

Assessment of Wollongong City Council's Draft West Dapto Section 94 Development Contributions Plan

Local Government — Final Report
October 2016

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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

Wollongong City Council (WCC) submitted the *Draft West Dapto Section 94 Development Contributions Plan 2016* (Draft West Dapto CP) to IPART for assessment in March 2016. This is the first time IPART has assessed a contributions plan for the Wollongong local government area (LGA). All previous plans that we have assessed have been for areas within Sydney's North West Growth Centre.

WCC estimates the total costs of the contributions plan to be \$1.23 billion, and that the maximum contribution payable under the proposed contributions plan is \$68,734 per residential lot.² This is above the maximum contribution cap of \$30,000 per lot set by the NSW Government that applies to the contributions plan.³

We have made 40 recommendations across the assessment criteria, for cost reductions and other items to review that could reduce the total cost of the Draft West Dapto CP by up to \$291.9 million or in the order of 24% in the short term. We acknowledge that the version of the plan we have assessed is a draft, and that WCC is continuing to refine infrastructure requirements and costs for this challenging release area.

The final impact of our assessment would depend on the outcome of responses to a range of our recommendations.

¹ See the Terms of Reference in Appendix A.

² WCC, Draft West Dapto CP, pp 1-2 and IPART calculations. This is the rate for a subdivision, dwelling house or dual occupancy.

³ 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).

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*⁴ 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.

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 gave 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 can provide 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 11 contributions plans from The Hills Shire Council and Blacktown City Council. Reports on these contributions plans were presented to the Minister for Planning and the councils, and are available on our website.

The Draft West Dapto CP is the first contributions plan from outside the Sydney North West Growth Centre that IPART has reviewed.

^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).

⁴ Department of Planning & Infrastructure, *Revised Local Development Contributions Practice Note: For the assessment of Local Contributions Plans by IPART*, February 2014 (Practice Note).

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 nexus⁵
- ▼ 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
- ▼ 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.

We have based our assessment of the Draft West Dapto CP on information provided by the council, and have consulted further with WCC, including during a site visit and meetings. WCC officers have also provided comment on drafts of IPART's findings and recommendations.⁶ In addition, we consulted with the Department of Planning and Environment (DPE).

To assist with our assessment of transport infrastructure in the plan, we engaged an independent transport engineering consultant, ARRB Group Ltd (ARRB). Appendix C 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.⁷

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

⁵ 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.

⁶ WCC, Emails to IPART, 1 and 21 September 2016.

⁷ See ARRB Group Ltd, *Review of Transport Items in the Draft West Dapto Contributions Plan*, September 2016, in Appendix C.

1.4 Overview of Draft West Dapto CP

The West Dapto Urban Release Area (WDURA) comprises around 4,700 hectares of land located in the south west of the Wollongong LGA. The Draft West Dapto CP is the most recent in a series of contributions plans for the area (see Section 2.1 for a summary of prior plans).

Development is planned to occur over 60 years from 2010.⁸ The total net developable area (NDA) is 1,951 hectares and is mostly for residential development. When fully developed the area is expected to accommodate a population of around 56,500, in approximately 19,500 dwellings, with 180 hectares for industrial development, to provide for an estimated 8,500 jobs.

The WDURA is divided into five stages consisting of six sub-precincts:

- ▼ Stage 1 (Darkes Town Centre, Sheaffes-Wongawilli) and Stage 2 (West Horsley) were rezoned in 2010 with development now underway.
- ▼ Stage 3 (Cleveland) and Stage 4 (Avondale) are currently non-urban, rural zones and have not yet been rezoned for urban release.
- ▼ Stage 5 (Yallah-Marshall Mount) is also currently non-urban and rural, but is the subject of a draft planning proposal to rezone for residential development.

WCC has adopted a tiered, or 'structure planning', approach for the WDURA, as recommended by the Growth Centres Commission (GCC) in 2008.⁹ This combines a comprehensive infrastructure plan for the whole release area, with neighbourhood plans being prepared for specific precincts or stages after they are rezoned for urban development. At the neighbourhood planning stage, detailed land use and infrastructure requirements are determined (see section 2.2).

Transport infrastructure accounts for the highest costs in the Draft West Dapto CP. This is attributable to the extensive upgrade to the road network required as the area is highly prone to flooding. The Draft West Dapto CP proposes a road network that includes flood accessible routes for residential areas and 66 bridges over creek lines, railway corridors and major roads.¹⁰

⁸ Draft West Dapto CP, p 1.

⁹ Growth Centres Commission, *West Dapto Release Area Review – Planning Report prepared for Wollongong City Council*, November 2008, p 17.

¹⁰ Draft West Dapto CP, pp 24-27.

1.4.1 Land and works costs in Draft West Dapto CP

The total proposed cost in the Draft West Dapto CP is \$1.23 billion, of which 87.1% represents the construction of facilities, 12.3% land acquisition, and 0.7% is for plan preparation and administration (see Table 1.1). Transport infrastructure accounts for \$893.6 million or 72.7% of total costs.

Table 1.1 Draft West Dapto CP – Total cost of land and facilities (\$2014)

	Land	Facilities	Total
Transport	43,040,217	893,576,395	936,616,612
Stormwater management	56,822,865	99,699,193	156,522,058
Open space	49,695,923	56,064,791	105,760,714
Community facilities	1,540,000	21,344,457	22,884,457
Administration			7,500,000
Total	151,099,005	1,070,684,836	1,229,283,841^a

^a The total cost in the plan to be met from development contributions is actually \$1,225,420,065 because \$3,863,776 was transferred into the West Dapto CP fund in 2010 from surplus contributions from the Horsley S94 plan, which has been completed.

Note: Estimates in the West Dapto S94 Work Schedule are in \$2015 for land and Stage 5 roadwork costs only.

Source: WCC, Draft West Dapto CP, West Dapto S94 Work Schedule.

1.4.2 Contribution rates for residential development

Table 1.2 sets out the proposed contribution rates in the Draft West Dapto CP for different dwelling types. All of the contribution rates are above the contributions cap of \$30,000 per dwelling or lot.

Table 1.2 Draft West Dapto CP – Proposed residential development contributions (\$2014)

	Occupancy Rate (persons)	Contributions rate
Subdivision, Dwelling house, Dual occupancies	3.2	68,734
Multi-unit housing 4+ bedrooms	2.9	62,291
Multi-unit housing 3 bedrooms	2.5	53,699
Multi-unit housing 2 bedrooms	2.2	47,255
Multi-unit housing 1 bedroom	1.7	36,515

Source: WCC, Draft West Dapto CP, p 2 and Work Schedule, Density & Contributions Summary Tab.

1.4.3 Contribution rates for non-residential development

Industrial development accounts for 180.4 hectares or around 9.2% of NDA.

Under the Draft West Dapto CP, contributions would be levied on a per hectare basis for industrial development (\$68,499).¹¹

WCC has proposed contribution rates for industrial development to be 10% of the average per hectare residential contribution rate to encourage industrial activity within the area, and therefore, generate employment. It has also proposed not to levy contributions on retail, office and business premises, and community and recreational facilities.¹²

1.5 Summary of our assessment

Our assessment of the Draft West Dapto CP against each of the criteria is summarised in Table 1.3. Our findings and recommendations are in section 1.7.

While we identified many issues to be addressed and have numerous recommendations that will significantly impact on the quantum of infrastructure costs (amounting to around \$291.9 million less), we acknowledge that the plan submitted to us for assessment is a draft, and the council is working to refine the infrastructure requirements and cost estimates.

Overall, we found that most of the infrastructure proposed in the plan is reasonable in terms of nexus and cost. However, we recommend that the cost of certain works be removed from the plan on the basis that they are either not on the essential works list, or do not satisfy the requirement for nexus. We also identified a number of areas for which cost estimates require revision by WCC, particularly roadwork costs. Where costs are outdated, we recommend that WCC seek to update its base cost estimates. Further, we recommend using more cost-reflective indexation methods, which could marginally increase costs in the plan.

In addition, we identified a central issue with the plan regarding the apportionment of infrastructure costs across expected development. We recommend that the apportionment of costs in the plan should be revised so that development contributions better reflect the demand for infrastructure:

- ▼ across the relevant development stages in the plan, and
- ▼ among residential, industrial and other non-residential development.

¹¹ During our assessment, WCC advised that the contribution rate for industrial development should be \$68,499 per hectare (not \$56,129 as in Table 1.4 in the Draft West Dapto CP): WCC, Email to IPART, 12 July 2016. We note that this adjustment would also alter other contribution rates in the plan.

¹² Draft West Dapto CP, pp 5 and 32.

The magnitude of the WDURA and likely pace of development in the region suggests that a period of 60 years is not unreasonable in the circumstances. But we consider that the council should prioritise where and when infrastructure will be delivered throughout the life of the plan, even in indicative tranches, and we recommend that WCC undertake at least biennial reviews of the plan to refine requirements and costings as necessary.

We also recommend that WCC should review its conservative estimate of the costs of preparing and administering the plan, as it is likely to incur higher costs, given the magnitude and duration of planned development in the WDURA.

In addition, we recommend that DPE work with WCC on aspects of the plan, particularly the need to acquire all of the core riparian land, and update the Practice Note to clarify whether certain transport items are on the Essential Works List.

Table 1.3 Summary of IPART's assessment of Draft West Dapto CP

Criterion	Assessment
1. Essential works	<p>Most infrastructure items are on the Essential Works List, but WCC should remove the cost of:</p> <ul style="list-style-type: none"> ▼ a multimodal interchange upgrade with carparking facilities (\$3.30m) ▼ 290.2 hectares of riparian land (\$14.51m) ▼ capital works for a community recreation and leisure centre (apportioned \$8.57m), and ▼ capital works for four multi-purpose community centres (\$21.34m). <p>WCC should pursue alternative funding arrangements for the car parking requirements at the interchange, review the need to acquire all the core riparian land in the plan (in consultation with DPE), and reinstate the cost of the outdoor courts for the recreation and leisure centre, once the reasonable cost has been estimated.</p>
2. Nexus	<p>There is reasonable nexus between the expected development and infrastructure but WCC should remove the cost of:</p>
Transport	<ul style="list-style-type: none"> ▼ local road works to upgrade Sheaffes Rd and Paynes Rd, and new road NR100-NR103 (\$16.37m) ▼ an unnecessary upgrade (2 to 4 lanes) of Marshall Mount Rd (\$19.37m) ▼ Rail Bridge A on Marshall Mount Rd (\$7.96m). <p>WCC should review the need for all bus stops if unidirectional services were to operate.</p>
Stormwater infrastructure	<ul style="list-style-type: none"> ▼ 4 duplicated enhanced storage areas (\$17.56m) ▼ 10 gross pollutant traps which are not required (\$0.55m) ▼ 6 detention basis in Yallah-Marshall Mount (\$8.92m), until WCC establishes nexus and determines reasonable costs
Open space	<ul style="list-style-type: none"> ▼ an overprovision of open space, consisting of: <ul style="list-style-type: none"> – a sports park and playground (9.56 ha, \$2.41m) – a neighbourhood park/playground (4 ha, \$4.07m) – a local park (2 ha, \$2.35m). <p>WCC should review the need to acquire 11.8 ha for cycleways (\$0.59m) because they could be located on land for other infrastructure.</p>

Criterion	Assessment
3. Reasonable costs	<p>The general approach to estimating land and infrastructure costs is reasonable, however it is timely for WCC to update some of its capital works estimates, and it should apply more cost-reflective indices both for capital costs (ie, a producer price index) and land value estimates (a derived Wollongong land value index).</p> <p>Cost estimates for infrastructure and land are mostly reasonable, with the following exceptions (where identified costs should be deducted):</p>
Transport	<ul style="list-style-type: none"> ▼ a new build cost rate used for the cost to upgrade existing roads, including Bong Bong Rd (\$2.57m), six 2-lane rural roads (\$5.50m) and five 4-lane rural roads (\$2.39m) ▼ an excessive contingency allowance for Fowlers Rd extension works, and grant funding not accounted for before apportionment (\$29.83m) ▼ bridges costed for 4 not 2 lanes: B9A, B9B and B9C (\$22.05m), B1 (\$3.10m) and 7 bridges on road NR40-NR47A (\$8.21m) ▼ double counted design and project management fees in Stages 1 to 4 (\$57.02m) ▼ the recommended lower base costs of roadwork in Stage 5 which will result in lower design and project management fees (\$4.76m) ▼ the recommended lower base costs of roadwork in Stages 1 to 4 which will result in a lower contingency allowance (\$15.79m) ▼ an excessive contingency allowance on Stage 5 road items (\$12.68m) ▼ unnecessary indexation of Stage 5 roadworks (\$9.20m). <p>(Total deduction of \$173.10m for transport infrastructure items)</p>
Stormwater management	<ul style="list-style-type: none"> ▼ estimates of the cost of land for detention basins (that should be refined once the basins' locations are determined) ▼ unnecessary indexation of estimated cost of trunk drainage (\$2.54m) ▼ unnecessary indexation of land acquisition (\$2.80m), and
Open space	<ul style="list-style-type: none"> ▼ an overestimate of land for cycleways stated in the plan (\$0.18m).
Plan administration	<p>The conservative estimate of \$7.5 million (0.7% of infrastructure costs) should be reviewed.</p>
4. Reasonable timeframe	<p>The extended timeframe of around 60 years for development in the WDURA is reasonable, however, in the plan, WCC should prioritise infrastructure delivery beyond the 10-year capital works program, with an indicative timetable for each stage in tranches of five or 10 years.</p>
5. Reasonable apportionment	<p>So that contribution rates better reflect demand, given the significant variations between the different stages in the WDURA in costs and the amount of infrastructure to be provided, WCC should either:</p> <ul style="list-style-type: none"> ▼ remove Stages 4 and 5 from the Draft West Dapto CP for inclusion in a new or separate contributions plan, or ▼ apply different contribution rates in the Draft West Dapto CP to development in Stages 1 to 3 compared with Stages 4 and 5. <p>WCC's approach to apportioning lower or no costs and contribution rates to non-residential development results in disproportionate costs being borne by residential development. Apportionment in the plan should reflect the relative NDA of each development type (residential, industrial and commercial/retail) and the demand arising from it.</p> <p>Unless a Ministerial direction applies to land, all the NDA should be used to calculate contributions, therefore WCC should reinstate 30ha for State schools to the NDA in the Draft West Dapto CP, and ask the NSW Department of Education to pay applicable contributions.</p>

Criterion	Assessment
Transport	<p>WCC's approach to apportioning the costs of transport, stormwater management, open space and land for community facilities infrastructure in the plan is otherwise reasonable, except for:</p> <ul style="list-style-type: none"> ▼ apportioning 50% rather than 64% of Road NR1-NR3 (+\$17.04m) ▼ signalised intersections Int23 and Int25 where the benefit to WDURA should be established before costs are included (\$1.41m) ▼ there being a lack of sufficient information in the plan or supporting documents to justify apportionment for specific transport works, based on demand linked to traffic modelling.
Stormwater management	<ul style="list-style-type: none"> ▼ using a population-based (per person) approach to apportioning costs to residential development, where an area-based (per hectare) would better reflect the source of demand from residential development.
Open space	<ul style="list-style-type: none"> ▼ a sports park in Darkes Town Centre which should be apportioned at only 25% (or \$1.66m) rather than 50%, and ▼ the costs of outdoor courts for a community leisure and recreation centre in Cleveland that WCC is yet to estimate, which should be apportioned at 50% rather than 67.5%.
6. Community liaison	WCC has conducted appropriate community consultation in preparing the Draft West Dapto CP.
7. Other matters	<p>The CP complies with most of the regulatory requirements in the EP&A legislation but could be improved to ensure it meets all requirements. Given the staged planning approach and uncertain nature of many of the infrastructure requirements, we recommend WCC review the plan biennially, at least for the first 10 years, to refine infrastructure needs and costings, consistent with planning outcomes.</p>

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 the Draft West Dapto CP, at least in the short term.

We have estimated that IPART's recommendations would reduce the \$1.23 billion cost of the Draft West Dapto CP by \$291.9 million. Therefore, our assessed reasonable cost of the plan is \$937.4 million.

Table 1.4 IPART's assessment of the total reasonable cost of essential works for Draft West Dapto CP (\$2014)

Infrastructure category and recommended adjustments	Cost in plan	IPART recommended adjustment	IPART-assessed reasonable cost
Transport and traffic land and works	936,616,612		
Remove multimodal interchange upgrade not on EWL		-3,304,738	
Remove 2 road upgrades and a new road (nexus)		-16,365,231	
Remove upgrade of Marshall Mount Rd		-19,365,854	
Remove Rail Bridge A on Marshall Mount Rd		-7,955,472	
Lower rates for upgrade of existing roads (Bong Bong Rd, six 2-lane rural roads and five 2 to 4 lane rural roads)		-10,452,449	
Fowlers Rd extension works – lower contingency allowance and accounting for grant funding (apportioned)		-29,834,764	
Lower costs for 11 bridges requiring only 2 lanes		-33,369,000	
Remove double counted design & project management fees (Stages 1 to 4)		-57,023,959	
Apply design & project management fees to lower base costs (Stage 5)		-4,760,150	
Reduce contingency allowance on Stage 5 items		-12,680,814	
Apply contingency allowance to lower base costs (Stages 1 to 4)		-15,787,485	
Remove indexation of Stage 5 roadworks		-9,196,155	
Increase apportionment rate for Road NR1-NR3		+17,040,037	
Remove 2 intersections without nexus		-1,407,158	
Total Transport adjustment		-204,463,192	
			732,153,420
Stormwater management land and works	156,522,058		
Remove riparian land not on EWL		-14,510,000	
Remove 4 double-counted ESAs		-17,559,419	
Remove 10 GPTs not required		-550,000	
Remove 6 basins in Stage 5 YMM		-8,917,630	
Remove unnecessary indexation of Mullet Creek basin land cost estimates		-2,795,594	
Remove unnecessary indexation of trunk drainage cost estimate		-2,539,484	
Total Stormwater adjustment		-46,872,127	
			109,649,931

Infrastructure category and recommended adjustments	Cost in plan	IPART recommended adjustment	IPART-assessed reasonable cost
Open space land and works	105,760,714		
Remove excess open space embellishment for an overprovision		-8,826,040	
Remove apportioned capital cost of recreation & leisure centre not on EWL		-8,573,318	
Remove overestimation of land required for cycleways		-\$177,785	
Remove 25% of cost of sports park in Darkes Town Centre apportioned to WDURA		-1,660,806	
Total Open Space adjustment		19,237,949	
			86,522,765
Community facilities land and works	22,884,457		
Remove capital costs of community centres not on EWL		-21,344,457	
			1,540,000
Total cost of Draft West Dapto CP	1,229,283,841		
IPART recommended adjustments		-291,917,725	
IPART assessed reasonable costs			937,366,116

Notes: YMM = Yallah-Marshall Mount; ESA = Enhanced Storage Area; GPT = Gross Pollutant Trap; EWL = Essential Works List. Estimates in the West Dapto S94 Work Schedule are in \$2015 for land and Stage 5 roadwork costs only.

Source: IPART calculations based on WCC, Draft West Dapto CP, West Dapto S94 Work Schedule.

Not all of our recommendations can be quantified at this stage. Additional net savings could result from the council determining that it needs less land for cycleways than currently included in the plan, or fewer bus stops with certain aspects of the service running in only one direction.

There are also a range of outcomes that are likely to result in costs being added to the final adjusted cost we have recommended, including:

- ▼ any reinstated core riparian land, verified by the council to be for drainage management more than environmental management, in consultation with DPE
- ▼ the cost of the outdoor netball/tennis courts (minimum 12 court complex) for the community and recreation facility in Cleveland once WCC determines its needs and reasonable cost
- ▼ nexus being established for the specific stormwater requirements for Stage 5 Yallah-Marshall Mount (eg, detention basins and gross pollutant traps) through a technical study
- ▼ the application of more up to date cost estimates where capital works estimates are outdated (eg, for some stormwater items)

- ▼ the addition of the land acquisition requirements for roadworks in Stage 5 Yallah-Marshall Mount
- ▼ any additional administration costs, on review of the plan requirements by the council, and
- ▼ the adoption of more cost-reflective indices to escalate capital works costs.

Further cost changes would result from the council replacing estimates with actual capital costs for completed works and it identifying the location of detention basins so that it can more accurately estimate land acquisition needs.

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

1.6.1 Impact on contribution rates

Table 1.5 shows the impact of our recommendations on the proposed residential contribution rates in the Draft West Dapto CP, incorporating:

- ▼ all of our recommended cost reductions to infrastructure costs, as in Table 1.4, and
- ▼ the reapportionment of transport, stormwater and administration costs between residential development and industrial development to equate the contribution per hectare between the two development types (Recommendation 30).

Under these assumptions, the indicative contribution rates for the different types of residential development would each decrease by around 30%.

Table 1.5 Impact of our recommendations on proposed contribution rates in Draft West Dapto CP (\$ per dwelling)

Dwelling type	Proposed contributions rate in Draft West Dapto CP	IPART assessed adjustments
Subdivision, Dwelling house, Dual occupancies	68,734	-20,359
Multi-unit housing 4+ bedrooms	62,291	-18,450
Multi-unit housing 3 bedrooms	53,699	-15,905
Multi-unit housing 2 bedrooms	47,255	-13,997
Multi-unit housing 1 bedroom	36,515	-10,816

Note: Our adjustments are based on 24% lower total infrastructure costs. The final rates are likely to change when WCC makes more adjustments in response to other, unquantified, recommendations and potentially, reallocates costs between development types.

Source: WCC, Draft West Dapto CP, p 2 and Work Schedule, Density & Contributions Summary Tab.

For industrial development, the amended apportionment approach would result in significant increases in the proposed contribution rates of some 533%, as shown in Table 1.6. This is because the plan proposed such low contribution rates for industrial development (10% of the per hectare residential rate) in the plan.

Table 1.6 Impact on industrial development contributions (\$ per hectare)

	Proposed contributions rate in Draft West Dapto CP	IPART assessed adjustments
Heavy Industry/Light industry	68,499	+364,760

Note: During our assessment, WCC advised that the contribution rate for industrial development should be \$68,499 per hectare (not \$56,129 as in Table 1.4 in the Draft West Dapto CP): WCC, Email to IPART, 12 July 2016. The final rates are likely to change when WCC makes more adjustments following some of our unquantified recommendations and reallocates costs between development types.

Source: WCC, Draft West Dapto CP, p 2 and Work Schedule, Density & Contributions Summary tab.

It is important to note that these scenarios do not include:

- ▼ The net developable area (NDA) for state schools (30 hectares) which the council has excluded from the NDA in the plan. Including this land in the NDA for the purposes of calculating contributions (in accordance with Recommendation 38) would reduce overall contribution rates by approximately 1.5%.¹³
- ▼ Any contributions being levied on other non-residential development (ie, retail, commercial and office development) because the NDA the council has assumed for these purposes was not included in the plan. WCC officers have advised that if contributions were to be levied on such non-residential developments, the attributed contributions revenue would be around \$4 million.¹⁴ This would result in marginally lower contribution rates for residential and industrial development.
- ▼ Any splitting of costs and contributions between the five different stages in the Release Area (Recommendation 29), but the impact of our recommendation in this regard is analysed further below.

Additional impact on contribution rates from separating Stages 1 to 3 from Stages 4 to 5

To demonstrate the possible implication of our recommendation for WCC to split Stages 1 to 3 from Stages 4 to 5 in determining contributions, we have compared different indicative contribution rates for residential development under these scenarios (Table 1.7).

We first compared the proposed contribution rates in the Draft West Dapto CP covering Stages 1 to 5 with our assessed contribution rates for Stages 1 to 5 if our recommended cost reductions are incorporated. This indicates around 30% lower rates, as noted above.

Next, we compared indicative contributes rates for Stages 1 to 3 and Stages 4 to 5 grouped separately, with our recommended cost reductions incorporated. In estimating these rates, we have made a range of assumptions about the impact of our recommendations on the infrastructure costs in the various stages.

¹³ See discussion in section 3.5.8.

¹⁴ WCC, Email to IPART, 1 September 2016. See discussion in section 3.5.3.

This analysis shows that the rates for Stages 1 to 3 would be around 21% higher than our assessed rates for Stages 1 to 5 as a whole, while the rates for Stages 4 to 5 together would be around 51% lower than our assessed rates for Stages 1 to 5.

Table 1.7 Comparison of WCC proposed contribution rates and IPART's indicative rates based on cost-reduction recommendations and the grouping of different stages (\$ per dwelling)

Dwelling type	Proposed rates in plan (Stages 1-5)	IPART's indicative rates (Stages 1-5)	IPART's indicative rates (Stages 1-3)	IPART's indicative rates (Stages 4-5)
Subdivision, Dwelling house, Dual occupancies	68,734	48,375	58,387	23,470
Multi-unit housing 4+ bedrooms	62,291	43,840	52,913	21,270
Multi-unit housing 3 bedrooms	53,699	37,793	45,615	18,336
Multi-unit housing 2 bedrooms	47,255	33,258	40,141	16,136
Multi-unit housing 1 bedroom	36,515	25,699	31,018	12,469

Note: In calculating the indicative contribution rates for Stages 1 to 3 and Stages 4 to 5 separately, we have made a number of broad assumptions about which stage would be affected by our recommendations for amendments to infrastructure items and costs in the plan, eg, we considered that core riparian land costs could be shared equally among Stages 1 to 4, and that administration costs could be shared equally among Stages 1 to 5. Further, we did not reapportion any costs, including roadworks, to account for any shared demand between stages.

Source: WCC, Draft West Dapto CP, p 2 and Work Schedule, Density & Contributions Summary Tab and IPART calculations.

It is important to note that these contribution rates are indicative only. This analysis shows how contribution rates might be affected by the different approach to apportionment of costs by stage in the WDURA. As the plan is updated, other changes will affect contribution rates.

1.7 Findings and recommendations

Criterion 1: Essential works

IPART Findings

- 1 All infrastructure items in the Draft West Dapto CP are on the Essential Works List except for:
 - the upgrade to the transport multimodal interchange with car parking facilities
 - 290.2 hectares of core riparian land
 - capital works for an indoor community recreation and leisure centre (67.5% apportioned to WDURA) and
 - capital works for three new multi-purpose community centres and the enhancement of an existing community centre. 39
- 2 The Practice Note does not identify whether public transport infrastructure is on the Essential Works list, nor whether car parking, as an excluded item, relates to on-street and/or off-street car parking. 39
- 3 WCC has included the cycleway network under open space and recreation facilities in the Draft West Dapto CP, rather than as a transport item. 40

Recommendations

- 1 WCC remove the apportioned cost of works for the upgrade to the multimodal interchange including car parking (\$3,304,738) from the cost of essential works in the Draft West Dapto CP. 40
- 2 WCC remove the cost of the riparian land (\$14,510,000) from the cost of essential works in the Draft West Dapto CP and review the need to acquire all of such land, in consultation with the Department of Planning and Environment (DPE). 40
- 3 WCC remove the apportioned cost of the community recreation and leisure centre (\$8,573,318) from the cost of essential works in the Draft West Dapto CP, but include the apportioned cost of an outdoor tennis/netball court complex (minimum 12 courts) once it has estimated the reasonable cost for this such facility. 40
- 4 WCC remove the cost of capital works for three new multi-purpose community centres and for the enhancement of an existing community centre (\$21,344,457) from the cost of essential works in the Draft West Dapto CP. 40

- 5 DPE update the Practice Note to clarify which transport infrastructure items are on the Essential Works List, including:
 - public transport infrastructure, and
 - on-street and off-street car parking. 40
- 6 WCC identify the cycleway network as transport infrastructure in the Draft West Dapto CP, rather than open space and recreation, to ensure that the planning for the cycleways forms an integrated part of the transport network. 40

Criterion 2: Nexus

IPART Findings

- 4 There is reasonable nexus between the transport infrastructure and the expected development in the WDURA, except for:
 - The upgrades of the western section of Sheaffes Road ('S4'), a section of Paynes Road ('P2') (including bridge 'B52') and new road NR100-NR103 because these are local roads only,
 - The 4-lane upgrade of the northern and southern sections of Marshall Mount Road because a 2-lane upgrade is sufficient, and
 - Rail Bridge A over the South Coast rail line on Marshall Mount Road because there is an existing rail bridge on Huntley Road ('B41') to be upgraded. 51
- 5 Bus stop infrastructure, including an estimated 214 shelters, may be reduced as some of the feeder routes could operate unidirectional services in a loop as they currently do for services in the Dapto district. 51
- 6 There is reasonable nexus between stormwater infrastructure and the expected development in the WDURA, except for:
 - duplication of four enhanced storage areas (in the count of 58 detention basins) such that only 54 basins are required in Stages 1 to 4
 - the six detention basins in Yallah-Marshall Mount (Stage 5) for which nexus has not been adequately established,
 - ten gross pollutant traps (GPTs) which, based on the revised number of detention basins, are not needed as WCC's water quality treatment approach recommends one GPT per detention basin. 57
- 7 There is reasonable nexus between the open space land and embellishment in the Draft West Dapto CP and the expected development in the WDURA, except for overprovision of open space above the minimum recommended level comprising:
 - one sports park plus playground (9.56 hectares in Stage 3 Cleveland)

- one neighbourhood park plus playground (four hectares in Stage 1-2 Sheaffes-Wongawilli), and
 - one local park (two hectares in Stages 1-3). 62
- 8 There is reasonable nexus between the land for community facilities in the plan and the expected development in the WDURA. 68

Recommendations

- 7 WCC remove from the cost of essential works in the Draft West Dapto CP the local road works for:
- the upgrade of the western section of Sheaffes Road (\$2,585,000)
 - the upgrade of Paynes Road (\$2,303,000) and bridge B52 (\$393,211), and
 - new road NR100-NR103 (\$11,084,020). 51
- 8 WCC reduce (by \$19,365,854) the cost of the upgrade of Marshall Mount Road in the Draft West Dapto CP to reflect a 2-lane, rather than a 4-lane upgrade. 51
- 9 WCC remove Rail Bridge A (\$7,955,472) on Marshall Mount Road from the cost of essential works in the Draft West Dapto CP. 51
- 10 WCC review the number of bus stops needed for unidirectional services with a view to reducing the number and costs in the Draft West Dapto CP. 51
- 11 WCC remove the cost of the four duplicated enhanced storage areas (\$17,559,419) from the cost of essential works in the Draft West Dapto CP. 58
- 12 WCC remove the cost of six detention basins in Yallah-Marshall Mount (\$8,917,630) from the cost of essential works in the Draft West Dapto CP, until it can establish nexus for the stormwater management needs of this sub-precinct by means of a technical study. Once done, WCC can include the reasonable costs of the necessary infrastructure (including GPTs) in the plan. 58
- 13 WCC remove the cost of ten gross pollutant traps (\$550,000) from the cost of essential works in the Draft West Dapto CP. 58
- 14 WCC remove \$8,826,040 from the cost of essential works in the Draft West Dapto CP, being the cost for 15.56 hectares of excess open space land and its embellishment, comprising amounts of:
- \$2,409,112 for one sports park plus playground with an area of 9.56 hectares (50% of cost apportioned to the plan)
 - \$4,066,816 for one neighbourhood park plus playground with an area of four hectares, and

- \$2,350,112 for one local park with an area of two hectares. 63
- 15 WCC review the need to acquire 11.81 hectares of land for cycleways (a cost of \$590,638) and consider opportunities to locate them on land that would be used for other infrastructure purposes (eg, open space or drainage land), thereby reducing costs in the plan. 63

Criterion 3: Reasonable costs

IPART Findings

- 9 Some of WCC's cost estimates for capital works are now relatively outdated. 69
- 10 WCC's general approach to estimating land acquisition costs, relying on recent (2015) advice from an independent valuer, is reasonable. 70
- 11 WCC's cost estimates for transport infrastructure are mostly reasonable, except the cost estimates contained in Table 3.9. 71
- 12 The costs of roadwork which has been completed by WCC are based on 2010 cost estimates rather than the actual capital expenditure, indexed by CPI. The roads include:
 - Shone Ave upgrade, including intersection Int14
 - Bong Bong Rd upgrade, including intersection Int16
 - Cleveland Rd, including intersections Int23 and Int25
 - Fairwater Dr upgrade, including intersections Int26 and Int42 and bridge 'B33', and
 - new roads NR14A and NR14B. 71
- 13 A number of discrepancies exist between the Draft West Dapto CP and the West Dapto S94 Work Schedule regarding the cost and description of transport items. 71
- 14 WCC has not included land acquisition costs for transport infrastructure in Stage 5 in the Draft West Dapto CP. 71
- 15 WCC's cost estimates for stormwater infrastructure and land are mostly reasonable, except for:
 - when estimating the land requirements for detention basins, assuming that 50% of land will be on developable land and 50% of basins will be on riparian land,
 - indexing estimates for land acquisition for detention basins in Mullet Creek, as they are costed using 2015 valuations, and

- indexing the cost estimate for trunk drainage as it is based on 2015 industry costings. 80
- 16 WCC's cost estimates for open space facilities are reasonable, except for the overestimate of land for cycleways in Stage 3, Cleveland precinct. 83
- 17 The cost of land for on which WCC will provide community facilities is reasonable. 85
- 18 Administration costs of \$7.5 million is a conservative estimate of the total cost of administration required over the life of the plan. 85
- 19 WCC's use of the CPI to escalate capital works cost estimates to current dollars does not represent the most cost-reflective indexation factor, and the CPI is applied only to June 2014. 86
- 20 WCC's use of the Established House Price Index for Sydney to index land acquisition cost estimates is not reasonable given the difference between the performance of the Sydney and Wollongong property markets. 87

Recommendations

- 16 WCC update the estimated costs of capital works in the plan, where outdated, with the assistance of a quantity surveyor if necessary. 69
- 17 WCC remove \$173,104,776 in costs from the transport essential works in the Draft West Dapto CP in line with the recommended adjustments in Table 3.9. 72
- 18 Where possible, WCC replace the cost estimates for completed roadworks with the actual capital expenditure, indexed annually by CPI. 72
- 19 WCC rectify the discrepancies identified in Table 3.10 in relation to transport items so that relevant costs and descriptions in the Draft West Dapto CP and the West Dapto S94 Work Schedule are aligned. 72
- 20 WCC include in the West Dapto CP estimates for the cost of land acquisition for transport infrastructure in Stage 5, relying on up-to-date advice from a registered valuer. 72
- 21 WCC refine the estimates for land values and cost of facilities for stormwater infrastructure, once the locations of the basins are known. 80
- 22 WCC remove \$2,795,594 from the cost of essential works in the Draft West Dapto CP for the unnecessary indexation of land acquisition estimates for the Mullet Creek basins. 80
- 23 WCC remove \$2,539,484 for the unnecessary indexation of the cost of trunk drainage. 78

- 24 WCC remove the cost of 1.99 hectares of land for cycleways in the Cleveland precinct (\$177,785) from costs in the Draft West Dapto CP. 83
- 25 WCC review the estimate for plan administration costs in the Draft West Dapto CP. 85
- 26 To index capital works estimates (but not actual costs) to current dollars, WCC apply more cost-reflective PPIs to the most recent period, as follows:
 - ABS PPI (Road and Bridge Construction) for transport and stormwater costs, and
 - ABS PPI (Non Building Construction) for open space costs. 86
- 27 To index land acquisition cost estimates between valuation years, WCC apply the NSW Valuer Generals' land valuation data for the Wollongong to derive an index for land acquisition cost estimates in the plan, and state this method in the plan. 87

Criterion 4: Timing

IPART Findings

- 21 The extended timeframe of around 60 years for development in the WDURA is reasonable. WCC's approach to refining the timeframe for delivery of infrastructure in the Draft West Dapto CP as the timing of development is more certain is, in the circumstances, also reasonable. 89
- 22 WCC has allocated infrastructure expenditure across forward years by stage, but there is benefit in WCC prioritising which infrastructure it will deliver for each stage across the proposed development life, and including this information in the plan. 89

Recommendation

- 28 WCC prioritise infrastructure delivery for each of the development stages beyond the 10-year capital works program, setting out in the Draft West Dapto CP and work schedules an indicative timetable for infrastructure provision in tranches of five or ten years. 89

Criterion 5: Apportionment

IPART Findings

- 23 There is significant variation in infrastructure costs and service provision between the five stages in the plan, particularly between Stages 1 to 3 compared with Stages 4 and 5. 97

- 24 The approach to apportioning infrastructure costs to development evenly across all stages could be more equitable if costs were apportioned separately to Stages 1 to 3 and Stages 4 and 5. 97
- 25 WCC's approach of apportioning open space and community facility costs only to residential development only is reasonable. 103
- 26 WCC's approach of apportioning transport, stormwater and administration costs to residential and non-residential development is not reasonable in these ways:
- Industrial development is not apportioned its share of demand for infrastructure and administration (1% rather than 9%), placing a disproportionate amount of the total costs on residential development (99% rather than 91%).
 - Other non-residential development is exempt from contributions and does not contribute to its share of the cost of meeting demand for infrastructure and administration, placing a disproportionate amount of the total costs on other development, residential in particular. 103
- 27 WCC's approach to apportioning the cost of transport in the plan appears reasonable, in principle, except that:
- Road NR1-NR3 should be apportioned 64% rather than 50% in the Draft West Dapto CP, based on traffic modelling information available to WCC, and
 - the signalised intersections on Cleveland Road (Int23 and Int25) should not be apportioned 100% to the Draft West Dapto CP because they are both outside the WDURA and provide benefit to residents in other precincts. 107
- 28 There is limited information available in the plan and supporting documents to assess the specific apportioned costs for various transport works proposed. 107
- 29 WCC's approach to apportioning the cost of stormwater infrastructure only to new development in the Draft West Dapto CP is reasonable. 111
- 30 The allocation of costs to residential development on a per person, rather than a per hectare, basis is not best practice as stormwater demand is generally driven more by land area than population. 111
- 31 WCC's approach to apportioning the cost of open space facilities in the Draft West Dapto CP is reasonable, except for two facilities which both serve the broader council area and for which a higher rate of apportionment to the WDURA was adopted than the rate recommended by the Elton Study. The facilities are:

- a sports park in Darkes Town Centre (apportioned 50% to WDURA rather than 25%), and
 - the Community Leisure and Recreation Centre in Cleveland (apportioned 67.5% to WDURA rather than 50%). 112
- 32 Apportioning 100% of the cost of land for community facilities in the Draft West Dapto CP the WDURA is reasonable. 113
- 33 WCC has excluded 30 hectares of land zoned for State schools from the NDA in the Draft West Dapto CP for the purpose of calculating development contributions. This has the effect of exempting school development from paying contributions, and making contribution rates for other development in the WDURA higher. 113

Recommendations

- 29 To improve the links between demand for infrastructure and contributions in different stages in the plan, WCC consider either:
- removing Stages 4 and 5 from the plan for inclusion in a new or another section 94 contributions plan, or
 - introducing separate contributions in the Draft West Dapto CP for developments in Stages 1 to 3 and developments in Stages 4 and 5, that are more reflective of the cost of facilities to meet demand from the new development in each of the stages. 98
- 30 WCC apportion costs for transport, stormwater and plan administration between residential and industrial development based on the relative NDA of the development type (currently a 91:9 split) such that 9% of contributions revenue for this infrastructure comes from industrial development and 91% comes from residential development. 103
- 31 WCC apportion costs to retail, office and business premises development (ie, in land zoned B1, B2 or B4) to represent its fair share of demand for infrastructure in the calculation of contribution rates for non-residential development. 103
- 32 WCC include an additional \$17,040,037 in the Draft West Dapto CP for the cost of road NR1-NR3 which should be apportioned 64% rather than 50% to the WDURA. 107
- 33 WCC remove \$1,407,158 from the Draft West Dapto CP for the combined costs of the signalised intersections on Cleveland Road (In23 and Int25), until it has assessed the benefits accruing to WDURA residents compared with outside precincts, so that it can then apportion a more reasonable share of their costs to development in West Dapto. 107

- 34 WCC include more information in the Draft West Dapto CP and work schedules to justify the specific apportionment of costs for various transport works to the WDURA, based on the estimated demand for the infrastructure (linked to its traffic modelling). 107
- 35 WCC apportion stormwater infrastructure costs to residential development on a per hectare basis rather than a per person basis, to better reflect the source of demand for the facilities. 111
- 36 WCC apportion only 25% (or \$1,660,806) of the cost of a sports park in Darkes Town Centre to the Draft West Dapto CP. 112
- 37 WCC apportion only 50% of the cost of outdoor recreation facilities at the Community Leisure and Recreation Centre in Cleveland (being only that component of the centre which is on the Essential Works List), based on the estimated share of demand for the district-wide facilities from within the WDURA. 112
- 38 WCC exclude land from the precincts' NDA for development contribution purposes only where there is a Ministerial direction to that effect, reinstate 30 hectares of land for State schools into the precincts' NDA for the purpose of calculating development contributions and request the Department of Education to pay the relevant contribution when school development is approved. 114

Criterion 6: Consultation

IPART Finding

- 34 WCC conducted appropriate community liaison and publicity when preparing the Draft West Dapto CP. 115

Criterion 7: Other matters

IPART Findings

- 35 The Draft West Dapto CP 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*. 116
- 36 Many aspects of infrastructure provision outlined in the Draft West Dapto CP are assumption-based, reflecting the staged and flexible planning approach adopted for the West Dapto Urban Release Area. This planning approach

gives rise to a need for more regular reviews of the contributions plan, particularly in the first 10 years of the plan. 118

Recommendations

39 WCC amend the Draft West Dapto CP to provide information in a way that more fully complies with the requirements of the Environmental Planning and Assessment Regulation 2000. 116

40 WCC review the West Dapto CP, at least every two years during the next 10 years of the plan, to take account of:

- changes to the expected provision of infrastructure resulting from the neighbourhood planning process and resulting revisions to the capital works program
- outcomes from the rezoning process for Stages 3 to 5 (if relevant), including any flow-on effects to the facility requirements in relevant areas, and
- reconciliation of actual costs to forward cost estimates, such that any cost efficiencies can result in lower contribution rates. 118

1.8 Structure of this report

The remainder of this report explains our assessment in more detail. Chapter 2 summarises the Draft West Dapto CP and Chapter 3 explains 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, the assessment of the Draft West Dapto CP against the information requirements in clause 27 of the *Environmental Planning and Assessment Regulation 2000*
- ▼ Appendix C, the report of the consultants ARRB Group Ltd.
- ▼ Glossary.

