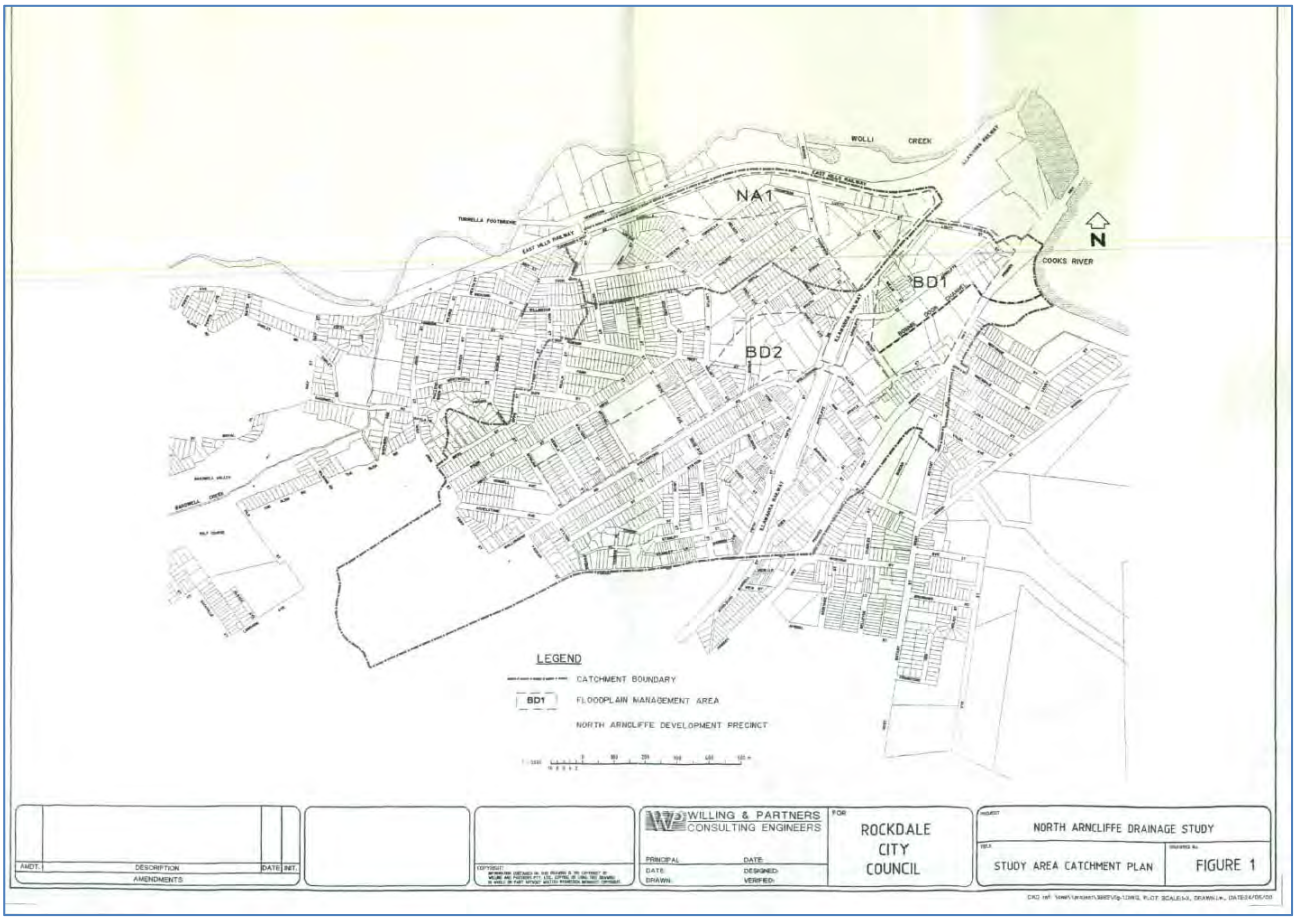


Plate 3.2– Figure 1 – North Arncliffe Drainage Study

Study Area Catchment Plan

(Source – W&P May 2000)

Prior to its rezoning, the entire URA was a traditional industrial and related employment area accommodating factories, warehouses and the like. The Wolli Creek precinct was rezoned for mixed use urban renewal in the early 2000s, and the Bonar Street precinct for higher density residential development in 2008. At the time of the rezoning, it was known that the area had a history of flooding.

In accordance with Directions issued by the Minister for Planning under section 117 of the EP&A Act, a planning proposal must not contain provisions that apply to flood planning areas which, amongst other things, permit a significant increase in the development of that land, or are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services.

In order to justify the rezoning of flood-affected land for a higher use, it is expected that the Council would have made submissions to the Director-General of Planning demonstrating how the proposed rezoning was appropriate in the circumstances. The Council was unable to provide these submissions to include in this review. It may have been of assistance to understand how the rezoning of flood-affected land was justified, and what potential funding sources were proposed at the time.

The following flood studies have also been conducted on behalf of the Council and are referenced as supporting documents in RCP 2016:

- Bonnie Doon Pipe & Overland 2D Flood Study, December 2011, WMA Water

This study defined flood behaviour in the Bonnie Doon catchment, prepared flood hazard and flood extent mapping, and prepared suitable models of the catchment and floodplain for use in a subsequent Floodplain Risk Management Study. The Bonnie Doon catchment includes the Bonar Street precinct in the URA, and extends upstream beyond the precinct to Wolli Creek Road. The study did not extend beyond the Illawarra railway line at the downstream end of the catchment.

- Bonar Street Upgrade Project – Design Options Assessment, February 2014, Cardno

This report provided preliminary and detailed design for the proposed upgrading of Bonar Street and Bidjigal Street, Arncliffe, within the Bonar Street precinct. The report includes an analysis of design compliance with the Bonar Street Upgrade Project objectives, including flood protection of basement car parks proposed along Bidjigal Street and the provision of trafficable driveway entrances to basement carparks proposed along Bidjigal Street.

The report developed three design options including a simple drainage design which is highly cost-effective, an optimised design and a conservative design and assessed the impact pf each design against the conditions existing at the time of the report.

- Draft Bonar Street Development Precinct Drainage Study, February 2014, Rockdale City Council

This study examined the Bonar Street Development Drainage Precinct, which included the Bonar Street precinct, and extended downstream beyond the Illawarra railway line to the SWOOS (Southern and Western Suburbs Ocean Outfall Sewer).

The study found that the existing trunk stormwater drain through the Bonar Street precinct does not cater for the 1%AEP flow, and at Bidjigal Street, a number of apartments and the basement carpark at 9-11 Wollongong Road would start to be inundated in about the 20 year ARI design flood.

- Bonar Street Flood Modelling – Peer Review, 1 April 2014, BMT WBM Pty Ltd

This review examined the hydraulic model for the Bonar Street Upgrade Project (BSUP) prepared by Cardno and the base case model prepared by WMAwater that was adopted for the BSUP.

The review recommended that justification be sought for the change in peak water level from the revised flood study model so that the Council can be confident the correct base case model is being utilised for the BSUP. Further the review recommended clarification of the downstream boundary configuration, the resolution flow instabilities in the model hydrographs and confirmation of an overland flow path between buildings in the BSUD Option 2 modelling.

- Bonar Street Upgrade Drainage Design, July 2014, Cardno

This report followed on from the February 2014 Cardno report and the April 2014 BMT WMB peer review. It included an assessment of flows through the development at 9-11 Wollongong Road, an options analysis for culvert design within the BSUP site, and an options analysis for flood mitigation upstream and downstream of the BSUP site.

This report recommended that:

1. The predicted flood levels should be used to determine minimum floor levels and driveway levels;

2. The mitigation options assessment should be reviewed in more detail, and potentially revised based on the final drainage design;

3. Other possible floor risk management options for consideration are whole-of-catchment flood mitigation options, which involve reductions to the peak of the hydrograph in the upstream catchment (eg upstream detention basin).

4 SCOPE AND COST OF STORMWATER INFRASTRUTURE ITEMS

In order to undertake an analysis of the proposed stormwater infrastructure items and their relevance to redevelopment of the URA, one must first understand the scope of the works, which technical study justified the works, and the cost of the works.

The findings in this section of the report are summarised in the Scope and Cost Summary included as Appendix A to this report.

4.1 Scope of stormwater infrastructure items

Clause 27(1)(h) of the Environmental Planning and Assessment Regulation 2000 (EP&A Regs) requires that a contributions plan must include 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.

The infrastructure location maps are included in Appendix B of RCP 2016. The maps relating to stormwater infrastructure are provided in Plates 4.1 & 4.2 below.

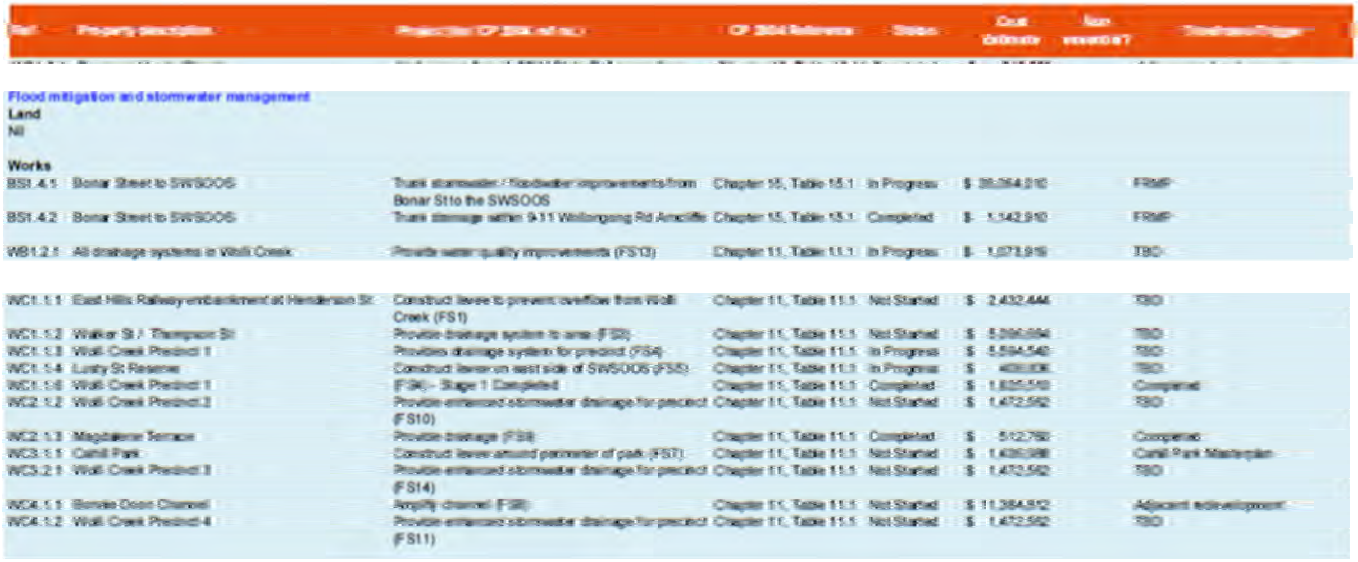
Plate 4.1 - Micro Catchment Analysis

(Source – RCP 2016)

Plate 4.2 - Work Item BS1.4.1 – Bonar Street to SWOOS

(Source – RCP 2016)

Fourteen line items of proposed infrastructure works are listed in the infrastructure schedule summary in the Appendix A of RCP 2016, and are shown in Plate 4.3 below. The entries also include the CP 2004 reference number.