2 Summary of Draft West Dapto Contributions Plan

Wollongong City Council (WCC) has recently prepared the *Draft West Dapto Section 94 Development Contributions Plan 2016* (Draft West Dapto CP) for the West Dapto Urban Release Area (WDURA), which comprises around 4,700 hectares of land located in the south west of the Wollongong local government area (LGA).

Development is planned to occur over 60 years from 2010. The Draft West Dapto CP is based on a net developable area (NDA) of 1,951 hectares. Most of the development will be residential. When fully developed, the area is expected to have approximately 19,543 dwellings, accommodating a forecast population of 56,579. Around 180 hectares will be for industrial development, providing for an estimated 8,500 jobs.

WCC estimates infrastructure costs of \$1.23 billion in the Draft West Dapto CP. Under the Government's current policy of capping residential contributions (at \$30,000 per lot or dwelling), WCC forecast contribution revenue to be \$596 million. This leaves a shortfall of \$633 million. WCC's preferred option to fund that gap is to seek government funding under the Local Infrastructure Growth Scheme (LIGS).

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 the Draft West Dapto CP

WCC submitted the Draft West Dapto CP to IPART for assessment following its exhibition between December 2015 and February 2016. The council did not amend the plan following the exhibition period and has not yet adopted it.¹⁵

¹⁵ The plans in force for land in the WDURA are the *West Dapto Release Area Section 94 Contributions Plan (2015)* for Stages 1 and 2, and the *Wollongong Section 94A Development Contributions Plan (2015)* for Stages 3 and 4 and Yallah-Marshall Mount (Stage 5). See below Section 2.1 which explains the current plans in more detail.

2.1.1 Earlier versions of the plan

WCC adopted the first plan to cover the WDURA in December 2010, replacing the Horsley Section 94 Contributions Plan.

The December 2010 plan specified a maximum residential contribution rate of \$29,255. In March 2011, at WCC's request, the NSW Government declared the WDURA a Greenfield area, therefore making it subject to the NSW Government's cap of \$30,000 on residential development contributions.¹⁶

WCC adopted a new plan in December 2011 which contained minor revisions and the indexed contributions reached the cap of \$30,000.

2.1.2 October 2015 revised West Dapto CP (currently in force)

WCC undertook a review of the contributions plan for the WDURA and adopted a revised plan in October 2015. This plan reflected new council priorities for transport and open space, and the cost of infrastructure increased from \$565 million to \$817 million. WCC calculated capped revenue from contributions to be \$581 million, leaving a shortfall of \$299 million (in \$2014).¹⁷

Significant amendments in the October 2015 plan included:

- ▼ addition of the Huntley development area, and consequently the land and infrastructure associated with this area
- ▼ addition of the Princes Highway/Fowlers Road – Fairwater Drive link (\$93.5 million)
- ▼ revision of drainage and land acquisition requirements in Wongawilli Road for additional open space (\$28 million)
- ▼ expansion of the range of developments that could be exempt from contributions (residential care and industrial training facilities)
- ▼ restructuring of contribution rates to encourage more variety in housing types and affordable housing (eg, for dual occupancy, seniors living and shop-top housing), and
- ▼ indexation of the 2010 cost estimates (\$62 million).¹⁸

¹⁶ Minister for Planning, *Direction Section 94E under the Environmental Planning and Assessment Act 1979*, 15 September 2010.

¹⁷ See WCC, *West Dapto Release Area Section 94 Contributions Plan (2015)*, October 2015 p 5 and WCC Business Paper, Meeting of 22 June 2015.

¹⁸ WCC Business Papers, Meeting of 22 June 2015, pp 45-51 and 30 November 2015, pp 4-5.

2.1.3 Draft West Dapto CP (2016) (submitted to IPART)

In November 2015, WCC endorsed the Draft West Dapto CP (dated 2016) for exhibition.¹⁹ The council intended to submit this version to IPART for assessment with a view to seeking funding from the LIGS.²⁰ This version of the plan has a different format from the version currently in force, and contains significant further amendments, including:

- ▼ more land coverage (in addition to the zoned land in Stages 1 and 2 in the 2015 plan, it now includes Stage 3, Stage 4 and Yallah-Marshall Mount (Stage 5))
- ▼ additional infrastructure and updated population and dwelling numbers to reflect the expanded coverage
- ▼ updated land costs, and
- ▼ a reduced list of development that can be exempted from contributions.²¹

The council has adopted a streamlined format, removing much of the detailed information about the rationale for infrastructure to be provided, how it has been costed, and maps showing the proposed location of new works for each infrastructure category that appear in the 2015 version. The plan itself contains a map of the WDURA and the land to which it applies, and lists of works and Part 4 Work Schedules, contains tables with high level costing information for each infrastructure category. Although the plan document does not specifically reference them, it is supported by:

- ▼ a Map book with integrated maps showing locations of existing and new facilities, and
- ▼ the West Dapto S94 Work Schedule, a spreadsheet with various tabs setting out in detail how costs and contribution rates are calculated.²²

The plan includes infrastructure costs and contribution rates based on anticipated development and provision of infrastructure across the entire WDURA, Stages 1 to 5.

- ▼ Stage 1 (Darkes Town Centre, Sheaffes-Wongawilli) and Stage 2 (West Horsley) were rezoned in 2010 with development now underway. The council has approved development applications for 995 residential lots. Work to deliver the upgrade of infrastructure and new roads has begun in these areas.

¹⁹ The revision so soon after the plan currently in force was adopted reflected WCC's intention to submit the draft to IPART for assessment with a view to seeking funding from the Local Infrastructure Growth Scheme (LIGS) or a special variation to meet the shortfall in development contributions as a result of the cap.

²⁰ WCC could also seek a special variation to meet the revenue shortfall as a result of the cap.

²¹ WCC Business Paper, Meeting of 30 November 2015, pp 8-12.

²² References to West Dapto S94 Work Schedule throughout our report will indicate, where appropriate, the relevant Tab where the data is found.

- ▼ Stage 3 (Cleveland) and Stage 4 (Avondale) are currently zoned non-urban and rural, and have not yet been rezoned as residential to be part of the WDURA.
- ▼ Stage 5 (Yallah-Marshall Mount) is also currently non-urban, however a plan for rezoning has been prepared, which the council has stated will be submitted to DPE once IPART has assessed the Draft West Dapto CP (see section 2.3.1).

The *West Dapto Section 94 Contributions Plan 2015* (currently in force) allows WCC to collect contributions from new development in Stages 1 and 2 only.²³ Until the Draft West Dapto CP is adopted, any development approval in the remainder of the WDURA (ie land yet to be rezoned in Stages 3, 4 and 5, Yallah-Marshall Mount) will be subject to contributions levied under the *Wollongong Section 94A Development Contributions Plan*.²⁴ As the land in Stages 3 to 5 is progressively rezoned, WCC intends to bring the areas under the West Dapto contributions plan for the purposes of levying contributions.²⁵

Revenue and expenditure associated with the plan to date are outlined in Box 2.1.

²³ See *West Dapto Release Area Section 94 Contributions Plan (2015)*, Section 1.4, p 13.

²⁴ A section 94A contributions plan allows a council to collect contributions to help meet the cost of new or enhanced local infrastructure by applying a percentage levy on the cost of the new development.

²⁵ When rezoning occurs in Stages 3, 4 or 5, WCC will need to amend the *Wollongong Section 94A Contributions Plan* by deleting the relevant area and transferring it to the West Dapto S 94 Contributions Plan then in force: see WCC Business Papers, 30 November 2015, pp 8-9.

Box 2.1 Revenue and expenditure associated with the Draft West Dapto CP

In November 2015, WCC reported \$21 million revenue from contributions under the plan, and \$40.8 million expenditure on infrastructure.

Contribution-related revenue comprises:

- ▼ \$3.8 million transferred from the repealed Horsley Section 94 Plan^a
- ▼ \$17.59 million in section 94 contributions from West Dapto, consisting of:
 - \$15.9 million from residential development (530 lots)
 - \$90,932 from employment lands, and
 - \$1.6 million in interest.

Other revenue sources for infrastructure provision are:

- ▼ \$26.05 million loan from the NSW Government towards the cost of the initial access strategy (\$11.6 million repaid, 5-year term remaining)
- ▼ \$15 million reduced-interest loan towards the cost of the Fowlers Road – Fairwater Drive link (a further draw down of \$5.5 million occurred in May, 2016)
- ▼ \$600,000 NSW Government grant towards the cost of the Fowlers Road – Fairwater Drive link
- ▼ \$22.5 million allocation from Restart NSW — Illawarra Infrastructure Fund towards the cost of the Fowlers Road – Fairwater Drive link (\$3.2 million received to date)
- ▼ \$4.7 million (net) grant from the Commonwealth Government's Building Better Regional Cities Program towards the initial access strategy.

Expenditure of \$40.8 million, sourced from loans, grants, section 94 contributions and general revenue has been confined to road network infrastructure implementing the West Dapto Access Strategy (see section 2.2.1), including:

- ▼ \$2.1 million for Fairwater Drive west (to Bong Bong Road)
- ▼ \$10.5 million for Fairwater Drive east connection with Cleveland Road
- ▼ \$6.7 million for Cleveland Road upgrade and Mullet Creek bridge
- ▼ \$1.4 million for Fowlers Road extension from Princes Highway to Marshall Street
- ▼ \$3.4 million for Princes Highway/West Dapto Road intersection, Kembla Grange
- ▼ \$6.7 million for Shone Avenue Stage 1, and
- ▼ \$6.5 million for Shone Avenue Stage 2.

^a The Horsley Release Area is now fully developed and a surplus of \$3.8 million collected under the applicable section 94 contributions plan, but not expended on infrastructure, was transferred into the West Dapto CP section 94 fund.

Source: WCC, Business Papers, Meeting of 30 November 2015, p 6 and Meeting of 9 May 2016, p 47, and Email to IPART, 6 September 2016.

2.2 Planning approach adopted by Wollongong City Council

The major aspect of planning that WCC has undertaken for the WDURA as a whole is for transport infrastructure which, with environmental and flooding constraints, is a central challenge in planning for the WDURA. This work is guided by the West Dapto Access Strategy.

In addition, the planning approach adopted by WCC for the WDURA combines an overall structure planning approach, with neighbourhood planning for specific precincts (stages) as they are zoned for development. Precise land use and infrastructure requirements are determined once the neighbourhood planning process is complete.

2.2.1 West Dapto Access Strategy

In 2009, WCC endorsed a strategy to address access challenges. The initial access strategy included significant improvements to a number of existing roads and the construction of new roads to provide greater connection between Horsley and Dapto and to the wider road network. It was intended to support the planned development in Stages 1 and 2 of the WDURA, and be the starting point for the expansion of the road network for longer term development. It was incorporated into the original West Dapto Section 94 Contributions Plan.²⁶

Planning for the West Dapto Access Strategy has involved NSW government agencies Roads and Maritime Services (RMS) and DPE.

WCC has progressed a number of projects under the strategy, including extending Fowlers Road and connecting it to the Princes Highway, and the West Dapto Road/Princes Highway intersection, as well as upgrades to Shone Avenue and Fairwater Drive. Current projects are a link road from Fowlers Road to Fairwater Drive, and a planned upgrade to Wongawilli and West Dapto roads.²⁷

2.2.2 Structural planning in the WDURA

In 2008 the Growth Centres Commission (GCC) recommended that WCC employ a 'structure planning' approach in the WDURA. This was to ensure a comprehensive infrastructure plan was prepared for the whole release area aligned to planning outcomes that retain a degree of flexibility.²⁸ Even though Stages 3 to 5 have not been rezoned, nor detailed planning undertaken for them, the costs of proposed infrastructure and land to meet the demand from development in those areas are included in the Draft West Dapto CP.

²⁶ See WCC, Business Paper, Meeting of 27 October 2009.

²⁷ See <http://www.wollongong.nsw.gov.au/services/majorprojects/westdaptoaccess/Pages/West-Dapto-Access-Strategy.aspx>.

²⁸ Growth Centres Commission, *West Dapto Release Area Review – Planning Report prepared for Wollongong City Council*, November 2008, p 17.

To ensure adequate land supply and development progress in West Dapto, the GCC also recommended the option for WCC to commence with Stages 1 and 2, followed by a second front in the south (with Yallah/Marshall Mount and the adjoining precinct of Calderwood in the Shellharbour LGA).²⁹

WCC has prepared a structure plan with proposed rezoning for the Yallah-Marshall Mount Precinct.³⁰ The revised infrastructure and cost estimates are included in the Draft West Dapto CP. However, WCC deferred finalising the structure plan and submitting it to DPE until IPART had considered the Draft West Dapto CP and the NSW Government determined “how the shortfall in funding for required local infrastructure across the West Dapto land release will be met”.³¹

2.2.3 Neighbourhood planning

In accordance with the Wollongong Development Control Plan (DCP) 2009, when an area is rezoned for urban development ‘neighbourhood plans’ are prepared prior to land being subdivided to allow residential and other development. Neighbourhood plans are essentially mini-master plans for a neighbourhood, precinct or catchment.³² Since 2010, WCC has adopted neighbourhood plans for 10 locations in the WDURA, which together open up about 3,400 residential lots and 75 hectares of industrial land for development.

2.3 Development in the West Dapto Urban Release Area

Figure 2.1 shows the boundaries of the WDURA, and the land which has been zoned to date. Figure 2.2 shows the proposed staging.

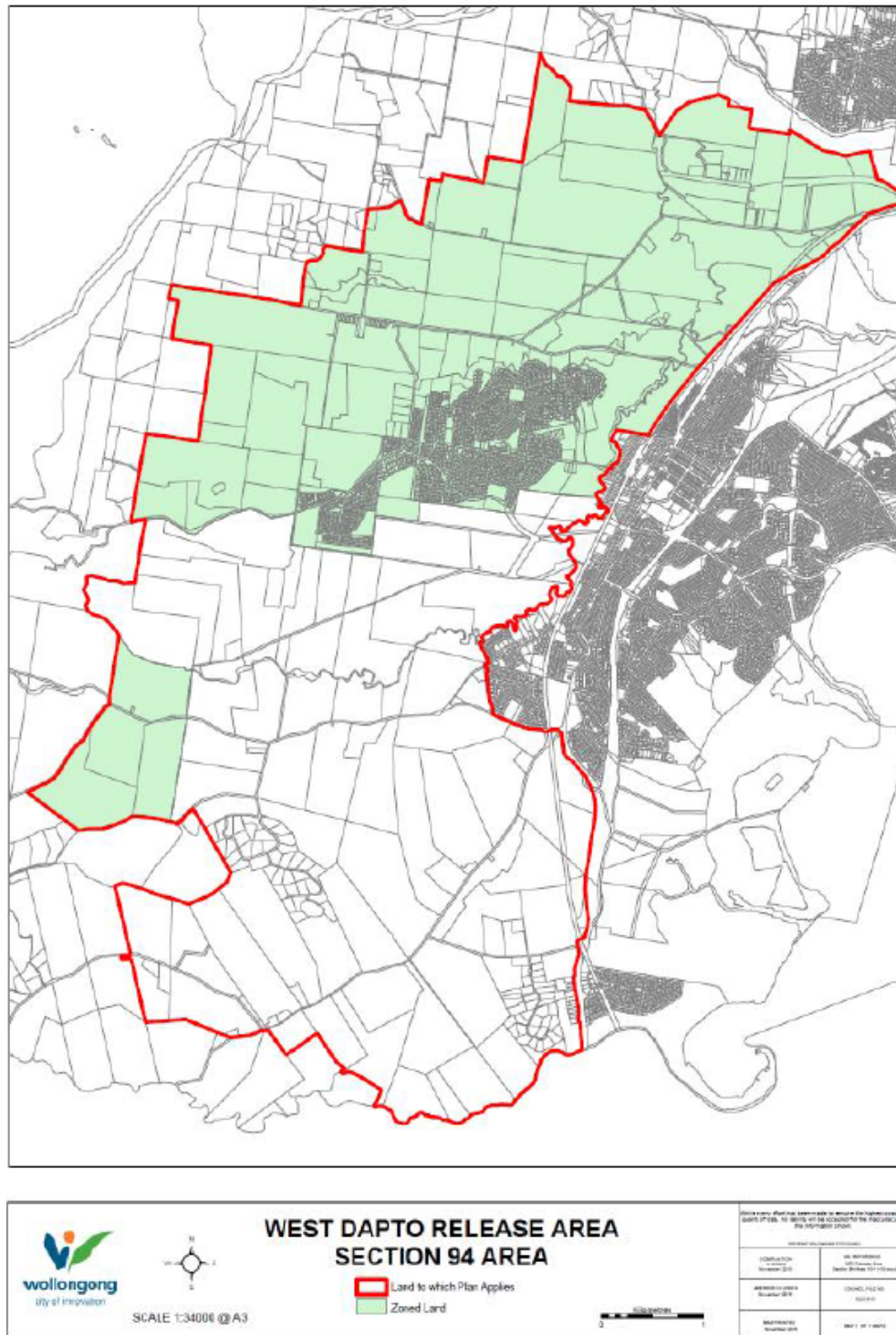
²⁹ Growth Centres Commission, *West Dapto Release Area Review – Planning Report prepared for Wollongong City Council*, November 2008, p 19.

³⁰ The council considers this precinct to be a “floating stage”, which could proceed if infrastructure and servicing is available, as it was not linked to the servicing of Stages 1-4. In this respect, the timing of the precinct depends on the nature of development proposed, the potential industry response, and the provision of infrastructure, considering other infrastructure demands within the wider area.

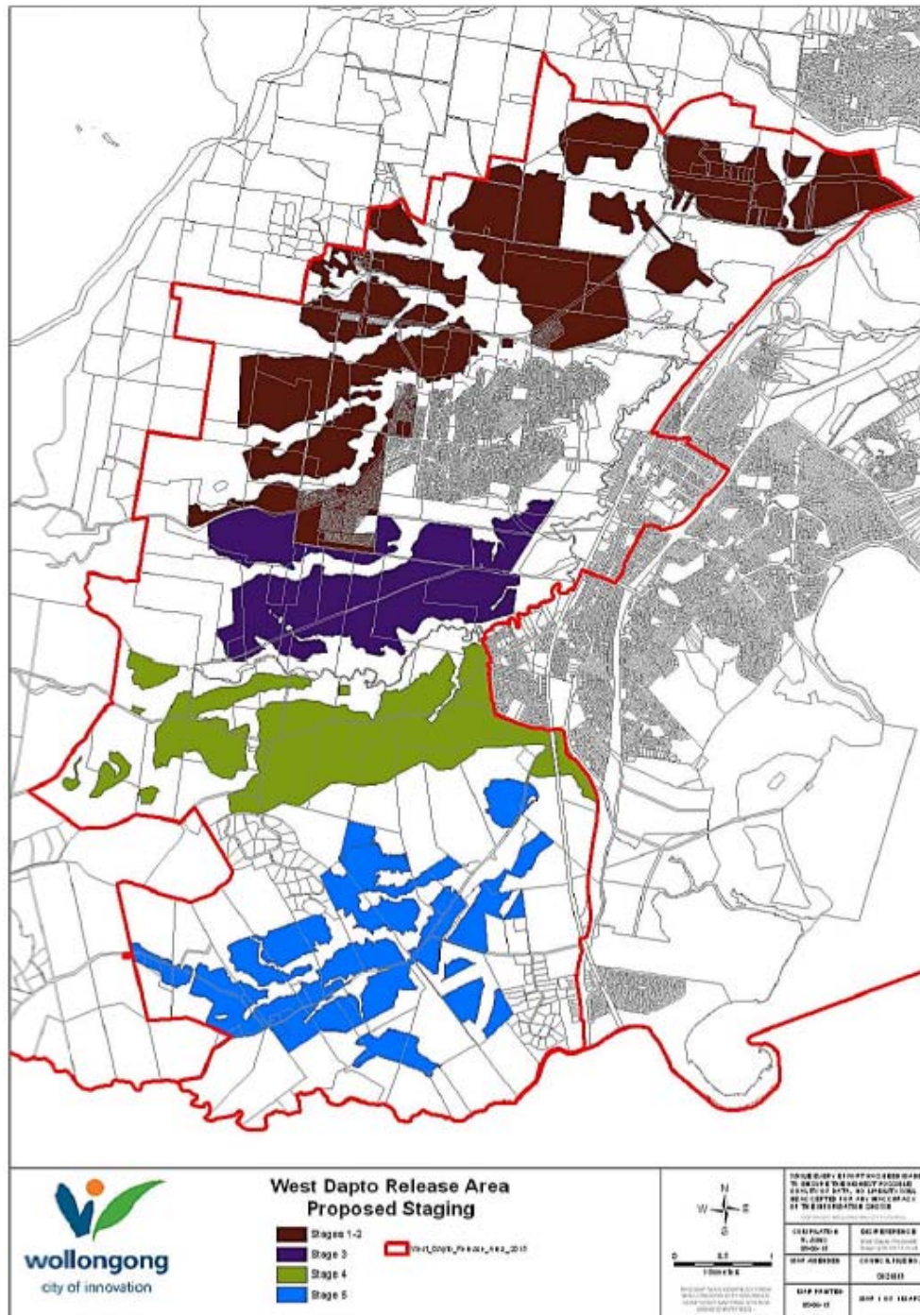
³¹ WCC, Minutes of the meeting of 19 October 2015, p 10.

³² Neighbourhood Plans typically illustrate the structure of a future neighbourhood, with indicative residential lots, road layouts, parklands and public open space, retail, commercial and industrial uses and proposed community facilities. Environmentally sensitive land and potential methods for protecting it are also shown.

Figure 2.1 Location of West Dapto Urban Release Area



Source: Wollongong City Council, *Draft West Dapto Section 94 Development Contributions Plan 2016*, p 4.

Figure 2.2 West Dapto Urban Release Area proposed staging

Source: <http://www.wollongong.nsw.gov.au/services/majorprojects/westdaptourbanrelease/Documents/West%20Dapto%20Stages%20to%205.pdf>, accessed 22 March 2016.

2.3.1 Net developable area of the WDURA

Of the 4,700 hectares of land within the WDURA, the NDA is 1,951 hectares, or just over 40% of the total area.³³ Development in the residential precincts will be separated by an extensive system of riparian/open space corridors.

Table 2.1 indicates how the NDA is distributed across the range of land use zonings and the five stages of development.

Table 2.1 Net developable area in the Draft West Dapto CP (ha)

Land use zone	Stages 1 and 2	Stages 3 and 4	Stage 5 (Yallah Marshall Mount)	Total
R3 Medium Density	38.6	42.8	46.4	127.8
R2 Low Density	375.4	512.0	188.9	1,076.3
R5 Large Lot Residential	24.0		291.6	315.6
E4 Environmental Living	42.4	86.0	100.2	228.6
B2 Local Centre	8.5	3.1	0.7	12.3
B1 Neighbourhood Centre	0.8	7.2		7.9
B4 Mixed Use			2.5	2.5
Subtotal	489.6	651.1	630.3	1,770.9
IN3 Heavy Industry	44.4			44.4
IN2 Light Industry	129.9		6.1	136.0
Subtotal	174.6		6.1	180.4
TOTAL	663.9	651.1	636.3	1,951.4

Note: Numbers may not add due to rounding.

Source: WCC, West Dapto S94 Work Schedule, Density & Contributions Tab.

2.4 Cost of land and facilities in the Draft West Dapto CP

The total cost of land and facilities in the Draft West Dapto CP is \$1.23 billion (see Table 2.2).³⁴ This comprises \$151.1 million (12% of total costs) for land, \$1.07 billion (87% of total costs) for construction of facilities and \$7.5 million (0.6% of total costs) for plan administration. The construction of transport facilities alone accounts for \$894 million (73% of total costs).

³³ See WCC, West Dapto S94 Work Schedule, Density & Contributions Tab. The NDA of 1,703.84 ha shown in Table 3.1 of the Draft West Dapto CP is incorrect: WCC, Email to IPART, 4 August 2016.

³⁴ For the purposes of calculating contribution rates required to fund infrastructure under the plan, the net cost is \$1,225,420,065. An amount of \$3,863,776 has been deducted to reflect contributions received from development in the Horsley area which was brought into the land covered by the West Dapto section 94 contributions plan, and which was transferred into the West Dapto contributions plan fund in 2010.

Table 2.2 Total costs in the Draft West Dapto CP (\$2014)

Infrastructure category	Land	Facilities	Total
Transport	43,040,217	893,576,395	936,616,612
Stormwater management	56,822,865	99,699,193	156,522,058
Open space	49,695,923	56,064,791	105,760,714
Community facilities	1,540,000	21,344,457	22,884,457
Administration costs			7,500,000
Total	151,099,005	1,070,684,836	1,229,283,841^a

^a The total costs in the plan to be met from development contributions is actually \$1,225,420,065 because of the inclusion of pooled contributions of \$3,863,776 from the previous Horsley section 94 plan.

Note: Estimates in the West Dapto S94 Work Schedule are in \$2015 for land and Stage 5 roadwork costs only.

Source: WCC, West Dapto S94 Work Schedule, Summary Tables, Open Space and Community Tabs.

2.5 Contribution rates in the Draft West Dapto CP

Under the Draft West Dapto CP, contributions will be levied on a per dwelling basis for residential development, and a per hectare basis for industrial development.

WCC has applied a cost of \$21,480 per person to derive rates per dwelling for residential development based on densities and occupancy rates.³⁵

Table 2.3 sets out the indicative maximum contribution rates for the range of residential and industrial land zonings, and Table 2.4 sets out the indicative rates for residential dwellings of different sizes. The maximum contribution for residential development proposed in the Draft West Dapto CP submitted for assessment is \$68,499.³⁶

³⁵ See WCC, West Dapto S94 Work Schedule, Density & Contributions Tab.

³⁶ The council has advised that the rate of \$56,129 in Table 1.5 of the Draft West Dapto CP is incorrect: WCC, Email to IPART, 12 July 2016.

Table 2.3 Development contributions – Draft West Dapto CP (\$2014)

Development type	Density (dwellings per ha)	Occupancy rate per dwelling	Maximum contribution
Residential development			Per dwelling
R3 medium density	31.4	2.5	53,699
R2 low density	13.2	3.1	64,947
R5 large lot residential	0.5	3.2	68,518
E4 Environmental living	2.8	3.2	68,734
B2 Local centre	19.1	2.0	47,255
B1 neighbourhood centre	15.0	1.7	36,515
B4 mixed use	60.0	1.7	36,515
Industrial development			Per hectare^a
IN3 heavy industry			68,499
IN2 Light Industry			68,499

^a WCC advised that the contribution rate for industrial development should be \$68,499 per ha (not \$56,129 as in Table 1.4 in the Draft West Dapto CP): WCC, Email to IPART, 12 July 2016.

Source: WCC, West Dapto S94 Work Schedule – Density & Contributions Tab.

Table 2.4 Residential contributions by dwelling type (\$2014)

Dwelling type	Average occupancy rate	Contribution rate
Subdivision, Dwelling House, Dual Occupancies	3.2	68,734
Multi-Unit Housing 4+ Bedrooms	2.9	62,291
Multi-Unit Housing 3 Bedrooms	2.5	53,699
Multi-Unit Housing 2 Bedrooms	2.2	47,255
Multi-Unit Housing 1 Bedroom	1.7	36,515

Note: The council has calculated the cost per person at \$21,480.

Source: WCC, Draft West Dapto CP, p 2.

Contributions from industrial development are to be levied on a per hectare basis for the cost of transport and stormwater infrastructure, and plan administration, ie, excluding the costs of community facilities and open space. WCC has set the contributions rate for industrial land so that they represent approximately 10% of the residential rate (excluding contributions for open space and community facilities) to encourage industrial activity within the area.³⁷ The council advised that the contribution rate for industrial development should be \$68,499 per hectare (not \$56,129 as in Table 1.4 in the Draft West Dapto CP).³⁸

³⁷ See CP October 2015 p 6. Although the draft CP submitted for IPART's assessment does not match these proportions (ie, that industrial rates equal 10% of residential rates), WCC advised that this remains its intended approach: WCC, Email to IPART, 12 July 2016.

³⁸ WCC, Email to IPART, 12 July 2016.

The plan states that WCC will not collect contributions from non-residential development for retail, office or business premises, or community facilities and recreational facilities. Contributions will, however, be levied on any residential components of such premises.³⁹

2.5.1 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 Act⁴⁰
- ▼ community infrastructure provided by the council
- ▼ public infrastructure provided by the NSW Government (if supported by a comprehensive submission), and
- ▼ other development if the council, by formal ratification, considers it is warranted.⁴¹

2.5.2 Indexing contribution rates

The Draft West Dapto CP proposes to index the base contribution rates as follows:

- ▼ Contributions for land yet to be acquired will be adjusted at least annually by the annual percentage change in the ABS Established House Price Index for Sydney.
- ▼ Contributions for land already acquired, capital works and administration costs will be adjusted quarterly by the change in the ABS Consumer Price Index – All Groups for Sydney (CPI). In the event that the current CPI is less than the base CPI, the current CPI shall be taken as not less than the previous CPI.⁴²

³⁹ Draft West Dapto CP, p 5.

⁴⁰ 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.

⁴¹ Draft West Dapto CP, pp 10-11.

⁴² Draft West Dapto CP, pp 12-13. The qualification for capital works means that contribution rates would never be reduced in real terms from one year to the next because of deflation.

3 Assessment of Draft West Dapto CP

We assessed WCC's application for a review of the Draft West Dapto CP against the criteria in the Practice Note. Our assessment is based on the contents of the plan, WCC'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).⁴³ ARRB examined the proposed land and facilities for roads, intersections, bridges and public transport works in the Draft West Dapto CP and advised on their:

- ▼ consistency with the essential works list
- ▼ reasonableness in terms of nexus, and
- ▼ reasonableness in terms of cost.

This chapter summarises our assessment of the Draft West Dapto CP against the criteria.

3.1 Criterion 1: Essential Works List

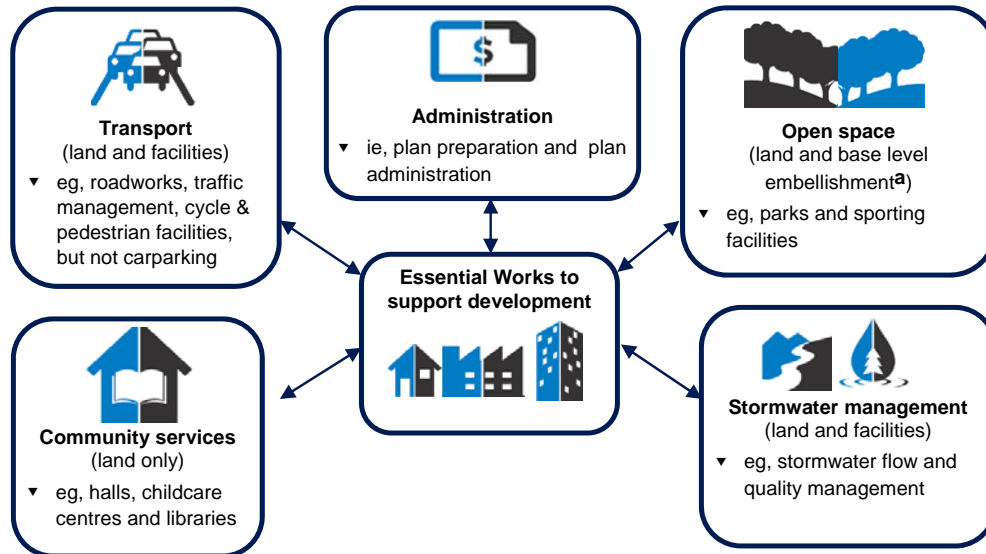
We are required to assess whether the infrastructure included in the Draft West Dapto CP is on the Essential Works List (EWL) outlined in the Practice Note (see Box 3.1). Only 'essential works' are to be included in a plan when the council is seeking external funding for the infrastructure costs above the revenue provided for by the capped contributions.⁴⁴

The Draft West Dapto CP submitted by WCC contains expenditure for transport, stormwater, open space and community facility infrastructure, including capital and land.

⁴³ See ARRB Group Ltd, *Review of Transport Items in the Draft West Dapto Contributions Plan*, September 2016 (ARRB Report).

⁴⁴ 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.

Box 3.1 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.

3.1.1 Summary of our assessment

IPART findings

- 1 All infrastructure items in the Draft West Dapto CP are on the Essential Works List except for:
 - the upgrade to the transport multimodal interchange with car parking facilities
 - 290.2 hectares of core riparian land
 - capital works for an indoor community recreation and leisure centre (67.5% apportioned to WDURA) and
 - capital works for three new multi-purpose community centres and the enhancement of an existing community centre.
- 2 The Practice Note does not identify whether public transport infrastructure is on the Essential Works list, or whether car parking, as an excluded item, relates to on-street and/or off-street car parking.

- 3 WCC has included the cycleway network under open space and recreation facilities in the Draft West Dapto CP, rather than as a transport item.

Recommendations

- 1 WCC remove the apportioned cost of works for the upgrade to the multimodal interchange including car parking (\$3,304,738) from the cost of essential works in the Draft West Dapto CP.
- 2 WCC remove the cost of the riparian land (\$14,510,000) from the cost of essential works in the Draft West Dapto CP and review the need to acquire all of such land, in consultation with the Department of Planning and Environment (DPE).
- 3 WCC remove the apportioned cost of the community recreation and leisure centre (\$8,573,318) from the cost of essential works in the Draft West Dapto CP, but include the apportioned cost of an outdoor tennis/netball court complex (minimum 12 courts) once it has estimated the reasonable cost for this such facility.
- 4 WCC remove the cost of capital works for three new multi-purpose community centres and for the enhancement of an existing community centre (\$21,344,457) from the cost of essential works in the Draft West Dapto CP.
- 5 DPE update the Practice Note to clarify which transport infrastructure items are on the Essential Works List, including:
 - public transport infrastructure, and
 - on-street and off-street car parking.
- 6 WCC identify the cycleway network as transport infrastructure in the Draft West Dapto CP, rather than open space and recreation, to ensure that the planning for the cycleways forms an integrated part of the transport network.

Table 3.1 summarises our assessment of infrastructure in the plan against the EWL. We found that most of the infrastructure items in the plan are on the EWL, except the multimodal transport interchange car parking, core riparian land, the capital works for an indoor recreation centre and the capital works for four community centres.

We considered whether the core riparian land in the plan should still be retained since this is not on the EWL unless it serves a dual purpose with another 'essential works' category (eg, stormwater management). WCC advised that all of this land serves a drainage management function;⁴⁵ however, our view is that the purpose in acquiring the land appears to be predominantly environmental.

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

⁴⁵ WCC, Telephone advice to IPART, 4 August 2016.

Table 3.1 Summary of IPART's assessment of infrastructure in the Draft West Dapto CP against the Essential Works List (EWL)

Infrastructure type	Included on the EWL	Not included on the EWL
Transport	Road upgrades and new roads Signalised intersections Roundabouts Bridges Bus stops Cycleways Land for essential transport infrastructure	Multimodal interchange upgrade, including carpark
Stormwater	Enhanced storage areas (ESAs) Detention basins (including wetlands) Gross pollutant traps (GPTs) Trunk drainage Land for essential stormwater infrastructure	
Open space	Sports parks Cycleways Playgrounds Local parks Neighbourhood parks Town Centre Park Land for essential open space infrastructure	Indoor facilities within a community and leisure recreation centre
Community	Land for essential community services	Capital works for: <ul style="list-style-type: none"> ▼ a new multi-purpose community centre and children's centre in Darkes Town Centre ▼ a new multi-purpose community centre including library (technology centre) in Cleveland Precinct ▼ a new multi-purpose children's centre including community hall in Yallah-Marshall Mount, and ▼ an enhancement to Wongawilli Community Hall.
Administration	Plan preparation and administration costs	

3.1.2 Transport – multimodal interchange upgrade with new car parking

WCC apportioned \$3.3 million (or 60%) of the total cost of \$5.5 million for an upgrade to a multimodal interchange, to new development in the WDURA. The interchange is in the Dapto Town Centre.

According to the integrated transport plan recommended by AECOM in 2010,⁴⁶ WDURA residents benefit from this existing multimodal facility as a result of the better provision of bus interchange services with other transport modes⁴⁷. The interchange is outside the WDURA so it also provides a significant benefit to current Dapto residents.⁴⁸

The Draft West Dapto CP does not detail the nature of the works to be provided as part of the proposed upgrade to the interchange. WCC advised ARRB that the proposed works incorporate a new parking facility at the station with a capacity as high as 200 parking spaces, provided through an at-grade or multi-deck car park.⁴⁹

WCC also advised us directly that:

Car parking is a critical component of the multimodal transport options for the interchange, and the exclusion of this as an essential infrastructure element could be detrimental to the successful transition of a 15% modal shift ... failure to achieve this target has greater implications in terms of increased traffic/4 lane roads and congestion issues on the RMS M1 road network.⁵⁰

The EWL for transport includes road works, traffic management and pedestrian and cyclist facilities, but not car parking (see Box 3.1). Although, the list does not specifically exclude public transport infrastructure, it contains examples of traffic management facilities only. This is why bus shelters, which form part of the traffic management network, are generally included as 'essential works.' ARRB noted:

- ▼ such multimodal interchanges are not typical transport infrastructure provided by local government, and may qualify for funding support from state or federal government, and
- ▼ works for the off-street car parking element of the interchange are not on the Essential Works List.⁵¹

In this particular case, we consider that the car parking proposed at the multimodal station, although likely to benefit the community, is not an 'essential work' as defined by the Practice Note. Therefore, we recommend that WCC removes the \$3.3 million for the apportioned cost for these works from the Draft West Dapto CP.

⁴⁶ AECOM, *Draft West Dapto urban release area: integrated transport plan*, 2010 (AECOM 2010), p 18.

⁴⁷ The modes include rail, coach, taxi, walking and cycling.

⁴⁸ ARRB Group Ltd, *Contract Report – Review of Transport Items in the Draft West Dapto Contributions Plan*, September 2016 (ARRB Report), p 12. (ARRB also recommended a 40% to 45% apportionment for the station to WDURA, rather than the 60% presented in the plan, based on the distance from the interchange to the centre of Dapto and a high degree of public transport accessibility in West Dapto (p 35). As we are recommending removal of the item altogether as it is not on the EWL, we have not considered the issue of apportionment for this item.

⁴⁹ ARRB Report, p 5.

⁵⁰ WCC, Email to IPART, 21 July 2016.

⁵¹ ARRB Report, pp 12 and 5 respectively.

WCC officers have raised with IPART the issue of the most appropriate funding mechanism for the interchange upgrade, including the Draft Special Infrastructure Contribution (SIC) for West Lake Illawarra.⁵² Our understanding is that the NSW Government's SIC does not usually fund infrastructure of this type because it is considered to provide a benefit to the broader community.⁵³ Instead, the State Government funds the facilities via other grants and subsidies.

We note that State Government funding has been made available for a recent upgrade to the station, covering other requirements in response to additional population needs of the region (see Box 3.2). It is not clear whether funding for additional commuter parking was also considered.

Box 3.2 State Government assistance to upgrade the Dapto Station

In 2010 AECOM reported that RailCorp was anticipating increased demand along the Illawarra line as a result of the WDURA and had subsequently planned improvements to the Dapto rail station, bus interchange and commuter parking.

As part of a package of transport improvements for the Illawarra line, in 2013 the State Government funded a number of improvements to Dapto station, including an upgraded ramp, new signage, new shelters and seating, a new low-speed bus/vehicle turnaround access road, improved lighting and upgraded footpaths.

Sources: AECOM, *Draft West Dapto Urban Release Area - Integrated Transport Plan*, 2010, p 16, and Transport for NSW, Transport Access Program completed works, www.transport.nsw.gov.au/projects-tap/completed-works.

Where external funding is not available (and works are non-essential for the purpose of levying section 94 contributions), councils have the option to fund facilities through their broader rating base if they consider there is a broader benefit to the community from doing so.

It would also be useful for the DPE to update the Practice Note to clarify the types of public transport facilities, such as bus shelters, that are on the EWL. ARRB sought clarification regarding whether on-street car parking, as opposed to off-street car parking, was on the EWL,⁵⁴ and we consider that this could be clarified in the Practice Note.

⁵² WCC, Email to IPART, 1 September 2016.

⁵³ NSW Department of Planning, *Planning Circular PS 08-017 - Review of infrastructure contributions*, 23 December 2008, p 2.

⁵⁴ ARRB Report, p 36.

3.1.3 Transport – cycleway paths

The off-road cycle paths form an integrated part of the cycle network in West Dapto, and are included on the EWL. ARRB noted that WCC had included cycleway paths in open space and recreation facilities. The Elton Study recommendations for open space and recreation included a cycleway network linking key destinations and activity centres. It also noted how parks should be linked to cycleway access, and acknowledged the role of cycleways in providing ‘active transport’ links between neighbourhoods, and maximising access, for example to town centres and community facilities.⁵⁵

ARRB suggests cycleways could be included as part of the transport facilities to ensure design consistency and the implementation of a well-connected network for both recreation and commuter purposes.⁵⁶ We support this proposal in the interests of best practice and note that this would not have any impact on the cost of the cycleway paths in the Draft West Dapto CP. It would, however, reduce land specified as open space, noting we have also recommended that the council review the land acquisition requirements for the cycleways (Recommendation 15) because they are likely to be at least partly located on land already earmarked for infrastructure (eg, parks).

3.1.4 Core riparian land

As outlined in Box 3.1, land and works that serve environmental purposes only, such as bushland regeneration or riparian corridors, are not on the EWL. The policy objective of excluding such land and works is to reduce the costs of infrastructure in contributions plans.

For the 290.2 hectares of watercourse lands to be acquired by WCC, we assessed whether this land serves a dual purpose in fulfilling a stormwater management as well as an environmental management function. Only if the dual purpose test is satisfied would we consider that this riparian land is on the EWL.

Previously, when we reviewed the Hills Shire Council’s CP15, we explained how water treatment strategies fall along a spectrum of dual purpose between stormwater management and environmental objectives.⁵⁷ We consider that where works serve predominantly an environment function, then some or all of the cost should be excluded from the plan.

⁵⁵ Elton Study, p 36.

⁵⁶ ARRB Report p 5.

⁵⁷ IPART, *Final Report – Assessment of the Hills Shire Council’s Section 94 Contributions Plan No. 15 Box Hill Precinct (CP15)*, March 2016, p 7.

WCC's proposed acquisition of the watercourse land

West Dapto is dissected by a series of watercourses that form part of the Mullet Creek and Duck Creek catchments. During heavy rain they can experience intense floods of short duration (rapid rise and fall of the creek levels).⁵⁸ The map in Figure 3.1 shows the watercourse land to be acquired (shaded light blue).

The zoning for this land is E3 – Environmental Management.⁵⁹ The land is concentrated in Stages 1 to 3 and accounts for 13% of the total area and 15% of the NDA in the Draft West Dapto CP.⁶⁰ WCC has assumed an average acquisition rate of \$50,000 per hectare for the land, for a total cost of \$14.5 million.

WCC advised that it considers the core riparian land in question to be high-hazard and flood-affected, and that the acquisition of the land is essential for drainage management.⁶¹ Box 3.3 outlines WCC's objectives for water management in the WDURA, which includes acquiring the watercourses, as stated in the Development Control Plan (DCP).⁶²

Box 3.3 WCC's objectives for water management in the WDURA

The objectives for water management in the WDURA are:

- ▼ to create a network of interconnected multi-functional creek corridors within the West Dapto release area which act as creeks, flood ways, flora and fauna habitat, water quality treatment areas, cyclist and pedestrian access, and drainage corridors
 - ▼ to conserve and restore remnant native vegetation along creek lines, escarpment vegetation to provide linkages and “stepping stones” for wildlife movement
 - ▼ to introduce wildlife corridors and establish riparian vegetation within natural creek lines, providing a functioning habitat for birds and diverse native flora
 - ▼ to protect and restore a range of aquatic habitats within the creeks
 - ▼ to enhance long-term environmental protection of the receiving waters and Lake Illawarra
 - ▼ to facilitate the provision of an integrated approach to Water Management development within West Dapto
 - ▼ to ensure the integration of various functions into the multiple use drainage systems of West Dapto to achieve aesthetic, recreational, environmental and economic benefits
 - ▼ to provide appropriate landscape treatments that enhance the required functions of the riparian corridors and reduce the impact of utilitarian drainage structures on the amenity of the open space
 - ▼ to ensure that development is designed to minimise the risk posed by flooding, and
 - ▼ to protect the environment of Lake Illawarra.
-

⁵⁸ WCC, *Wollongong Development Control Plan 2009*, Chapter D16 West Dapto Release Area, p 21.

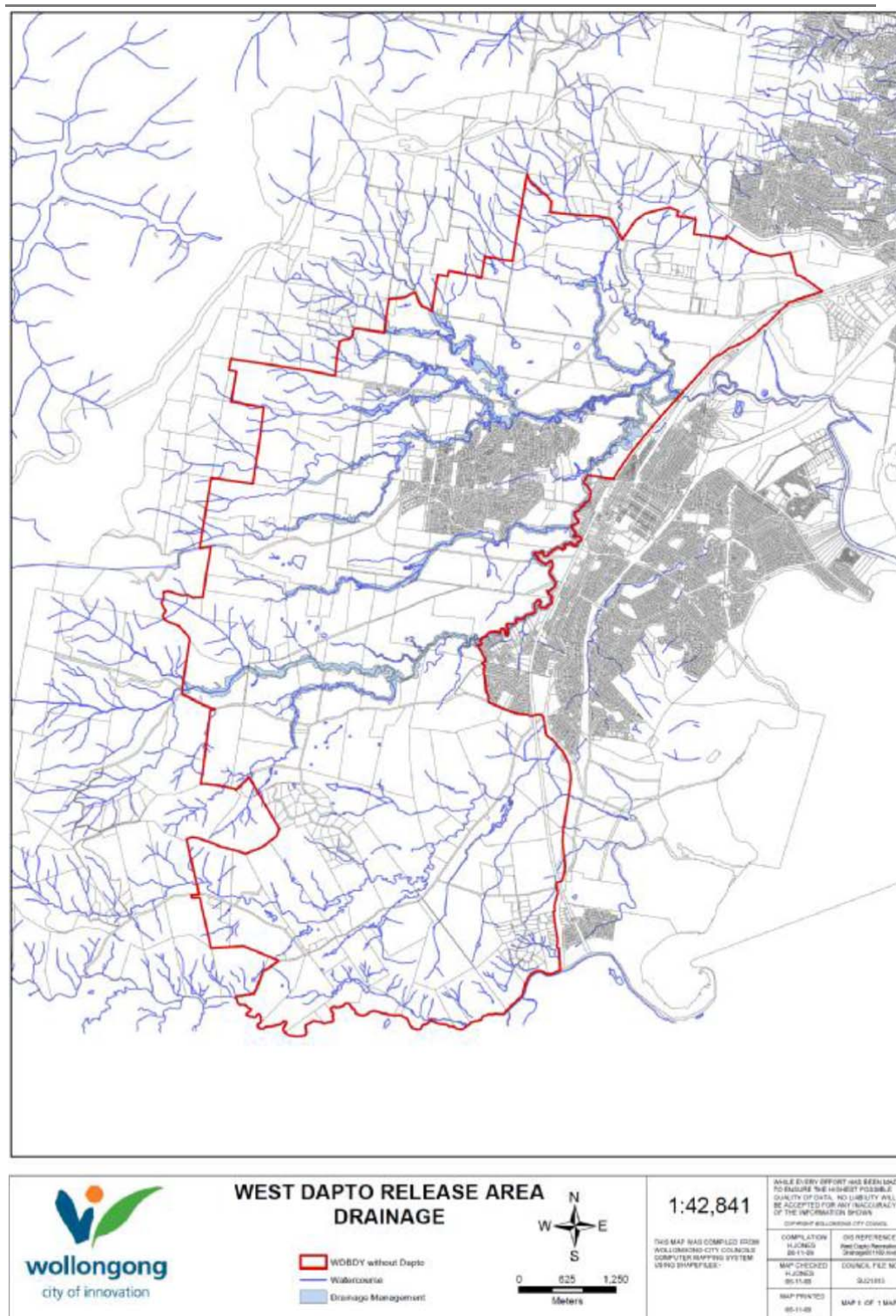
⁵⁹ The objective of the E3 - Environmental Management zoning is to protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values, and to provide for a limited range of development that does not have an adverse effect on those values (Wollongong Local Environment Plan (LEP) 2009, Land Use Table Comparison).

⁶⁰ Draft West Dapto CP, WCC, Email to IPART, 12 July 2016, and IPART calculations.

⁶¹ WCC, West Dapto S94 Work Schedule, Drainage Tab.

⁶² WCC, *Wollongong Development Control Plan 2009*, Chapter D16 West Dapto Release Area, p 40.

Figure 3.1 Proposed watercourse management area



Source: West Dapto Release Area Section 94 Development Contributions Plan (2015), p 83.

WCC plans to acquire the first 10 metres from the top of the bank of the waterway to undertake the water management function, but is allowing other non-developable land in the riparian corridor (further from the bank) to be:

- ▼ retained in private ownership, or
- ▼ dedicated to the council at no cost to the council for use as bushland, or for agricultural or recreational purposes.⁶³

Therefore, this (other) riparian land is not included in the plan.

Our assessment of dual purposes for the core riparian land

The stormwater infrastructure proposed by WCC for the WDURA consists of a configuration of multiple detention basins (64), enhanced storage areas (ESAs) (5), gross pollutant traps (GPTs) (64), and trunk drainage works⁶⁴ (including bio retention systems and raingardens).

The ESAs are online along the main creek systems of Mullet Creek and Duck Creek such that the 'footprints' are largely confined to the zoned riparian corridor.⁶⁵ The ESAs will perform an important drainage management function around the creek systems. We understand that land for stormwater infrastructure in the plan is otherwise zoned SP2 – Special Infrastructure, whereas the core riparian land is zoned E3 – Environmental Management.⁶⁶

The GCC identified in 2008 that some of the core riparian lands would need to be managed by WCC to mitigate flood risk. It recommended that "high flood hazard" land should be acquired using section 94 contributions or retained in private ownership.⁶⁷ It also suggested the council introduce an Environmental Levy to fund the acquisition. WCC advised us that it did not consider the introduction of a levy but does consider private ownership to be an option provided it does not compromise the council's ability to maintain the creek.⁶⁸

⁶³ WCC, *Wollongong Development Control Plan 2009*, Chapter D16 West Dapto Release Area, p 24.

⁶⁴ This is stormwater drainage (natural or artificial open channels or pipes) linking property, inter-allotment and street drainage with the receiving waters and is greater than 600 mm in diameter. <http://stormwater.net.au/definitions.html> & <http://www.lgam.info/trunk-drain>

⁶⁵ Bewsher Consulting Pty Ltd, *GCC West Dapto Review – Flooding & Stormwater Strategy - Final Report*, November 2008, p 7.

⁶⁶ See for example, WCC, *LEP 2010 (West Dapto) Zoning Map*.

⁶⁷ GCC, *West Dapto Release Area Review – Planning Report prepared for Wollongong City Council*, November 2008, p 3. Note that this report by the GCC preceded the introduction of the caps on local development contributions by the NSW Government, and the associated Essential Works List which applies to infrastructure in the s 94 plan when councils seek to fund the gap for the cost of the infrastructure (above the revenue provided for by the capped contributions) from the State Government.

⁶⁸ WCC, Email to IPART, 12 July 2016.

On balance, we recommend that WCC review the strategy to acquire all of the core riparian land. There is clearly a significant environmental dimension associated with the decision to acquire and manage the land, as evidenced by the zoning of E3 and the objectives for acquiring the land stated in the DCP. Watercourses will inevitably perform a drainage function, to some degree. It is also not clear that all of the land is needed to be acquired by the council for stormwater management purposes as a result of the new development.

In the interim, we recommend that the costs of acquiring this land (\$14.5 million) be removed from the plan, pending the outcome of a review by the council, in consultation with DPE. A review should consider whether any of the land can be retained in private ownership and whether WCC can isolate any specific tracts of core riparian land that it needs for stormwater management purposes.

WCC officers reiterated that the assumption underlying the plan was that the land serves dual purposes, but indicated support for working with DPE to “provide a clear strategy for acquisition of drainage land” (in accordance with Recommendation 40).⁶⁹

3.1.5 Open Space – Community and leisure recreation centre

WCC has apportioned 67.5% of the total cost of \$12.7 million (amounting to \$8.6 million) for a community and leisure recreation centre to the WDURA which would provide district level and outdoor recreation facilities. The proposed facility in Cleveland (Stage 3) includes a mix of indoor recreation facilities⁷⁰, outdoor tennis/netball courts (minimum of 12 tennis courts) and community meeting space. We consider that most of this centre is not on the EWL because the works exceed what is defined as base level embellishment for open space land. We recommend removing this apportioned cost from the Draft West Dapto CP.

However, the outdoor tennis and netball courts can be considered as essential works because they are recognised as base level embellishment by the EWL. WCC advised that it does not have a costing estimate for the outdoor facility at this stage.⁷¹ We recommend that WCC add the costs of the outdoor tennis and netball courts back into the plan once it has a reasonable estimate of them.

3.1.6 Community facilities

The Draft West Dapto CP contains costs for three multi-purpose community centres in Darkes Town Centre, Cleveland and Yallah-Marshall Mount, and an extension to an existing community hall located in Wongawilli.

⁶⁹ WCC, Email to IPART, 1 September 2016.

⁷⁰ The proposed facility includes an indoor pool and sports hall.

⁷¹ WCC, Email to IPART, 12 July 2016.

Land for community facilities is on the EWL so the council can include its cost (\$1.54 million) in the plan.

Although in the plan the council states that this infrastructure is required to support the new community, there is no provision on the EWL for capital works for community facilities. Therefore, we recommend that the capital costs of these four facilities be removed from the plan. The total amount to be removed is \$21,344,457.⁷² WCC would need to fund these facilities through alternative revenue sources.

We note that the capital cost of the community facilities in Stage 5, Yallah-Marshall Mount includes an amount of \$42,664 for indexing the cost of land for the facilities. As it only occurs for one community centre, this appears to be an anomaly by WCC in applying the indexing formula. Such indexing is not warranted given the land is costed in \$2015. However, as the capital cost of facilities is to be removed from the plan, we do not need to also recommend that the amount for the unnecessary indexation be removed.

3.2 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.

The Draft West Dapto CP covers five stages across six sub-precincts, and the infrastructure needs for the expected development over the WDURA. In this section, we have assessed the nexus between the proposed infrastructure and the new population in the Release Area as a whole, but have also considered the variations in rates of provision in each sub-precinct as necessary.

We have further considered how infrastructure costs are allocated to development throughout the WDURA in the apportionment section (see section 3.5).

A key part of our assessment was to consider the evidence that WCC has provided to establish the nexus for the items of infrastructure included in the plan. WCC used the technical studies listed in Table 3.2 to assist in determining the types and quantity of public amenities and services that are required in West Dapto. It also provided us with additional information to explain the differences between infrastructure in the plan and the technical studies. Our assessment findings are outlined below.

⁷² WCC, West Dapto S94 Work Schedule, Summary Tables Tab.

Table 3.2 Studies used by WCC to establish nexus in the Draft West Dapto CP

Infrastructure type	Timing	Technical studies
All		<i>Infrastructure & Financial / Economic Assessment Report</i> , GHD, April 2006 (GHD 2006 Study)
Transport	Prepared for the original West Dapto Vision and Master Plan	<i>Transport Management and Access Plan, Stage 2 Study, – Final Report</i> , Kellogg Brown & Root, March 2007 (KBR Study) <i>West Dapto T-Map Extension Study</i> , Connell Wagner, October 2008 (Connell Wagner Study)
	Prepared as part of the NSW Growth Centres Commission Review	<i>West Dapto Masterplan Traffic & Transport Review, Final Report</i> , Urbanhorizon, November 2008 (Urbanhorizon Study) <i>West Dapto Release Area Access Review, Investigation of Alternative Transport Access Options</i> , Cardno, November 2008 (Cardno 2008 Study A) <i>West Dapto Transport Link Review, Review and Cost Estimates for Alternative, Low Cost Options</i> , Cardno, November 2008 (Cardno 2008 Study B) Peer Review – Urbanhorizon Traffic & Transport Report, Northrop, November 2008 (Northrop Study)
	Completed after the adoption of the NSW Growth Centres Commission's recommendations	<i>Road Infrastructure (Section 94) Estimates Review</i> , GHD, February 2010 (GHD 2010 Study) <i>West Dapto Urban Release Area – Integrated Transport Plan</i> , AECOM, October 2010 (AECOM 2010) <i>West Dapto Urban Release Area Stages 1 & 2 – Road Network Infrastructure Needs Study – Traffic Modelling & Analysis</i> , WCC, October 2010 <i>Marshall Mount and Yallah Road Upgrade – Strategic Concept Design</i> , SMEC, August 2015 (SMEC Study) TRACKS Land Use/Transport models
Stormwater management		<i>Water Cycle Management Study</i> , URS, December 2004 (URS Study) Flood Event Access Strategy for West Dapto, Molino Stewart, December 2008 <i>West Dapto Review – Flooding & Stormwater Strategy – Final Report</i> , Bewsher Consulting, November 2008 (Bewsher 2008 Study) <i>West Dapto Development Area Mullet Creek Flood Modelling</i> , Bewsher Consulting, December 2009 (Bewsher 2009 Study) <i>Mullet & Brooks Creeks Flood Study – Final Report</i> , Bewsher Consulting and BMT WBM, February 2010 (Bewsher BMT WBM Study) <i>Mullet Creek, West Dapto Extension of Flood Model</i> , Bewsher Consulting, December 2011 (Bewsher 2011 Study)
Open space		<i>Social Cultural and Recreational Needs Study for the West Dapto New Release Area</i> , Elton Consulting, July 2007 (Elton Study)
Community facilities		<i>Social Cultural and Recreational Needs Study for the West Dapto New Release Area</i> , Elton Consulting, July 2007 (Elton Study)

Source: WCC, Draft West Dapto CP, p 39.

3.2.1 Nexus of transport facilities

IPART findings

- 4 There is reasonable nexus between the transport infrastructure and the expected development in the WDURA, except for:
 - the upgrades of the western section of Sheaffes Road ('S4'), a section of Paynes Road ('P2') (including bridge 'B52') and new road NR100-NR103 because these are local roads only
 - the 4-lane upgrade of the northern and southern sections of Marshall Mount Road because a 2-lane upgrade is sufficient, and
 - Rail Bridge A over the South Coast rail line on Marshall Mount Road because there is an existing rail bridge on Huntley Road ('B41') to be upgraded.
- 5 Bus stop infrastructure, including an estimated 214 shelters, may be reduced as some of the feeder routes could operate unidirectional services in a loop as they currently do for services in the Dapto district.

Recommendations

- 7 WCC remove from the cost of essential works in the Draft West Dapto CP the local road works for:
 - the upgrade of the western section of Sheaffes Road (\$2,585,000)
 - the upgrade of Paynes Road (\$2,303,000) and bridge B52 (\$393,211), and
 - new road NR100-NR103 (\$11,084,020).
- 8 WCC reduce (by \$19,365,854) the cost of the upgrade of Marshall Mount Road in the Draft West Dapto CP to reflect a 2-lane, rather than a 4-lane upgrade.
- 9 WCC remove Rail Bridge A (\$7,955,472) on Marshall Mount Road from the cost of essential works in the Draft West Dapto CP.
- 10 WCC review the number of bus stops needed for unidirectional services with a view to reducing the number and costs in the Draft West Dapto CP.

The Draft West Dapto CP proposes \$937 million in transport infrastructure expenditure⁷³, including \$894 million on capital works and \$43 million on land acquisition.⁷⁴

The CP states that WCC developed a LGA wide traffic model to establish the required road hierarchy to service the future population of West Dapto and adjoining Release Areas. The proposed infrastructure for the WDURA includes:

- ▼ new roads
- ▼ capacity improvements to existing road and intersection infrastructure

⁷³ This relates only to expenditure apportioned to the Draft West Dapto CP and in some cases, total project costs exceed the amount of the cost apportioned to WDURA in the plan.

⁷⁴ WCC, West Dapto S94 Work Schedule, Summary Tables Tab.

- ▼ intersection treatment upgrades (priority controls, roundabouts, or traffic signals)
- ▼ road widening and condition improvements
- ▼ bridging structures
- ▼ bus accessible routes through West Dapto and connections to Dapto, and bus stop facilities, and
- ▼ optimisation of public transport routes and infrastructure.⁷⁵

The proposed road network has taken into consideration the heavily constrained nature of the release area, including flooding, and road and rail corridor infrastructure. It has provided a flood accessible route for the residential areas with bridging structures over creek lines, railway corridors and major roads.⁷⁶

We engaged ARRB Group Ltd (ARRB), transport consultants to help us assess the nexus of transport infrastructure in the Draft West Dapto CP. The assessment found that the transport demand and needs for transport facilities were established by WCC based on the various transport studies listed in Table 3.2, as well as Part 5 of the Draft West Dapto CP and the West Dapto Master Plan.⁷⁷

Overall, our consultant's assessment of nexus for the transport network found:

- ▼ The proposed road network is generally consistent with the WDURA Masterplan.
- ▼ The road hierarchy (eg, two and four lane roads) was established using TRACKS traffic modelling of the distribution of the demand across the road network.
- ▼ The transport network analysis also incorporated the use of household travel survey data of origin-destination trips and journey purposes.
- ▼ The population and demand data that informed the need for the facilities is reliable and up-to-date.
- ▼ The existing rural road network, for the most part, caters only for low volume traffic. The urbanisation of the area necessitates an extensive upgrade of the primary movement network in the area.
- ▼ Without the development, the transport facilities to the proposed standards would not be required, except for road upgrade maintenance in the flood prone areas.
- ▼ Where new or upgraded road sections are necessary for network planning and operations, the associated intersection improvements and bridges are also warranted.⁷⁸

⁷⁵ Draft West Dapto CP, p 24.

⁷⁶ Ibid.

⁷⁷ ARRB Report, p 7.

⁷⁸ ARRB Report, pp 7-9.

The consultant also undertook a more detailed assessment of the nexus for each item of transport infrastructure to determine whether:

- ▼ there is any scope deviation in infrastructure provision from the recommendations in the supporting technical documents, and
- ▼ where there is scope deviation, whether the proposed items are 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 development contributions.⁷⁹

Table 3.3 outlines the proposed transport infrastructure in the Draft West Dapto CP, together with the evidence provided by WCC to establish nexus for each of the items and where items deviate from the recommendations in the technical studies.

The basis for our findings and recommendations is discussed in more detail below.

⁷⁹ ARRB Report, p 7. ARRB did not review the TRACKS model but did examine the model outputs to determine whether nexus could be established for certain items.

Table 3.3 Assessment of nexus for transport infrastructure in the Draft West Dapto CP

Type	Description	Assessment of supporting evidence to establish nexus
Existing road works	14 existing roads with proposed upgrade works	Most items are supported in various technical studies and the TRACKS model, except for: <ul style="list-style-type: none"> ▼ Sheaffes Road western section (S4) upgrade, which is not required as it is a local road ▼ upgrade of Paynes Road (S2), including bridge B52 along it, which is not required as it is a local road, and ▼ the Marshall Mount Road 4-lane upgrade as it is inconsistent with the integrated transport plan (AECOM 2010) and the Draft West Dapto CP (2015) which both recommend only two lanes.
New road works	11 new local roads	Most items are supported in various technical studies and the TRACKS model, except for: <ul style="list-style-type: none"> ▼ road NR100-NR103 which is not required as it is a local road^a ▼ nexus not being shown for Local Road (Stage 5) and upgrade to Yallah Rd, for which WCC has since demonstrated nexus, including on the basis of TRACKS modelling outputs.
Bridges and intersections	66 bridge crossings 54 intersections	Most items are supported in various technical studies and TRACKS model, except for: <ul style="list-style-type: none"> ▼ Rail Bridge A over the South Coast rail line on Marshall Mount Road (as in the 2015 SMEC design), which is not needed given the upgrade of existing bridge B41 on Huntley Road ▼ various deviations from the bridge lengths recommended by GHD (2010) for B9A, B9B, B9C, B11 and B12, which were verified by WCC as being required for flood protection purposes, and ▼ B44 and B45 (part of Fowlers Rd extension), for which WCC subsequently provided a concept design establishing nexus.
Public transport facilities	214 bus shelters, 7 bus kiosks and upgrade to multimodal interchange	Items supported in various technical studies. ^b

^a Confirmed by WCC: WCC, Email to IPART, 4 August 2016.

^b We found that the multimodal interchange upgrade (including car parking) is not on the EWL and should be removed from the plan (Recommendation 1).

Source: Draft West Dapto CP, pp 25-29 and West Dapto S94 Work Schedule Transport Tabs, and ARRB Report.

Existing road works

We consider that there is insufficient nexus to include upgrades of the western sections of Sheaffes Road (S4), Paynes Road (S2), and the watercourse bridge along it (B52), because the roads are not part of the broader road network. Instead, these roads service local development needs only. We recommend that their costs be removed from the plan, thereby reducing the cost of transport infrastructure by a total of \$5.28 million (\$2.59 million for Sheaffes Rd, \$2.30 million for Paynes Road and \$0.39 million for bridge B52).⁸⁰

ARRB found that these roadworks were not included in the technical studies and that nexus could not be established by the TRACKS traffic model information.⁸¹

Public local roads, which service individual developments, are typically funded and constructed by the developer as part of each subdivision. ARRB noted that in some cases, it might be reasonable for the formation of a new local road that traverses a number of properties with multiple land ownership to be funded via section 94 contributions. However, the responsibility of upgrading an existing rural road to an urban standard that will continue to perform a local road function only primarily rests with individual developers.⁸² For Sheaffes and Paynes Roads, the council can include the upgrade work as part of the conditions of consent for the relevant developments, rather than sharing the cost across other developments in the precinct.

We also recommend that the upgrade of the existing Marshall Mount Road in Stage 5 be restricted to a 2-lane, rather than a 4-lane formation. ARRB found that WCC had not established the need for the 4-lane upgrade. They reported that the TRACKS traffic modelling showed a 2-lane road formation for the entire length of the road (including northern and southern sections) with adequate operational performance. There is evidence that WCC also determined that two lanes would be adequate to meet the additional demand.⁸³ Our recommendation would reduce the cost of transport infrastructure in the Draft West Dapto CP by \$19.37 million.⁸⁴

WCC officers have advised that while two travel lanes would satisfy demand, some parking lanes would be required closer to the town centre, reflecting a “type 3” configuration accepted elsewhere in the WDURA.⁸⁵ ARRB confirmed the reasonable cost, as recommended, already includes the additional two parking lanes in the southern section of the road, near the town centre.

⁸⁰ WCC, West Dapto S94 Work Schedule, Sheaffe Rd, P1-P2 and Bridges Tabs.

⁸¹ ARRB Report, pp 14, 22 and 35.

⁸² ARRB Report, pp 5-6.

⁸³ ARRB Report, pp 11 and 20-21, and WCC, Business paper, Meeting of 19 October 2015.

⁸⁴ WCC, West Dapto S94 Work Schedule, Marshall Mt Rd Tab.

⁸⁵ WCC, Email to IPART, 21 September 2016.

New road works

Similar to the recommendation for existing local roads, we have recommended that new proposed road NR100-NR103 is not required because it is expected to function as a local road only. WCC confirmed during the assessment process that this road would not service the broader road network.⁸⁶ Accordingly, we recommend that WCC remove these roads from the items of transport infrastructure in the Draft West Dapto CP, which would reduce the cost by \$11.08 million.⁸⁷

Bridges and intersections

For a number of bridges, WCC has extended the lengths recommended in the technical study⁸⁸ to ensure the routes are accessible in floods. The bridges are B9A, B9B and B9C on West Dapto Road, and B11 and B12 on Shone Avenue. These extensions were considered reasonable by ARRB and we have not recommended any adjustment to the lengths.⁸⁹

However, the three bridges on West Dapto Road (B9A, B9B and B9C) are based on a 4-lane design when the road will have two lanes. We have recommended, in our assessment of the Reasonable Costs criterion, that the cost estimates for the bridges should be based on widths to reflect a 2-lane cross section.

ARRB also found that Rail Bridge A over the South Coast rail line on Marshall Mount Road is not needed given the proposed upgrade of the existing nearby bridge B41 on Huntley Road. WCC confirmed that Rail Bridge A is not required.⁹⁰ We recommend removing this bridge from the Draft West Dapto CP, which would reduce plan costs by \$7.96 million.⁹¹

Public transport (bus) facilities

The 2010 integrated transport plan recommended by AECOM 2010⁹² provides an indicative planned network of four bus feeder routes that overlap and intersect one another to enable a high level of accessibility to the new Darkes Road and Bong Bong district centres.

⁸⁶ ARRB Report, p 26.

⁸⁷ WCC, West Dapto S94 Work Schedule, NR100-NR103 Tab.

⁸⁸ GHD, 2010.