Flood mitigation and stormwater management						
Land						
Nil						
Works						
BS1.4.1	Bonar Street to SWSOOS	Trunk stormwater / floodwater improvements from Bonar St to the SWSOOS	Chapter 15, Table 15.1	In Progress	$ 38,264,210	FRMP
BS1.4.2	Bonar Street to SWSOOS	Trunk storage within 9-11 Wollongong Rd Arncliffe	Chapter 15, Table 15.1	Completed	$ 1,142,910	FRMP
WB1.2.1	All drainage systems in Wolli Creek	Provide water quality improvements (FS13)	Chapter 11, Table 11.1	In Progress	$ 1,073,915	TBD
WC1.1.1	East Hills Railway embankment at Henderson St	Construct levee to prevent overflow from Wolli Creek (FS1)	Chapter 11, Table 11.1	Not Started	$ 2,432,444	TBD
WC1.1.2	Walker St / Thompson St	Provide drainage system to area (FS2)	Chapter 11, Table 11.1	Not Started	$ 5,396,094	TBD
WC1.1.3	Wolli Creek Precinct 1	Provides drainage system for precinct (FS4)	Chapter 11, Table 11.1	In Progress	$ 5,594,540	TBD
WC1.1.4	Lusty St Reserve	Construct levee on east side of SWSOOS (FS5)	Chapter 11, Table 11.1	In Progress	$ 400,000	TBD
WC1.1.6	Wolli Creek Precinct 1	(FS6) - Stage 1 Completed	Chapter 11, Table 11.1	Completed	$ 1,835,510	Completed
WC2.1.2	Wolli Creek Precinct 2	Provide enhanced stormwater drainage for precinct (FS10)	Chapter 11, Table 11.1	Not Started	$ 1,472,592	TBD
WC2.1.3	Magdalene Terrace	Provide drainage (FS9)	Chapter 11, Table 11.1	Completed	$ 512,752	Completed
WC3.1.1	Cahill Park	Construct levee around perimeter of park (FS7)	Chapter 11, Table 11.1	Not Started	$ 1,436,988	Cahill Park Masterplan
WC3.2.1	Wolli Creek Precinct 3	Provide enhanced stormwater drainage for precinct (FS14)	Chapter 11, Table 11.1	Not Started	$ 1,472,592	TBD
WC4.1.1	Bonnie Doon Channel	Amplify channel (FS8)	Chapter 11, Table 11.1	Not Started	$ 11,384,812	Adjacent redevelopment
WC4.1.2	Wolli Creek Precinct 4	Provide enhanced stormwater drainage for precinct (FS11)	Chapter 11, Table 11.1	Not Started	$ 1,472,592	TBD

Plate 4.3 - Infrastructure Schedule Summary Flood mitigation and stormwater management (Source – RCP 2016)

4.1.1 Mapping of stormwater infrastructure items

It is important that mapping of the proposed infrastructure items is included in the contributions plan. It is extremely difficult to understand the location, nature, extent and scope of the works where they are not suitably mapped.

The maps included in RCP 2016, shown above, only label *BS 1.4.1 - Bonar Street to SWOOS.* An item within the Bonar Street precinct. No other stormwater works items are labelled on maps included in RCP 2016.

Accordingly, to appropriately comply with the requirements of the EP&A Regs, the maps within RCP 2016 should be updated to clearly label and illustrate the location and extent of all of the stormwater infrastructure items.

In the absence of a complete mapping of the stormwater infrastructure items within RCP 2016, one must cross-reference the item's 2004 contribution plan (CP 2004) reference number from the infrastructure schedule summary above; with Figure 11.1 within the CP 2004 (see plate below 4.4 below).

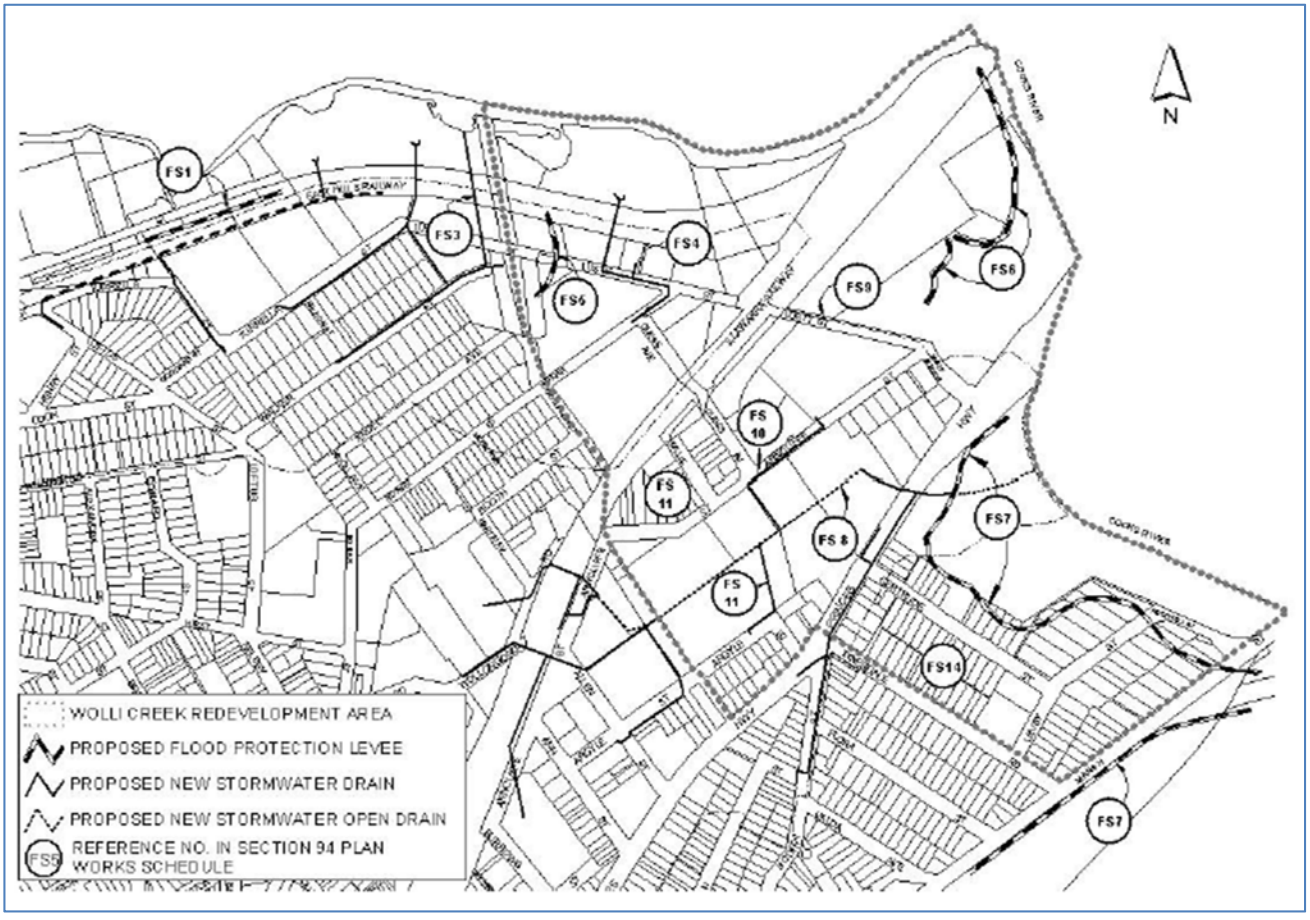


Plate 4.4 - Figure 11.1 CP 2004 – Location of flood mitigation and stormwater infrastructure management facilities

(Source – CP 2004)

The RCP 2016 maps and infrastructure schedule summary and CP 2004 Figure 11.1 have been reviewed, and it is found that:

- *BS 1.4.2 - Bonar Street to SWOOS* (Trunk drainage within 9-11 Wollongong Road Arncliffe) appears to be a component of *BS 1.4.1 - Bonar Street to SWOOS* (Trunk stormwater/floodwater improvements from Bonar Street to the SWOOS).
- *WB 1.2.1 - All drainage systems in Wolli Creek* (CP 2004 - *FS13 - Provide water quality improvements*) is not illustrated on CP 2004 Figure 11.1. It may be the key WSUD locations and/or the gross pollutant traps on the micro catchment analysis map, however that is not clear.
- WC 1.1.1 - East Hill Railway embankment at Henderson Road (CP 2004 – FS1 – Construct levee to prevent overflow from Wolli Creek) is located on CP 2004 Figure 11.1 outside the URA.
- WC 1.1.6 - Wolli Creek Precinct 1 (CP 2004 – FS4 – Stage 1 completed) appears to be a component of WC - 1.1.3 Wolli Creek Precinct 1 (CP 2004 – FS4 – Provides drainage system for precinct).
- *WC 3.2.1 - Wolli Creek Precinct 3* (CP 2004 – *FS14 – Provide enhanced stormwater drainage for precinct)*. CP 2004 Figure 11.1 includes a label FS14; however, the location and extent of works are not shown.

4.1.2 Essential infrastructure

The essential works list is set out at section 3.4.2 of the NSW Department of Planning & Infrastructure document Revised Local Development Contributions Practice Note - for the assessment of Local Contributions Plans by IPART February 2014. This applies to contributions plan that propose a contribution level above the relevant cap.

With regard to stormwater infrastructure items, it describes the essential works as ‘land and facilities for stormwater management’. The term ‘stormwater management’ is not defined.

It is our opinion that ‘stormwater management’ encompasses the management of both stormwater quality and quantity. It is current best practice to include water quality control devices in drainage systems to ensure appropriate functioning of the system. An example is the removal of gross pollutants and coarse sediment to reduce the risk of blockage of the drainage system and outlet. The use of a swale instead of a pipe may slow water velocity and reduce damage and maintenance at the outlet.

Further, it is our view that within the context of the RCP 2016, the flood mitigation works proposed are an essential part of the overall stormwater quantity management strategy and accordingly fit within the definition of ‘stormwater management’.

Accordingly, all elements are considered essential infrastructure, provided there is a nexus between the redevelopment and the works.

4.2 Recommendations of technical studies

The Summary of IPART’s assessments of local government contributions plans Fact Sheet dated 20 August 2015 notes in Table 2 that a key assessment principle in the consideration of proposed stormwater infrastructure items is whether the location and configuration of those items is consistent with the stormwater technical study.

The supporting documents in RCP 2016 for flood mitigation and stormwater management are:

- Bonnie Doon Pipe & Overland 2D Flood Study, December 2011, WMA Water
- Bonar Street Upgrade Project – Design Options Assessment, February 2014, Cardno
- Draft Bonar Street Development Precinct Drainage Study, February 2014, Rockdale City Council

- Bonar Street Flood Modelling – Peer Review, 1 April 2014, BMT WBM Pty Ltd
- Bonar Street Upgrade Drainage Design, July 2014, Cardno

Based on the supporting documentation, only the proposed trunk drainage upgrade works within the Bonnie Doon catchment (and in the vicinity of Bonar Street) have been able to be assessed in detail. As such, the only proposed stormwater infrastructure items in RCP 2016 that are consistent with the technical studies are *BS 1.4.1 - Bonar Street to SWOOS* (Trunk stormwater/floodwater improvements from Bonar Street to the SWOOS) and *BS 1.4.2 - Bonar Street to SWOOS* (Trunk drainage within 9-11 Wollongong Road Arncliffe).

None of the Wolli Creek precinct stormwater infrastructure items are addressed and/or proposed by the abovementioned supporting documents. Further, not all of the Wolli Creek items appear to originate from the 1998 Webb McKeown Floodplain Management Plan.

The draft North Arncliffe Drainage Study, dated May 2000, prepared by Willing & Partners was commissioned to review flooding behaviour within the North Arncliffe Development Precinct, and to identify the preferred flood mitigation and stormwater drainage works for the area to allow a Section 94 Drainage Plan to be developed. The study area covers the RCP 2016 Bonar Street precinct and most of the Wolli Creek precinct.

The draft Willing & Partners study preferred stormwater augmentation works include:

- Raise the railway embankment or construct levee - similar to RCP 2016 WC 1.1.1 East Hill Railway embankment at Henderson Street.
- Install flap gates - a component of the RCP 2016 WC 1.1.2 Walker St/Thompson St works.
- Upgrade pipe drainage between railway and Lusty Street, upgrade section of pipe drain under East Hill railway line and install flap gates – similar to RCP 2016 Wolli Street precinct 1 works.
- Installation of an additional drainage system to complement the Bonnie Doon channel – contrary to RCP 2016 WC 4.1.1 amplify the Bonnie Doon Channel. The draft report did consider the amplification of the Bonnie Don Channel, however noted that deepening the existing channel is not practical due to the elevation and flat grade of the existing channel bed. The draft report also that due to the location of existing buildings, construction of a new drain adjacent to the existing alignment would only be feasible as part of a large scale re-development.

The supporting technical studies, the Webb McKeown report and the draft Willing & Partners report do not propose the following stormwater infrastructure items:

- *WB 1.2.1 - All drainage systems in Wolli Creek* (CP 2004 – FS13 - Provide water quality improvements)
- *WC 1.1.4 – Lusty St Reserve* (CP 2004 – FS5 – Construct levee on east side of SWOOS)
- *WC 2.1.2 – Wolli Creek Precinct 2* (CP 2004 – FS0 – Provide enhanced stormwater drainage for precinct)
- *WC 2.1.3 – Magdalene Terrace* (CP 2004 – FS9 – Provide drainage)
- *WC 4.1.1 – Bonnie Doon Channel* (CP 2004 – FS8 – Amplify channel)
- *WC 4.1.2 – Wolli Creek Precinct 4* (CP 2004 - FS11 – Provide enhanced stormwater drainage for precinct)

As these items have not been included in a technical study, it is not possible to comment on the reasonableness of their inclusion. Prima facie the works are not supported by the relevant technical studies.

CP 2004 states that *"As the provision of the flood mitigation works identified in this plan are collectively critical to the acceptability of redevelopment of the area, and as there is no likelihood of alternative funding from either the State government or from contributions by developments elsewhere in the catchments, these works must all be provided for, and fully funded by, future developments within the Wolli Creek area through section 94 contributions, even though some of the floodwater which would otherwise affect the area may originate from outside of the area"*.

It is agreed that these upgrades (levees and pipe upgrades) would likely provide improved flooding outcomes for the area and potentially facilitate additional development within the catchment. However, an assessment / mapping needs to be undertaken by Council to clearly demonstrate the benefits of these measures and how they would support future development in the area. Figure 11.1 in CP 2004 (Plate 4.4) vaguely shows the extent of proposed upgrade works and does not show the benefits of undertaking these upgrades.

No mapping of the floodplain extent, depths or hazards pre and post mitigation works and redevelopment in the Wolli Creek precinct has been made available. The absence of such mapping makes it extremely difficult to adequately understand the efficacy of the proposed stormwater infrastructure works. Further, none of the technical studies articulate the post mitigation flood depth, level and hazard targets that they are attempting to achieve.

It is therefore recommended that Council undertake flood modelling and provide results to IPART in order to clearly demonstrate which areas will be benefited, how these will support future re-development in the area and how the mitigation works will address the impacts and demand of the re-development.

4.2.1 Boonie Doon and Bonar Street studies

The Bonnie Doon Pipe & Overland 2D Flood Study (WMA Water, 2011) included a TUFLOW assessment to define flood behaviour under "Existing" conditions. Flood mapping was provided for the 20%, 5%, 1% AEP and PMF events.

The flood study formed the first stage in the flood management process and provided a management tool in order to assess the overall floodplain management options in the study area.

The study noted that historically, flooding has "caused considerable property damage". In particular, the "*storm of February 1993 caused significant flooding problems and disrupted morning peak traffic. Flood waters swept through four houses in Kelsey Street and ponding approximately 0.15 m above the kerb was experienced at Mitchell, Walters, Kembla and Dowling Streets, Arncliffe. Flood waters under the railway underpass at Allen Street at the intersection of Wollongong Road and Arncliffe Street were significant enough to move vehicles. There have been other instances of floodwaters ponding under the Illawarra railway line but there is no accurate or detailed historical record".*

TUFLOW modelling results of the study area demonstrated that *"in many locations the existing piped storm drainage system does not adequately cater for runoff generated from frequent design rainfall events".*

Most notably, the existing lowpoint in Wollongong Street is recognised as a key issue with the Illawarra railway line, SWOOS (Southern and Western Suburbs Ocean Outfall Sewer) and Princes Highway being a barrier to overland flooding. The existing crossings in this location is limited to a single 1500 mm pipe extending from Wollongong Road / Martin Avenue to Arncliffe Street along with the railway underpass at Allen Street (which acts as an overflow path after flood water reach a depth of 0.8m at the intersection of Wollongong Road and Martin Avenue). Refer to photos in Plate 4.5 below.

Photo 1: Intersection of Wollongong Rd and Martin Ave

Photo 2: Railway underpass upstream of Allen St

Plate 4.5 - Bonnie Doon Photos

(Source – WMA Water 2011)

During the site visit with Council on 16 September 2016, it was also observed that a pedestrian link under the Railway Line has been recently installed (approximately 20 m to the north of the underpass). Whilst this may provide some additional flood relief, it does appear to have been constructed relatively high so is unlikely to significantly improve the flooding situation at the low point in Wollongong Road. Refer to photo in Plate 4.6 below.

Plate 4.6- Bonnie Doon Photo

(Source – JWP)

A review of the Overland Flood Study (WMA, 2011) confirms flood behaviour for the 1% AEP flood extents which would have occurred **prior** to the recent construction of large re-development areas upstream of the Illawarra Railway Line. See Plate 4.7. In particular:

- **Location A** (Meriton Apartments – Corner of Hirst and Bonar Street) – Flooding is generally clear of existing dwellings however does inundate surrounding roads.
- **Location B** (43 – 45 Bonar Street and 10 Birigilli Street) – Flooding overtops into the existing property from the corner of Hirst Street and Bonar Street, where it becomes either trapped and / or continues overland to Wollongong Road to the East.
- **Location C** (9 – 11 Wollongong Road) – Overland flooding and / or ponding is conveyed through the property (including carpark areas and locations surrounding buildings).
- **Location D** (Al Zahara College – Corner of Martin Avenue and Wollongong Road) – Partially extends into site just north of existing building layout.
- **Lowpoint** – Ponding occurs at the lowpoint of Wollongong Road, with overland flooding breaching via the existing underpass at Allen Street.

Results therefore confirm that flooding is an existing issue in the area.