⁸⁹ ARRB Report, pp 10 and 13.

⁹⁰ ARRB Report, p 35.

⁹¹ WCC, West Dapto S94 Work Schedule, Marshall Mt Rd Tab.

⁹² AECOM, *Draft West Dapto Urban Release Area – Integrated Transport Plan*, 2010.

WCC has proposed a total of 214 bus stops to service new development in the WDURA, with each stop equipped with a shelter, timetable and route information display.⁹³ WCC has based its method of calculating the number of bus shelters to ensure that there is one stop on both sides every 400 metres. We consider that the estimated 214 shelters to cover the total distance of 42.79 km is reasonable. The cost of bus shelters in the Draft West Dapto CP is \$3.75 million, as each shelter is costed at \$17,515.⁹⁴

However, we understand that the total number of bus stops could be reduced if some routes (or in part) run unidirectional in a loop as they currently do for part of Routes 31, 33 and 43 services in the Dapto district.⁹⁵ We recommend that WCC review the number of shelters that will be needed with a view to reducing their number, and the overall cost of bus stops in the Draft West Dapto CP.

WCC officers have advised that Transport for NSW has not yet provided the Bus Servicing Plan for West Dapto, which will have implications for the number of bus stops in the plan.⁹⁶

Across the network there are also seven kiosk sites, representing larger bus shelters.⁹⁷ Based on ARRB's advice, we found that nexus is supported for the seven kiosk sites located in the villages and town centres, including one site on Bong Bong Rd near the existing Horsley settlement.⁹⁸

3.2.2 Nexus of stormwater management facilities

IPART finding

- 6 There is reasonable nexus between stormwater infrastructure and the expected development in the WDURA, except for:
 - duplication of four enhanced storage areas (in the count of 58 detention basins) such that only 54 basins are required in Stages 1 to 4
 - the six detention basins in Yallah-Marshall Mount (Stage 5) for which nexus has not been adequately established, and
 - 10 gross pollutant traps (GPTs) which, based on the revised number of detention basins, are not needed as WCC's water quality treatment approach recommends one GPT per detention basin.

⁹³ ARRB Report, p 27.

⁹⁴ WCC, Draft West Dapto CP, p 37. There are 75 further bus shelters proposed in the WDURA to service existing development, and these costs have not been apportioned to new development in the plan.

⁹⁵ Ibid.

⁹⁶ WCC, Email to IPART, 1 September 2016.

⁹⁷ WCC, Draft West Dapto CP, p 29.

⁹⁸ ARRB Report, p 27.

Recommendations

- 11 WCC remove the cost of the four duplicated enhanced storage areas (\$17,559,419) from the cost of essential works in the Draft West Dapto CP.
- 12 WCC remove the cost of six detention basins in Yallah-Marshall Mount (\$8,917,630) from the cost of essential works in the Draft West Dapto CP, until it can establish nexus for the stormwater management needs of this sub-precinct by means of a technical study. Once done, WCC can include the reasonable costs of the necessary infrastructure (including GPTs) in the plan.
- 13 WCC remove the cost of ten gross pollutant traps (\$550,000) from the cost of essential works in the Draft West Dapto CP.

Stormwater infrastructure included in the plan

WCC has adopted a 'treatment train' approach, using a combination of different stormwater measures to achieve stormwater objectives.

The Draft West Dapto CP includes costs for:

- ▼ 64 detention basins (including wetlands)
- ▼ five enhanced storage areas (ESAs), which are also known as 'mega basins'
- ▼ trunk drainage works, and
- ▼ 64 gross pollutant traps (GPTs), at a rate of one per detention basin.

Generally, detention basins and trunk drainage manage stormwater flows while wetlands and GPTs manage stormwater quality.

Table 3.4 outlines the proposed stormwater infrastructure in the plan, together with the evidence provided by WCC to establish nexus for each of the items, and where proposed items deviate from technical study recommendations.

Table 3.4 Stormwater infrastructure in the Draft West Dapto CP

Infrastructure type	Description	Supporting evidence to establish nexus
Detention basins	64 basins (56.4 ha)	<ul style="list-style-type: none"> ▼ Bewsher 2009 Study recommended 54 basins (covering 57.9 hectares). ▼ WCC proposed six more basins for West Dapto including an additional six in Yallah-Marshall Mount), based on the URS Study and WCC internal review. ▼ Four ESAs have been double-counted as detention basins.^a
Enhanced storage areas ('mega basins')	5 storage sites (64.5 ha)	<ul style="list-style-type: none"> ▼ Bewsher 2009 Study (Forest, Robins, Reed and Mullet creeks) recommended four sites for mega basins. ▼ Need for a fifth storage site (Duck Creek in Yallah-Marshall Mount) was identified in the Bewsher 2008 Study.
Trunk drainage	Estimated length 10km	<ul style="list-style-type: none"> ▼ This infrastructure was not recommended in the technical studies. ▼ Based on its experience WCC estimated the need for 10km of trunk drainage x 1,000m x \$2,500 cost per linear metre.^b
Gross pollutant traps and wetland areas (located in basins)	Traps and wetlands (varying sizes)	<ul style="list-style-type: none"> ▼ URS Study recommended GPTs and wetlands to meet pre-development water quality standards for run-off. Although the URS Study does not specify the number of GPTs, WCC assumed one trap per basin will be required.^c

^a WCC confirms this double counting: WCC, Email to IPART, 12 July 2016.

^b WCC, Emails to IPART, 12 July 2016 and 2 August 2016.

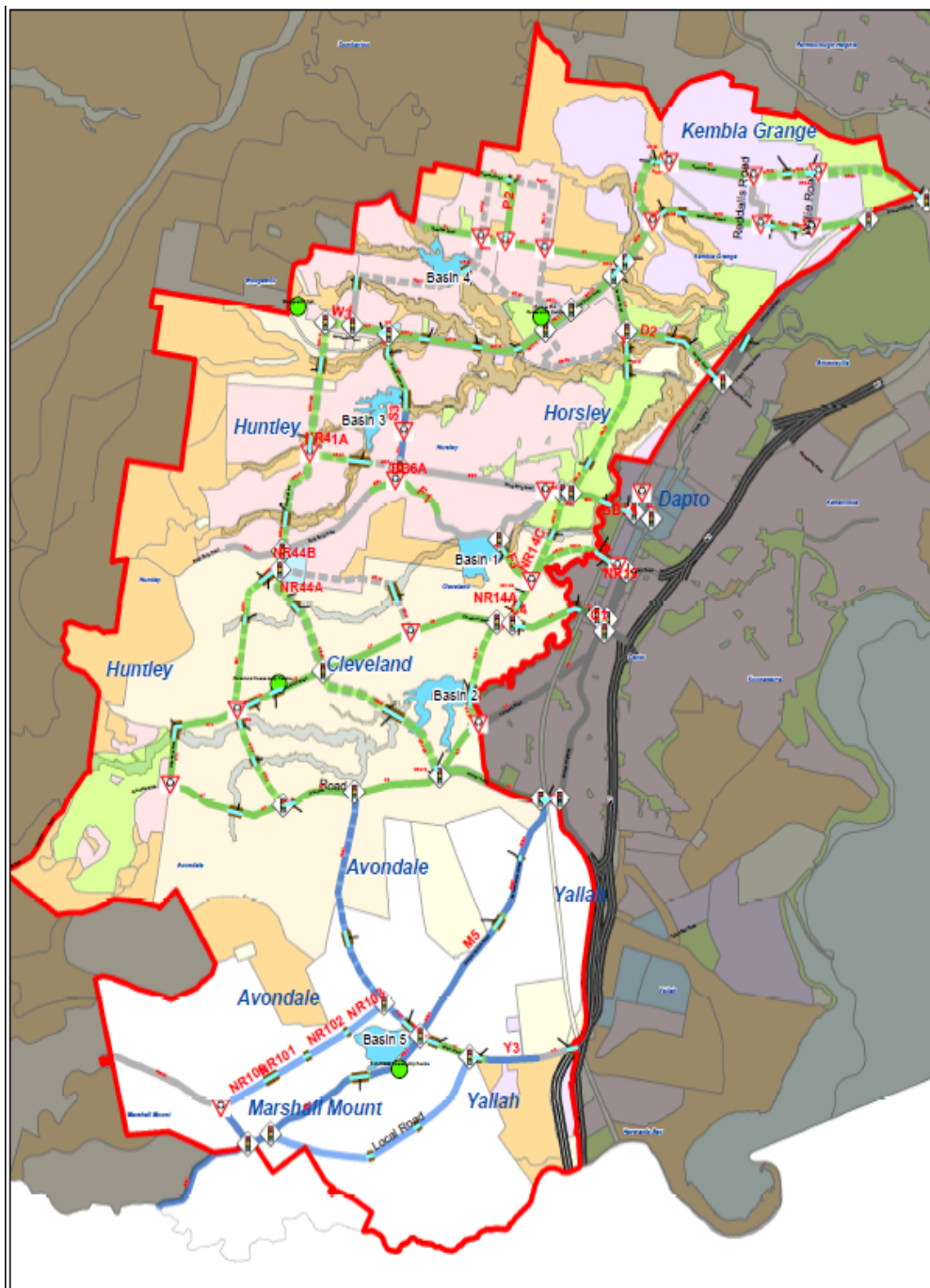
^c WCC, Email to IPART, 2 August 2016.

Source: WCC, Draft West Dapto CP and IPART analysis.

Figure 3.2 shows where the enhanced storage areas (marked Basin 1-5) are to be located within the WDURA. WCC has not yet determined the location of the detention basins (including GPTs) but has advised that their precise location will be determined by the proposed development footprint and the volume of stormwater detention required to return the catchment post development to pre-development conditions.⁹⁹

⁹⁹ WCC, Email to IPART, 12 July 2016.

Figure 3.2 Locations of Enhanced Storage Areas in the Draft West Dapto CP



Source: WCC, Draft West Dapto CP, Integrated map.

Our assessment of nexus for detention basins

For the 64 detention basins proposed in the Draft West Dapto CP, we identified deviations between the recommended infrastructure and the stormwater infrastructure in the plan.

The Bewsher 2008 Study identified 39 local detention basins (for the Mullet Creek, Duck Creek and Marshall Mount Creek catchments). The subsequent Bewsher 2009 Study recommended 58 'hydrology basins', comprising four 'enhanced storage areas' (ESAs) and 54 detention basins. This study considered the prior URS 2004 Study and Bewsher 2008 Study, but was based on a revised West Dapto development area which included the Mullet Creek catchment only, representative of Stages 1 to 4 in the current plan.

Our assessment identified that of the 64 detention basins, four are actually ESAs which WCC has double counted. The cost of the four ESAs is included in the detention basin works schedules, as well as in a separate ESA cost schedule.¹⁰⁰ Therefore, we recommend that the cost of these duplicated ESAs (valued at \$17.5 million) be removed from the essential works in the Draft West Dapto CP.

Of the remaining 60 detention basins in the plan, the Bewsher 2009 Study supported inclusion of 54 detention basins in Stages 1 to 4.

WCC has not provided supporting evidence to establish nexus for the six remaining detention basins proposed for the Yallah-Marshall Mount precinct (Stage 5). We note that the earlier studies identified a need for detention basins in this area, however there has been no specific needs analysis or technical study of the stormwater management requirements for the Duck Creek basin on which Yallah-Marshall Mount is located. WCC advised that it had relied on the URS Study and its own internal review to estimate the need for the six detention basins.¹⁰¹

Without any supporting analysis of the stormwater treatment needs of the Yallah-Marshall Mount precinct, we cannot determine that nexus has been reasonably established. We therefore recommend that the cost of the six detention basins in Yallah-Marshall Mount (\$8.9 million) be removed from the plan until WCC undertakes work to establish the need for such detention basins. Then, the reasonable costs of the necessary infrastructure can be included in the plan. WCC officers indicated that guidance for stormwater infrastructure in Stage 5 could be considered as part of the first biennial review of the plan, which would be consistent with our recommendation (Recommendation 40).¹⁰²

¹⁰⁰ WCC confirms this double counting: WCC, Email to IPART, 12 July 2016.

¹⁰¹ WCC, Email to IPART, 12 July 2016.

¹⁰² WCC, Email to IPART, 1 September 2016.

Our assessment of nexus for enhanced storage areas (ESAs)

The Bewsher 2008 Study recommended ESAs for the whole WDURA, including the Duck Creek catchment in Yallah-Marshall Mount (Stage 5). Therefore, we consider inclusion of the five sites in the plan is reasonable.

Our assessment of nexus for the trunk drainage

While trunk drainage, valued at \$27.5 million, was not recommended by a supporting technical study, we note such works are usually required for the overall functioning of a drainage network. WCC advised that:

These figures are assumptions derived in consultation with the consultant and using internal experience as to the gaps the Council will likely be responsible for delivering between the end of a development area and linking into the drainage system.¹⁰³

We consider that this approach is reasonable.

Our assessment of nexus for gross pollutant traps and wetlands

For GPTs and wetland areas (located in detention basins), we consider that the approach adopted by WCC of one trap and wetland area for each basin is reasonable. WCC has applied the URS Study recommendation for stormwater strategies to include a combination of GPTs, wetlands and detention ponds to ensure water quality targets are met.

However, we recommend that WCC remove the cost of four GPTs from the plan, consistent with our recommendation to remove four double-counted detention basins, and six GPTs associated with the six detention basin in Yallah-Marshall Mount for which nexus has not been established. Consistent with our recommendation for the detention basins, once nexus is established the reasonable costs of these GPTs can be added back in to the costs of the plan.

3.2.3 Nexus of open space facilities

IPART finding

- 7 There is reasonable nexus between the open space land and embellishment in the Draft West Dapto CP and the expected development in the WDURA, except for overprovision of open space above the minimum recommended level comprising:
- one sports park plus playground (9.56 hectares in Stage 3 Cleveland)
 - one neighbourhood park plus playground (four hectares in Stage 1-2 Sheaffes-Wongawilli), and
 - one local park (two hectares in Stages 1-3).

¹⁰³ WCC, Emails to IPART, 12 July 2016 and 2 August 2016.

Recommendations

- 14 WCC remove \$8,826,040 from the cost of essential works in the Draft West Dapto CP, being the cost for 15.56 hectares of excess open space land and its embellishment, comprising amounts of:
 - \$2,409,112 for one sports park plus playground with an area of 9.56 hectares (50% of cost apportioned to the plan)
 - \$4,066,816 for one neighbourhood park plus playground with an area of four hectares, and
 - \$2,350,112 for one local park with an area of two hectares.
- 15 WCC review the need to acquire 11.81 hectares of land for cycleways (a cost of \$590,638) and consider opportunities to locate them on land that would be used for other infrastructure purposes (eg, open space or drainage land), thereby reducing costs in the plan.

Open space included in the plan

The Draft West Dapto CP includes approximately 100 hectares of open space spread across parks and cycleways. Based on 56,579 residents, this is equivalent to a rate of provision of around 1.74 hectares per 1,000 residents or 1.54 hectares per 1,000 residents excluding the cycleways (comparable with the Elton Study).

The *Social, Cultural and Recreational Needs Study for the West Dapto New Release Area*, July 2007 prepared by Elton Consulting (Elton Study) informed the requirements for open space and recreation facilities in West Dapto. The Elton Study recommended an overall provision of 68 hectares or 1.25 hectares per 1,000 residents, in addition to existing open space areas. The Elton Study was based on a lower population for Stage 5, and did not nominate the length of cycleways nor the amount of land required for them.

The rate of provision in the plan is relatively low compared with the commonly accepted benchmark rate for open space of 2.83 hectares per 1,000 people. However, when the 68 hectares recommended in the Elton Study is added to the existing 176.2 hectares of open space,¹⁰⁴ the total amount of open space available to residents of the WDURA is 244.2 hectares. This equates to a higher rate of open space provision of 3.9 hectares per 1,000.

¹⁰⁴ The existing open space includes 106 hectares of natural areas and other open space in surrounding precincts such as Horsley, and specific active recreation facilities such as cricket fields, basketball courts and a running track, and passive open space in Horsley: Draft West Dapto CP, pp 20-21.

WCC also stated that the amount of land proposed for local open space and recreation facilities in the Draft West Dapto CP has taken into account the following:

- ▼ the extent of existing open space in the area
- ▼ increasing difficulties faced by WCC in maintaining parks to a standard that meets community expectations
- ▼ the need to plan for fewer but larger neighbourhood and local parks, and
- ▼ the need for accessible open space within 400 to 600 metre walking distance from most residents.¹⁰⁵

We assessed the rate of provision for specific facilities against the Elton Study which informed the open space needs of the plan. This analysis suggests that there is a reasonable nexus for most of the open space in the Draft West Dapto CP. However, there is a higher rate of open space provision in the plan than recommended by the Elton Study. Table 3.5 presents the open space provision in the plan and how this compares with the Elton Study recommendations.

¹⁰⁵ Draft West Dapto CP, p 21.

Table 3.5 Comparison of open space in Draft West Dapto CP and recommended rate of provision in Elton Study

Type	Description	Comparison with Elton Study recommendation
Total open space (including cycle ways)	98.68 ha for (56,579 residents) (1.74 ha per 1,000)	Overall rate of open space is high compared with Elton Study's recommendation of 68 hectares for 54,533 residents (1.25 hectares per 1,000 residents).
Total open space (excluding cycle ways)	86.87 ha for 56,579 residents (1.54 ha per 1,000)	
Sports parks (2x)	Total 19.0 ha and 2 playgrounds, 50% (9.48) apportioned to WDURA	Amount of sports parks land and embellishment is high. Elton Study recommended only one sports park (8.0 ha) with a playground.
Local parks (13x)	Total 33.2 ha	One additional local park compared with Elton Study's recommendations. Overall land for local parks is 9.2 ha more than the 24 ha recommended by the Elton Study.
Neighbourhood parks (7x)	Total 31.7 ha and 7 playgrounds	Number of parks consistent with the Elton Study. However, the overall amount of land for neighbourhood parks is slightly more than the 28.0 ha recommended by the Elton Study.
Town centre park	Total 3.0 ha and 1 playground	Consistent with recommendation in the Elton Study.
Cycleways (47.25km)	Total 11.81 ha	Elton Study supports cycleways for Stages 1 to 4, (but not Stage 5, in light of low population projections), but did not nominate length or land required. WCC advised that the cycleway length (including for Stage 5's revised population) was derived through GIS spatial mapping, most would be located along the riparian corridor, and it assumed all land for cycleways would need to be acquired.
Community leisure and recreation centre	Indoor and outdoor recreation facilities (indoor courts, pool sports hall) & outdoor courts (5.0 ha)	Outdoor complex (at least 12 playing courts) is consistent with the Elton Study. ^a Land for the facility is consistent with the Elton Study, but its cost is not included in the CP as WCC already owns it.

^a The indoor recreation facility in the community leisure and recreation centre is also consistent with the Elton Study.

Source: WCC, West Dapto S94 Work Schedule, Open Space Tab and IPART calculations.

Our assessment of parks/playgrounds

We found that there is an overprovision of some parks and playgrounds in the plan. The Elton Study recommended 68 hectares of open space for 54,533 residents, or 1.25 hectares per 1,000 residents. In making this recommendation, the Elton Study noted the large amounts of natural areas and conservation areas that were already available for passive recreational purpose, and the existing facilities in the Horsley precinct.¹⁰⁶

Based, on the Elton Study's recommended overall provision rate, applied on a pro rata basis to the latest population estimate (56,579), the amount of open space that should be provided in WDURA is around 71 hectares. This is around 16 hectares less than proposed in the plan.

WCC advised of its intention to maintain the overall recommended number of parks and playgrounds and attributes the redistribution partly to the neighbourhood planning process.¹⁰⁷

WCC has adopted the approach of using the neighbourhood planning process to determine the exact location of infrastructure. In Stage 1 and 2 the application of this approach has resulted in deviations from the recommended provisions, as described in Table 3.6.

Table 3.6 Additional land for open space arising from neighbourhood planning in Darkes Town Centre, Stage 1-2

Facility	Elton Study (ha)	West Dapto CP (ha)	Additional land (ha)	WCC explanation of need for additional land
Sports park	8.0	9.4	1.4	The final size of the sports park (beyond Elton Study recommendation) was determined by the size and shape of the land and its relation to the floodplain as well as the need to accommodate 2 cricket and AFL ovals outside flood prone land.
Ridge Park	4.0	9.75	5.75	An endangered ecological community (EEC) was identified on the site, the extent and significance of which was not known until the neighbourhood planning process was undertaken. The land could not be cleared and had to be incorporated into the park which was increased in size.

Sources: Draft West Dapto CP, p 22, and S94 Work Schedule, Open Space Tab, and Emails to IPART, 5 and 12 July 2016, and Elton Study, p 34.

¹⁰⁶ Horsley is not included in the WDURA for the purposes of the Draft West Dapto CP.

¹⁰⁷ WCC, Email to IPART, 5 July 2016.

We acknowledge that the need to accommodate the floodplain may warrant the need for more open space in planning the sports park, and that the need to protect the EEC may result in additional passive open space in these locations. However, both examples suggest that there is the risk of possible 'scope creep' in the plan. To avoid possible 'scope creep', WCC should monitor the overall level of open space provision against the minimum recommended level of 1.24 hectares per 1,000 residents to offset the additional open space with lower open space areas elsewhere.

WCC's 2010 internal review of open space requirements also recommended additional facilities in the WDURA, amounting to 15.56 hectares at a cost of \$8,826,040, as follows:

- ▼ neighbourhood park plus playground in Stage 1-2 Sheaffes – Wongawilli
- ▼ sports park with playground in Stage 3 Cleveland, and
- ▼ an additional local park in Stages 1 to 3 (location to be determined).¹⁰⁸

We found that there is insufficient nexus for these facilities to remain in the plan given the Elton Study considered the total area of the WDURA and the principles of creating a range of opportunities for sport and active recreation opportunities for the new population. We recommend that these open space facilities be removed from the Draft West Dapto CP.

An additional 3.71 hectares has also been included in the plan compared with the recommendations in the Elton Study in relation to the neighbourhood park in Stage 5, Yallah-Marshall Mount. WCC has advised this is based on revised population estimates in the draft planning proposal from 1,040 dwellings upon which the Elton Study is based, to 4,000.¹⁰⁹ We consider that there is reasonable nexus for this change.

Our assessment of cycleways

We also found that there is reasonable nexus for the cycleways and incoming development in the WDURA. Cycleways are supported by the Elton Study for Stages 1 to 4 and WCC has established a reasonable case to extend the cycleway network to Stage 5 Yallah-Marshall Mount.¹¹⁰

The Elton Study considered that pathways identified for cycleways are intended to provide 'active transport' as well as passive recreation opportunities in the WDURA.¹¹¹ Our transport consultant supports this approach and advised that the cycleways will contribute to effective transport links.¹¹²

¹⁰⁸ WCC, Email to IPART, 12 July 2016.

¹⁰⁹ WCC, Email to IPART, 12 July 2016.

¹¹⁰ WCC, Email to IPART, 12 July 2016.

¹¹¹ Elton Study, p 37.

¹¹² See section 3.1.3.

The Elton Study did not recommend that the cycleway extend to Stage 5 because at the time of the study, the population forecast for this precinct was much lower. WCC extended the cycleway network to Stage 5 to accommodate the revised population estimates in the draft planning proposal for this precinct with 4,000, rather than 1,040 dwellings, now expected.¹¹³

WCC advised that the distance of 47.25km for the cycleways in the Draft West Dapto CP has been derived through GIS spatial mapping.¹¹⁴

Land for cycleways (totalling 13.8 hectares) will need to be acquired and in most cases it will be riparian land (outside the 'core riparian land' discussed in section 3.1.2). We note from our previous assessment of contributions plans, that councils generally co-locate cycleways on other public lands such as conservation areas and parks to reduce the cost of acquiring land. We therefore recommend that WCC should consider options to reduce the land acquisition cost for the cycleways. WCC officers advised that their preferred approach is to retain the cost for the land in the plan for now and consider the need to acquire all the land as part of WCC's first biennial review of the plan.¹¹⁵ We support this approach.

Our assessment of the Community Leisure and Recreation Centre (open space)

For the community leisure and recreation centre, we found that there is reasonable nexus for an outdoor complex of at least 12 courts. This is consistent with the Elton Study, which recommended five hectares for the facility. However, WCC has not included any land for these facilities. We understand that this is because the council already owns the land.

WCC has advised that a needs analysis for the outdoor facility is required but has not yet been completed.¹¹⁶ We recommend that the council include the cost for the outdoor courts in the Draft West Dapto CP, once it is known (see section 3.1.3).

3.2.4 Nexus of community facilities (land only)

IPART finding

- 8 There is reasonable nexus between the land for community facilities in the plan and the expected development in the WDURA.

Our analysis indicates there is a reasonable amount of land for community facilities. The plan proposes acquisition of 2.2 hectares of land for three new multi-purpose community centres. The amount and the location of this land is consistent with the Elton Study.

¹¹³ WCC, Email to IPART, 5 July 2016.

¹¹⁴ WCC, Telephone advice to IPART, 4 August 2016.

¹¹⁵ WCC, Email to IPART, 1 September 2016.

¹¹⁶ WCC, Email to IPART, 12 July 2016.

3.3 Criterion 3: Reasonable Costs

IPART is required to advise whether the proposed development contributions are based on a reasonable estimate of the cost of the proposed public amenities and public services.

Reasonable costs may be based on estimates that have been provided by consultants or the council's experience. They should be comparable to the costs required to deliver similar land and facilities in other areas.

In this section, we have considered the approach by WCC to cost its capital works and land requirements for infrastructure in the context of whether the estimates in the plan are up to date. We have then considered the reasonableness of the cost estimates for each category of infrastructure and administration costs. Lastly, we have assessed the choice of indices to escalate cost estimates to current dollars.

3.3.1 General costing approach for capital works

IPART finding

9 Some of WCC's cost estimates for capital works are now relatively outdated.

Recommendation

16 WCC update the estimated costs of capital works in the plan, where outdated, with the assistance of a quantity surveyor if necessary.

WCC has used cost estimates in the plan for some of its capital works from 2010 and earlier, which largely originate from the *2011 West Dapto Release Area Section 94 Contributions Plan* (2011 plan). For roadwork items in Stages 1 to 4 for example, the council has relied on estimates by GHD from 2010. For other items (eg, some stormwater items), we understand that the cost estimates were carried over in 2011 from previous years. In general, the estimates have been indexed using a CPI factor from 2010 to 2014, regardless of the base year of the estimate.

The 2011 plan stated that 'costs for facilities included in this plan were derived from the services of a qualified quantity surveyor as well as from Council's experience of facility costs in other areas'.¹¹⁷ The planning of facilities was carried out at a strategic level with a lack of concept plans on which to base the estimates. Contingency allowances were added to the estimates to compensate for the level of uncertainty.

¹¹⁷ WCC, *West Dapto Release Area Section 94 Contributions Plan*, 2011, p 26.

WCC has used more up to date estimates for some of its other costs. In particular, it has adopted the recommended costs in the 2015 SMEC design estimates for roadworks in Stage 5. Therefore, we recommend that WCC only consider updating the base cost estimates for its capital works where they are relatively outdated, with the assistance of a quantity surveyor if necessary. WCC officers acknowledge that estimating costs in the plan will be an ongoing process. Costs can be estimated more accurately as further concept designs for infrastructure become available. Such updated costings should be incorporated into the plan when it is regularly reviewed.

We have separately addressed the matter of indexing capital works costs further below (section 3.3.6).

3.3.2 General costing approach for land

IPART finding

10 WCC's general approach to estimating land acquisition costs, relying on recent (2015) advice from an independent valuer, is reasonable.

The total cost of land in West Dapto is \$151.1 million or 12.3% of the total value of the contributions plan. Table 3.7 provides a breakdown of the total cost of land and the amount of land for each infrastructure category.

Table 3.7 Breakdown of cost of land in the Draft West Dapto CP (\$2015)

Infrastructure category	Amount of land (hectares)	Cost	Average cost per hectare
Transport	48.99	43,040,217	878,551
Stormwater	411.1	56,822,865	138,222
Open space	100.67	49,695,923	493,652
Community	2.20	1,540,000	700,000
Total	562.96	151,099,005	268,401

Note: The cost of land for open space and transport infrastructure is the apportioned cost attributed to West Dapto. The unapportioned cost of land is \$51 million for open space and \$56 million for transport.

Source: WCC, Draft West Dapto CP, Summary Tables, Open Space, Community, Drainage and Roads Summary Tabs.

WCC estimated the cost of land by:

- ▼ estimating the types and amount of land to be acquired, based on its current underlying land use (eg, urban, riparian), and
- ▼ multiplying the land to be acquired by the indicative englobo land value rates for each underlying land use, which were provided by an external registered valuer (Table 3.8).¹¹⁸

¹¹⁸ This assessment was undertaken by a Registered Valuer from MMJ Wollongong (a residential and commercial real estate firm) in October 2015 (MMJ 2015 estimates).

Table 3.8 Indicative englobo land values in the Draft West Dapto CP

Land use	Indicative value (\$ per hectare)
Residential/urban	700,000
Riparian	50,000
Industrial	400,000
Open space	700,000
Rural	50,000
Commercial/town centre	1,000,000

Note: The land values are based on an external valuer's assessment.

Source: WCC, West Dapto S94 Work Schedule, Variable Inputs Tab.

We found that the methodology used by WCC is reasonable, noting this approach is the same as the approaches we endorsed by Blacktown City Council and The Hills Shire Council for development precincts in Sydney's North West Growth Centre.

However, we have identified some specific concerns in relation to WCC's requirements for the cost of land for transport infrastructure in Stage 5 which is dealt with in section 3.3.3, and the assumptions about the nature of the land needed for stormwater purposes, which are dealt with in section 3.3.4.

3.3.3 Transport facilities and land costs

IPART findings

- 11 WCC's cost estimates for transport infrastructure are mostly reasonable, except the cost estimates contained in Table 3.9.
- 12 The costs of roadwork which has been completed by WCC are based on 2010 cost estimates rather than the actual capital expenditure, indexed by CPI. The roads include:
 - Shone Ave upgrade, including intersection Int14
 - Bong Bong Rd upgrade, including intersection Int16
 - Cleveland Rd, including intersections Int23 and Int25
 - Fairwater Dr upgrade, including intersections Int26 and Int42 and bridge B33, and
 - new roads NR14A and NR14B.
- 13 A number of discrepancies exist between the Draft West Dapto CP and the West Dapto S94 Work Schedule regarding the cost and description of transport items.
- 14 WCC has not included land acquisition costs for transport infrastructure in Stage 5 in the Draft West Dapto CP.

Recommendations

- 17 WCC remove \$173,104,776 in costs from the transport essential works in the Draft West Dapto CP in line with the recommended adjustments in Table 3.9.
- 18 Where possible, WCC replace the cost estimates for completed roadworks with the actual capital expenditure, indexed annually by CPI.
- 19 WCC rectify the discrepancies identified in Table 3.10 in relation to transport items so that relevant costs and descriptions in the Draft West Dapto CP and the West Dapto S94 Work Schedule are aligned.
- 20 WCC include in the West Dapto CP estimates for the cost of land acquisition for transport infrastructure in Stage 5, relying on up-to-date advice from a registered valuer.

Table 3.9 IPART's recommended adjustments to transport costs (\$2014)

Reasonable Cost issue	Cost in Draft West Dapto CP	Recommended adjustment
Existing road upgrade cost estimates		
Upgrade of Bong Bong Rd is based on a 2-lane new build rate of \$4,700/m instead of a more reasonable rate of \$3,000/m which reflects that the road has already been formed to an urban standard	\$19,920,082	-\$2,565,579
Upgrades of 2-lane rural roads (to 2 lanes) for West Dapto Rd, Sheaffes Rd, ^a Wongawilli Rd, Darkes Rd, Avondale Rd and Cleveland Rd are based on a new build rate of \$4,700/m instead of a more reasonable upgrade rate of \$4,300/m	\$70,829,743	-\$5,499,086
Upgrades of 2-lane rural roads to 4 lanes for West Dapto Rd, Avondale Rd, Cleveland Rd, Huntley Rd and Reddalls Rd are based on a new build rate of \$5,300/m instead of a more reasonable upgrade rate of \$4,900/m	\$31,638,134	-\$2,387,783
Fowlers Rd extension work should use a lower contingency allowance (20% not 37%) given the concept design available, and grant funding of \$22,500,000 should be proportionally deducted from the cost in the CP based on the apportionment rate of 76%	\$77,663,918	-\$29,834,764
Bridge cost estimates		
Costs for bridges B9A, B9B and B9C on West Dapto Rd are based on four lanes when the road will have two lanes	\$54,390,000	-\$22,050,000
As above for the cost for bridge B1 on Bong Bong Rd	\$9,324,000	-\$3,108,000
As above for the costs for bridges B26A, B26B, B27, B28, B29A, B29B, and B29C on road NR40-NR47A	\$24,633,000	-\$8,211,000
Overall cost estimates		
Roadwork cost estimates in Stages 1 to 4 (based on GHD 2010 estimates) include double-counted design and project management fees of 10%	\$57,023,959	-\$57,023,959
Additional adjustment to roadwork estimates in Stage 5 for design and project management fees of 10% applied to recommended lower base cost estimates	\$11,081,178	-\$4,760,150
Lower contingency allowance (15%, not 20%) applicable for Stage 5 road items (Yallah Rd, Marshall Mount Rd, NR1-NR3, Local Rd and NR100-NR103) as costs already include identified risk items	\$22,162,357	-\$12,680,814
Additional adjustment to roadwork estimates in Stages 1 to 4 for contingency of 20% applied to our lower recommended base cost estimates	\$114,047,918	-\$15,787,485
Stage 5 road items already costed in \$2015 have been indexed from 2010 unnecessarily	\$9,196,155	-\$9,196,155
Total		-173,104,776

^a Recommendation applies to the eastern sections of Sheaffes Road not the western section (S4).

Note: Estimates in the West Dapto S94 Work Schedule are in \$2015 for land and Stage 5 roadwork costs only.

Source: WCC, West Dapto S94 Work Schedule, Roads Summary and various roadwork tabs, ARRB Report, pp 30-35 and IPART calculations.

Once transport costs are adjusted to account for our recommendations under the essential works and nexus criteria, we estimate that the remaining costs in the Draft West Dapto CP would be \$889.6 million.¹¹⁹

In assessing the reasonableness of the costs for this remaining infrastructure, we found that the majority of the estimates are reasonable. However, based on our assessment of the costings at this stage by WCC, there are also several opportunities for further savings in the plan, estimated to be around \$173.1 million. This would result in a total of \$732.2 million transport costs in the Draft West Dapto CP, that is before other cost adjustments are made by WCC (for example to include actual capital works costs or to apply our recommended indexation factors).

Our assessment of the reasonableness of the current transport cost estimates by WCC and our recommendations for further savings, as informed by our transport consultant's advice, are outlined below.

WCC's approach to costing transport facilities

WCC employed the following approaches to estimate the transport costs in the Draft West Dapto CP:

- ▼ The cost estimates of road, intersection and bridge upgrade works for Stages 1 to 4 are primarily based on advice from 2010 GHD report.
 - The only exception is an additional concept design cost estimate for the Fowlers Rd extension which was prepared by R O'Sullivan in September 2015.
- ▼ The cost estimates of road, intersection and bridge upgrade works for Stage 5 are based on 2015 SMEC design and report.
- ▼ The cost estimates for bus shelters are based on IPART's 2014 *Local Infrastructure Benchmark Costs* report (IPART benchmark report) and the cost estimates of bus kiosks are those recommended by GHD (2010).
- ▼ Land acquisition estimates are based on the 2015 MMJ valuation report, with the exception of estimates for transport infrastructure in Stage 5, for which cost estimates are not included in the total costs.
- ▼ At WCC's discretion, an additional 10% design and project management fees has been applied to roadwork costs in Stages 1 to 5 (in addition to the costs recommended by GHD and SMEC).
- ▼ The 20% construction contingency applied to the costs recommended in the relevant technical studies is based on IPART benchmark report. It has been applied to most roadwork costs in Stages 1 to 5 at WCC's discretion (except the Fowlers Rd extension for which WCC has applied a 37% contingency rate).¹²⁰

¹¹⁹ The Draft West Dapto CP proposes transport facility costs (including land and capital) of \$936.6 million.

¹²⁰ ARRB Report, pp 33-34.

- ▼ The 2010 cost estimates have been indexed by the CPI from \$2010 to \$2014.

Cost estimates for roadwork upgrades

WCC applied GHD's 2010 estimates to the costs of road, intersection and bridge upgrade works for Stages 1 to 4. It based the costs of the Stage 5 roadwork on the 2015 SMEC design and report. Our consultant found that most cost estimates are reasonable and within the acceptable ranges for such estimates.¹²¹

However, for roadworks in Stages 1 to 4 that are based on the GHD estimates, ARRB found that there was no differentiation between the cost rates applied to existing and new road pavement costs. As a result, the cost rate for a new road was applied to upgrade works, even when the roadwork required was less than the cost of new construction.¹²²

We question the validity of this approach because for the most part, less input (including material, time and cost) is required for upgrading the existing roads. This has formed the basis for a number of our recommended revisions to the estimates for road upgrades,¹²³ including:

- ▼ Upgrade of Bong Bong Road, where large sections of the road has already been formed to an urban standard. The cost estimates are based on a 2-lane new build rate of \$4,700/m. We recommend a more reasonable rate of \$3,000/m for the work required to upgrade the road from an urban standard. At this stage, we estimate the savings to costs in the Draft West Dapto CP is around \$2.6 million.
- ▼ Various upgrades of 2-lane rural roads (ie, to be maintained as two lane roads), which are based on a new build rate of \$4,700/m. We recommend a more reasonable upgrade rate of \$4,300/m. The total estimated saving to costs in the plan is around \$5.5-million.
- ▼ Various upgrades of 2-lane rural roads to four lanes, which are based on a new build rate of \$5,300/m. We recommend a more reasonable upgrade rate of \$4,900/m. The total estimated saving is around \$2.4 million.