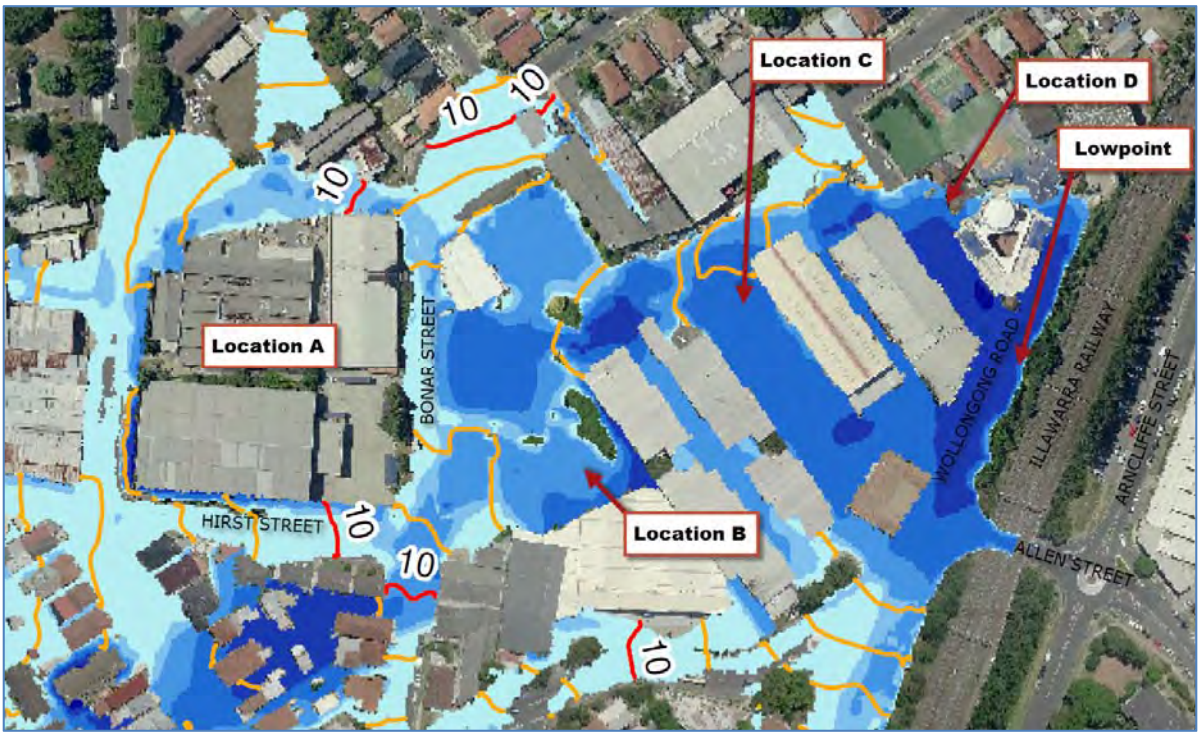


Plate 4.7- Bonnie Doon 1% AEP Flooding – Existing Conditions

(Source - Figure 11 WMA Water 2011)

Council subsequently engaged Cardno to undertake a series of investigations in the Bonnie Doon Precinct to assess potential mitigation options (Cardno, 2014a and 2014b). These investigations particularly focused around the Bonar Street upgrade works to inform the Bonar Street to SWSOOS upgrade works denoted under BS 1.4.1 of RCP 2016)

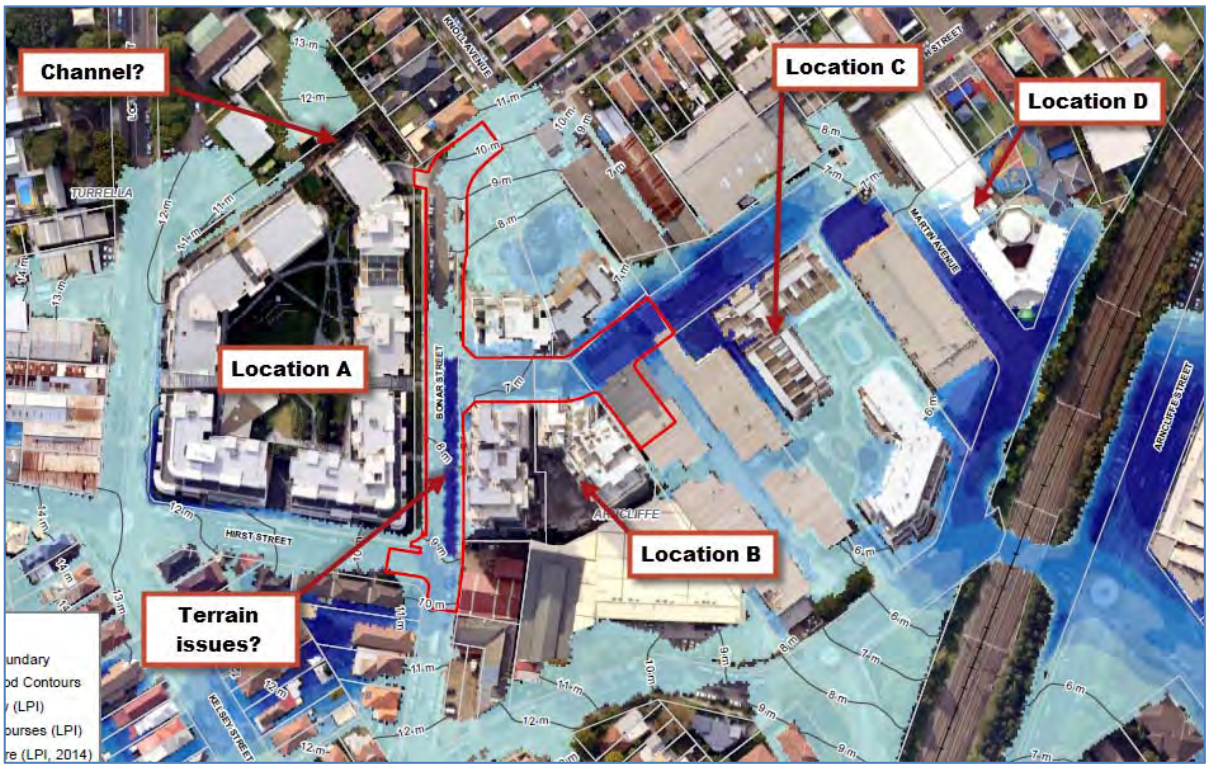


Plate 4.8 - Pre Development Conditions

(Source – Cardno, 2014b)

Plate 4.8 above is an extract from Appendix H of Cardno's Bonar Street Upgrade Drainage Design Report (Cardno, 2014b).

A review of the supplied data has identified that Cardno's "Pre-Development" conditions (Plate 4.8) is inconsistent with WMA Water's "Existing" conditions (Plate 4.7). In particular, those large re-developments which have recently occurred throughout the Precinct (to the West of the Illawarra Railway) have all been considered as "Pre – Development".

Importantly, this inconsistency means that it is difficult to quantify the magnitude of flood differences against "existing" conditions associated with **both** the proposed re-development areas and the proposed upgrades.

There also appears to be a few anomalies in the modelling which need to be investigated:

- Deep ponding along Bonar Street. This appears to have been caused by the construction of apartments / lifting of the terrain at Location B. It is unclear whether Birrigilli Road is included and whether the terrain is acting as a barrier to flows.
- No flooding appears to be shown in the overland flowpath around the Meriton apartments at Location A which would be expected.

Plate 4.9 - 100yr ARI Post-Development Impact on Flood Levels

(Source – Cardno, 2014b)

Plate 4.9 demonstrates the 1% AEP flood difference mapping for the Bonnie Doon Catchment (Cardno, 2014b). Based on the supplied data alone, the benefits of the upgrades are not clearly demonstrated as to how the proposed works listed in the Contributions Plan would respond to development in the Precinct. The study also appears to only consider part of the proposed upgrade works at BS 1.4.1 (in the vicinity of Bonar Street) and does not consider the remaining downstream upgrade works.

Importantly however, if mapping were to demonstrate that the proposed upgrade works (BS1.4.1, BS1.4.2, WC 4.1.1 and WC4.1.2) will enable large re-development to occur or mitigates the impact of development (such as Locations A, B, C and D along with other rezoned areas) then this may be considered a suitable nexus on which development contributions could be levied.

Scenarios to support this outcome would generally include:

- Scenario 1 – Existing Conditions (pre 2009)
- Scenario 2 – Existing Conditions (pre 2009) plus proposed mitigation measures already constructed
- Scenario 3 – Post-Developed Conditions plus proposed mitigation measures

Flood difference mapping would then be required to show the benefits of the upgrades for the Bonnie Doon Precinct to clearly demonstrate both to IPART and developers how the proposed upgrade deliver benefits to the individual development sites. Modelling should also consider the following:

- Proposed trunk drainage upgrades through to Cooks River (BS1.4.1, BS1.4.2, WC 4.1.1 and WC4.1.2)
- Consideration of areas downstream of the Railway Line
- Impact of tail water conditions from the Cooks River.

It is also noted that the current Cardno assessment (Cardno, 2014b) does not address flood impacts downstream of the Railway line. In our view, this should be addressed as part of the extension of the modelling in order to support the finalisation of the Contributions Plan.

4.3 Cost of stormwater infrastructure items

When undertaking an evaluation of a contributions plan, it is necessary to assess whether the proposed development contribution is based on a reasonable estimate of the cost of the proposed infrastructure. The costs should be based upon the best available information at the time of preparing the contributions plan.

In order to provide a consistent approach to estimating costs for infrastructure, IPART has prepared the Local Infrastructure Benchmark Costs.

The benchmark cost is made up of 3 components:

1. Base cost – which reflects the typical efficient cost of providing the infrastructure
2. Adjustment factors – which reflect variations due to geographical setting, regional prices, access to materials and congestion settings.
3. Contingency allowance – which reflects the nature of the infrastructure, and what planning stage the project is at.

The key principles and approaches used in the assessment of costs are:

- The cost estimates should be based upon the best information available and be comparable to the cost of similar infrastructure in other plans.
- The contingency allowances, professional fees and other on-costs should be commensurate with the stage of infrastructure planning and delivery.
- Where IPART's benchmarks have been used, they should be applied in accordance with IPART's benchmark report and should be replaced with site-specific estimates when these are available.

It is noted that Evans & Peck were engaged by IPART to provide advice regarding the Local Infrastructure Benchmark Costs, and the final report was issued April 2014.

The Council also engaged Evans & Peck to provide cost estimates for most stormwater infrastructure items in RCP 2016. Those estimates are dated 15 May 2014 and are referred to as cost source estimates in the Scope and Cost Summary in Appendix A to this report.