Cost estimate for Fowlers Rd extension

One of the most extensive roadworks in the plan is the Fowlers Rd extension. This is the major east-west entry road into West Dapto, providing a direct connection to Dapto Town Centre and the M1 Motorway and Princes Highway.¹²⁴ The plan proposes that the cost of the extension would be \$102.4 million (including bridge work), with \$77.7 million apportioned to the Draft West Dapto CP based on a 76% rate of apportionment to the WDURA.¹²⁵

¹²¹ ARRB Report, pp 29-35, including Table 4.2.

¹²² ARRB Report, p 33.

¹²³ For costing of recommended adjustments, see ARRB Report, Table 4.2, p 33 and WCC, Email to IPART, 21 September 2016.

¹²⁴ WCC, Email to IPART, 21 July 2016.

¹²⁵ WCC, Draft West Dapto CP, p 36.

During the assessment, WCC provided more detailed costing for this work prepared by R O'Sullivan. This costing showed that a 37% contingency amount had been applied to the cost estimate, even though the project has reached the design concept stage. We recommend that, at this stage in the planning phase, a lower contingency rate of 20% is more reasonable.¹²⁶

In the near future WCC will receive grant funding totalling \$22.5 million from the State Government towards the Fowlers Rd extension, but the cost of the works apportioned to West Dapto has not been reduced to take account of the expected grant. We recommend that this grant funding be deducted (proportionally) from the cost of these roadworks in the CP, using WCC's apportionment rate of 76%.¹²⁷

WCC advised that the expected usage of the road for WDURA residents compared with residents in the adjoining Horsley precinct was 70-76%, which supports an apportionment rate of 76%.¹²⁸

With the combined effect of these adjustments, we recommend that the cost of the Fowlers Rd extension in the Draft West Dapto CP be reduced from \$77.7 million to \$47.8 million.

Roadwork costs – project management/design fees and contingency allowances

Our assessment also considered the reasonableness of the add-ons in the roadwork cost estimates, including the allowance for project management and design fees and a contingency amount for unforeseen risks.

ARRB advised us that the overall 10% design and project management fees applied by WCC to the roadwork costs (including bridges and intersections) in Stages 1 to 4 are not warranted because the adopted rates, based on GHD's 2010 estimates, already include detailed design investigation and management plus other project costs and overheads.¹²⁹ Therefore, we recommend that these additional costs be removed from the plan, amounting to a reduction of \$57.0 million.

ARRB confirmed that the 10% design and project management fees applied by WCC to the roadwork costs in Stage 5 are reasonable because the adopted base costs did not include these fees.

Table 3.9 includes an adjustment for reduced fees of \$4.8 million after applying the 10% allowance to the lower recommended base costs for roadwork.

¹²⁶ The cost schedule prepared by R O'Sullivan in September 2015 supersedes the costing information in the Plan for this transport item (ARRB Report, p 34).

¹²⁷ WCC, Draft West Dapto CP, p 25.

¹²⁸ WCC, Email to IPART, 21 September 2016.

¹²⁹ ARRB Report, p 32.

However, for Stage 5 roadwork costs, ARRB recommended use of the lower contingency rate of 15% compared with the 20% WCC has applied to the base cost estimates. This is because the concept design estimates by Muller Partnership (SMEC 2015) upon which the Stage 5 estimates are based, already incorporates both a construction contingency (9.1%) and identified risk items (ranging from 3.0% to 5.6%). The lower contingency would reduce the cost of transport works in the Draft West Dapto CP by \$12.7 million.¹³⁰

Further, an adjustment has been made to reflect that the contingency allowance is to be applied to the lower recommended base costs for road work in Stages 1 to 4, reducing costs by \$15.8 million.

Roadwork costs – indexation of Stage 5 costs

The roadwork cost estimates for Stage 5 Yallah-Marshall Mount are based on the SMEC design report, and are in \$2015. However, we found that the Draft West Dapto CP included indexation of these costs as if they were in \$2010. We recommend that this unnecessary indexation be removed, which would reduce the costs in the plan by a further \$9.2 million.

Cost of bridge works

Bridges account for \$502.4 million or 56% of proposed transport capital costs in the plan.¹³¹ ARRB examined the basis for WCC's bridge cost estimates and found that the higher cost rates applied by WCC for upgrading (widening) existing bridges reflect the added complexity of modifying existing structures. However, the review identified a central issue with the costing of the bridges in that many have been costed based on a four lane design when they only need two lanes (primarily because the connecting road is only two lanes).

We recommend that the costs be reduced accordingly, for:

- ▼ bridges B9A, B9B and B9C on West Dapto Road by a total of \$22.1 million
- ▼ bridge B1 on Bong Bong Road by \$3.1 million, and
- ▼ bridges B26A, B26B, B27, B28, B29A, B29B, and B29C on proposed new road NR40-NR47A by a total of \$8.2 million.¹³²

WCC noted that it has followed Australian Standards (AS5100) in that the width of bridge matches the width of the road. The council further clarified with us that in some cases, roads would have additional parking lanes near bridges such that the bridges would need to reflect four lanes accordingly, but that this specification would not be known until the concept designs are available for the infrastructure.¹³³ We acknowledge the need for further work to determine the actual specification of bridges in some cases. However, where possible, we

¹³⁰ ARRB Report, p 33.

¹³¹ WCC, Draft West Dapto CP Work Schedule, Summary Tables Tab and IPART calculations.

¹³² ARRB Report, Table 4.2, pp 34-35.

¹³³ WCC, Telephone advice to IPART, 22 September 2016.

consider that for cost efficiency, road lanes approaching bridges should be maintained at two lanes to contain the bridge widths.

Completed roadworks

ARRB also found that there are various roadworks which have been completed (fully or in part) but that at present, the original cost estimates for the work, rather than the actual costs, are reflected in the plan. The relevant roadworks are:

- ▼ Shone Ave upgrade, including intersection Int14
- ▼ Bong Bong Rd upgrade, including intersection Int16
- ▼ Cleveland Rd, including intersections Int23 and Int25
- ▼ Fairwater Dr upgrade, including intersections Int26 and Int42 and bridge B33, and
- ▼ new roads NR14A and NR14B as 2-lane roads.¹³⁴

We recommend that WCC replace the cost estimates for all the completed work with the actual costs, indexed annually by CPI.

We note that new roads NR14A and NR14B have already been constructed as a 2-lane road, but will require further work to reach the four lanes proposed in the Draft West Dapto CP. Therefore, once the cost estimates have been updated to reflect the actual capital work completed, the cost estimate for the remaining work in the plan should not be based on a new build rate of \$5,300/m. We recommend a lower upgrade rate of \$4,900/m, removing redundant activities from each sub item¹³⁵. We have not provided a cost estimate for this lower cost rate because it depends on the scope of work remaining, and the total road costs will also be based on the cost of the actual work completed.

Description discrepancies

ARRB noted various description and costing discrepancies between information in the Draft West Dapto CP¹³⁶ and the West Dapto S94 Work Schedule.¹³⁷ Table 3.10 sets out the discrepancies identified.

We recommend that WCC review these discrepancies and amend the Draft West Dapto CP or the West Dapto S94 Work Schedule spreadsheets as required. Based on the information available to us, we did not consider there was a need to make any associated cost adjustments in the plan.

¹³⁴ ARRB Report, p 26

¹³⁵ ARRB Report, Table 4.2, p 34.

¹³⁶ Section 3.5.2 Proposed Transport Facilities and Table 4.3 Transport Facilities.

¹³⁷ Including Public Transport and other transport-related tabs.

Table 3.10 Discrepancies identified between the Draft West Dapto CP and the West Dapto S94 Work Schedule

Item	As in Draft West Dapto CP	As in West Dapto S94 Work Schedule
Wongawilli Road lane arrangement	Description – 2 lanes/4 lanes (length 590m)	2-lane road (length 590m)
Intersection Int13	Identified as a junction of West Dapto Rd and 'Road No. 2'	Upgrade work is on Wongawilli Rd (as part of road item NR40–NR47A)
Yallah Road	Bridges B20A and B20B	A bridge and a culvert (as in SMEC concept design)
Roadwork on Avondale Rd	2-lane upgrade (length 3,436m)	2-lane upgrade (length 1,945m) and 4-lane upgrade (length 1,465m)
Bong Bong Road Rail Crossing	Bridge B21 2-lane (length 16m)	Interim crossing work and a 3-lane widening

Source: ARRB report, pp 14, 16, 18, 19, and 21, and WCC, Email to IPART, 21 September 2016.

Bus infrastructure cost estimates

WCC has based the cost of bus shelters in the plan on IPART's local infrastructure costs benchmark report.¹³⁸ We consider that this approach is reasonable.

Each shelter is costed at \$17,515, reflecting the recommended benchmark. The total cost of the 214 bus shelters in the Draft West Dapto CP is \$3.75 million. As discussed in our assessment of nexus for the bus shelters, there may be scope for WCC to reduce the number of shelters if it provided for a unidirectional service to operate in some sections of the network.

WCC estimated the cost of bus kiosks (larger bus stops) to be \$150,000 each, at a total cost for seven kiosks of \$1.05 million in the plan. The kiosk estimates were reported by GHD in its review of costs in 2010 and we consider that, on this basis, they are reasonable.

Cost of land for transport items in Stage 5

In aggregating the cost of transport infrastructure in Stage 5, WCC has omitted land acquisition requirements.¹³⁹ We consider that this is an oversight and recommend that these costs be included, first updated with the advice of a registered valuer if necessary.

¹³⁸ IPART, *Local Infrastructure Benchmark Costs – Costing infrastructure in Local Infrastructure Plans Final Report*, April 2014, p 240.

¹³⁹ WCC, Draft West Dapto CP, S94 Work Schedule, Stage 5 road tabs and WCC, Email to IPART, 6 September 2016.

3.3.4 Stormwater land and facilities costs

IPART finding

- 15 WCC's cost estimates for stormwater infrastructure and land are mostly reasonable, except for:
- when estimating the land requirements for detention basins, assuming that 50% of land will be on developable land and 50% of basins will be on riparian land
 - indexing estimates for land acquisition for detention basins in Mullet Creek, as they are costed using 2015 valuations, and
 - indexing the cost estimate for trunk drainage as it is based on 2015 industry costings.

Recommendations

- 21 WCC refine the estimates for land values and cost of facilities for stormwater infrastructure, once the locations of the basins are known.
- 22 WCC remove \$2,795,594 from the cost of essential works in the Draft West Dapto CP for the unnecessary indexation of land acquisition estimates for the Mullet Creek basins.
- 23 WCC remove \$2,539,484 for the unnecessary indexation of the cost of trunk drainage.

Cost of stormwater land

We identified two specific issues regarding stormwater land costings which we recommend that the council address.

First, we found that the assumptions for the 56.4 hectares of land to be acquired for detention basins may not be reasonable. For each basin, the plan assumes half of the land to be acquired will be residential/urban zoned land (\$700,000/ha) and half the land will be riparian land (\$50,000/ha).¹⁴⁰

WCC has noted the 50/50 split for land requirements (riparian and residential/urban) relates to the current strategy for detention basins to be offline, ie, located on non-flood-affected land, and therefore, potentially, on urban land. However, the specific land for the basins has not yet been identified and the location of detention basins will be determined through the neighbourhood planning process.¹⁴¹ Therefore, the assumptions used in the plan may not adequately reflect the cost of land to be acquired for detention basins. We recommend WCC refine its land value estimates once the locations of the basins are known. WCC officers advised that the future location of basins in the plan could be updated and clarified as part of WCC's first biennial review.¹⁴²

¹⁴⁰ WCC, Draft West Dapto CP, p 38 and West Dapto S94 Work Schedule, Basin Calcs Tab.

¹⁴¹ WCC, Email to IPART, 12 July 2016.

¹⁴² WCC, Email to IPART, 1 September 2016.

We also found that WCC had indexed land acquisition cost estimates for detention basins when the costs have been estimated using land values in \$2015. We recommend removing \$2.8 million from the Mullet Creek basin costs for this unnecessary indexation. The Duck Creek basin costs have also been unnecessarily indexed but we have recommended the entire costs be removed from the plan (Recommendation 12).

Cost of stormwater facilities

The cost of stormwater facilities is \$99.7 million, or 8.1% of the total cost the Draft West Dapto CP. These costs include works for detention basins (including wetlands), enhanced storage areas, trunk drainage and gross pollutant traps, as summarised in Table 3.11.

During our assessment, we reviewed these cost estimates based on the information presented in the Water Management Work Schedule Table 4.4 (and supporting spreadsheet) and the additional information provided by WCC.

Based on our assessment, we found that the majority of the stormwater costings appear reasonable.

The cost of detention basins are based on standard cost rates, multiplied by key design parameters ie, the average cost per cubic metre of detention volume/wetland¹⁴³ (\$45), multiplied by the estimated detention and wetland volume for each basin. For trunk drainage, the formula assumes 10km of trunk drainage multiplied by 1,000m, costed at \$2,500 per linear metre, and then indexed. For gross pollutant traps, the cost is based on a unit rate of \$55,000 per trap. In addition, WCC has included an allowance for construction contingencies.¹⁴⁴

Table 3.11 Costs of stormwater facilities in the Draft West Dapto CP (\$2014)

Infrastructure type	Cost
Detention basins (including wetlands)	44,976,898
Enhanced storage areas	23,662,808
Trunk drainage	27,539,487
Gross pollutant traps	3,520,000
Total	99,699,193

Source: WCC, West Dapto S94 Work Schedule, Drainage Tab.

Table 3.12 compares the costs of detention basins (and contingencies) and gross pollutant traps with those in two other contributions plans which we have recently reviewed. We used this information in assessing the reasonableness of some of the stormwater infrastructure costs in the Draft West Dapto CP.

¹⁴³ Also known as raingardens or bio-retention areas.

¹⁴⁴ WCC, West Dapto CP S94 Work Schedule, Drainage Tabs.

Our analysis indicated that:

- ▼ The costs for the detention basins (including the wetland component) appear low, based on a comparison with those in plans we have previously assessed.
- ▼ The gross pollutant trap costs appear reasonable as they are comparable with rates adopted in CP15 and CP24. WCC has not indicated the size of the GPTs it is proposing to provide.
- ▼ For enhanced storage areas, it is unclear how WCC derived the cost of these works. The supporting spreadsheet only provides the total cost of works, without further details on the unit or cost rates. No other contributions plans we have assessed have included ESAs, so we do not have readily comparable costings.
- ▼ For the contingency allowance, the rate of 25% of construction costs for detention basins (including wetlands) appears high compared with the two other plans, but still reasonable. The lower rates used for such facilities in the Schofields and Box Hill precincts reflect more advanced designs and that costings had been undertaken since the plans' inception.

Table 3.12 Comparative costs of detention basins and gross pollutant traps across three contributions plans

Infrastructure item	Wollongong City Council	The Hills Shire Council	Blacktown City Council
	West Dapto (\$2014)	Box Hill CP15 (\$ June 2013)	Schofields CP24 (\$ March 2013)
Detention basins and wetlands	Detention basin: \$45 per m ³ Wetlands: \$45 per m ³	Combined basin, raingarden and drainage: \$96 to \$182 per m ³	Detention basin \$100 to \$700 per m ³ (approx) Plus integrated bio-retention/raingarden area \$320 to \$630 per m ³ (approx)
Gross pollutant traps	\$55,000 per trap	\$35,000 to \$80,000 ^a	Standalone trap \$37,000 to \$249,000 per trap (2.5m ³ to 40m ³) Median is \$70,000 (5.7m ³)
Contingency allowance	25% for detention basins (including wetlands)	5% for all stormwater infrastructure	15% for detention basins and raingardens.

^a Where separately costed in CP15.

Source: IPART analysis based on WCC, Draft West Dapto CP Work Schedule, Variable Inputs, Drainage and Basin Calcs Tabs; IPART, *Assessment of The Hills Shire Council's Section 94 Contributions Plan No 15, Box Hill Precinct*, March 2016; and IPART, *Assessment of Blacktown City Council's Section 94 Contributions Plan No 24, Schofields Precinct*, August 2014.

For trunk drainage, the per linear metre cost for trunk drainage is based on a 2015 industry cost determined in conjunction with WCC's flooding and stormwater engineers, which appears a reasonable approach. However, as it

uses a 2015 cost estimate, indexing is unnecessary and the additional amount of \$2,539,487 should be removed from the cost of trunk drainage in the plan.

The estimate of 10km length dates back to 2007 and requires revision. We consider that WCC should revise outdated estimates for capital works in the plan (see Recommendation 16).

3.3.5 Open space facility costs

IPART finding

- 16 WCC's cost estimates for open space facilities are reasonable, except for the overestimate of land for cycleways in Stage 3, Cleveland precinct.

Recommendation

- 24 WCC remove the cost of 1.99 hectares of land for cycleways in the Cleveland precinct (\$177,785) from costs in the Draft West Dapto CP.

The cost of open space facilities is \$56.1 million or 4.6% of the total cost of the plan. The open space facilities and their costs are summarised in Table 3.13. Our assessment of the costs, as reasonable, is explained below.

Table 3.13 Cost of open space facilities in the Draft West Dapto CP (\$2014m)

Facilities	Description	Amount	Cost
Local park	2.0 ha park with a playing field	12 parks	11.4
Neighbourhood park	4.0 ha park with <ul style="list-style-type: none"> 2 ha of active open space with playing field 2 ha of passive open space 	7 parks	8.9
Sport park	9.40 and 9.56 ha parks with 4 playing fields	2 parks	4.3
Ridge Park (Darkes town centre)	9.75 ha park for passive recreation purposes	1 park	1.1
Town Centre Park	3.0 ha park with a playing field	1 park	3.5
Playgrounds	Located in parks	9 parks	3.4
Cycleways	2.5 metres wide	47.25 km ^b	14.9
Community leisure and recreation centre	Indoor recreation facilities and outdoor courts	1 centre	8.6
Total			56.1

^a Recommendation 2 is to remove the cost of the community leisure and recreation centre from the plan as it is not on the EWL, but to allow WCC to add back in the reasonable cost of associated outdoor courts back in once it has been established.

^b WCC advised that the amount of land required in Cleveland should be reduced by 1.99ha: WCC, Email to IPART, 5 July 2016.

Source: WCC, Draft West Dapto CP and West Dapto S94 Work Schedule, Open Space Tab.

WCC based cost rates on internal reviews conducted in 2009 and 2010, and used costings based on standard embellishment for comparable open space facilities being delivered at the time.¹⁴⁵ An allowance of 15% for contingencies has been added to the base rates. For sports parks and the community leisure and recreation centre, an additional \$30,000 is included for 'additional studies'.¹⁴⁶

During our assessment we identified an inconsistency in the costs of land for cycleways in the Cleveland precinct. The Draft West Dapto CP provided for 2.5 hectares, but the S94 Work Schedule identifies 4.49 hectares. WCC advised that the correct figure is 2.5 hectares.¹⁴⁷ Accordingly, we recommend that an amount of \$177,785 (being the cost of 1.99 hectares) be removed from the cost of land for cycleways in the plan.

Table 3.14 compares the costs of a range of open space facilities in the Draft West Dapto CP with those in two other contributions plans which we have recently reviewed. We used this information in assessing the reasonableness of some of the stormwater infrastructure costs.

Table 3.14 Comparison of base cost rates for open space facilities across three contributions plans

Facility	Wollongong City Council West Dapto (\$June 2014)	The Hills Shire Council Box Hill CP15 (\$ June 2013)	Blacktown City Council Schofields CP24 (\$ March 2013)
Local park	\$37.5 per m ²		
Neighbourhood park	\$25 per m ²		
Sports parks	\$36 per m ²	\$60 to \$200 per m ² (approx) for open space embellishment	\$30 to \$350 per m ² (approx) for open space embellishment
Ridge Park (Darkes town)	\$8 per m ²		
Town Centre Park	\$91 per m ²		
Playgrounds	\$0.20m (neighbourhood) \$0.35m (district)		\$0.12m (local) \$0.25m (neighbourhood)
Cycleways	\$250 per metre	\$216 per metre	\$563 per metre
Contingencies	15% of base cost	15% of base cost	15% of base cost
Other costs	\$30,000 in additional studies for community centre and sports parks	15% of base cost for project management and design	10% of base cost for design fees

Note: We have not considered the cost of the community leisure and recreation centre as this facility is not on the EWL (see Recommendation 3).

Sources: IPART analysis based on WCC, Draft West Dapto CP and West Dapto S94 Work Schedule, Open Space Tab and IPART, *Assessment of The Hills Shire Council's Section 94 Contributions Plan No 15, Box Hill Precinct*, March 2016, and IPART, *Assessment of Blacktown City Council's Section 94 Contributions Plan No 24, Schofields Precinct*, August 2014.

¹⁴⁵ WCC, Email to IPART, 12 July 2016.

¹⁴⁶ WCC, West Dapto S94 Work Schedule, Open Space Tab.

¹⁴⁷ WCC, Email to IPART, 5 July 2016.

Our analysis in Table 3.14 indicates that the cost rates for open space facilities are less than, or broadly comparable with, the cost rates for similar types of embellishments that we assessed as reasonable in other CP reviews.

The contingency allowance and additional study costs appear reasonable. An allowance of 15% was also added by Blacktown City Council and the Hills Shire Council to the costs of open space embellishment works in their contributions plans, an approach which we assessed as reasonable.

Our recommendation that WCC to update the base costs of capital construction would apply to the costs for open space facilities, which are derived from estimates made in 2009 and 2010. (Recommendation 16: see section 3.3.1.)

3.3.6 Cost of land for community facilities

IPART finding

17 The cost of land for on which WCC will provide community facilities is reasonable.

The Draft West Dapto CP includes a total of \$1.54 million for costs to acquire three parcels of land for community facilities. It has assumed a rate of \$700,000 per hectare for acquiring land zoned urban, using a valuation from 2015.¹⁴⁸ We find that these costs are reasonable.

3.3.7 Administration costs

IPART finding

18 Administration costs of \$7.5 million is a conservative estimate of the total cost of administration required over the life of the plan.

Recommendation

25 WCC review the estimate for plan administration costs in the Draft West Dapto CP.

WCC has included \$150,000 per annum for the life of the plan for administration costs, which totals \$7.5 million. This represents 0.7% of the current estimate of infrastructure costs (ie, excluding land costs) in the plan.¹⁴⁹

We found the cost of plan administration to be conservative. This rate is well below the benchmark of 1.5% recommended in our report on local infrastructure benchmark costs.¹⁵⁰

¹⁴⁸ WCC, West Dapto S94 Work Schedule, Variable Inputs Tab and Community Tab.

¹⁴⁹ WCC, Draft West Dapto CP, p 32.

¹⁵⁰ IPART, *Local Infrastructure Benchmark Costs*, April 2014.

Compared with other contributions plans we have assessed, the area and projected population is the largest, the infrastructure costs the highest, and the development life the longest. At \$150,000 per annum, plan administration costs have been set at a quite modest level. 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).¹⁵¹

We consider that WCC could review the cost estimate for plan administration it proposes, in light of the project management and administrative costs already incurred and the annual costs that are likely to be required to administer the plan.

3.3.8 Indexation factors

Capital works cost estimates

IPART finding

- 19 WCC's use of the CPI to escalate capital works cost estimates to current dollars does not represent the most cost-reflective indexation factor, and the CPI is applied only to June 2014.

Recommendation

- 26 To index capital works estimates (but not actual costs) to current dollars, WCC apply more cost-reflective PPIs to the most recent period, as follows:
- ABS PPI (Road and Bridge Construction) for transport and stormwater costs, and
 - ABS PPI (Non Building Construction) for open space costs.

WCC escalates the cost of capital works estimates in the plan 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) which would be more cost-reflective for the relevant infrastructure categories. The recommended PPIs are:

- ▼ the ABS PPI (Road and Construction Index) for transport and stormwater costs, and
- ▼ the ABS PPI (Non-residential Building Construction Index) for open space costs.¹⁵²

¹⁵¹ Practice Note, p 9.

¹⁵² ABS, *6427.0 Producer Price Indexes, Australia*, Table 17, Index No. 3101 Road and bridge construction New South Wales, and ABS, *6427.0 Producer Price Indexes, Australia*, Table 17, Index No. 3020 Non-residential construction New South Wales, respectively.

We also found that WCC has escalated most of the capital works cost estimates to \$2014 (June), whereas it has used \$2015 estimates for other cost inputs in the plan, for example for most of the land acquisition cost estimates. To avoid underestimating infrastructure costs in current dollars, we recommend that WCC apply the relevant index for the most recent period to cost estimates in the plan. The implication of the use of the most recent period PPI is that capital works estimates would increase (Box 3.4).

For clarity, we also consider that WCC should indicate which year dollar costs are expressed in by way of a note in the Work Schedule of the plan.

Box 3.4 Escalation of cost estimates – comparison of impact of CPI and PPIs

In the Draft West Dapto CP, the council has used an escalation factor of 1.1016 for the CPI to index capital works estimates from 2010 to 2014. If the relevant PPIs were used to escalate to \$2015 (June), the relevant escalation factors would be:

- ▼ 1.1338 for the PPI (Road and Construction Index), which represents an increase of 2.9% on the indexation for the majority of capital works costs (transport and stormwater), and
- ▼ 1.0637 for the PPI (Non-residential Building Construction Index), which represents a decrease of 3.4% on the indexation for the remaining capital works (open space).

Note: The actual change in cost estimates will depend on the relevant base year used to estimate the cost of each infrastructure item.

Land acquisition cost estimates

IPART finding

- 20 WCC's use of the Established House Price Index for Sydney to index land acquisition cost estimates is not reasonable given the difference between the performance of the Sydney and Wollongong property markets.

Recommendation

- 27 To index land acquisition cost estimates between valuation years, WCC apply the NSW Valuer Generals' land valuation data for the Wollongong to derive an index for land acquisition cost estimates in the plan, and state this method in the plan.

The Draft West Dapto CP states that contribution rates for land acquisition will be indexed based on the average of the annual percentage change in the Established House Price Index for Sydney (EHPI), published by the ABS.¹⁵³

¹⁵³ Draft West Dapto CP, p 12.

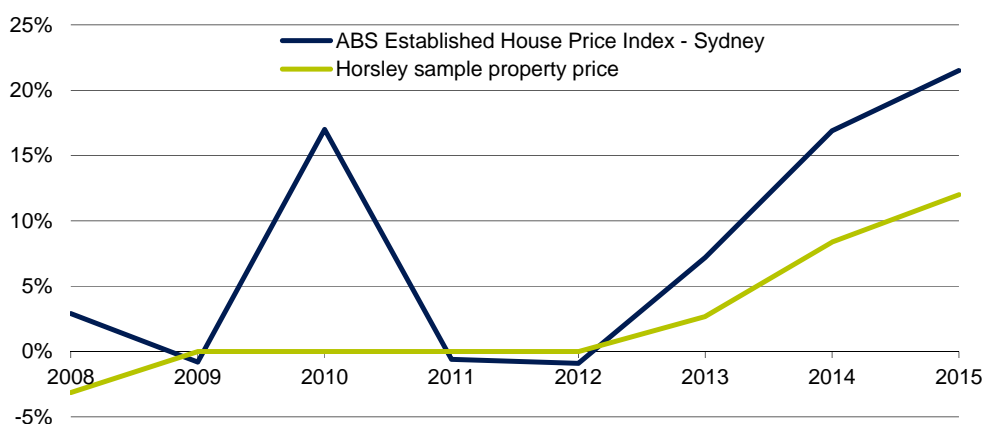
The EHPI provides a readily available index. However, we consider that the EHPI to index land values in West Dapto is not the most reasonable option given the difference between Sydney and Wollongong property market performance.

The Wollongong market is a distinct property market from the Sydney market, although there is some correlation between the two. Most recently, the Valuer General's valuation report for the Wollongong LGA states that the boom in residential property is "a ripple effect from the Sydney metropolitan area".¹⁵⁴

To determine the relative performance of the two markets, we compared the EHPI against available Wollongong property price information from 2008 to 2015. To represent the Wollongong market and the WDURA as closely as possible, we used the Horsley sample property from the Valuer General's data.¹⁵⁵

Figure 3.3 illustrates the comparison from 2008 to 2015. This shows that the EHPI has been more volatile than the Wollongong market, and often has a higher growth rate, which suggests that the use of this index to escalate land acquisition estimates in the Draft West Dapto CP, currently estimated at \$151 million, might distort the likely costs for WCC.

Figure 3.3 ABS Established House Price Index Sydney and Sample Property Price in Wollongong LGA (Horsley) (% annual change)



Note: The annual change in the Established House Price Index is based on the percentage change from the corresponding June quarter, and the annual change in the Horsley property price is based on the change in the 1 July 2015 estimate each year.

Data source: ABS, *6416.0 – Residential Property Price Indexes*, Established House Price Index – Sydney, percentage change from corresponding quarter (June) of previous year – 2007-2015, December 2015, and NSW Valuer General, www.valuergeneral.nsw.gov.au, Table 2 – Newcastle, Central Coast, Wollongong - land value for representative property, Horsley, 2007-2014 and Median land values – Wollongong, 2015.

¹⁵⁴ Crown Valuation Service, *Final Report Base Date 1st July 2015 - Municipality of Wollongong*, 19 November 2015 (Wollongong Valuation Report), p 4. Residential properties increased by 14.99% from 2014 to 2015, p 24.

¹⁵⁵ We note that the annual percentage change in this sample property price in 2013 and 2014 is similar to the annual changes in the overall Wollongong LGA market reported by the Valuer General in 2013 and 2014.

Instead, we recommend that WCC use an alternative land value index, more representative of the local market, to escalate its land acquisition cost estimates. The Valuer General publishes land valuation data for the LGA annually, and the council could apply this data in constructing its own index. Consistent with the indexation reporting requirements in the EP&A Regulation,¹⁵⁶ the council would need to state in the plan that this the indexation approach which is applied.

Should WCC not wish to construct its own index, an alternative is to regularly review the land acquisition estimates with advice from an independent valuer. This could involve the council indexing the valuations by the CPI between valuation years, noting that the CPI is unlikely to match the property market change over time.

3.4 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.

IPART findings

- 21 The extended timeframe of around 60 years for development in the WDURA is reasonable. WCC's approach to refining the timeframe for delivery of infrastructure in the Draft West Dapto CP as the timing of development is more certain is, in the circumstances, also reasonable.
- 22 WCC has allocated infrastructure expenditure across forward years by stage, but there is benefit in WCC prioritising which infrastructure it will deliver for each stage across the proposed development life, and including this information in the plan.

Recommendation

- 28 WCC prioritise infrastructure delivery for each of the development stages beyond the 10-year capital works program, setting out in the Draft West Dapto CP and work schedules an indicative timetable for infrastructure provision in tranches of five or 10 years.

¹⁵⁶ *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), clause 32(3)(b).

3.4.1 Approach to timing of infrastructure delivery in the Draft West Dapto Contributions Plan

The provision of infrastructure in the Draft West Dapto CP extends over a period of 60 years from 2010 to 2069. The anticipated timeframe for infrastructure expenditure contained in the draft plan is structured on a pro-rata basis over the assumed life of the total development. WCC has proposed timeframes for receipt of contributions and infrastructure expenditure based on evidence from the current take up of land for development, and indications from industry of likely location and timing of development in the future.

Timing of development

The development timetable adopted in the Draft West Dapto CP is shown in Table 3.15.

Table 3.15 Development Timetable for West Dapto Urban Release Area

Years	Percentage of development
2010-2019	11.2
2020-2029	20.2
2030-2039	27.4
2040-2049	19.9
2050-2059	20.0
2060-2069	1.2

Source: Draft West Dapto CP, p 1.

The WDURA covers a large area, and will be developed over a long period (up to 60 years.) Only Stages 1 and 2 are rezoned and it is expected that development in Stages 1 and 2 will occur over 15 to 20 years. The first development applications in Stages 1 and 2 were approved in 2015 and to date, approximately 995 residential lots have been approved.¹⁵⁷

Current assumptions project development in Stages 3, 4 and 5 to occur between 2018 and 2066¹⁵⁸ (although the rollout of development across and within the different stages is indicative only).

We consider that the timeframe for development is conservative but reasonable. Land supply in the Illawarra-Shoalhaven region currently exceeds demand for the next 15 years.¹⁵⁹ This means that in the short to medium term, there will be limited demand for a faster pace of new residential development.

¹⁵⁷ WWC, Application for an assessment of a section 94 development contributions plan, p 2.

¹⁵⁸ This timeframe is based on the assumed timing of revenue from contributions: see WCC, West Dapto S94 Work Schedule, Cashflow Tab.

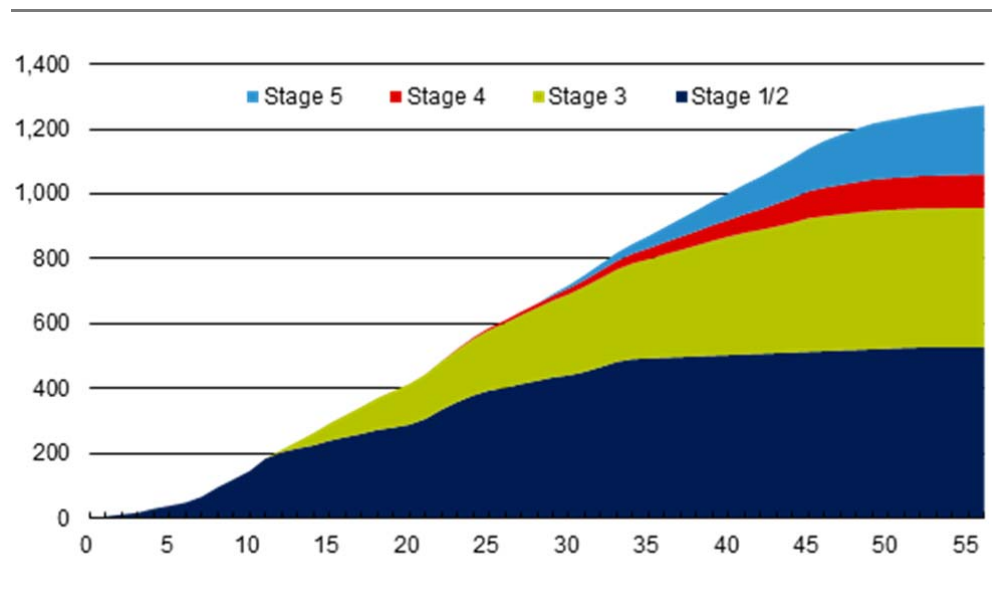
¹⁵⁹ DPE, *Illawarra Urban Development Program, Update 2014*.

Timing of infrastructure delivery

WCC's approach to planning and timing infrastructure delivery in the Draft West Dapto CP is constrained by the structural planning approach it has adopted for the WDURA. As Stages 3 to 5 are not rezoned, there remains a level of uncertainty about the future infrastructure needs of these precincts.

Figure 3.4 illustrates the timing of delivery across the five stages in the WDURA assumed in the Draft West Dapto CP. Infrastructure provision for Stages 1 to 3 will occur in the first 25 years while expenditure in Stages 4 to 5 is not expected to occur for another 30 years into the life of the plan.¹⁶⁰

Figure 3.4 Proposed annual infrastructure expenditure in Draft West Dapto Contributions Plan by stage, year 1 to 56 (\$ million)



Note: Year 0 is 2009-10.

Data source: WCC, West Dapto S94 Work Schedule, Cashflow model Tab.

The amount and location of infrastructure in the structure plans is identified at a 'high level' only. In planning for facilities to meet the needs of the expected population, WCC recognises that the needs are likely to vary over time.

¹⁶⁰ The council has considered bringing Stage 5 to development sooner than this timeframe. During 2015 WCC adopted a structure plan for Yallah-Marshall Mount (Stage 5) and prepared concept designs and cost estimates for major road infrastructure in anticipation that it may be included in the Draft West Dapto CP. The council did not proceed with this option. See WCC, Minutes, Meeting of 9 November 2015 and Business paper, Meeting of 19 October 2015.

To some degree, WCC has adopted this approach to allow for multiple development fronts within the WDURA, with the flexibility to respond to planning events, as they occur, including:

- ▼ utility and service provision by other agencies, including Sydney Water and Integral Energy
- ▼ demand for development in particular areas, and
- ▼ developer requests for Voluntary Planning Agreements for provision of works-in-kind.

The precise amount and location of infrastructure to meet the proposed development is done in neighbourhood plans, drawn up only after land is rezoned for urban development. To date only 10 neighbourhood plans have been approved, all within Stages 1 and 2.