It is noted that the indirect costs for site establishment, design and overheads & profit in the Evans & Peck estimates range between 36 and 42%. This is considered excessive and in our opinion a more reasonable allowance for these indirect costs for the proposed range of works is 15%.

J Wyndham Prince regularly prepares Opinions of Probable Costs (OPC) for largescale greenfield developments at concept stage for clients. This concept stage is prior to any detailed design, and is considered to be equivalent to the Strategic Review and Business Case review stages referred to in the IPART Benchmark Costs report.

The rates used in the preparation of an OPC are based upon rates from recent tenders for similar works. The contractor's overheads and profits, site management and risk costs are already allowed for in those rates. Further, a 5% allowance is made for site establishment costs and a 10% allowance for design costs. We consider that this approach is equally applicable to brownfield development cost estimates.

Accordingly, it is considered appropriate to apply a 15% indirect cost, comprising 5% site establishment and 10% design, to those stormwater works items at the Strategic Review and Business Case stage in the contribution plan.

The following is an assessment of the costs proposed for the stormwater infrastructure items in the RCP 2016.

- *BS 1.4.1 Bonar Street to SWOOS*

The supplied cost estimate is based upon a Gateway 1 methodology which is equivalent to a project at the strategic review planning stage. Accordingly, the estimate applies a final 30% contingency to the total cost of the project.

Part B of the estimate provides a list of detailed documentation for part of the works.

As the W4 work component has been completed (and included in BS 1.4.2 as actual costs), the cost of the W4 work item is to be deducted from the total direct costs. This results in a total direct cost of $15,875,812 (May 2014 $).

The cost estimate applies a total indirect cost of 42% (24% site establishment, 8% design, 10% overhead & profit). This is considered excessive, and a 15% indirect cost is considered appropriate. Further, the client cost of 11% is greater than the 10% cost included in the benchmark report. Accordingly, the 10% client cost is applicable.

As the works have progressed beyond the strategic review stage, it is considered that the 30% contingency is excessive, and should be reduced to 20%.

On the basis of excluding work item W4 from the direct costs, reducing the indirect cost to 15%, client costs to 10% and contingency to 20%, our estimated total project cost of this item is $24,099,482 (May 2014 $).

Based upon the 2.8% increase applied to the 'May 2013 $' in the Evans & Peck cost estimates, our estimate of the total project cost of this item is $24,784,126 (September 2015 $).

- *BS 1.4.2 Bonar Street to SWOOS*

This item relates to the trunk drainage within 9-11 Wollongong Rd Arncliffe. These works are completed and the RCP 2016 costs are based on the actual costs to undertake the works.

- *WB 1.2.1 All drainage systems in Wolli Creek*

No supporting cost estimates have been provided for this item, and as noted earlier in this report, the mapping of this item makes it difficult to articulate the extent and scope of works.

WB 1.2.1 is costed at $1,073,919 in RCP 2016.

The micro catchment map in RCP 2016 (Plate 4.1 of this report) indicates 4 gross pollutant traps (GPT). The Local Infrastructure Benchmark Costs indicate at item 2.1.4 that a proprietary GPT system with a 370l/s design flow had a benchmark base cost of $118,560 each. As no detail on sizing of the GPTs is provided, the cost of 4 GPTs should be based upon the total benchmark base cost of $474,240.

As, the schedule in Appendix A of RCP 2016 (Plate 5.1.3) notes that these works are 'in progress', further detail on the location and extent of these works and more accurate cost estimates should be able to be provided by Council to justify the total cost.

If the WB 1.2.1 cost includes works in the key WSUD locations shown on the micro catchment map, then a fully detailed cost estimate and concept design must be provided for review.

On the basis of the available information, the direct cost is based upon the benchmark base cost is $474,240 (May 2014 $). Applying 15% indirect costs, 10% client costs, and 20% contingency (as works are noted as 'in progress') the our estimate of the total project cost is $719,896 (May 2014 $) and $740,053 (September 2015 $).

- *WC 1.1.1 East Hills Railway embankment at Henderson St*

The supplied cost estimate is not supported by any detailed plan or sketch. The only information provided are handwritten notes, Figure 11.1 of CP 2004 (FS1) and what can be deduced from the estimate spreadsheet.

The direct costs are estimated at $1,182,626 (May 2014 $).

The estimate applies a 35% indirect cost, 11% client cost and 30% contingency.

It is considered appropriate to apply 15% indirect costs, 10% client costs and due to the stage of the planning process, it is appropriate to apply a 30% contingency. This results in a total; our estimate of the total project cost is $1,944,828 (May 2014 $) and $1,999,283 (September 2015 $).

- *WC 1.1.2 Walker St/Thompson St*

The supplied cost estimate is supported by a sketch and hand written notes.

It is noted that the rates for 1200mm diameter pipework ($2,722/m and $3,596/m in road) are in excess of the rates at 2.6.7 for 1500mm diameter pipes in the Local Infrastructure Benchmark Costs ($2012/m). Similarly, the cost estimate for stormwater pits for 1200mm diameter pies ($15,000.00 each) are more than double that in item 2.5.6 of the Local Infrastructure Benchmark Costs ($6,992 each).

Applying these benchmark costs, the direct costs is reduced to $2,192,901 (May 2014 $).

With 15% indirect costs (cf 42% in estimate) and 10% client costs (cf 11% in estimate) and 30% contingency, our estimate of the total project cost is $3,606,225 (May 2014 $) and $3,707,200 (September 2015 $).

- *WC 1.1.3 Wolli Creek Precinct 1*

The supplied cost estimate is supported by a sketch and hand written notes and is estimated to cost $5,594,540 in RCP 2016.

The RCP 2016 schedule indicates that this item is 'in progress', however it is noted that Stage 1 complete. This is reflected by item WC 1.1.6 with an actual cost of $1,825,510 in RCP 2016. As Stage 1 is completed, applying a 30% contingency is inappropriate. Each stage provides for a 700m^3 detention tank and it is considered that a more accurate cost estimate can be used based upon the actuals for Stage 1.

Alternatively, cost estimates should be based upon a concept design.

Based upon the information available, the direct cost of $2,720,000 (May 2014 $) is acceptable. The total project cost should be based upon 15% indirect costs, 10% client and 20% contingency. Our estimate of the total project cost is $4,473,040 (May 2014 $) and $4,128,960 (September 2015 $).

- *WC 1.1.4 Lusty St Reserve*

A spreadsheet with the detailed cost estimates has not been supplied for this item. A single figure of $397542 (May 2014 $) is provided.

The estimate notes indicate that this is based upon a Gateway 1 estimate methodology, however RCP 2016 notes that these works are 'in progress'. It would be expected that an accurate cost estimate could be provided and a 30% contingency would not be applicable in this instance.

Applying a 20% contingency, our estimate of the total project cost is $366,961 (May 2014 $) and $377,236 (September 2015 $).

- *WC 1.1.6 Wolli Creek Precinct 1*

This item relates to Stage 1 Wolli Creek Precinct 1 works and is listed as completed. The RCP 2016 costs are based on the actual costs to undertake the works. Full details of the costs should be provided for review.

- *WC 2.1.2 Wolli Creek Precinct 2*

No supporting cost estimate or sketch has been provided for this item. It is also not clear from which technical study this originated. A detailed cost estimate and concept design is to be supplied by the Council to justify the cost in RCP 2016.

- *WC 2.1.3 Magdalene Terrace*

This items relates to item FS9 in CP 2004 (Provide drainage) and is listed as completed in RCP 2016. It is not clear from which technical study this originated.

In the absence of a sketch or detailed design of the works it is assumed that the RCP 2016 costs are based on the actual costs to undertake the works.

Full details of the costs should be provided for review.

- *WC 3.1.1 Cahill Park*

The supplied cost estimates are based upon hand written notes and plan Option 1A prepared by UmbaCo Landscape Architects (see Plate 4.10 below), however a 30% contingency has been applied.

The cost estimate allows for a 78m long levee. Option 1A by UmbaCo however appears to include approximately 300m of levee. Accordingly, a concept sketch is required indicating which '78m' of the levee is proposed to be included as the works item in RCP 2016.

Assuming the direct costs of $698,647 (May 2014 $) are appropriate, and applying indirect costs of 15%, client costs of 10% and contingency of 20%, our estimate of the total project cost is $1,060,546 (May 2014 $) and $1,090,241 (September 2015 $).

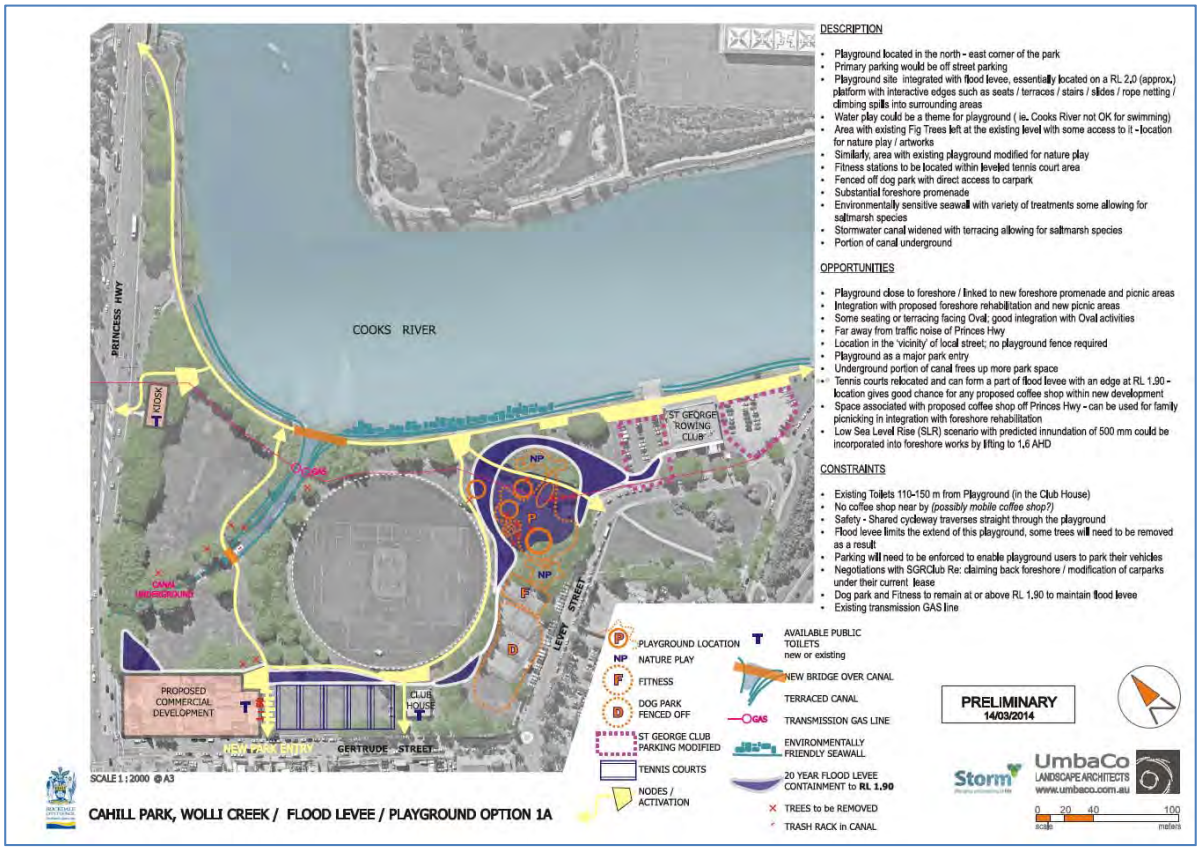


Plate 4.10 - Cahill Park Option 1A

(Source – Rockdale City Council)

- *WC 3.2.1 Wolli Creek Precinct 3*

No supporting cost estimate or sketch has been provided for this item.

A detailed cost estimate and concept design is to be supplied by the Council to justify the cost in RCP 2016.

- *WC 4.1.1 Bonnie Doon Channel*

The supplied cost estimate is based upon Wolli Creek and Bonar Street Precinct, Public Domain Plan (see Plate 4.11 below).

The cost of this item is $11,384,812 and it is unclear from which technical study the proposed drainage works originated.

A review of the supplied estimate indicates that the works extend far beyond stormwater works, and include 2 new roads, footpaths, street lighting, street furniture and landscaping. The channel works for this item are approximately only 42% of the direct costs of this item.

Excluding non-stormwater items, the direct costs are $2,338,831 (including preliminary works costs). Applying an indirect cost of 15%, client costs of 10% and contingency of 30%, our estimate of the total project cost is $3,846,207 (May 2014 $) and $3,953,901 (September 2015 $).

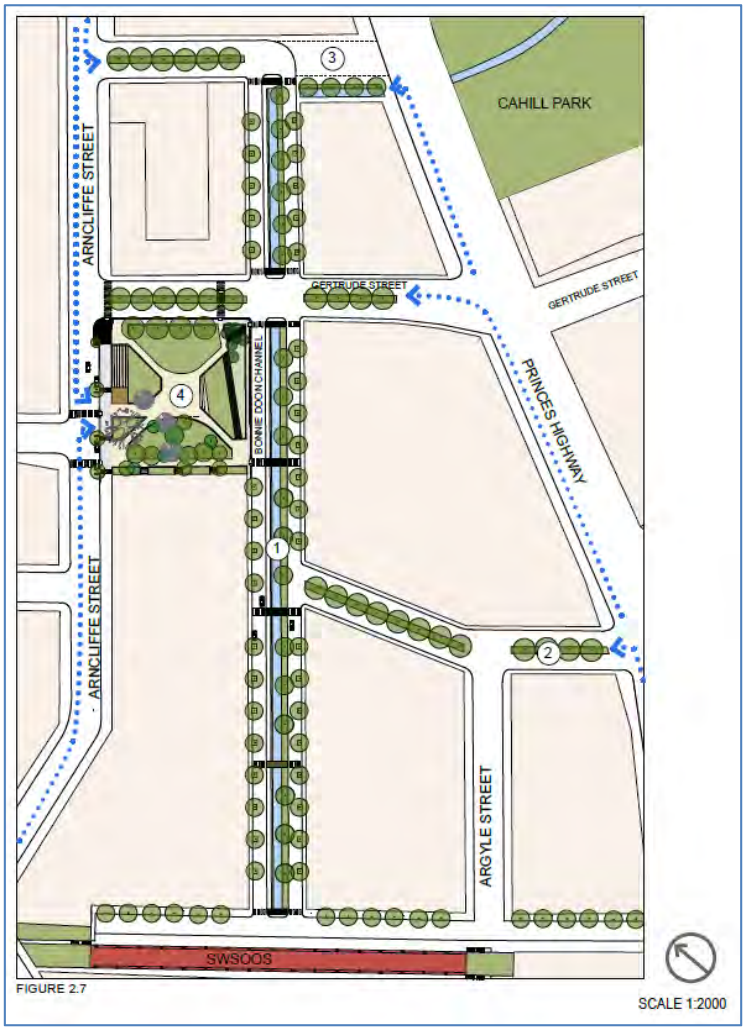


Plate 4.11 - Bonnie Doon Channel Design Principles

(Source – Wolli Creek and Bonar Street Public Domain Plan)

- *WC 4.1.2 Wolli Creek Precinct 4*

No supporting cost estimate or sketch has been provided for this item. It is also not clear which technical study this originated from.

A detailed cost estimate and concept design is to be supplied by the Council to justify the cost in RCP 2016.

5 NEXUS

A central question in assessing the suitability of using s94 as a public financing mechanism is whether, and to what extent, the infrastructure is required to offset the impacts of development. Clause 27(1)(c) of the EP&A Regs requires that a contributions plan must include particulars of 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.

Nexus refers to the connection between the development and the demand created by that development. The requirement to satisfy nexus is based on ensuring that there is a link between the development and increased demand for infrastructure.

In greenfield development areas, the demonstration of nexus between additional development and need for additional stormwater infrastructure is relatively straightforward. The new development results in an increase in impervious area resulting in an increased rate of stormwater runoff, a concentration of runoff and deterioration in water quality. These changes necessitate additional stormwater infrastructure.

In brownfield development areas, the sites are often already impervious, and the redevelopment results in little or no increase in impervious area and may actually result in improvements in water quality. Accordingly, a different nexus between the development and the need for additional stormwater infrastructure must be demonstrated in order to justify development contributions towards that infrastructure.

The preparation of a contributions plan for stormwater infrastructure facilities in the URA is complex. The URA is impacted by flooding from upstream overland flows, riverine flooding from Wolli Creek and Cooks River, as well as tidal flooding from these watercourses. It may also at times be affected by a combination of these sources.

The Council acknowledges the existing flood problems affecting the URA, including the existing substandard stormwater drainage system. It also acknowledges that the redevelopment is unlikely to result in any substantial increase in the volume of stormwater runoff generated and that new development can be conditioned and constructed to be above the relevant flood planning level.

5.1 Council's justification

RCP 2016 states at section 3.1.4 Demand for Infrastructure:

"Prior to the commencement of mixed use development in the Urban Renewal Area, public amenities and services were essentially been (sic) designed to cater for the predominantly industrial development that existed in the area at the time. To support the full re-development of the Urban Renewal Area, significant augmentation and upgrading of existing infrastructure and public amenities is required.

The Local Infrastructure needs likely to be generated by this development were investigated as part of, and following, the rezoning of the land to permit mixed use development. Those investigations concluded that the redevelopment would have the following Local Infrastructure impacts:

- *Increased pressure on the existing vehicle and pedestrian access networks requiring capacity* upgrades *to roads and intersections.*
- *Increased pressure on the existing stormwater drainage facilities which already struggle to cope with the water run-off from significant storm events.*
- *Increased demand for active and passive recreation facilities such as sporting fields, sports courts, playgrounds, walking trails, cycle paths, recreation centres and community facilities.*

In order to provide a safe, convenient and amenable urban redevelopment, new and upgraded roads, traffic, parking and streetscape facilities; flood mitigation and stormwater management facilities; and social infrastructure including open space and recreation facilities and community facilities will be required."

At section 3.2.2, the RCP 2016 describes the objectives, needs assessment and infrastructure strategy, the nexus and apportionment, and the contributions rate calculations for the proposed flood mitigation and stormwater drainage infrastructure.

The objectives cover flood protection, safety, minimisation of flood damage, no increase in flood levels, satisfactory drainage of development sites, minimisation stormwater pollution and encourage water conservation.

In this section it is stated that:

"The competition for land means that many of these areas are coming under pressure for conversion to housing. With that conversion there is a need to maintain the community's expectation that the areas where people live, and the safe evacuation routes, will be flood free. Council's flood policy requires buildings to be built to a design floor level which is the design level plus freeboard. The design flood is established at the 0.5% AEP (annual exceedance probability) flood and the freeboard 500mm.

The Urban Renewal Area is served by a substandard stormwater drainage system that results in frequent overland flows and ponding of stormwater. Redevelopment of the area is unlikely to result in a substantial increase in the volume of stormwater runoff generated. However, consistent with Council's policy, the intensity and value of development which is likely to occur in the area will require a higher standard of stormwater servicing to be implemented than presently exists, necessitating the implementation of an appropriate, reasonable and equitable funding mechanism to deliver the needed facilities. Section 94 contributions are the proposed mechanism."

"The proposed flood mitigation works are a pre-requisite to make the sites within the Urban Renewal Area developable for residential, commercial and other non-residential purposes. This is despite the flood waters coming from other areas.

Similarly, the drainage works are needed to enable the new developments to take place."

With regard to water quality control infrastructure, CP 2004 is more explicit at section 11.1.2 in stating that:

"Council has a longstanding policy of funding provision of pollution control facilities under its previous contributions plan. This strategy should continue, particularly as this area is adjacent to Cooks River and sensitive wetlands. It would not be acceptable, in the present day, to provide new stormwater drainage systems, as required in this area, without providing the associated water quality treatment as an integral part of the drainage works.

While Council's DCP for the area requires developments to carry out on-site water quality management, there will be a need to provide further pollution control at downstream ends of the drainage system. The intensification of development in the area will increase the demand for off-site water quality treatment, such as gross pollutant traps, due to the increased levels of silt and litter from increased pedestrian and vehicular activity on the streets."