The Draft West Dapto CP does not contain a schedule showing the timing of future infrastructure delivery. Rather, it outlines expenditure on the different infrastructure categories, allocated across each of the stages in each year to 2065, and over the short term, reflecting the council's 10-year capital expenditure program.

For the years 2016 to 2025, the West Dapto S94 Work Schedule indicates a total expenditure of:

- ▼ \$227.7 million for roads and traffic
- ▼ \$5.7 million on community facilities
- ▼ \$20.8 million on open space and recreation
- ▼ \$0.6 million on public transport, and
- ▼ \$13 million on stormwater management.¹⁶¹

Apart from \$83 million for roads for Stage 3, all expenditure relates to Stages 1 and 2 over this time period.

The roads scheduling is based on WCC's 10-year capital works program undertaken in the context of its long term financial planning. As at November 2015, the capital works program forecasts expenditure of approximately \$205 million, allocated to nominated roads. The council advised that these allocations will be revised as phasing and development progresses. WCC's priority is to deliver major road network infrastructure in line with the West Dapto Access Strategy, and the timing and location of work to date has been driven to some extent on the grants and interest rate subsidies from the NSW and federal governments. It would also be expected that the capital works program will be revised in response to external funding opportunities, including successful applications for LIGS funding.

¹⁶¹ WCC, West Dapto S94 Work Schedule, Cashflow Model Tab. Planned expenditure exceeds the contributions that will be collected over that period. Funding will come from a variety of sources including grants, interest rate subsidies, works-in-kind/VPAs and internal council reserves.

For delivery of infrastructure other than roads over the next 10 years, no detailed planning has been undertaken. Timing of delivery is assumed to occur in line with the dwelling/lot production forecasts.¹⁶²

3.4.2 IPART's assessment of the timing of infrastructure delivery

The Draft West Dapto CP is unlike other CPs that IPART has assessed in terms of the large size of the area to be developed, the extended time frame over which development is expected to occur, and the uncertain status of land use planning.

In our previous reviews of plans in the Sydney North West Growth Centre, the land is fully rezoned following the precinct planning process. The extent and location of the local infrastructure needs to meet projected demand is more certain, and the development life is shorter and more predictable.

WCC states that it is “extremely difficult to accurately determine the staging and provision of infrastructure over such a large area with potential multiple development fronts”.¹⁶³ The prolonged time period (up to 60 years) over which development in the WDURA is currently projected to occur also contributes to this uncertainty.

Stakeholders such as developers and current land owners would benefit from greater certainty about the timing of future infrastructure provision.¹⁶⁴

It might be possible for WCC to prepare more detailed programs for delivering infrastructure in each of the stages. These could only be based on assumptions about the likely timing of rezoning, as well as the roll out and expected life of development. They would also have to rely on the high-level infrastructure requirements included in the structural plans.

One approach would be to allocate infrastructure delivery for each stage in tranches across the assumed development life. Tranches of five years could be appropriate in the short to medium term, or 10 years when development is nearing completion. Such an approach could inform both the council's forward capital works programming, and developers' decisions about potential investment.

The council acknowledges that firmer infrastructure delivery programming will occur when there is greater certainty about actual development. Given these circumstances, we found that WCC's approach in the Draft West Dapto CP is reasonable.

¹⁶² WCC, Email to IPART, 12 July 2016.

¹⁶³ Draft West Dapto CP, p 11.

¹⁶⁴ A submission on the exhibited Draft West Dapto CP questioned the timing of infrastructure delivery (Don Fox Planning on behalf of Stockland Corporation): WCC, Councillors' Information Note, February 2016.

However, we also consider that it would be beneficial for the council to prioritise infrastructure delivery, even at a high-level, beyond the 10-year horizon. It should indicate to stakeholders where its infrastructure priorities lie in each of the stages, to align with its expenditure projections over the life of the plan. As more information comes to hand, the council can refine its priorities, as necessary.

For these reasons we have recommended that WCC prioritise infrastructure delivery for each stage across the proposed development life, in tranches of five or 10 years, and set this out in an indicative timetable in the plan. WCC officers have advised that work is underway to prioritise infrastructure delivery in 5-year intervals, which will be reflected in the plan.¹⁶⁵

3.5 Criterion 5: Apportionment

Apportionment refers to the division of the costs equitably between all those who will benefit from 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 only from new development.¹⁶⁶

In assessing apportionment in the Draft West Dapto CP, we have taken into account:

- ▼ demand for infrastructure in the plan, arising from the expected development inside and outside the WDURA
- ▼ 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 WDURA.

We have identified several issues with the apportionment of costs in the Draft West Dapto CP related to:

- ▼ apportionment of all costs across five stages in the WDURA
- ▼ apportionment of costs between residential and non-residential development
- ▼ apportionment of certain transport and open space costs, and
- ▼ development that is exempt from contributions.

¹⁶⁵ WCC, Email to IPART, 1 September 2016.

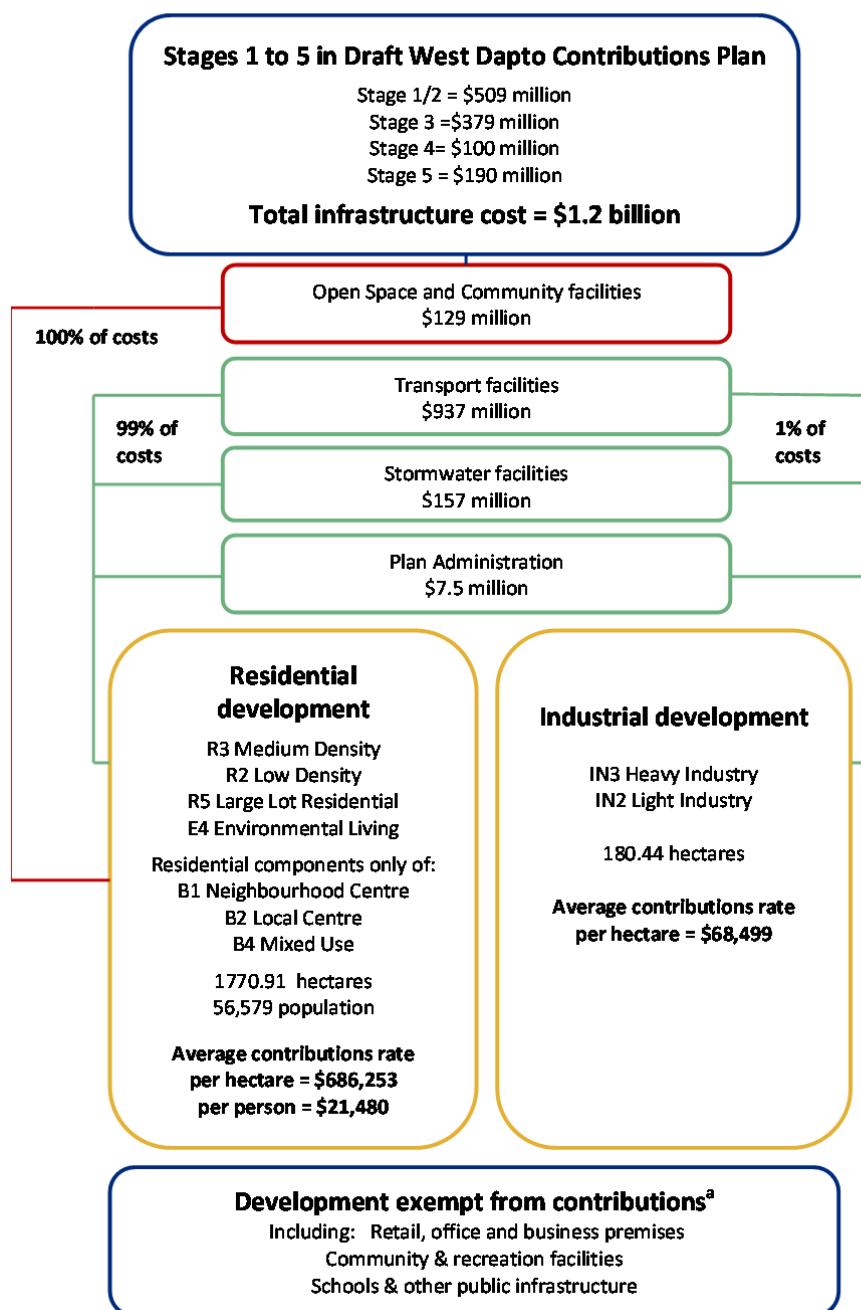
¹⁶⁶ Practice Note, p 3.

In the next section, we explain WCC's apportionment approach in the plan. In subsequent sections we outline our assessment findings and recommendations in relation to each of these areas.

3.5.1 How infrastructure costs in the Draft West Dapto CP are apportioned

Figure 3.5 illustrates WCC's overall approach to apportioning the cost of infrastructure in the Draft West Dapto CP.

Figure 3.5 Apportionment approach in Draft West Dapto CP



^a Other development listed as exempt in the CP is affordable housing and seniors living, for example. See section 2.5.1.

Note: During our assessment, WCC advised that the contribution rate for industrial development should be \$68,499 per hectare (not \$56,129 as in Table 1.4 in the Draft West Dapto CP): WCC, Email to IPART, 12 July 2016.

Data source: Draft West Dapto CP and West Dapto S94 Work Schedule.

The apportionment approach encompasses the following steps:

1. WCC aggregated the infrastructure costs by category across all five stages in the WDURA, including a proportional share of the cost of transport and some open space items where the demand for this infrastructure is considered to be shared with populations outside the WDURA.
2. WCC separated the proposed NDA into land zoned for residential development (including land zoned for a mixed uses) and land zoned for industrial development (light and heavy).
3. WCC did not apportion any costs to development for retail, office or business premises, and community or recreation facilities. For land zoned for such development, WCC did, however, include the residential component of the commercial developments in the total NDA for residential development.
4. For open space and community infrastructure, WCC apportioned costs to residential development only (and not to industrial development).
5. For the remaining infrastructure categories (transport, stormwater and plan administration), WCC weighted the infrastructure costs based on the relative NDA for two main groups of development, residential and industrial.
6. To obtain the proportions depicted in Figure 1.1 for residential and industrial development, the council applied two factors to reflect first, the split of NDA in the WDURA (91:9) and second, that the industrial contributions rate remains a fixed proportion (8%) of the residential per hectare contributions rate.¹⁶⁷

3.5.2 Apportionment of costs across all stages in the WDURA

IPART findings

- 23 There is significant variation in infrastructure costs and service provision between the five stages in the plan, particularly between Stages 1 to 3 compared with Stages 4 and 5.
- 24 The approach to apportioning infrastructure costs to development evenly across all stages could be more equitable if costs were apportioned separately to Stages 1 to 3 and Stages 4 and 5.

¹⁶⁷ During our assessment, WCC advised it had made an error its weighting calculation - the industrial contributions rate per hectare is supposed to represent 10% of the average residential contributions rate per hectare, not 8% (WCC, Email to IPART, 12 July 2016).

Recommendation

- 29 To improve the links between demand for infrastructure and contributions in different stages in the plan, WCC consider either:
- removing Stages 4 and 5 from the plan for inclusion in a new or another section 94 contributions plan, or
 - introducing separate contributions in the Draft West Dapto CP for developments in Stages 1 to 3 and developments in Stages 4 and 5, that are more reflective of the cost of facilities to meet demand from the new development in each of the stages.

The WDURA covers development across five stages and six sub-precincts. The Draft West Dapto CP submitted to IPART for assessment calculates aggregated infrastructure costs and contributions for all stages. However, the previous version of the contributions plan, currently in force, applies to Stages 1 and 2 only.

One of WCC's aims in amending the plan to cover the five stages in the WDURA is to spread the significant costs in Stages 1 to 3 – transport costs in particular – across a broader development area.¹⁶⁸ This results in lower contributions for Stages 1 to 3.

The Draft West Dapto CP apportions all infrastructure costs through Stages 1 to 5 equally on development in the WDURA,¹⁶⁹ irrespective of in which stage or sub-catchment the facilities are located. This results in some cross-subsidisation of the costs in Stages 1 to 3 by development in the remaining stages where there are lower infrastructure costs.

Comparison of costs across the Stages 1 to 5

In assessing the reasonableness of this apportionment approach, we first considered how the costs for different infrastructure categories are allocated across each stage in the WDURA.

Table 3.16 shows how costs compare based on average rates by stage and infrastructure category, taking into account the expected population and/or total NDA in each stage. We have presented Stages 1 and 2 together because this is how WCC presents much of the data in the work schedules.

The comparison shows how the largest share of transport and open space costs are concentrated in Stages 1 to 3, and the largest share of stormwater costs in Stages 1 to 2. Stage 5 has a relatively high total transport cost compared with Stage 4.

¹⁶⁸ WCC response to submission from Don Fox Planning on behalf of Stockland (large developer) in consultation process: WCC, Information Note to Council, 23 February 2016.

¹⁶⁹ Notwithstanding differences in contribution rates between development types – residential and industrial.

Table 3.16 Comparison of average infrastructure cost rates in the Draft West Dapto CP, by stage and infrastructure category (\$2014)

	Stages 1 & 2 (Kembla Grange, Sheaffes, Wongawilli and Horsley)	Stage 3 (Cleveland)	Stage 4 (Avondale)	Stage 5 (Yallah-Marshall Mount)
Net developable area	664 ha (incl 174 ha of industrial)	308 ha	343 ha	636 ha (incl 6 ha for industrial)
Population	18,246	13,909	13,069	11,354
Transport \$ per ha	561,121	1,050,088	152,530	227,636
Stormwater \$ per ha	110,852	67,304	84,962	38,589
Open space \$ per person	2,938	1,724	1,292	996
Community \$ per person	320	622	0	739

Note: Transport and stormwater costs are expressed on a per hectare basis here for comparative purposes because both residential and industrial development contributions include a proportion of the costs. The relative costs do not change materially when transport costs are compared on a per person basis.

Note: Estimates in the West Dapto S94 Work Schedule are in \$2015 for land and Stage 5 roadwork costs only.

Source: Draft West Dapto CP and West Dapto S94 Work Schedule, Summary Tables, Land Use & Density Model and Density & Contributions Summary Tabs, and IPART calculations.

The variations in costs among the different stages suggest that it may not be equitable to apportion all developments the same share of the total costs of infrastructure in the plan (notwithstanding other differences to contribution rates within development types). It suggests, in particular, that it may not be equitable for Stage 4 (Avondale) or Stage 5 (Yallah-Marshall Mount) developments to be apportioned the same contributions for a share of the entire WDURA's costs because developments in these areas do not appear to need the same level of infrastructure as the other stages.

We note that average total infrastructure costs per hectare for Stages 1 to 5 are:

- ▼ 17% lower than the combined costs for Stages 1 to 4
- ▼ 42% lower than the combined costs for Stages 1 to 3, and
- ▼ 54% higher than the combined costs for Stage 4 and 5.¹⁷⁰

These differences demonstrate the significant variations in infrastructure costs between Stages 4 and 5, in particular, compared with all stages combined.

¹⁷⁰ WCC, Draft West Dapto CP and West Dapto S94 Work Schedule, Summary Tables, Land Use & Density Model and Density & Contributions Summary Tabs and IPART calculations.

Links between demand for facilities in each of the stages

Given that transport costs are such a significant share of total costs in the plan and are highest in Stages 1 to 3, it is important to consider whether sufficient demand for these facilities will be generated by developments in Stages 4 to 5. The 2005 Practice Notes for development contributions provide that demands should be isolated so that the contributing population only pays for its share of the total demand.¹⁷¹ The following reasons suggest that the demand for the road network for the first three stages is different from that of Stages 4 and 5:

- ▼ Much of the initial access strategy included significant improvements to a number of existing roads and the construction of new roads to provide greater connection between Horsley and Dapto, as well as to the wider road network, with benefits mostly accruing to residents in Stages 1 to 3.¹⁷²
- ▼ The road network in Stage 5, and to a lesser extent that in Stage 4, are self-contained and isolated from the other road network in the WDURA. There is direct flood-free access to the Princes Highway in the east of the precincts, without the need for residents to travel north through the WDURA.
- ▼ Yallah-Marshall Mount adjoins the Calderwood Release Area, and the road network is more aligned with this Area than the broader WDURA. WCC's current *Draft Calderwood Section 94 Development Contributions Plan 2016* apportions a share of the costs its road network to the Yallah-Marshall Mount precinct. This draft contributions plan states that:
 - the cost of the provision for roads and bridges in Calderwood are apportioned to both plans, as they will be utilised by residents of both release areas
 - the need to provide the traffic and transport facilities identified in Calderwood is predominately generated by the residential development of West Dapto (Yallah-Marshall Mount), and
 - Calderwood has been identified as a significant source of traffic generation travelling north through the Yallah-Marshall Mount Area.¹⁷³

In addition to varying demand for the road network, there are further reasons to apportion infrastructure costs separately between Stages 1 to 3 and Stages 4 and 5, as follows:

- ▼ There is a much higher rate of open space provision in Stages 1 to 3, compared with Stages 4 and 5. The rate of open space provision (excluding cycleways) in the plan is 2.64 hectares per 1,000 residents in Stage 1 and 2; 1.26 hectares per 1,000 residents in Stage 3; but just 0.92 and 0.81 hectares for 1,000 residents in Stages 4 and 5 respectively.¹⁷⁴

¹⁷¹ DP&I, Practice Notes 2005, Development contributions, p 2.

¹⁷² WCC, Email to IPART, 12 July 2016.

¹⁷³ WCC, *Draft Calderwood Section 94 Development Contributions Plan 2016*, pp 7 and 18.

¹⁷⁴ WCC, Draft West Dapto CP and Work Schedule, Open Space Tab.

- ▼ Yallah-Marshall Mount has a separate stormwater catchment (Duck Creek) whereas Stages 1 to 4 are located in the Mullet Creek catchment. At this stage, stormwater costs are relatively lower in Yallah-Marshall Mount, although we have also recommended that more analysis of the needs of the area be undertaken.¹⁷⁵
- ▼ Until neighbourhood planning is undertaken, the infrastructure needs of Stages 3 to 5, and 5 in particular, are indicative only. WCC has advised that it still needs to undertake further analysis of the stormwater and open space needs for Yallah-Marshall Mount (including the number and location of basins).¹⁷⁶
- ▼ The plan does not schedule infrastructure works in Stages 4 and 5 for another 25 to 30 years and there is considerable uncertainty about development yields and infrastructure provision over the longer term. With rezoning and neighbourhood planning still to occur, there could be further changes to infrastructure needs.
- ▼ Residents in Stage 5, in particular, are less likely to access the northern centres (eg, Darkes Town Centre) in the future when they are in close proximity to the facilities to be provided in the Calderwood release area, and are therefore likely to demand less of the proposed infrastructure (eg, roads) in other stages.

Our recommended apportionment approach

We acknowledge that there are also practical considerations to consider, including whether the apportionment is reasonable in the circumstances. However, given that WCC has split infrastructure items and costs by stage in the work schedules, it would be relatively straightforward for WCC to set contribution rates which are more reflective of the costs and level of service provision in each stage.

Therefore, we recommend that WCC consider apportioning costs by Stages 1 to 3 and Stages 4 and 5 separately. One option would be to remove Stages 4 to 5 from this West Dapto plan altogether. Another reasonable option would be for WCC to set different contribution rates for Stages 4 and 5 within the plan for the whole WDURA.

The resulting impact on contribution rates would depend on the re-apportionment of some facilities (eg, district wide parks and sub-arterial roads) between stages within the WDURA.

To demonstrate the possible implication of our recommendation for WCC to split Stages 1 to 3 from Stages 4 to 5 for the purposes of determining contribution rates, we have compared different indicative contribution rates for residential development under these scenarios (Table 3.17).

¹⁷⁵ WCC, Draft West Dapto CP and Work Schedule, Drainage Tab.

¹⁷⁶ WCC, Conference call with IPART, 5 August 2016.

We first compared the proposed contribution rates in the Draft West Dapto CP covering Stages 1 to 5 with our assessed contribution rates for Stages 1 to 5 if the recommended cost reductions are incorporated. This indicates rates would be around 30% lower.

Next, we compared indicative contributes rates for Stages 1 to 3 and Stages 4 to 5 grouped separately, with our recommended cost reductions incorporated. In estimating these rates, we have made a range of assumptions about the impact of our recommendations on the infrastructure costs in the various stages.

This analysis shows that the rates for Stages 1 to 3 would be around 21% higher than our assessed rates for Stages 1 to 5 as a whole, while the rates for Stages 4 to 5 together would be around 51% lower than our assessed rates for Stages 1 to 5.

Table 3.17 Comparison of WCC proposed contribution rates and IPART's indicative rates based on cost-reduction recommendations and the grouping of different stages (\$ per dwelling)

Dwelling type	Proposed rates in plan (Stages 1-5)	IPART's indicative rates (Stages 1-5)	IPART's indicative rates (Stages 1-3)	IPART's indicative rates (Stages 4-5)
Subdivision, Dwelling house, Dual occupancies	68,734	48,375	58,387	23,470
Multi-unit housing 4+ bedrooms	62,291	43,840	52,913	21,270
Multi-unit housing 3 bedrooms	53,699	37,793	45,615	18,336
Multi-unit housing 2 bedrooms	47,255	33,258	40,141	16,136
Multi-unit housing 1 bedroom	36,515	25,699	31,018	12,469

Note: In calculating the indicative contribution rates for Stages 1 to 3 and Stages 4 to 5 separately, we have made a number of broad assumptions about which stage would be affected by our recommendations for amendments to infrastructure items and costs in the plan eg, we considered that core riparian land costs could be shared equally among Stages 1 to 4, and that administration costs could be shared equally among Stages 1 to 5. Further, we did not reapportion any costs, including roadworks, to account for any shared demand between stages.

Source: WCC, Draft West Dapto CP, p 2 and Work Schedule, Density & Contributions Summary Tab and IPART calculations.

It is important to note that these contribution rates are indicative only. While this analysis has shown how contribution rates might be affected by the different approach to apportionment of costs by stage in the WDURA, the final impact of our recommendations would depend on various outcomes.

WCC officers indicated that further, more detailed, work to understand the implications of each approach proposed by IPART was necessary. Consultation with the NSW Government should occur, as part of a comprehensive review of infrastructure in Stages 4 and 5. A preliminary view is that based on stormwater catchment areas and likely sewer infrastructure provision, Stage 5 and part of

Stage 4 could constitute a separate section 94 plan or component of a plan, and this could be considered in the first biennial review of the plan.¹⁷⁷

We acknowledge the need for further work to be undertaken to establish the most reasonable split of contributions.

3.5.3 Apportionment of costs between residential and non-residential development

IPART findings

- 25 WCC's approach of apportioning open space and community facility costs only to residential development only is reasonable.
- 26 WCC's approach of apportioning transport, stormwater and administration costs to residential and non-residential development is not reasonable in these ways:
 - Industrial development is not apportioned its share of demand for infrastructure and administration (1% rather than 9%), placing a disproportionate amount of the total costs on residential development (99% rather than 91%).
 - Other non-residential development is exempt from contributions and does not contribute to its share of the cost of meeting demand for infrastructure and administration, placing a disproportionate amount of the total costs on other development, residential in particular.

Recommendations

- 30 WCC apportion costs for transport, stormwater and plan administration between residential and industrial development based on the relative NDA of the development type (currently a 91:9 split) such that 9% of contributions revenue for this infrastructure comes from industrial development and 91% comes from residential development.
- 31 WCC apportion costs to retail, office and business premises development (ie, in land zoned B1, B2 or B4) to represent its fair share of demand for infrastructure in the calculation of contribution rates for non-residential development.

While we found that WCC's approach of apportioning open space and community facility costs to residential development only is reasonable, we identified two aspects of apportionment between residential and non-residential development where we recommended WCC amend its approach, namely:

- ▼ limiting the contribution rate per hectare for industrial land to 10% of that for residential land, and
- ▼ exempting other non-residential development from contributions.

¹⁷⁷ WCC, Email to IPART, 1 September 2016.

Summary of WCC's apportionment approach regarding non-residential development

In the Draft West Dapto CP, industrial development represents 180 hectares (or 9%) of the total 1,951 hectares of NDA. Residential development represents the remaining 91% (1,771 hectares) of NDA. Within the 1,771 hectares is land zoned B1 Neighbourhood Centre, B2 Local Centre and B4 Mixed Use (a total of 22.7 hectares). As well as development for retail and commercial premises, there will be some residential development in each of these zones. The estimated yield is a total of 504 dwellings.¹⁷⁸

WCC has not apportioned any open space or community facility costs to non-residential development in the WDURA, instead apportioning all costs to residential development. We consider that this is reasonable because non-residential land is usually assumed not to generate demand for these facilities.

On the other hand, we queried the approach to apportioning costs in the plan for transport, stormwater and administration between residential and non-residential development, the effect of which is that the costs apportioned to residential development are disproportionately high compared with those for non-residential development.

In the plan, WCC suggests that non-residential development is to be exempt from contributions:

Development contributions will not be sought for retail premises, office premises, business premises, community facilities and recreational facilities (excluding any residential components).¹⁷⁹

The application stated that:

Retail and Business development provide an important service to the growing population and reduce car dependency to access these services in existing areas outside of the release area. Therefore retail and business uses will not contribute to the demand assessment of these uses as they will primarily be utilised by the new incoming population.¹⁸⁰

WCC also apportioned the infrastructure costs between residential and industrial development (the remaining type of non-residential development in the plan) "at a rate of 10%".¹⁸¹ WCC stated in its application that the need for transport and stormwater infrastructure and administration is predominantly generated by the residential development of West Dapto. However, it also indicated that "the future employment development within the proposed industrial and business zonings will also generate demand for this critical infrastructure".¹⁸²

¹⁷⁸ WCC, West Dapto S94 Work Schedule, Density & Contributions Tab.

¹⁷⁹ WCC, Draft West Dapto CP, p 5.

¹⁸⁰ WCC, Application to IPART, p 6.

¹⁸¹ Draft West Dapto CP, pp 30 and 32.

¹⁸² Ibid.

WCC advised that its approach to the relative contribution rates for residential and employment land is consistent with a recommendation from a GCC review that the employment land contributions should represent 10% of the residential development contributions to encourage industrial activity within the area.¹⁸³

Our assessment of the apportionment of costs between non-residential and residential development

The contribution rates in the plan and supporting work schedules indicate that WCC apportions only 1% of the total cost of transport, stormwater and administration to industrial development. This results in contribution rates per hectare for industrial development being 8% of the average per hectare rate for residential development.¹⁸⁴

During our assessment, WCC advised that its costing required further revision and proposed alternative contribution rates should be as follows:

- ▼ average residential contribution per hectare of \$684,992, and
- ▼ industrial contribution per hectare of \$68,499.¹⁸⁵

The revised figures produce a per hectare contributions rate for industrial development which is 10% of the rate for residential development, but still it generates just 1% of the revenue needed for the proposed infrastructure expenditure (given the much lower NDA of industrial land compared with residential land).

Therefore, the implication of this approach is that the contributions for residential development are higher in the plan to cover the lower contribution rate for industrial development.

Box 3.5 presents several reasons which suggest that, compared with a residential development of a similar footprint, a single industrial development would create demand for at least an equal share of transport and stormwater infrastructure.

¹⁸³ WCC, Email to IPART, 12 July 2016.

¹⁸⁴ WCC, West Dapto S94 Work Schedule, Density & Contributions Summary Tab.

¹⁸⁵ WCC, Email to IPART, 12 July 2016.

Box 3.5 Comparing demand for transport and stormwater infrastructure from industrial and residential development

Transport infrastructure – A one hectare industrial site with gross floor area of 5,000m² is estimated to generate around 100 to 250 vehicle trips per day. By contrast, a one hectare site of low density residential development (13 dwellings) is estimated to generate 96 vehicle trips per day.^a This indicates that on a per hectare basis, an industrial site could generate disproportionately more traffic than residential development.

Stormwater management infrastructure – Development on Industrial land contributes to increased stormwater runoff as structures and paved working areas significantly increase impervious surfaces.^b However, compared with residential development, industrial development generates no less runoff, nor less demand for stormwater infrastructure, unless there is a requirement for onsite stormwater treatment. There do not appear to be any onsite stormwater requirements reflected in the Draft West Dapto CP.

^a RMS traffic generation guide (2013) states that the average for daily vehicle trips is around 2.2 to 4.9 trips per 100m² of GFA for industrial parks, based on surveyed data of two typical industrial parks (including one in the Illawarra region). For low density residential development, the average daily vehicle trip per dwelling is 7.4 in regional areas. RMS, *Guide to Traffic Generating Developments* (Technical Direction, TDT 2013/04a), August 2013, pp 5 and 15.

^b WCC, Application to IPART, p 5.

Note: The 5,000m² site area is for illustrative purposes, based on Wollongong's maximum allowed floor space to area ratio (0.5 for the industrial area around Kembla Grange) in its 2009 Local Environmental Plan.

Source: <http://www.rms.nsw.gov.au/business-industry/partners-suppliers/guidelines/complementary-traffic-material/traffic-transport-technical-direction-documents.html>

Our recommended approach

Based on our assessment, we recommend that WCC apportion costs (apart from open space and land for community facilities) based on the relative share of NDA between residential and industrial development, such that:

- ▼ industrial development contributions would altogether total 9% of the contributions revenue, and
- ▼ the contribution rate per hectare would be the same for residential and industrial development.

We also recommend that WCC apportion some transport, stormwater and administration costs to other non-residential development (with zonings B1, B2 and B4) so that residential development is not allocated more than its share of the demand for infrastructure. WCC officers advised that if contributions were to be levied on these non-residential developments, the attributed contributions revenue could be around \$4 million.¹⁸⁶

¹⁸⁶ WCC, Email to IPART, 1 September 2016.

3.5.4 Apportionment of transport costs

IPART findings

- 27 WCC's approach to apportioning the cost of transport in the plan appears reasonable, in principle, except that:
- Road NR1-NR3 should be apportioned 64% rather than 50% in the Draft West Dapto CP, based on traffic modelling information available to WCC, and
 - the signalised intersections on Cleveland Road (Int23 and Int25) should not be apportioned 100% to the Draft West Dapto CP because they are both outside the WDURA and provide benefit to residents in other precincts.
- 28 There is limited information available in the plan and supporting documents to assess the specific apportioned costs for various transport works proposed.

Recommendations

- 32 WCC include an additional \$17,040,037 in the Draft West Dapto CP for the cost of road NR1-NR3 which should be apportioned 64% rather than 50% to the WDURA.
- 33 WCC remove \$1,407,158 from the Draft West Dapto CP for the combined costs of the signalised intersections on Cleveland Road (Int23 and Int25), until it has assessed the benefits accruing to WDURA residents compared with outside precincts, so that it can then apportion a more reasonable share of their costs to development in West Dapto.
- 34 WCC include more information in the Draft West Dapto CP and work schedules to justify the specific apportionment of costs for various transport works to the WDURA, based on the estimated demand for the infrastructure (linked to its traffic modelling).

Existing roads

A total of \$487.2 million is included in the Draft West Dapto CP for the cost of upgrades to existing roads, including pavements, intersections, bridges and rail crossings. A small portion of the total project cost for the upgrades (4.6% or an additional \$22.2 million)¹⁸⁷ is apportioned to developments in other areas in the Wollongong LGA because the roadworks in the WDURA are near existing development areas or the entrance to adjoining precincts. These include:

- ▼ a section of Shone Avenue (\$0.5 million), near the existing developed Horsley area, and
- ▼ Yallah Road (\$1.5 million) and Marshall Mount Road (\$20.2 million), near the entrance to the Yallah-Marshall Mount sub-precinct.

¹⁸⁷ WCC, West Dapto S94 Work Schedule, Roads Summary Tab and IPART calculations.

Given the likely demand crossover for roads situated near other developments or adjoining precincts, it is reasonable to apportion some of the costs for the upgrade works outside the WDURA.

New roads

The plan includes \$398.2 million in costs for proposed new roads.¹⁸⁸ This represents 51% of the estimated total \$787.3 million project cost of the new roads, as the remaining costs are apportioned to development in other areas in the Wollongong LGA.¹⁸⁹ Most of the other areas are near the entrance to the precinct (eg, near the entrance in the Stage 5 Yallah Mount Marshall sub precinct) but also where the roadwork is outside of the WDURA (eg, the Fowlers Rd extension).

Table 3.18 presents the rates of apportionment for new roads apportioned to development within the WDURA (across Stages 1 to 5) as reflected in the apportioned costs in the Draft West Dapto CP, which WCC provided to us during the assessment process. WCC stated that it used TRACKS traffic modelling to determine estimated road usage and therefore, how much of the costs should be apportioned to West Dapto.¹⁹⁰

Table 3.18 WCC's rates of apportionment for new roads in the Draft West Dapto CP

Road	Share of costs apportioned to Draft West Dapto CP
Shone Ave	98%
Yallah Rd	92%
Marshall Mount Rd	79%
Northcliffe DR extension/West Dapto Rd	43%
Fowlers Rd	76%
NR1-NR3	50%
Local Road	32%
NR100-NR103	50%

Source: WCC, Email to IPART, 12 July 2016.

In the Yallah-Marshall Mount (Stage 5), there is a significant external influence on the demand for new roads (eg, Yallah, Marshall Mount, Local and NR1-NR3 Roads), from the adjoining Calderwood land release area. WCC used TRACKS modelling to determine the apportionment of costs between West Dapto and Calderwood. WCC advised that:

The modelling methodology essentially separated all of the trips to/from Calderwood model zones from the remainder of network traffic, resulting in "Calderwood only" traffic volumes. These volumes were then used to calculate percentage Calderwood traffic volumes for the road links in Yallah-Marshall Mount.¹⁹¹

¹⁸⁸ The new roadworks include pavement, intersection, bridge and rail crossings.

¹⁸⁹ WCC, West Dapto S94 Work Schedule, Roads Summary Tab and IPART calculations.

¹⁹⁰ WCC, Email to IPART, 12 July 2016.

¹⁹¹ WCC, Email to IPART, 12 July 2016.

The partial apportionment of the total cost of the new roads in Stage 5 to the Draft West Dapto CP (\$66.7 million) reflects the shared demand for the facilities between West Dapto and Calderwood, as evidenced by the traffic volumes data.

However, WCC also advised us that the 50% apportionment to West Dapto development for new road NR1-NR3, which was reflected in the transport costs in the plan, was an error, and the correct share should be 64%.¹⁹² We have recommended that this rate of apportionment be reflected in the Draft West Dapto CP such that a further \$17.04 million can be included in the transport costs in the plan.

WCC officers have further advised that estimated rates of apportionment for the costs of roads in Stage 5 need to be refined, but that the changes would be unlikely to have a significant impact on their total cost in the plan.¹⁹³

The costs of other new roads in Table 3.18 which are not in Stage 5, but which are also not 100% apportioned to West Dapto, comprise:

- ▼ Intersection and bridge works on Northcliffe Drive/Reddalls Road at the Princess Highway intersection (\$87.6 million) in Stage 1, near the future industrial land.
- ▼ Road, intersection and bridge works on Fowlers Road (\$32.2 million), located off-site near the developed Dapto Town Centre.

We consider that the methodology upon which WCC has apportioned the costs for all of these new road items is reasonable, however as discussed below, the TRACKS information is not readily available to verify the actual rates of apportionment.

Cleveland Road intersections

Two intersections on Cleveland Road are located outside the WDURA, but all costs are apportioned to the Draft West Dapto CP:

- ▼ Signalised intersection Int23 on the Princes Highway, a classified regional road, at an estimated cost of \$757,000, and
- ▼ Signalised intersection Int25 on Marshall Street, upgraded to a signalised intersection in 2011 at an estimated cost of \$520,400.¹⁹⁴

Given that these intersections are located outside the WDURA, it is unreasonable for all costs to be apportioned to the Draft West Dapto CP. Therefore, we recommend that these costs be removed from the plan until WCC determines a more reasonable share of costs, indicative of shared demand between the WDURA and outside precincts, which can then be included in the costs of the plan.

¹⁹² WCC, Email to IPART, 12 July 2016.

¹⁹³ WCC, Email to IPART, 22 September 2016.

¹⁹⁴ WCC, West Dapto S94 Work Schedule, Intersections Tab.

WCC officers have advised that an appropriate level of apportionment for intersection usage would be based on TRACKS modelling.¹⁹⁵

Public transport facilities

In the plan, WCC has apportioned \$8.2 million (or 69%) of \$11.9 million in costs for public transport facilities, including bus shelters, bus kiosks and the upgrade to the Dapto multimodal interchange to the WDURA.

The remaining 31% or \$3.7 million of costs are apportioned to other development in the Wollongong LGA, including existing development in West Dapto, to account for shared demand for the multimodal interchange and bus shelters.¹⁹⁶

We recommended that the costs for the multimodal facility be removed from the Draft West Dapto CP because we do not consider it an essential work (Recommendation 1). Therefore, it is not necessary for us to consider whether to apportion a higher share of its costs to development outside the WDURA given the significant benefit to Dapto residents from the facility, as our transport consultant has recommended.¹⁹⁷

We do, however, consider it reasonable to apportion a share of the bus shelters to other, existing, development, as WCC has done in the plan, apportioning to the WDURA \$3.7 million for bus shelter costs (74% of the \$5.06 million total costs for bus shelters). The costs of 214 shelters are apportioned to WDURA, while the costs of 75 other shelters are apportioned to existing development in local areas.