Accordingly, it is considered reasonable to summarise the Council's justification of the stormwater infrastructure works in the RCP 2016 as:

1. To support the full re-development of the Urban Renewal Area.

2. To provide a safe, convenient and amenable urban redevelopment, new and upgraded flood mitigation and stormwater management facilities will be required.

3. To provide for the intensity and value of development which is likely to occur in the area, a higher standard of stormwater servicing is required to be implemented than presently exists.

4. The proposed flood mitigation works are a pre-requisite to make the sites within the Urban Renewal Area developable for residential, commercial and other non-residential purposes.

5. The drainage works are needed to enable the new developments to take place.

6. The intensification of development in the area will increase the demand for off-site water quality treatment, such as gross pollutant traps, due to the increased levels of silt and litter from increased pedestrian and vehicular activity on the streets.

Of particular interest from the commentary in RCP 2016 is the expectation that the areas where people live, and the safe evacuation routes, will be flood free and that the proposed mitigation works would achieve that outcome.

5.2 Assessment of justification

As noted earlier in this report, a central question in assessing the suitability of using s94 as a public financing mechanism is whether, and to what extent, the infrastructure is required to offset the impacts of development.

It is clear that the Council is trying to facilitate a higher intensity of development occurring in a flood-affected area, and has structured RCP 2016 as a cost sharing mechanism between developers who would otherwise be not able to fund those works individually. However, the Council has framed RCP 2016 is as a funding arrangement to facilitate development, not a funding arrangement to address the impacts of the development.

With the exception of the works proposed by studies in the Bonar Street precinct and the proposed water quality control devices, it appears that the proposed flood mitigation and stormwater management works are intended to address the existing and known flood problems. The studies do not consider the impacts of the redevelopment in the Wolli Creek precinct on the flood levels, depths and hazards.

On this basis, a nexus has been demonstrated for works BS 1.4.1, BS 1.4.2 (Bonar Street to SWOOS) and WB 1.2.1 (water quality improvements) only.

As stated in section 4.1.2 of this report, it is our opinion that stormwater quality control devices and systems are a component of stormwater management, and as such, are essential infrastructure.

One may expect that the historical industrial uses in the URA pre-date contemporary water sensitive urban design needs and expectations. Accordingly, it could be argued that there may be some 'credit' achieved by the conversion of old industrial sites with questionable quality control, and potentially hazardous substances, to contemporary residential and commercial sites with DCP compliant water quality control systems.

Stormwater quality modelling allows for similar pollutant load rates from roof areas, irrespective of whether they are residential, industrial or commercial. The water quality 'credit' achieved in the rezoning would come from the conversion of car parking areas to roof areas. Roads and car parking areas have a significantly higher suspended solids pollutant rate than roof areas.

It is accepted that the redevelopment of the area will result in a significant increase in vehicle and pedestrian traffic as multi-storey residential and mixed use development is now permissible. The significant increase in traffic is likely to result in an increase in pollution (such as litter, sediment, oils etc) off the roads and footpaths. It is expected that this increase in pollutants from the roads and footpaths would far exceed the credit resulting from the conversation of car parking area to roof area.

The provision of flood free homes in the URA can be, and is being, provided in the absence of the implementation of the stormwater infrastructure. Recent consents require that new developments have the habitable floor level and the entry to basements car parking areas at the 0.5% AEP plus 500mm freeboard level.

Ideally, broad flood studies would have been prepared to understand the flood extent, depths and hazards prior to redevelopment, as well as the expected changes to the flood extents, depths and hazards after full redevelopment has occurred. The mitigation measures required to address the changes of flood impacts between these two studies would normally form the basis of the stormwater infrastructure items within a contribution plan.

Unfortunately, there is no comprehensive mapping to illustrate the pre and post re-development circumstances. Accordingly, it is unclear if and to what extent the proposed stormwater infrastructure works will address the impacts of the re-development.

It is a reasonable argument that the increase in volume of pedestrian and vehicle traffic and the change in the type of pedestrian and vehicle traffic is an impact of the re-development that justifies mitigation works that reduce the flood extents, depths and hazards below the pre re-development level.

In order for Council to demonstrate the nexus between the proposed flood mitigation and stormwater management works and the impacts of the re-development, further comprehensive flood studies are considered necessary.

Further, the additional studies must specifically articulate and address the outcomes that the mitigation works are intended to achieve. If this includes flood free vacation routes, then those routes must be identified to enable the direction of the mitigation works.

The NSW Floodplain Development Manual provides guidance in relation to the outcomes to be achieved by flood mitigation works. The traditional safety criteria to be considered for pedestrian and traffic safety in flood affected areas relates to the depth and velocity of the flood waters.

In order to justify the costs of the works in a contribution plan, the studies must demonstrate that the outcomes of the mitigation works meet the desired outcomes. The cost of works that achieve results in excess of the desired outcome should be discounted proportionally to the extent of the exceedance.

6 APPORTIONMENT

Apportionment is about ensuring the allocation of costs equitably between all those who will benefit from the infrastructure, or create the need for it. To assess whether the contributions rate is based on a reasonable apportionment of costs, we assess how the council has allocated the costs both within the precinct and across precincts.

Generally, costs should be apportioned on the basis of nexus. That is, they should be allocated to those who caused the need for the costs incurred.

If the proposed infrastructure satisfies not only the demand of new development, but also some regional demand, demand by people from outside the area, or makes up for some existing deficiency, only the portion of demand created by new development can be charged.

At section 3.2.2, RCP 2016 states:

"The proposed flood mitigation works are a pre-requisite to make the sites within the Urban Renewal Area developable for residential, commercial and other non-residential purposes. This is despite the flood waters coming from other areas

Similarly, the drainage works are needed to enable the new developments to take place.

The contribution rates are therefore calculated on the assumption that the full cost of the infrastructure is shared among the expected development."

'"The costs will be shared between the expected resident and worker population. Contributions will be levied on a per resident or per worker basis. The resident demand for the infrastructure is assumed to be the same as the worker demand."

At section 4.5, RCP 2016 states:

"In order for contributions to be reasonable, the Consent Authority shall only impose a section 94 contribution on a development that reflects the net increase in the demand for Local Infrastructure included in this plan.

The net increase in infrastructure demand is calculated by the determining the (sic) *subtracting the existing resident population of the development site from the expected resident and worker population of the proposed development using the assumptions contained in Table 5 of this plan. Any existing resident population on a development site shall be assumed to have an infrastructure demand credit.[14]"*

Note 14 states:

"Note that no existing demand credit will be made for the workforce that existed on a site immediately prior to commencement of redevelopment in the Urban Renewal Area as the future workers of the area will be an entirely new workforce with different needs and requirements."

It has been stated previously in the report, that based upon the information made available, it is difficult to articulate the impact of the redevelopment in the URS on the pre-rezoning flood extent, levels, depths and hazards, and the impacts of the proposed mitigation works.

It is reasonable to state that the redevelopment within the URA is likely to adversely affect floodwaters due to occupying flood storage volume and blocking flow paths, and that the increase in pedestrian and vehicle traffic is likely to increase pollutant loading from roads and footpaths. It is also reasonable to state that the mitigation works, separately and/or in combination, are likely to positively affect the floodwaters.

However, it is not considered reasonable that 100% of the cost of the stormwater mitigation works should be imposed as development contributions on new development within the URA.

The proportion applicable to the new development should be discounted due to:

1. The existing infrastructure being substandard. It is likely the extent and cost of the stormwater infrastructure works would not be as significant if the current system was to contemporary standard.

2. There were existing workers and residents, as well as vehicle and pedestrian traffic in the area prior to the rezoning. Due to the significant increase in population in the area from re-development, the discount for existing population may be insignificant.

3. The East Hills Railway embankment at Henderson Road (WC 1.1.1) is located outside the URA, and the installation of a levee in this location is likely to provide some degree of protection to properties between the levee and the URA, however the full extent of the protection has not been quantified. Based upon relative areas, the additional land provided with some protection from this levee is approximately 5% of the area of the URA.

Further, it appears that the works and the resulting benefits are not distributed equally across the URA. It is not clear how the works outside Western Precinct (WC1) benefit that area and vice versa, nor how the works within the Wolli Creek precinct benefit the Bonar Street precinct.

It is considered that the total funding of the stormwater infrastructure by new development in the URA is not reasonable, and that the distribution of the s94 contributions across the URA be re-examined.

7 FINDINGS

J. Wyndham Prince has reviewed CP 2004, RCP 2016, the supporting technical documents and the 2015 Evans & Peck cost estimates and found that:

Essential Works List

All stormwater infrastructure items are considered essential infrastructure, with the exception of the non-stormwater related items of WC 4.1.1 Bonnie Doon Channel.

Nexus

Council has established nexus for the BS 1.4.1 and BS 1.4.2 Bonar Street to SWOOS and WB 1.2.1 water quality improvements works items only.

Council has not established nexus for the works items within the Wolli Creek precinct.

Reasonable costs

We find that:

- The costs of WC 2.1.2 Wolli Creek Precinct 2, WC 3.2.1 Wolli Creek Precinct 3 and WC 4.1.2 Wolli Creek Precinct 4 are unreasonable as the nature and scope of works are unknown.
- The costs of BS 1.4.1 Bonar Street to SWOOS to be unreasonable as it includes the cost of BS 1.4.2, and overestimates the indirect, client and contingency costs.
- The cost of BS 1.4.2 and WC 2.1.3 to be reasonable as it is assumed that they are based upon actual costs.
- The cost of WB 1.2.1 to be unreasonable as it over estimates the cost of proprietary GPTs and the indirect, client and contingency costs.
- The cost of WC 1.1.1 and WC 1.1.2 to be unreasonable as they overestimate the indirect and client costs.
- The cost of WC 1.1.3 and WC 3.1.1 to be unreasonable as they overestimate the indirect, client and contingency costs.
- The cost of WC 1.1.4 to be unreasonable as it overestimates the contingency costs.
- The cost of WC 1.1.6 to be reasonable as it is based upon actual costs.
- The cost of WC 4.1.1 to be unreasonable as it includes non-stormwater related works and it overestimates the indirect and client costs.