Basis for apportioning roads in the Draft West Dapto CP

WCC has used the TRACKS model to determine rates of apportionment for existing and new roads in the Draft West Dapto CP. In order for us to assess the reasonableness of the apportionment rate for each road, we would need a proxy such as the relative split in vehicle trips between traffic from West Dapto and from the Wollongong (and Shellharbour) LGAs. This information is not readily available.

We recommend that the Draft West Dapto CP include vehicle trip information (in line with the TRACKS model), even at a high level, to substantiate the link between demand and the rate of apportionment for specific items of road infrastructure.

In Section 3.7.1 we recommend that the plan could be explain more fully the relationship between expected development and demand for facilities, as required by clause 27(1)(c) of the EP&A Regulation. Further information in the plan about the apportionment of road costs is one way in which WCC could improve compliance in this respect.

¹⁹⁵ WCC, Email to IPART, 21 September 2016.

¹⁹⁶ WCC, West Dapto S94 Work Schedule, Public Transport Tab.

¹⁹⁷ ARRB Report, p 35.

3.5.5 Apportionment of stormwater costs

IPART findings

- 29 WCC's approach to apportioning the cost of stormwater infrastructure only to new development in the Draft West Dapto CP is reasonable.
- 30 The allocation of costs to residential development on a per person, rather than a per hectare, basis is not best practice as stormwater demand is generally driven more by land area than population.

Recommendation

- 35 WCC apportion stormwater infrastructure costs to residential development on a per hectare basis rather than a per person basis, to better reflect the source of demand for the facilities.

Our assessment indicates the apportionment of all proposed stormwater infrastructure costs to new development within the WDURA is reasonable. The stormwater studies indicate that the need for detention basins and enhanced storage are based on flood modelling of the riparian networks in the WDURA and their cumulative impact on the broader Illawarra area.

For non-residential development, we found that it is reasonable to apportion the costs on a per hectare basis, as WCC has done.

However, WCC calculates contributions for the cost of stormwater land and facilities for residential development on a per dwelling basis (using a per person allocation), and this does not reflect IPART's preferred approach.

We consider that it is more appropriate to apportion the cost of stormwater infrastructure by applying an area-based measure, ie, per hectare. Stormwater infrastructure design is dictated by the size of the catchment area, such that demand for the infrastructure is driven more by the development area than the number of people in the development. As such, WCC should apportion the cost of stormwater infrastructure on a per hectare basis.

WCC officers have advised that using a per hectare rate across all infrastructure types is designed to encourage a mix of dwelling types, and assist in the provision of affordable housing, without compromising the demand on infrastructure provision.¹⁹⁸ We would support this approach for stormwater, but consider that transport and open space costs should be apportioned on a per person approach for residential development, because the demand is more population-driven.

¹⁹⁸ WCC, Email to IPART, 1 September 2016.

3.5.6 Apportionment of open space costs

IPART finding

31 WCC's approach to apportioning the cost of open space facilities in the Draft West Dapto CP is reasonable, except for two facilities which both serve the broader council area and for which a higher rate of apportionment to the WDURA was adopted than the rate recommended by the Elton Study. The facilities are:

- a sports park in Darkes Town Centre (apportioned 50% to WDURA rather than 25%), and
- the Community Leisure and Recreation Centre in Cleveland (apportioned 67.5% to WDURA rather than 50%).

Recommendations

36 WCC apportion only 25% (or \$1,660,806) of the cost of a sports park in Darkes Town Centre to the Draft West Dapto CP.

37 WCC apportion only 50% of the cost of outdoor recreation facilities at the Community Leisure and Recreation Centre in Cleveland (being only that component of the centre which is on the Essential Works List), based on the estimated share of demand for the district-wide facilities from within the WDURA.

The Draft West Dapto CP apportions all of the costs for local parks, neighbourhood parks, playgrounds and cycleways across the WDURA to residential development on a per person basis.

We consider that the approach of apportioning open space costs only to residential development is reasonable. It is consistent with advice from the Elton Study about the demand for the facilities from the new population, based on a needs assessment of development in the WDURA.

However, the plan's apportionment approach in relation to demand from within and outside the WDURA for two facilities deviates from the apportionment recommended in the Elton Study.

Sports Park in Darkes Town Centre

The Draft West Dapto CP apportions the sports park in Darkes Town Centre 50% (\$3.3 million) to WDURA whereas Elton Study recommended it be apportioned only 25%. This sports park is a district level facility serving a population catchment of 230,000, around four times the population of West Dapto.

Therefore, we recommend the approach recommended in the Elton Study (25% to WDURA) be adopted.¹⁹⁹ This would reduce the cost of the park in the Draft West Dapto CP by \$1.66 million.

Community Leisure and Recreation Centre

The Draft West Dapto CP adopts a higher apportionment than in the Elton Study (67.5% rather than 50%) for the Community Leisure and Recreation Centre in Cleveland. We found that this facility is not on the EWL, but that WCC should include the costs of outdoor courts associated with the facility once it had estimated their reasonable costs (Recommendation 2).

On the basis that this is also a district level facility, serving a population catchment of 107,000, around twice the population of West Dapto, we consider that the 50% apportionment to the WDURA recommended in the Elton Study is reasonable. Therefore, the reasonable costs of the outdoor courts should also be apportioned 50% to the WDURA.

3.5.7 Apportionment of cost of land for community facilities

IPART finding

32 Apportioning 100% of the cost of land for community facilities in the Draft West Dapto CP the WDURA is reasonable.

WCC has included the cost of land for three community facilities in the Draft West Dapto CP, apportioning 100% to demand from the WDURA. This is reasonable.

In relation to the capital costs of these facilities, we found that they were not on the EWL and should be removed from the costs of the plan (see Recommendation 3).

3.5.8 Exclusion of land from the NDA in the Draft West Dapto CP

IPART findings

33 WCC has excluded 30 hectares of land zoned for State schools from the NDA in the Draft West Dapto CP for the purpose of calculating development contributions. This has the effect of exempting school development from paying contributions, and making contribution rates for other development in the WDURA higher.

¹⁹⁹ WCC, West Dapto S94 Work Schedule, Open Space Tab.

Recommendation

- 38 WCC exclude land from the precincts' NDA for development contribution purposes only where there is a Ministerial direction to that effect, reinstate 30 hectares of land for State schools into the precincts' NDA for the purpose of calculating development contributions, and request the Department of Education to pay the relevant contribution when school development is approved.

We considered where a council excluded land from the NDA for the purposes of calculating contributions in our previous reviews of The Hills Shire Council's CP15 and Blacktown City Council's CP20, primarily in the context of government-funded schools (since private schools are generally not exempt from contributions).²⁰⁰ We considered that the councils should not exclude the land from the precincts' NDA for calculating development contributions. To exclude the land would mean that by other developments in the precincts would bear the cost associated with demand from the schools. The exception to this position would be where the Minister has issued a direction under section 94E of the EP&A Act that exempts any school development from paying contributions.²⁰¹

In the absence of a Ministerial direction, WCC has elected to exclude 30 hectares of State school land from the NDA, and therefore exempt public school developments from paying a development contribution. In doing so, the council has apportioned the costs applicable to this land to all other developers.

We consider that the ideal scenario would be for the Department of Education to pay the relevant contributions for the government school development. However, in our recent review of CP20, Blacktown City Council advised us how the Department of Education frequently declines to pay development contributions.²⁰² WCC further advised that the State Government and not the council is the consent authority for government school sites,²⁰³ which implies that the council cannot require payment of the contributions from the Department of Education.

Schools do provide an important public service to the broader community, but the school developments will also contribute directly to the demand for local infrastructure.²⁰⁴ Therefore, we consider that the Department of Education paying the contribution is a superior outcome to residential and other development in the precincts subsidising the cost of this demand (through higher contributions) because not all development will benefit directly from the school.

²⁰⁰ See IPART, *Assessment of The Hills Shire Council's Section 94 Contributions Plan No 15, Box Hill Precinct*, March 2016, and IPART, *Assessment of Blacktown City Council's Section 94 Contributions Plan No 15, Riverstone and Alex Avenue Precinct*, July 2016.

²⁰¹ *Environmental Planning and Assessment Act 1979*, section 94E. An existing (2009) direction exempts school development which is a Building Education Revolution project, but this is unlikely to apply to school development in the future.

²⁰² IPART, *Assessment of The Hills Shire Council's Section 94 Contributions Plan No 15, Box Hill Precinct*, March 2016, p 9.

²⁰³ WCC, Email to IPART, 21 September 2016.

²⁰⁴ Primarily roads and stormwater facilities.

For these reasons, we recommend that land reserved for State schools (30 hectares) should be included in the precincts' NDA, to take account of the schools' demand for new infrastructure. This would result in an increase of the precincts' NDA for development contribution purposes, and therefore, the contribution rate for all developments would be lower than would otherwise be the case. We estimate this recommendation would reduce contribution rates by approximately 1.5%.²⁰⁵

We also recommend that WCC should request the contribution from the Department of Education for the school sites. We acknowledge that this presents a financial risk to WCC²⁰⁶ because in the absence of these contributions being paid by the Government, the implication of our recommendation is that WCC would effectively fund the exemption from other sources.

In this regard, our recommendation here is consistent with our position on the exemption provided for retail, business and commercial development from paying contributions or a partial exemption for industrial development. WCC can opt to exempt the development from paying contributions but in our view, it should not increase the contributions payable by other development as a result of the exemption.²⁰⁷

3.6 Criterion 6: Consultation

IPART finding

34 WCC conducted appropriate community liaison and publicity when preparing the Draft West Dapto CP.

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

IPART's assessment of Wollongong City Council's consultation

WCC exhibited the Draft West Dapto CP from 9 December 2015 until 15 February 2016.²⁰⁸ It was available at the council's Administration Building and on its website. A separate "Have Your Say" page was developed with FAQs, maps of the WDURA, the draft contributions plan and associated council reports to explain the plan's purpose, contents and the process following exhibition. The site received 306 visits, with 187 downloads.

²⁰⁵ The NDA will rise from 1,951 hectares to 1,981 hectares when the exempted properties are reinstated in the NDA. This should not affect the open space portion of development charges as these are not allocated to non-residential developments such as schools. It would, however, affect the stormwater, transport and plan administration components of development contributions.

²⁰⁶ WCC, Email to IPART, 21 September 2016.

²⁰⁷ See section 3.5.3.

²⁰⁸ This criterion is discussed in section 3.6 of the council's Application.

Information was provided to the community at a stall at the Dapto Mall on 21 January 2016, at a Local Neighbourhood Forum on 10 February 2016, and at an informal session with the Urban Development Institute of Australia on 8 December 2015.

The council received seven submissions about the draft plan, however made no amendments in light of the submissions.

We find that WCC has undertaken appropriate consultation about the draft plan.

We note also that WCC had consulted the community in July and August 2015 about the *West Dapto Release Area Section 94 Contributions Plan (2015)*, which the council adopted in October 2015.²⁰⁹

3.7 Criterion 7: Other matters

3.7.1 Information presented in the Draft West Dapto CP

IPART finding

35 The Draft West Dapto CP 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

39 WCC amend the Draft West Dapto CP to provide information in a way that more fully complies with the requirements of the *Environmental Planning and Assessment Regulation 2000*.

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)*.

The Draft West Dapto CP adopts a different format from that of the *West Dapto Release Area Section 94 Contributions Plan (2015)*, currently in force. Information has been presented in a more streamlined way, particularly by taking out maps and information from the various technical studies that explained how nexus

²⁰⁹ See section 2.1.2.

was established.²¹⁰ The plan itself contains only one map, and Part 4 Works Schedule has summary tables with high level costings for infrastructure items. It is supported by a Mapbook, with integrated maps showing locations of existing and new infrastructure and the West Dapto S94 Work Schedule. These two documents are not specifically referenced in the plan.

While technically 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 found that the information provided in the Draft West Dapto CP complies with most of the information requirements of the Regulation (see Appendix B), and in general, we found that Draft West Dapto CP is set out in a manner that is consistent with the guidelines in the 2005 Practice Notes.

However, there are aspects of the way information is provided in the plan that should be improved, including:

- ▼ While the Mapbook shows the specific public amenities and services proposed to be provided by WCC, these maps are not integral with the plan itself.
- ▼ The Draft West Dapto CP does not satisfactorily explain the relationship between expected development and demand for facilities, which is required by clause 27(1)(c) of the EP&A Regulation. Adequate explanations are not provided in the plan for:
 - apportionment of costs between residential, industrial and other non-residential development (see section 3.5.3)
 - apportionment of some costs in the work schedules to areas outside the WDURA (see section 3.3.4), and
 - how the projected employment figure was determined.
- ▼ Neither the plan itself nor the accompanying spreadsheets indicates timeframes for provision of infrastructure that demonstrate clear priorities for expenditure on the staged delivery of transport, stormwater management open space and community facilities beyond the council's 10-year capital works program. This is required by clause 27(1)(i) of the EP&A Regulation.²¹¹

WCC officers advised that work on the maps and the Draft West Dapto CP would continue, so as to provide clarity on locations, costs and nexus, with reference to appropriate supporting information as necessary.

²¹⁰ WCC, Business paper, Meeting of 10 November 2015, p 8.

²¹¹ In relation to Criterion 4 Timing, we recommended that WCC should provide more detailed delivery schedules in 5- or 10-year tranches.

3.7.2 Regular review of the contributions plan

IPART finding

- 36 Many aspects of infrastructure provision outlined in the Draft West Dapto CP are assumption-based, reflecting the staged and flexible planning approach adopted for the West Dapto Urban Release Area. This planning approach gives rise to a need for more regular reviews of the contributions plan, particularly in the first 10 years of the plan.

Recommendation

- 40 WCC review the West Dapto CP, at least every two years during the next 10 years of the plan, to take account of:
- changes to the expected provision of infrastructure resulting from the neighbourhood planning process and resulting revisions to the capital works program,
 - outcomes from the rezoning process for Stages 3 to 5 (if relevant), including any flow-on effects to the facility requirements in relevant areas, and
 - reconciliation of actual costs to forward cost estimates, such that any cost efficiencies can result in lower contribution rates.

The staged planning approach adopted for the WDURA is largely assumption-based. As precincts are rezoned and neighbourhood planning is undertaken which will identify the precise location of infrastructure requirements, the plan and its costs will need to be updated. In its application to IPART, WCC advised that it would ‘continue to develop annual and 4-yearly capital works programs that reflect current and likely development fronts’.²¹²

In the Draft West Dapto CP WCC has also stated that it intends to review the contributions plan for West Dapto regularly as required by the EP&A Regulation, and monitor contribution rates and the works programs by “monitoring variables such as lot production and dwelling construction, anticipated population as well as costs of land and construction”.²¹³

Given the significant costs in the plan, we consider that WCC should review the plan at least every two years to adjust for revised costing information and changes in development staging.

²¹² WCC, Application for an assessment of a section 94 development contributions plan, p 6.

²¹³ See WCC, Draft West Dapto CP, section 2.23.

IPART has previously recommended reviews of contributions plans at least every five years, unless there is a need for an earlier review.²¹⁴ For the West Dapto CP, we consider there is a need for biennial reviews over the next 10 years to take account of:

- ▼ changes to the expected provision of infrastructure resulting from the ongoing neighbourhood planning process and resulting revisions to the capital works program
- ▼ outcomes from the rezoning process for Stages 3 to 5 (if relevant), including any flow-on effects to the requirements for facilities in the relevant areas, and
- ▼ reconciliation of actual costs to forward cost estimates, to improve the accuracy of cost estimates, such that any cost efficiencies can result in lower contributions.

These reviews should concentrate on aspects of the plan that have changed, rather than a comprehensive plan review that may be unnecessary. Revisions to the plan should be exhibited in accordance with the requirements of the EP&A Regulation, as the council indicates it will do.²¹⁵

As the rezoning of precincts is finalised and estimates for infrastructure provision across the WDURA are more certain, the need for such regular reviews should reduce.

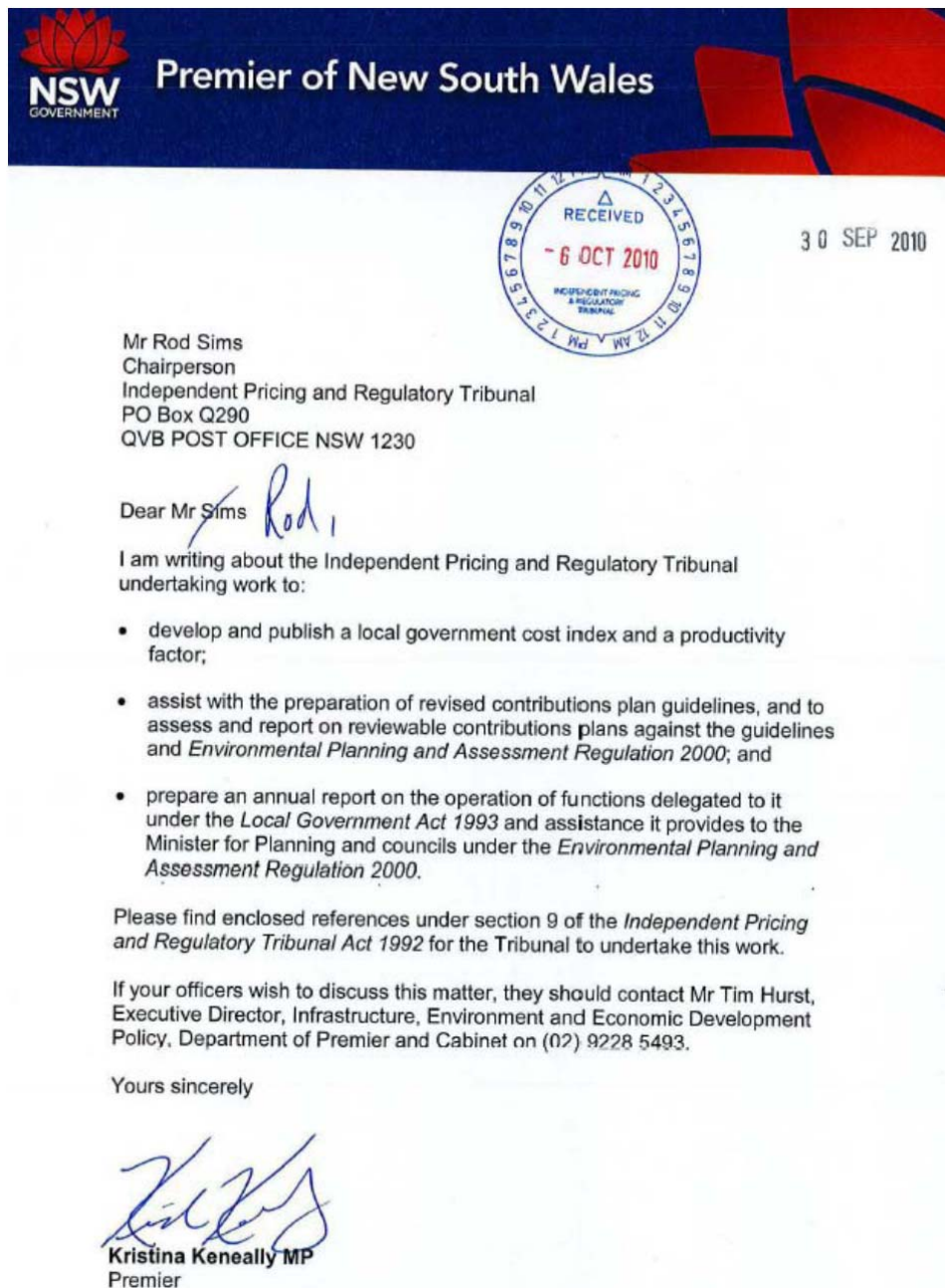
²¹⁴ For example, IPART, *NSW Planning System Review – IPART Submission on Issues Paper*, February 2012, p 27.

²¹⁵ WCC, Draft West Dapto CP, section 2.23.



Appendices

A Terms of Reference



B Assessment of Draft West Dapto CP against the information requirements in Clause 27 of the EP&A Regulation

Table B.1 Assessment of Draft West Dapto CP against the information requirements in Clause 27 of the EP&A Regulation

Subclause	Location in CP
1(a) Purpose of the plan.	Section 2.4
1(b) Land to which the plan applies.	Section 2.3
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.	Part 3
1(d) The formulas to be used for determining the section 94 contributions required for different categories of public amenities and services.	Section 2.22
1(e) The section 94 contribution rates for different types of development, as specified in a schedule in the plan.	Section 2.6, Tables 1.3 to 1.5
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 2.13 & 2.14
1(h) A map showing the specific public amenities and services proposed to be provided by the council, supported by a works schedule that contains an estimate of their cost and staging (whether by reference to dates or thresholds).	Mapbook & S94 Work Schedule
1(i) If the plan authorises monetary section 94 contributions or section 94A levies paid for different purposes to be pooled and applied progressively for those purposes, the priorities for the expenditure of the contributions or levies, particularised by reference to the works schedule.	Section 2.20 & S94 Work Schedule
1A Despite subclause (1) (g), a contributions plan made after the commencement of this subclause that makes provision for the imposition of conditions under section 94 or 94A of the Act in relation to the issue of a complying development certificate must provide that the payment of monetary section 94 contributions and section 94A levies in accordance with those conditions is to be made before the commencement of any building work or subdivision work authorised by the certificate.	Section 2.13
2 In determining the section 94 contribution rates or section 94A levy percentages for different types of development, the council must take into consideration the conditions that may be imposed under section 80A (6)(b) of the Act or section 97 (1)(b) of the <i>Local Government Act 1993</i> .	Section 2.12
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

C | Review of Transport Items in the Draft West
Dapto Contributions Plan, ARRB Group Ltd

CONTRACT REPORT

Review of Transport Items in the Draft West Dapto Contributions Plan

Project No: PRS-16-137



by Auttapone Karndacharuk, David McTiernan

for Independent Pricing and Regulatory
Tribunal

Review of Transport Items in the Draft West Dapto Contributions Plan

IPART Reference: 16/210

for Independent Pricing and Regulatory
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REVIEW OF TRANSPORT ITEMS IN THE DRAFT WEST DAPTO CONTRIBUTIONS PLAN

SUMMARY

ARRB Group (ARRB) has been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to review transport items in a draft West Dapto Section 94 development contributions plan (the Plan) submitted by Wollongong City Council (WCC).

The review scope involved the three assessment criteria of the essential works, nexus and reasonable costs in accordance with the revised local development contributions practice note (the Practice Note) from the NSW Department of Planning and Infrastructure.

The review of essential works for transport (Section 2), taken at face value, against the Practice Note's definition resulted in a recommendation to exclude the off-street car parking element of the multi-modal transit interchange and to include the off-road cycle paths as an essential transport work.

The consideration of nexus (Section 3) 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 initially encountered a difficulty due to a lack of clarity in cross-identification of transport items among various supporting documents. With clarification received from WCC, including the TRACKS model outputs, the majority of the transport items and associated facilities can be supported. Outstanding matters, including deviations from the recommendation in the technical studies, are documented in Section 3.3.

The review of cost reasonableness (Section 4) drew upon the outcome of the nexus review and the main assessment according to guidance in the Practice Note. Potential cost savings are listed in Table 4.2 with the review finding and recommendations presented in Table 5.1.

This final version of the review report, released in August 2016, has been revised to incorporate WCC responses in relation to ARRB findings and comments documented in a draft review report dated 30 June 2016. The WCC responses are included in Appendix A.



Although the Report is believed to be correct at the time of publication, ARRB Group Ltd, to the extent lawful, excludes all liability for loss (whether arising under contract, tort, statute or otherwise) arising from the contents of the Report or from its use. Where such liability cannot be excluded, it is reduced to the full extent lawful. Without limiting the foregoing, people should apply their own skill and judgement when using the information contained in the Report.

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1 INTRODUCTION

ARRB Group (ARRB) was commissioned by the Independent Pricing and Regulatory Tribunal (IPART) to review transport items in the draft West Dapto Section 94 Contributions Plan (the Plan) prepared by Wollongong City Council (WCC) 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 \$68,734.49 per dwelling, which exceeds the \$30,000 contribution cap for greenfield areas as specified in the Section 94E Ministerial Direction. The Plan is to be valid for approximately 50 years from when it is adopted by WCC, subject to the timing of development activity.

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 in the Plan are on the essential works list as defined in the Practice Note.
2. The proposed transport facilities are reasonable in term of nexus.
3. The estimated cost of the proposed transport facilities is reasonable.

The above objectives match the first three criteria listed in the Practice Note for the assessment of the local contributions plans.

1.1.1 Primary Review Documentation

The following technical studies listed in Part 5 of the Plan have been supplied and reviewed:

- Transport Management and Access Plan (KBR 2007)
- West Dapto T-Map Extension Study (Connell Wagner 2008)
- Infrastructure & Economic Assessment Report (GHD 2006)
- West Dapto Master Plan Traffic & Transport Review (Urbanhorizon 2008)
- West Dapto Release Area Access Review (Cardno 2008a)
- West Dapto Transport Link Review (Cardno 2008b)
- Peer Review – Urbanhorizon Traffic & Transport Report (Northrop 2008)
- Draft Road Infrastructure (Section 94) Estimates Review (GHD 2010)
- Draft Marshall Mount and Yallah Road Upgrade Strategic Concept Design (SMEC 2015)
- Draft West Dapto Urban Release Area – Integrated Transport Plan (AECOM 2010)
- West Dapto Urban Release Area Stages 1 & 2 – Road Network Infrastructure needs Study Traffic Modelling & Analysis (WCC 2010)
- Yallah-Marshall Mount Precinct Draft Structure Plan and Infrastructure Costs Report (WCC 2015c)
- MMJ Letter dated 14 October 2015, titled 'West Dapto Land Indicative Acquisition Values'

The 2015 TRACKS land use and transport model outputs in support of the Plan were supplied in August 2016 and as such have been reviewed as part of this report.

1.1.2 Supplementary Documentation

The following relevant documents, independently sourced by ARRB, have also been reviewed:

- West Dapto Masterplan in the Vision West Dapto report (WCC 2007)
- (Current) West Dapto Section 94 Development Contributions Plan (WCC 2015a)
- West Dapto release area staging plan (WCC 2015b).

A draft version of this report, attached to the IPART briefing report, was considered by the Tribunal on 20 July 2016. Upon approval, the draft report and specific clarification queries, were forwarded to WCC on 21 July 2016 for review and comment. The Council's responses (see Appendix A), received on 8 August 2016, were reviewed and incorporated into the final version of this report.

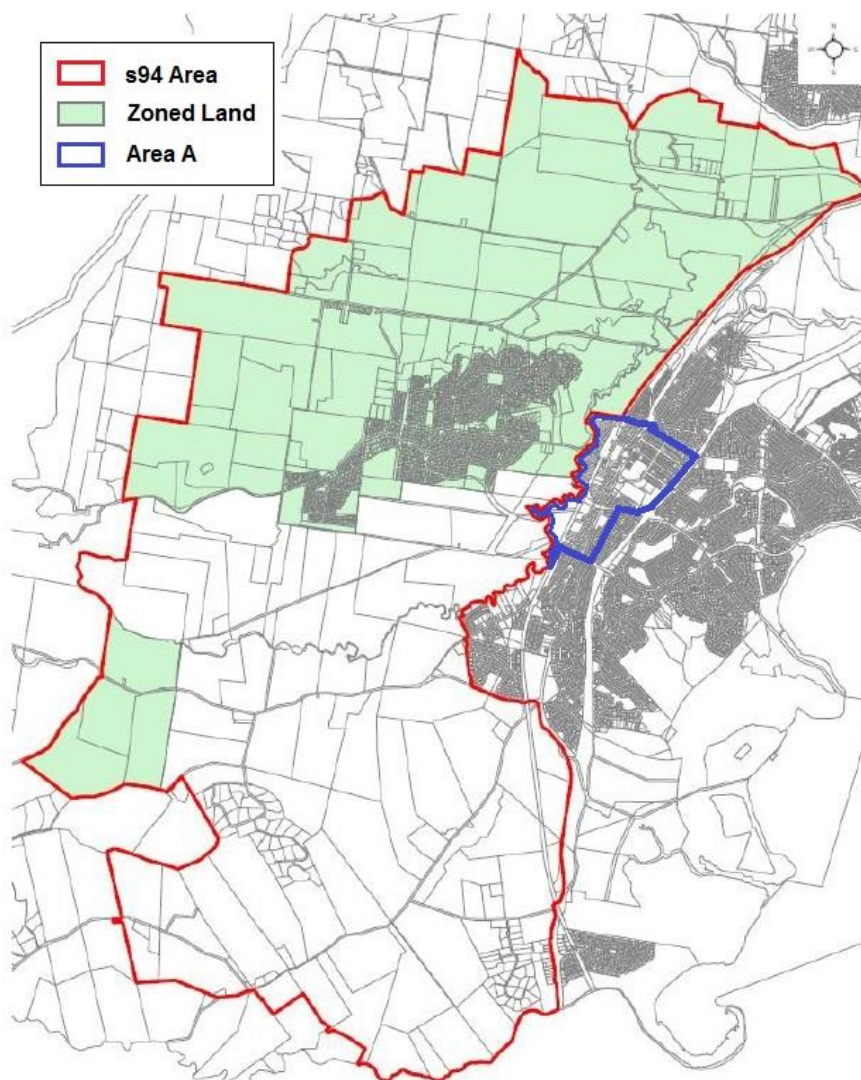
A costing spreadsheet of the s94 transport works was supplied by WCC on 17 June 2016. It contains a schedule of works, base rates and apportionments that form the basis of all costing reported in the Plan. The Council's responses, dated 27 June 2016, to the review queries are included in Appendix B.

1.1.3 Review Scope

In accordance with the Plan and the application for assessment of the Plan submitted to IPART, the geographical area covered is illustrated in Figure 1.1.

The area covered by the Plan does not exactly match the extent of the West Dapto master plan (WCC 2007) and the release stages (WCC 2015b) as it excludes the Dapto town centre area (marked as 'Area A' in Figure 1.1). The discrepancy in area coverage potentially affects the nexus and cost assessment of the new transit interchange to be located within the town centre. This point is discussed in the following relevant sections.

Figure 1.1: West Dapto geographical area covered by the Plan



Source: WCC 2016 (modified by the authors).

1.2 Methodology

The method for the transport-related review of the Plan involves two analysis steps. The first step is the main assessment of the proposed transport facilities with respect to the review objectives (i.e. essential works, nexus and reasonable cost) using the descriptions and questions in the Practice Note, and its appendices in particular.

The second step of the detailed assessment of each key transport item is applicable to the review of the nexus and infrastructure costs, presented in Section 3 and Section 4. Transport items that do not necessarily meet the assessment criteria or divert from the recommendations in the

technical studies are further evaluated in terms of their reasonableness in scope and cost. The evaluation process, adopted by ARRB, adheres to the following principles:

- Timing. Unless confirmed by the WCC otherwise, a recommendation from a more up-to-date study has priority over an older one. This applies when there are multiple transport studies undertaken for the same or overlapping development areas. For example, the extent of a local road upgrade described in the 2010 AECOM report has more weight than that in the 2006 GHD report.
- Level of detail. More detailed design and assessment supersedes a strategic investigation. This is particularly evident for the Yallah-Marshall Mount precinct (Stage 5) where a concept design has been undertaken for costing of a road upgrade. In comparison, the cost estimate of the earlier stages is a preliminary indication of the 'order of magnitude' of the capital work (GHD 2010).
- 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.

Any scope and cost deviation from the recommendation of the supporting technical studies are documented and its reasonableness assessed based on available sources and engineering judgement.

1.3 Structure of the Report

The organisation of this report follows the review sequence as per the objectives as follows:

- Section 2 – discusses the extent to which the proposed transport works are on the essential works list.
- Section 3 – presents an assessment of the nexus of the transport items with the development area.
- Section 4 – provides a reasonableness review of the cost of the proposed transport facilities.
- Section 5 – offers a conclusion of the review with findings and recommendations.

2 ESSENTIAL WORKS FOR TRANSPORT

The first assessment objective relating to essential works for transport involved a review of the proposed transport items taken at face value. Section 3.4.2 of the Practice Note (Department of Planning and Infrastructure 2014) defines essential transport works as:

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

Based on this definition, the proposed transport facilities and associated land acquisition listed in Section 3.5 and Table 4.3 of the Plan are considered essential works, and are therefore on the essential works list. However, there are three observation points that with clarification and detailed design would give greater clarity to the consideration of this assessment criterion. The first two are of the non-essential nature of car parking and the other a suggested inclusion of the off-road cycleway in the transport essential works list.

- Typical cross-sections for the two-lane (type 3) and four-lane (type 4) road upgrade have not been provided as part of the IPART application, except for Stage 5. However, the existing 2015 contribution plan available on the WCC website shows the proposed Type 3 sections that includes parallel on-street parking on either side. Without specifying that the 'car parking' aspect of the definition is only applicable to the off-street parking, it is arguable that the on-street parking of the Type 3 road is to be excluded from the Plan. Nevertheless, IPART confirmed in a progress update meeting on 23 June 2016 that this is not the case and that kerbside on-street parking is an acceptable essential works for transport.
- As mentioned in Section 1.1.3, the proposed multi-modal public transport station will be located within the Dapto town centre, which is outside of the area covered by the Plan. The main bus and rail interchange as described in the transport management and access plan (KBR 2007) and the integrated transport plan (AECOM 2010) will include a limited amount of private vehicle parking in order to encourage greater access by bus, walking and cycling.

Based on the Council responses in August 2016, the station is likely to incorporate a parking facility with a capacity as high as 200 parking spaces, provided through an at-grade or multi-deck car park. Based on the direction of the Practice Note, the works relating to the off-street car parking provision for the transport interchange item are to be explicitly excluded from the Plan.
- As indicated in Table 3.3 of the Plan, cycleways are included in open space and recreation facilities in stages 3–5. As documented in the 2015 development contributions plan (WCC 2015a) and supporting studies (GHD 2006, KBR 2007, AECOM 2010), the off-road cycle paths form an integrated part of the cycle network in West Dapto. For design consistency as well as to ensure the implementation of a well-connected network for both recreation and commuter purposes, it is suggested that the cycleways be included on the transport essential works list.

Public local roads, servicing individual developments are typically funded and constructed by the developer as part of each subdivision. While it may be reasonable for the formation of a new local road that traverses a number of properties with multiple land ownership to be facilitated through the s94 contributions process, the responsibility of upgrading to an urban standard of an existing local road that will continue to perform a local road function in the future when the Plan area is fully developed primarily rests with individual developers, at least for an improvement to their road frontage. Some of the road sections in the Plan could be considered 'local road' in this context.

An example is an upgrade to existing Paynes Road that includes watercourse bridge 'B52'. The road is unlikely to form part of a 'collector' road network, except a section that will serve as a bus route and as such the majority of the improvement works, one would argue, should not be funded through the development contributions.

The validity of an improvement work for an existing or a new local road is discussed in detail in Section 3.3 under the review of nexus.

3 NEXUS BETWEEN TRANSPORT DEMAND AND PROVISIONS

3.1 Overview

The nexus between the residential development and the proposed transport items in the Plan has been reviewed through a series of traffic and transport studies since the development of the local environmental study (GHD 2006) for the West Dapto release area that saw the use of the transport modelling (TRACKS) to assess future transport infrastructure requirements against various land use development scenarios. The household travel survey data of origin-destination trips and journey purposes have been used in the transport network analysis. Public transport, walking and cycling are an integral part of the nexus considerations for West Dapto. Key milestones of transport studies for nexus developments can be outlined as follows:

- Transport management and access plan (TMAP) and TMAP extension study (Connell Wagner 2008, KBR 2007), including West Dapto Transport Link, also known as the Fowlers Road extension.
- Growth Centres Commission's review of West Dapto master plan (Cardno 2008a; 2008b, Northrop 2008, Urbanhorizon 2008).
- The initial access strategy and development staging (WCC 2010; 2015a; 2015b).
- Structure plan and concept road design for Stage 5, Yallah-Marshall Mount (SMEC 2015).

Based on these studies, the overarching need and nexus for transport infrastructure to cater for both population and traffic growth have been established. The focus of this nexus review is therefore:

- (a) To identify any scope deviation in infrastructure provision from the recommendations in the supporting technical documents.
- (b) 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.

3.2 Main Nexus Assessment against IPART Practice Note

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 3.1 presents the outcome of the main assessment with our review comments.

Table 3.1: Assessment of nexus between development and proposed transport facilities

IPART Practice Note		WCC S94 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 upgrade and new road construction, including earthworks, pavement, footpath, kerb, road drainage and street lights.	p. 25	The types of the proposed transport facilities are appropriate. As noted in Section 2, off-road cycleways can be included in the transport items (rather than as open space and recreation facilities).