8 RECOMMENDATIONS

Nexus

Remove $33,110,240 of works until nexus is established for the Wolli Creek precinct works and reasonable costs are assessed.

Reasonable costs

Remove a further $11,613,750 due to unreasonable costs associated with BS 1.4.1 and WB 1.2.1.

Other

Update mapping in RCP 2016 to illustrate the location, nature and extent of stormwater infrastructure items

Undertake further studies to:

- Determine the base flood levels, depths and hazards that existed prior to rezoning and prior to redevelopment.
- Determine the additional impacts on the flood levels, depths and hazards caused by the redevelopment of all of the rezoned land.
- Clearly articulate the target flood level, depth and hazard that the mitigation works are designed to achieve.
- Determine the works required to mitigate the flood levels, depths and hazards at the redeveloped state to an acceptable degree.

Once these studies are completed, concept designs and updated cost estimates should be prepared and apportionment reassessed.

APPENDIX A – SCOPE AND COST SUMMARY

RCP 2016 ref	RCP 2016 Decription	CP 2004 ref & description	Which map is item located on	Which technical study does item come from	Is item essential infrastructure?	RCP 2016 cost est	Costing source and basis	Cost source est	Estimate methodology	Basis of cost calculation	Status of work	Is costing appropriate?	Alternate costing
BS1.4.1	Bonar Street to SWSOOS	Trunk stormwater/floodwater improvements from Bonar Street to the SWSOOS (BN-9)	RCP 2016	WMA Water & Cardno	Yes	$36,064,010	E&P est June 2013	$35,067,767	Gateway 1	Hand drawn sketch, Cradno Bonar Street Road upgrade plans	In progress	Exclude work item W4, reduce indirect costs to 15%, reduce client costs to 10% and contingency to 20%	$24,784,126
BS1.4.2	Bonar Street to SWSOOS	Trunk drainage within 9-11 Wollongong Rd Arncliffe	RCP 2016 - component of BS 1.4.1	WMA Water & Cardno	Yes	$1,142,910	Actuals	$1,050,301	Assume actuals	Assume approved design	Completed	Yes	$1,142,910
WB1.2.1	All drainage systems in Wolli Creek	Provide water quality improvements (FS13)	Unclear - possibly GPT and key WSUD locations on RCP 2016 micro catchment analysis map	unknown	Unsure - water quality controls devices	$1,073,919	Unknown - not in E&P est	Unknown	Unknown	Unknown	In progress	Based upon benchmark base cost for proprietary GPTs, the direct cost is $118,560 each for 4 GPTs. Indirect costs 15%, client costs 10%, contingency 20%.	$740,053
WC1.1.1	East Hill Railway embankment at Henderson St	Construct levee to prevent overflow from Wolli Creek (FS1)	CP 2004 Fig 11.1	Webb McKeown, Willing & Partners	Yes	$2,432,444	E&P est June 2013	$2,365,249	Gateway 1	Hand written notes	Not started	Direct cost ok, apply 15% indirect, 10% client & 30% contingency	$1,999,283
WC1.1.2	Walker St/Thompson St	Provide drainge system to area (FS3)	CP 2004 Fig 11.1	Webb McKeown	Yes	$5,096,664	E&P est June 2013	$4,955,872	Gateway 1	Hand drawn sketch & hand written notes	Not started	Use benchmark costs, 15% indirect, 10% client & 30% contingency	$3,707,200
WC1.1.3	Wolli Creek Precinct 1	Provides drainage system for precinct(FS4)	CP 2004 fig 11.1	Webb McKeown	Yes	$5,594,540	E&P est June 2013	$5,439,995	Gateway 1	Hand drawn sketch & hand written notes	In progress	Stage 1 works completed. Cost should be revised based on Stage 1 actuals, with reduced contingency, or based upon a concept design. Otherwise use estimated direct costs, 15% indirect, 10% client and 20-% contingency.	$4,128,960
WC1.1.4	Lusty St Reserve	Construct levee on eastside of SWOOS (FS5)	CP 2004 Fig 11.1	Unknown	Yes	$408,836	E&P est June 2013 - however no detailed spreadsheet provided	$397,542	Gateway 1	Hand drawn sketch & hand written notes	In progress	No detailed cost estimate. Gateway 1 methodology, 30% contingency but works in progress. Apply 20% contingency	$377,236
WC1.1.6	Wolli Creek Precinct 1	(FS4) Stage 1 completed	CP 2004 Fig 11.1 - component of WC1.1.3	Webb McKeown	Yes	$1,825,510	Actuals	$1,765,000	Actuals - Ford Civil Claim	Wollacotts design	Completed	yes	$1,825,510
WC2.1.2	Wolli Creek Precinct 2	Provide enhanced stormwater drainage for precinct (FS10)	CP 2004 Fig 11.1	Unknown	Yes	$1,472,562	Unknown - not in E&P est	Unknown	Unknown	Unknown	Not started	Unknown - unable to determine nature & scope of works	Unable to estimate based upon the available information
WC2.1.3	Magdalene Terrace	Provide drainage (FS9)	CP 2004 Fig 11.1	Unknown	Yes	$512,760	Unknown - not in E&P est, as works completed, assume actuals	Unknown	assume actuals as item complete	Unknown	Completed	Full details of the costs should be provided for review	$512,760
WC3.1.1	Cahill Park	Construct levee around perimeter of park (FS7)	CP 2004 Fig 11.1	Webb McKeown	Yes	$1,436,988	E&P est June 2013 - based upon UmbaCo concept plan Option 1A	$1,397,292	Gateway 1	hand drawn sketch & hand written notes, & UnbaCo Option 1A plans	Not started	15% indirect, 10% client & 20% contingency	$1,090,241
WC3.2.1	Wolli Creek Precinct 3	Provide enhanced stormwater drainage for precinct (FS14)	CP 2004 Fig 11.1 - FS14 label, however the location and extent of works are not shown	Webb McKeown	Yes	$1,472,562	Unknown - not in E&P est	Unknown	Unknown	Unknown	Not started	Unknown - unable to determine nature & scope of works	Unable to estimate based upon the available information
WC4.1.1	Bonnie Doon Channel	Amplify channel (FS8)	CP 2004 Fig 11.1	Unknown	Yes	$11,384,812	E&P est June 2013 - based upon public domain plans	$11,070,314	Gateway 1	Public Domain Plan	Not started	The cost of this item should be reviewed and costs not related to flood mitigation and stormwater management deducted and possibly reallocated to other contribution plan categories.	$3,953,901
WC4.1.2	Wolli Creek Precinct 4	Provide enhanced stormwater drainage for precinct (FS11)	CP 2004 Fig 11.1	Unknown	Yes	$1,472,562	Unknown - not in E&P est	Unknown	Unknown	Unknown	Not started	Unknown - unable to determine nature & scope of works	Unable to estimate based upon the available information
Total						**$71,391,079**							**$40,308,279**

Glossary

ABS	Australian Bureau of Statistics
Apportionment	The division of the costs equitably between all those who will benefit from the infrastructure, including any existing population. Full cost recovery from contributions should only occur where the infrastructure is provided to meet the demand from new development.
Condition of development consent	Conditions imposed by a consent authority (eg, council) when approving an application for development.
Contributions cap	The maximum contribution payable by a developer for local infrastructure per residential dwelling or lot.
Contribution charge	The rate used to calculate the total contributions payable by the developer for different infrastructure categories.
Contributions plan	A plan that a council uses to impose a contribution on new development to help fund the cost of providing new local infrastructure and services to support that development.
BC	Bayside Council
CP15	The Hills Shire Council, *Section 94 Contributions Plan No 15 – Box Hill Precinct,* June 2015.
CP 2004	*Rockdale Section 94 Contributions Plan 2004.*
CPI	Consumer Price Index
DPE	Department of Planning & Environment
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*

Essential Works List (EWL)	The following public amenities or public services are considered essential works: – land for open space (for example, parks and sporting facilities) including base level embellishment – land for community services (for example, childcare centres and libraries) – land and facilities for transport (for example, road works, traffic management and pedestrian and cyclist facilities), but not including carparking – land and facilities for stormwater management, and – the costs of plan preparation and administration.
Greenfield	Undeveloped land that is suitable for urban development, usually located in the fringe areas of existing urban development and requiring significant provision of new infrastructure and services to facilitate development.
Growth Centres Development Code	Growth Centres Commission, *Growth Centres Development Code*, October 2006.
IPART	Independent Pricing and Regulatory Tribunal
IPART Benchmark report	IPART, *Local Infrastructure Benchmark Costs - Costing Infrastructure in Local Infrastructure Plans - Final Report*, April 2014.
Net Developable Area (NDA)	The land occupied by development, including internal streets plus half the width of any adjoining access roads that provide vehicular access, but excluding public open space indicated on the land use zoning or precinct plan, and other non-residential and non-industrial zoned land.
Nexus	The connection between the demand created by the new development, and the public facilities provided, which is assessed to ensure that equity exists for those funding the facilities.
Plan administration costs	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, and/or – project management costs for preparing and implementing the plan (eg, the employment of someone to coordinate the plan).

Practice Note (2014)	NSW Planning and Infrastructure, *Revised Local Development Contributions Practice Note - For the assessment of Local Contributions Plans by IPART*, February 2014.
Precinct planning	Precinct planning coordinates the planning and delivery of water, wastewater, recycled water, power, roads, transport and other services in time to service new communities in Sydney's Growth Centres. Precinct planning involves detailed investigations into appropriate land use options, physical environment constraints and infrastructure requirements.
RCC	Rockdale City Council
RMS	Roads and Maritime Services
RURA	Rockdale Urban Renewal Area
Section 94 contributions	Section 94 contributions are imposed by way of a condition of development consent or complying development, and can be satisfied by: – dedication of land – monetary contribution – material public benefit, or – a combination of some or all of the above.
SEPP	State Environmental Planning Policy
SIC	State Infrastructure Contributions
Terms of Reference	Refer to the Terms of Reference received by IPART from the Premier of NSW on 30 September 2010 outlining IPART's role to assist with the preparation of revised contributions plan guidelines, and to assess and report on reviewable contributions plans against the guidelines and EP&A Regulation.
Works-in-kind	The construction or provision of the whole or part of a public facility that is identified in a work schedule in a contributions plan.