IPART Practice Note		WCC S94 Plan		ARRB Comment
Item	Consideration	ARRB Review	Ref.	
N1	What are the types of transport facilities for which the proposed development will create demand?	New bridges crossing streams, roads and railway.	p. 26–28	The types of the proposed transport facilities are appropriate. As noted in Section 2, off-road cycleways can be included in the transport items (rather than as open space and recreation facilities).
		Intersection improvements	p. 28–29	
		Public transport facilities, including shelters, kiosks and a new bus-rail interchange.	p. 29	
		Off-road cycle facilities.	p. 23	
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 on the various transport studies listed in Part 5 of the Plan as well as the West Dapto Master plan.	p. 39	Road hierarchy (e.g. two and four lane roads) is established using TRACKS traffic modelling. Review of the models is not within the scope of this study.
N3	Has the WCC assessed the implications of the expected types of development catered for by the Plan on the demographic structure of the development area?	Yes, anticipated dwelling structure and population have been assessed.	p. 15–17	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 West Dapto resident populations.	p. 16–17	Satisfactory.
N5	Is the information on demand both reliable and up-to-date?	Population and traffic growth generates demand for the transport facilities. The demand distributed across the road network is modelled using TRACKS platform.	p. 24	Review of the reliability and currency of the TRACKS models is out of scope for this review study.
N6	Can the new demand be accommodated, in whole or in part, within existing public amenities and public services?	The existing rural road network in most part is developed to cater for low volume traffic. The urbanisation of the area necessitates an extensive upgrade of the primary movement network in the area.	p. 24	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.
N7	Are the transport facilities appropriately located for the expected types of development in the area to which the plan applies?	The Plan refers to supporting technical studies and the output from the TRACKS modelling. Without a proper plan originally submitted to show where the facilities are located, ARRB made a request to WCC on 9 June 2016 for a cross-referenced map that illustrates the location of each roading item (e.g. road section, intersection and bridges) and on 23 June 2016 for a map showing the	p. 39	Refer to Section 3.3 for a detailed assessment of each transport item in a road section. An overall comment for each type of transport facilities is offered below.
	(a) Road network			The proposed road network is generally consistent with the masterplan. The nexus of new local roads that do not provide an improved network connectivity is to be further considered in the next review step.

IPART Practice Note		WCC S94 Plan		ARRB Comment
Item	Consideration	ARRB Review	Ref.	
N7	(b) Intersections	extent of the planned bus routes. These requests along with Council's responses on 27 June 2016 are included in Appendix B of this report.	p. 39	If the location (alignment) of a road section is necessary for network planning and operations, associated intersection improvements are warranted.
	(c) Bridges			Similar to the intersection consideration, s94 funding for bridges should only be applied to primary road sections that are critical to a wider network operation.
	(d) Public transport facilities			Bus stop infrastructure may be reduced as some of the feeder routes could operate unidirectional services. The extent of the nexus of the Dapto transport interchange is to be further considered.
	(e) Off-road cycle facilities			The riparian cycle network forms part of the transport network in West Dapto.
N8	If the expected development did not occur, would the transport facilities still be required?	The increased demand for transport facilities is created by the expected development.	p. 17	Without the development, the transport facilities to the proposed standards will not be required, except for road upgrade maintenance in the flood prone areas.

3.3 Detailed Nexus Assessment of Transport Items

Without a detailed, cross-referenced schedule of works for each transport item supplied by WCC, it is difficult to accurately establish how each identified improvement work (e.g. intersection and bridge upgrade) constitutes the main transport items. The unnecessary complexity due to inconsistency in identifying the transport items cannot be overemphasised. There are various terms used such as NR12-NR22, B1-B53 and Int1-Int113 in the Plan against identifiers such as Road No 1-8, Road P1-P2 and Bridge A-I in the supporting documents. As included in Appendix C, the complication in terminology can be observed in the Council's nomenclature table, which was provided on 27 June 2016.

A lack of clarity in identification of quantity and cost exist throughout the documentation originally received. Additionally, key information for the nexus assessment is missing (e.g. Appendix A of the 2010 GHD and AECOM reports). Clarification was sought from the Council with most of the queries addressed at the time when this review report was finalised.

The following points are applicable to the process of the detailed assessment:

- The itemisation and order of transport facilities per road section and public transport facility are in accordance with Table 4.3 of the Plan.
- The Plan's naming convention for new and existing collector roads, bridge crossings, and intersections (included in Sections 3.5.2.1-3.5.2.3) is employed.

- Without a concept road design for Stages 1–4, the extent of land acquisition cannot be verified. The acquisition areas in hectares identified in the Council's costing spreadsheet, supplied on 17 June 2016 are taken at face value.

A detailed nexus assessment of the transport facilities is presented in Table 3.2 with outstanding items **underlined and in bold**.

There are a number of review issues and deviations from the recommendations in the supporting studies that do not readily fit within the three points of the project terms of reference. These on a road-by-road basis include:

- West Dapto Road
 - The deviation of the increased length of bridges 'B9A' 'B9B' and 'B9C' from 30 m, 20 m and 30 m as per the schedule of road infrastructure works in the technical report (GHD 2010) to 150 m, 150 m and 50 m, respectively, was identified. However, information from a flood assessment model subsequently provided by WCC verifies the proposed extent of the bridges (150 m, 150 m and 50 m).
 - Cost of the three bridges is based on a 4-lane design. Given West Dapto Road in this location will continue to have two lanes, the width of the bridges should be reduced to a two-lane cross section.
- Sheaffes Road
 - The existing Sheaffes Road is not explicitly required in the technical studies (e.g. AECOM 2010). The most western section ('S4') does not form part of a primary movement network and should therefore be removed from the Plan.
- Shone Avenue
 - There is a discrepancy of the extent of bridges 'B11' and 'B12'. The length of 45 m and 75 m is specified in the Plan whereas the 2010 GHD report allows for 18 m and 48 m. Based on the WCC subsequent response, it is confirmed that the two bridges have been constructed to the lengths indicated.
- Bong Bong Road
 - It is considered unreasonable to include the full two-lane upgrade of new road construction to the majority of Bong Bong Road as it has been formed to an urban two-lane road standard.
 - The higher construction rate of \$7,400 per m² for the bridge 'B1' upgrade is acknowledged. However the estimated cost of \$9,324,000 seems to be based on a four-lane bridge.
- Yallah Road, NR1–NR3 and Local Road
 - There is no network planning evidence of the nexus of Local Road.
 - Detailed cost estimate of the three transport items is undertaken together by Muller Partnership (SMEC 2015). It was initially unclear how the cost and extent of sub-items (e.g. earthworks, drainage, revegetation, services and contingency) are allocated to each transport item, particularly Local Road.
 - An estimated work and cost breakdown, subsequently provided for these transport items and Marshall Mount Road in Stage 5, is accepted and included in Appendix D.

- Marshall Mount Road
 - The need for a four-lane road upgrade is unclear. TRACKS traffic modelling shows a two-lane road formation for an entire length of this transport item with an adequate operational performance.
 - Council meeting minutes (WCC 2015c) recommended a two-lane road for the northern segment (Road section 4 in the SMEC design) and acknowledge the adequacy of the two-lane arrangement for the southern segment (Road sections 1-2 in the SMEC design).
 - As advised by the WCC on 27 June 2016, the rail bridge 'A' in the 2015 SMEC design (approximately \$7.2m) is no longer applicable, and should be deleted from the Plan.
- Paynes Road
 - The nexus of upgrading 490 m ('S2') of this existing rural road is not supportive along with bridge 'B52' (approximately \$2.7m in total cost).
- Northcliffe Drive extension (Reddalls Road)
 - The full four-lane upgrade cost (\$5,300/m) applied to the east-west section of existing Reddalls Road (820 m) is considered unreasonable.
- Fowlers Road extension
 - To avoid confusion, the term 'NR19' for a new four-lane road section in this transport item could be changed to 'NR19F'.
 - There was initially no preliminary design and quantities supplied to confirm the quantum of the two bridges 'B44' and 'B45'. The '100%' concept design and cost estimate of the road extension, including the two bridges, were provided by WCC in the August 2016 response.
 - The estimated cost of \$32.5 m of the bridge component (Item G1) in the recently supplied detailed schedule is considerably less than the combined estimate of \$70 m for the two bridges in the Plan.
 - The total construction cost estimate of \$71.2 m (excluding contingencies) is comparable to the total unindexed cost (\$92.9 m) identified in the Plan. However, the application of construction contingencies as high as 40% is considered unreasonable, particularly at the '100%' concept design stage.
- NR12–NR22
 - The upgrade description of this transport item in the Plan should include a four-lane arrangement and the costing of the future four-lane road sections 'NR14A' and 'NR14B' should capture the actual construction cost of the two-lane formation.
- NR40–NR47A
 - It was initially unclear whether this major collector is a four-lane road as per the current s94 plan (WCC 2015a) or a two-lane road as per the costing spreadsheet. The WCC response in August 2016 confirms that this north-south road is a two-lane road with kerbside parking and planter boxes on either side.
 - The future possibility of requiring this transport item to be upgraded to a four-lane road due to a degree of uncertainty in traffic demand analysis and modelling is acknowledged; however, it is considered unreasonable to justify the nexus of a four-lane bridge provision of this transport item based on a 'future-proof' scenario of the

four-lane road which is not clearly identified as required due to the proposed development.

- Therefore, the cost of the associated bridges ('B26A' to 'B29C') should be reduced to reflect a two-lane arrangement.
- NR100-NR103
 - There is no evidence of nexus for this item in any of the technical studies and it is therefore suggested that this transport item (approximately \$20.1m) should be removed from the Plan.
- Dapto Station Multi-modal Interchange
 - This type of a multi-modal interchange is not typically the type of transport infrastructure that is provided by local government, and may qualify for funding support from state or federal government.
 - The cost apportionment should reflect that users in Dapto will likely receive a greater benefit from implementing the interchange than West Dapto users, due to their closer proximity.
- Overall Road Network
 - A number of transport items involve a classified road (Princes Highway as a regional road) which may attract financial assistance from Roads and Maritime Services (RMS). 50% funding is provided for maintenance but capital works is based on program funding applications and commonly around road safety, but also capacity. Consideration to discount the contribution rate may be appropriate if government funding is made available.
 - Based on the SMEC design, not all road crossings over small streams require bridge structures (such as Culvert K on Yallah Road).

Table 3.2: Detailed nexus assessment of transport items

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Existing Roads							
West Dapto Road	5066 + 87 (Rail Crossing)	2/4 lane	Int4, Int5, Int7, Int8, Int9, Int9A, Int9B, Int41	B6A, B6B, B7, B8, <u>B9A</u> , <u>B9B</u> , <u>B9C</u> , B10A, B10B	1.47	<ul style="list-style-type: none"> Approximately 3 km of West Dapto Rd together with Northcliffe Drive extension forms a major collector linking Princes Highway and the Motorway to the West Dapto residential and employment areas. The road distance is verified by GIS (NearMap). The four-lane extent is approx. 1.1 km (between Northcliffe Dr extension intersection and new road 'NR24') with the rest a two-lane road. This transport item includes works associated with West Dapto Rd rail crossing. The existing level crossing on West Dapto Rd based on 2008 review of the transport master plan and the 2010 integrated transport plan is to be closed when the Northcliffe Dr rail overbridge constructed. The crossing works incorporates intersection 'Int41' upgrade and road improvement between Princes Highway and rail crossing. The rail crossing work between the rail line and at the Princes Highway intersection was completed in 2014 (NearMap). It is arguable that direct benefits of the 'Int41' intersection signalisation accrued to other activities outside of West Dapto (including Kembla Grange racecourse, train station and other existing users on Princes Highway). However, the Council confirmed with supporting information on 27 June 2016 the nexus between the intersection upgrade and demand generated from Stages 1 and 2 of the release area. The nexus of the other seven intersections is accepted. The extent of the bridges is generally consistent with the 2010 GHD report, except bridges 'B9A', 'B9B' and 'B9C'. The technical study shows the length in metres of 30, 20, 30 whereas the Plan identified 150, 150, 50 for the three bridges. The costing spreadsheet supplied on 17 June 2016 shows the 30, 20, 30 combination, but with a total cost of approx. \$54.39m, which is more than eight times that of the GHD estimate (\$6.45m). With clarification from WCC, the proposed bridge lengths can be accepted; however, their width should be reduced based on a two-lane cross section. 	AECOM 2010, GHD 2006; 2010, KBR 2007, RMS 2014, Urbanhorizon 2008, WCC 2010; 2015a

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Sheaffes Road	<u>2005</u>	2 lane	Int100, Int101, Int102	–	2.09	<ul style="list-style-type: none"> The upgrade of this existing two-lane rural road has not been explicitly indicated in the technical studies in support of the Plan. The 2007 study recommended a new east-west link route somewhat parallel to Sheaffes Rd and only the eastern section of Sheaffes Rd formed a traffic model network (KRB 2007). In the 2010 AECOM report, Sheaffes Rd is not identified as an existing road that requires an upgrade based on the road network planning principles. As no evidence of network requirement and benefit is supplied and the upgraded section does not form a bus route, the 550 m upgrade of Sheaffes Rd (section 'S4', west of new road 'NR28') should be locally funded by individual developments and thus excluded from the Plan. WCC in its response confirms that this road section will remain as a local road. Intersections 'Int100' and 'Int102' will form part of the implementation of the new north-south roads, marked as a bus route. Intersection 'Int101' is an upgrade to the existing intersection with Paynes Rd. 	AECOM 2010, KBR 2007
Smiths Lane	93	2 lane	Int104	B43	0.04	<ul style="list-style-type: none"> The Smiths Lane upgrade is not explicitly specified in the technical studies. This transport item consists of the upgrade of one intersection (Int104) and one bridge (B43). The nexus of the majority of Smiths Lane and the 'Int104' work can be supported as they form a bus route as per the AECOM report. The nexus of Bridge 'B43' is identified in the 2010 GHD report under 'Road No 2' bridge works. 	AECOM 2010, GHD 2010, KBR 2007, SMEC 2015
Wongawilli Road	590	<u>2/4 lane</u>	–	B42	0.14	<ul style="list-style-type: none"> The upgrade of Wongawilli (between Shone Ave and 'Road No 2' in the Plan or 'NR40– NR47A' in the costing spreadsheet) forms part of the east-west link improvement works. The quantity is verified. There are two description discrepancies in the Plan, including (a) page 25 of the Plan indicates two and four lane arrangement whereas the costing spreadsheet shows a two-lane road for the entire section and (b) page 28 of the Plan identifies intersection 'Int13' as a junction between West Dapto Rd and 'Road No. 2'. Currently West Dapto Rd finishes at the Shone Ave/Wongawilli Rd intersection. The 'Int13' upgrade work is in fact on Wongawilli Rd. This intersection work is documented in the item 'NR40–NR47A'. Bridge 'B42' work, bridge 'B42' work forms part of the main flood access 'West Dapto Rd – Northcliffe Dr extension' route, and is considered a necessary transport item. 	AECOM 2010, KBR 2007

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Darkes Road	1476	2 lane	–	B2, B3	0.65	<ul style="list-style-type: none"> Although Growth Centres Commission's 2008 review of the transport master plan recommended the Darkes Rd level crossing to be closed in the early stages of the release, the Darkes Rd upgrade of this existing two-lane rural road that includes rail overbridge 'B35' is reasonable as it provides an important access link to Princes Highway and the M1 motorway from New Road 1 and West Dapto Rd as per the 2010 AECOM report. Given that the adjoining road sections to the north (West Dapto Rd), south (NR1) and east (Princes Highway and Kanahooka Rd) are or will be a four-lane road, the proposed two-lane arrangement for this road section (particularly between NR1 and Princes Highway) is questionable. The 2010 GHD report cost estimates Darkes Rd as a four-lane link. WCC advised on 27 June 2016 that Darkes Rd will be closed in the future when reintroduced Fowlers Rd extension is implemented. An interim two-lane road upgrade is therefore supportive. The length of Darkes Rd of 1476 m is accepted. 	AECOM 2010, GHD 2006; 2010, Urbanhorizon 2008
Shone Avenue	<u>1256</u>	2 lane	Int12, Int14, Int15	B11, B12	0.18	<ul style="list-style-type: none"> Existing Shone Ave is predominantly an urban, two-lane road with footpath and kerb/channel. Out of the 1,256 m identified, only approximately 350 m based on a GIS photo taken in April 2016 (NearMap) have not been formed to an urban road standard (e.g. missing footpath and surface marking). It is unreasonable to include the two-lane full upgrade work (at the cost estimated for new road construction) for the existing urban road section. Work for intersection 'Int14' with Horsley Dr is identified as 'small roundabout' as per the 2010 GHD report. Based on the latest GIS (NearMap), a roundabout has been constructed at this location. IPART confirmed on 23 June 2016 that funding recoup of essential works such as this is reasonable. There was a noticeable discrepancy of the quantity and cost of bridges 'B11' and 'B12'. The length of 45 m and 75 m (\$11.6m in total, unindexed) is specified in the Plan whereas the 2010 GHD report allows for 18 m and 48 m (\$5.9m in total). The Council has subsequently confirmed that the two bridges have been constructed at the total cost of \$13.2m. 	AECOM 2010, GHD 2006; 2010

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Bong Bong Road Rail Crossing	20	<u>2 lane</u>	–	B21	–	<ul style="list-style-type: none"> This transport item includes the rail overbridge 'B21' and an interim level crossing work. Both upgrade works located outside the s94 area are identified in the 2008 master plan review, but only the 'B21' work is documented in the 2010 integrated transport plan. Given the interim work is essential to the staging plan (200–2,500 additional dwellings), the nexus is reasonable. As per the costing spreadsheet, the interim level crossing upgrade involves a widening to three lanes. The Plan should be updated to reflect this. 	AECOM 2010, Urbanhorizon 2008

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Bong Bong Road	<u>1450</u>	2 lane	Int16, Int18, Int20, Int43, Int105, Int106	<u>B1</u>	0.06	<ul style="list-style-type: none"> This transport item includes a two-lane road upgrade, six intersections and one bridge. Similar to Shone Ave, existing Bong Bong Rd is an urban two-lane road with footpath, particularly the sections within the Horsley precinct. It is therefore unreasonable to include the full two-lane upgrade work (for new road construction) for the whole section of Bong Bong Rd. Intersection 'Int16' with Fairwater Dr (West) is identified in the GHD report as 'small roundabout upgrade'. It is noted that the roundabout has recently been constructed. Intersection 'Int43' in the Plan and the 2010 GHD report is for an upgrade to Marshall St/Osbourne St intersection. The costing spreadsheet, however, allocated \$520,400 (base rate, unindexed) for the (different) signalised Princes Highway intersection. WCC advised on 27 June 2016 that 'Int43' represents the Marshall/Osbourne St intersection. Similar to the 'Int16' situation, the roundabout at Intersection 'Int106' with Sierra Dr has been constructed. The nexus of bridge 'B1' can be discussed as follows. As per the Plan, the 60 m long bridge is located between Horsley and Dapto, which is to the west of the railway line. In the 2008 Urbanhorizon report, the interim level crossing upgrade (included in the previous transport item for the Bong Bong Rd rail crossing) will enable Bong Bong Rd to be accessible in 1 in 10 year flood events. With an existing watercourse bridge, the work could be interpreted as an upgrade to the existing bridge (and the subsequent interim level crossing works) to provide flood free access at a 1 in 100 year event. WCC advised on 27 June 2010 that this is not the case and that this 'B1' work is for the upgrade to cater for 1 in 10 year storm events. The higher bridge upgrade rate of 7400 per m² was advised by WCC to justify the 'B1' cost of \$9.3m. With the complexity of construction methodology for an existing bridge upgrade, the rate is accepted. However, the \$9.3m amount seems to be based on a four-lane bridge works (\$7,400 x 60 m long x 21 m wide). The upgraded Bong Bong Rd will have 2 lanes, thereby the cost of 'B1' upgrade should be approx. \$6.2m (\$7,400 x 60 m long x 14 m wide). 	AECOM 2010, GHD 2006, 2010, Urbanhorizon 2008, WCC 2015a

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Avondale Road	3436	<u>2/4 lane</u>	Int32, Int34, Int35, Int36, Int37	B16, B17	1.35	<ul style="list-style-type: none"> The road forms part of the primary movement network as per the master plan. The total length is verified. The four-lane extent of the transport item is approx. 1.5 km with the remainder a two-lane upgrade of the existing rural road. A description in the Plan (Section 3.5.2.1) is to be revised to include the four laning work. The 5 intersections and 2 bridges are an essential part of the road link and for West Dapto. A small part of the works is located outside the s94 area. 	AECOM 2010, GHD 2006, Urbanhorizon 2008
Cleveland Road	5080	2/4 lane	<u>Int23, Int25, Int27, Int28, Int31, Int33, Int111</u>	B13A, B13B, B14A, B14B, B15	2.46	<ul style="list-style-type: none"> Similar to Avondale Rd, this road section is an important movement link for the release area. The total length is verified with approx. 1 km of a four-lane road section. The work located outside the s94 area for intersection 'Int23' involves Princes Highway, a classified regional road. As the existing intersection has been signalised, the cost allocation (\$757k, base rate) with 100% apportionment to West Dapto for full 'large signals' is questionable. Based on the GIS (NearMap), Intersection 'Int25' with Marshall St was upgraded to a signalised intersection in 2011. Given the intersection is outside of the s94 Plan with a greater benefit to the Dapto precinct, 100% apportionment to West Dapto is unreasonable. WCC advised on 27 June 2016 that the costing should reflect the actual construction cost and not to be indexed into the future. The nexus of the other four intersection and the five bridges is accepted. 	AECOM 2010, GHD 2006, Urbanhorizon 2008
Huntley Road	1144	4 lane	Int38, Int39	B41	0.50	<ul style="list-style-type: none"> The upgrade of this existing rural road is supported by the technical studies. The four-lane upgrade requirement is verified by reviewing the TRACKS model outputs.. The nexus for upgrade of the two intersections is reasonable. Bridge 'B41' is for an upgrade of the existing rail overbridge. The four-lane bridge was mentioned in the 2006 GHD report, but was irrelevant as many transport assumptions (including Northcliffe Dr extension and Bong Bong Rd rail overbridge) have changed since then. The nexus of this upgrade work has to be considered in conjunction with the new rail overbridge on Marshall Mount Road (refer to the Marshall Mount Rd transport item). Council advised on 27 June 2016 that the four-lane bridge 'B41' is deemed required and that the construction of a new rail bridge on realigned Marshall Mount Rd is not selected. 	AECOM 2010, GHD 2006, Urbanhorizon 2008

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
<u>Yallah Road</u>	1200	4 lane	–	<u>B20A, B20B</u>	<u>?</u>	<ul style="list-style-type: none"> Based on the 2015 design, this transport item includes a road widening of the existing rural road to four lanes. The Yallah Rd upgrade (Sections 5–6 in the SMEC design) forms an integrated part of a \$69.59m cost estimate package that also includes Local Rd (Section 3) and NR1–NR3 (Section 7, which is misidentified as Section 8 in Appendix A of the Muller design estimates). It is unclear how WCC extract relevant sub-items and costs relating only to the Yallah Rd upgrade from the package and how the contingency allowances (of identified risk items and for construction) are apportioned. The Plan identified two bridges 'B20A' and 'B20B', but the WCC costing spreadsheet adopts the SMEC concept design with one bridge and on culvert. The Plan is to be revised in accordance with the recent concept design. The 1200 m length is verified. The four-lane requirement is verified based on the output from TRACKS modelling. The 2015 design stops short of providing any solution for connecting Yallah Rd to Princes Highway, including an upgrade to the existing rail overbridge. It is noted that this intersection work is not included in the Plan. The cost of land acquisition in the Plan is \$3.5m whereas the Council's costing spreadsheet indicates \$3.8m. It is important to note that land and property acquisition costs have been specifically excluded from the cost estimate (by Muller partnership) in the 2015 SMEC report. It is unclear whether the basis of determining the extent (and cost) of the land acquisition for Stage 5 is the same as that for the earlier stages where the base rates are as per the MMJ letter. 	SMEC 2015

<u>Marshall Mount Road</u>	5600	<u>2/4 lane</u>	Int40	B18A, B18B, B19, <u>Rail Overbridge 'A'</u>	<u>?</u>	<ul style="list-style-type: none"> The overall nexus for upgrading this existing rural road is supportive. The length is verified. This existing road can be divided into two segments for a detailed nexus consideration. The northern segment of approx. 2.5 km is located between Huntley Rd/Princes Hwy to the north and Yallah Rd to the south (Section 4 in the SMEC design) and the southern segment (Sections 1–2 in the SMEC design). The nexus for the four-lane upgrade of both the northern and southern segments, as currently proposed in the Plan, is questionable. The four-lane consideration is not consistent with what are indicated in the earlier reports such as the integrated transport plan (AECOM 2010) and the existing contribution plan (WCC 2015a) whereby only an upgraded two-lane road is required. The minutes of the ordinary council meeting (WCC 2015c), dated 19 October 2015, reveal an insight into the determination process. An excerpt below discusses the northern segment where a two-lane road was recommended. <i>This northern section of Marshall Mount Road has had two optional concept designs.</i> <i>Option 1: The first option would involve upgrading the road from a 2 lane rural road to a Type 4 road (22.4m road reserve with a 13.4m carriageway comprising 4 lanes). This option would involve significant new construction of new bridges and culverts.</i> <i>Option 2: The second option is to upgrade this road from a 2 lane rural road to a Type 3 Minor Collector Road, with modifications in some sections. This option would effectively upgrade the existing road, maintaining the 2 lane format for the area north of the proposed village centre. Due to flooding constraints, there are only limited dwelling numbers north of the proposed village centre. If the road is not upgraded beyond 2 lanes, the existing single lane bridge structures (which still have a long life span) can be retained and the road left at its current levels. With limited through traffic, the cost of upgrading this northern section of road can be significantly reduced. It is recommended that Council use this option.</i> Similarly for the southern segment, it is acknowledged that a four-lane road may not be required, and only a road reserve suitable for a four-lane is to be obtained. <i>The Calderwood Concept Plan depicts a separate road extending through the Calderwood Release Area to Marshall Mount Road near the intersection with North Marshall Mount Road. There is no design for this road, and its timing is unknown. If constructed, the traffic volumes on the southern part of Marshall Mount Road (south of North Marshall Mount Road) will reduce and a Type 4 – 4 lane road may not be required and a Type 3 – 2 lane Collector Road can be provided. A road reserve suitable for a 4 lane road will still be required, as the additional area is utilised for public transport and parking.</i> 	AECOM 2010, KBR 2007, SMEC 2015, Urbanhorizon 2008, WCC 2015a; 2015c
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						<ul style="list-style-type: none"> ▪ The Council meeting minutes also disclose a financial arrangement between Wollongong and Shellharbour to co-fund connecting roads with respect to West Dapto Stage 5 and Calderwood developments. The exact statement can be repeated as follows: <p><i>Council will be receiving a Section 94 contribution of \$304,920 for Stage 1 of the Calderwood major project area (231 lots). The contribution for the other stages has yet to be resolved. Traffic generated from the Calderwood development would make approximately 45.4% of the traffic volumes on the Yallah-Marshall Mount local roads, in 2036+ and ranges from 9% to 89% depending on proximity to Calderwood. Calderwood traffic would also use local roads that have not yet been designed or costed, for Section 94 purposes. Any future contributions from Calderwood would further reduce the contribution required from Yallah-Marshall Mount and West Dapto.</i></p> ▪ It is unknown whether the four-lane deviations of both the northern and southern segments in the Plan is a result of a update to an integrated network planning, a consideration of Stage 5 as a 'floating' stage (WCC 2015c) or a conscious approach for consistency with Shellharbour City Council's road design within Calderwood urban development project. ▪ What is, nonetheless, known from the review of the TRACKS model outputs is that the road network in the area can operate satisfactorily when Marshall Mount Road is a two-lane road. The inclusion of the four-lane road for the entire length of this transport item is, therefore, not supported. ▪ Upgrade of Marshall Mt Rd/Yallah Rd Intersection 'Int40' with the new road 'Road 08' is accepted. It is observed that the SMEC design does not include the 'Int40' intersection design with Princes Highway. Such design needs to take into account the close proximity of the existing Huntley Rd intersection. ▪ The nexus of the new grade separation over the South Coast rail line (rail bridge 'A' in the SMEC design) is not identified in the technical studies. It is unreasonable to construct this rail overbridge if the existing Huntley Rd rail bridge is to be upgraded (bridge 'B41' work). Council confirmed on 27 June 2016 that this is the case and \$7.2m can be removed from the Plan's costing spreadsheet. ▪ Similar to Yallah Rd, there is the cost discrepancy for land acquisition (\$6.7m in the Plan vs. \$8.4m in the costing spreadsheet). 	
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Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Paynes Road	<u>937</u>	2 lane	–	<u>B52</u> , B53	0.97	<ul style="list-style-type: none"> The upgrade of this existing two-lane rural road (termed 'P1-P2' in the costing spreadsheet) has not been specifically identified in the technical study in support of the Plan. Approx. 300 m of the east-west section is identified in the AECOM report as a bus route. The nexus of the remaining road section (P2) is unsupportive. Given the road itself is not recommended in the supporting documents, the nexus of bridge 'B52', located on a future local road, is arguable. 	AECOM 2010
New Roads							
NR29-NR31	100	2 lane	–	B38	0.20	<ul style="list-style-type: none"> This item only contains bridge 'B38' work, which excludes construction of the new road. The bridge is identified in the GHD report. This coupled with the fact that the new road segments (NR29–NR31) form part of a minor collector road as identified in the 2010 AECOM report supports the nexus of this transport item. 	AECOM 2010, GHD 2010, KBR 2007
Northcliffe Drive extension (NR33– NR39, <u>Reddalls Rd</u>)	3482	4 lane	Int1, Int2, Int3, Int6	B22, B23A, B23B, B24, B25	3.69	<ul style="list-style-type: none"> The Northcliffe Dr extension, including a rail overbridge, will function as a major east-west link, servicing the future suburbs such as Wongawilli and Kembla Grange. The total road length is verified. The four-lane arrangement is accepted particularly when it extends the existing four-lane Northcliffe Rd. However, upgrade cost of the existing Reddalls Rd (820 m) should be lower – refer to Section 4 for reasonable cost discussion. The quantity of four intersections and five bridges are confirmed. It is noted that intersection 'Int1' with Princes Hwy and bridge 'B22' over the rail line are not included in the Plan as the funding is obtained from Council/existing development. 	AECOM 2010, Connell Wagner 2008, GHD 2010, Urbanhorizon 2008

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Fairwater Drive	758	2 lane	Int26, Int42	B33	–	<ul style="list-style-type: none"> This transport item has already been constructed, involving the 275 m long extension of Fairwater Dr to the west to connect with Bong Bong Rd (completed in 2011 based on NearMap) and a new road from the Sierra Dr intersection to the east (completed approximately in 2013, NearMap). The nexus of the two intersections and one watercourse bridge are supportive. As discussed in the costing review, the funding recoup should be based on the actual, unindexed capital expenditure as opposed to the base rates from the 2010 GHD report. The actual construction cost of \$7.2m of this transport item and an interim solution for road sections 'NR14A-NR14B' is provided in the WCC response in August 2016. 	AECOM 2010, GHD 2006; 2010

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
<u>Fowlers Road extension</u> (NR16– NR18, NR19F)	795	4 lane	Int21, Int22	<u>B44, B45</u>	1.83	<ul style="list-style-type: none"> This transport item of extending existing Fowlers Rd, which is a key component of the West Dapto Transport Link proposal, consists of two sub-items. The first sub-item is the extension from Princes Highway to Marshall St, which was completed in 2011 (NearMap). The nexus of this work, including a roundabout at the Marshall St intersection, is supported in the 2010 integrated transport plan. The second sub-item involves road upgrade ('NR17' and 'NR18') and two bridges 'B44' and 'B45' crossing the rail line and Mullet Creek, respectively. While the 2010 studies (AECOM 2010, GHD 2010) excludes this sub-item from their recommendations, Council in email response (dated 27 June 2016) confirms the reintroduction of the Fowlers Rd extension as a primary movement link in general accordance with recommendations from the Growth Centres Commission report (Cardno 2008b) and State Rail (no supporting evidence supplied). There are two description discrepancies of the extent of new road formation (795 m). Firstly, a four-lane new road 'NR19' has the same identifier as a new two-lane road under in the 'NR12–NR22' transport item. The extent of work is accurate with repeated road names. Name 'NR19F' is therefore used for this section to avoid confusion. Secondly, new road 'NR16' seems to be missing from the work schedule of this transport item, but after verifying the length (600 m) of the new road 'NR17', it is likely that works required to construct 'NR16' work has already included in the new road 'NR17'. As noted in the costing spreadsheet, the cost estimate of the two bridges is \$70m with 24% contribution of \$22.5m from Restart NSW. The extent and the basis for calculating the cost of the bridge works were initially unclear. The Council in the August 2016 response provides a concept design and cost estimate for the entire Fowlers Rd extension works. The new information does not necessarily affect the nexus consideration, but substantially change the reasonable cost analysis. This is investigated in detail in Section 4.3. 	AECOM 2010, Cardno 2008b, GHD 2006, KBR 2007

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
NR12-NR22	3942	<u>2 lane</u>	–	B31, B32, B34, B35, B36, B37	9.03	<ul style="list-style-type: none"> This transport item includes only new roads 'NR12–NR15' and 'NR19–NR22'. The road sections forms an important north-south link. The length is verified, but the road upgrade description is to include a four-lane upgrade. The future four-lane, 455 m long roads 'NR14A' and 'NR14B' have been constructed as a two-lane road as part of the initial access strategy. For costing accuracy, the s94 funding for this transport item should consist of an actual cost for the two-lane formation plus a road upgrade cost from two to four lanes. The actual cost information provided by WCC in August 2016 does not specifically indicate the actual expenditure to construct the two-lane 'NR14A-NR14B' sections, but rather a total cost of \$7.2m for the complete extension of Fairwater Dr, including the 'NR14A-NR14B' interim upgrade. The transport item includes five stream crossing bridges and one rail bridge ('B35'). 	AECOM 2010, KBR 2007
NR40–NR47A	4947	<u>4 lane</u>	Int13, Int17, Int29, Int30	<u>B26A, B26B, B27, B28, B29A, B29B, B29C</u>	10.09	<ul style="list-style-type: none"> The nexus and length of this north-south transport item is verified. According to the AECOM report, Road No 5 (understandably all road sections in this transport item) is a major collector road, serving the southern and western areas of the Plan. The four-lane description in the Plan and the current s94 plan (WCC 2015a) is different from the two-lane upgrade in the costing spreadsheet. A review of the adopted scenario of the TRACKS modelling reveals a two-land road formation, which is consistent with the WCC response in August 2016 confirming that this north-south road is a two-lane road with kerbside parking and planter boxes on either side. The future possibility of requiring this transport item to be upgraded to a four-lane road due to a degree of uncertainty in traffic demand analysis and modelling is acknowledged; however, it is unreasonable to justify the nexus of a four-lane bridge provision of this transport item based on the 'future-proof' scenario of the four-lane road. The nexus of four intersections and seven watercourse bridges is accepted. However, there is an issue with bridge costing, the 2010 GHD report allows for four-lane bridges of 300 m in total length with a total cost of \$23.9m (c.f. \$24.6m, unindexed over 345 m). If this collector will be constructed as a two-lane road as a final design solution, the cost of the bridges can be reduced significantly. To recap, the costing spreadsheet currently includes two-lane roads, but with four-lane bridges. 	AECOM 2010, GHD 2006; 2010, WCC 2015a

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
NR4-NR9	2290	2 lane	–	B39A, B39B, B39C, B39D, B39E	4.67	<ul style="list-style-type: none"> This minor collector road is recommended in the AECOM report. The length, two-lane formation and the five watercourse bridges are accepted. 	AECOM 2010, GHD 2006; 2010
NR49 & NR50	500	2 lane	–	B40	1.02	<ul style="list-style-type: none"> The nexus of the extension of Bong Bong Rd/IReddel Rd is supportive. The extent of the transport item, including a 100m long bridge and a new two-lane road 'NR49', is accepted. 	AECOM 2010, GHD 2010
<u>NR1-NR3</u>	2500	4 lane	–	B30A, B30B	-	<ul style="list-style-type: none"> The new road construction is recommended in the AECOM report. The length is verified. Similar to the Yallah Rd situation, the exact extent of the sub items and associated costs to implement these new road sections is unclear as the Plan and costing spreadsheet simply refers to Section 7 (or Road 08) of the 2015 SMEC design and the \$69.59m cost estimate package. The four-lane formation is as per the SMEC design, and its nexus is verified by reviewing TRACKS models. Bridges '30A' and '30B' in the Plan are bridge 'J' and culvert 'D' in the SMEC design. Based on the costing spreadsheet, 50% on the total cost is included in the Plan. 	AECOM 2010, SMEC 2015
Local Road	2300	2 lane	Int107, Int108	B46, B47	4.69	<ul style="list-style-type: none"> This transport item is Road Section 3 in the SMEC design. This road section has not been recommended in other technical studies. Its nexus and importance within the primary road network was initially questioned; however, after reviewing the TRACKS modelling output and WCC response in August 2016, the nexus of this transport item is verified. The costing spreadsheet indicate 32% of the total cost is included in the Plan. 	AECOM 2010, SMEC 2015
<u>NR100-NR103</u>	<u>2335</u>	<u>2 lane</u>	<u>Int109, Int110, Int113</u>	<u>B48, B49, B50</u>	<u>3.68</u>	<ul style="list-style-type: none"> In reference to the Local Rd situation, there is no nexus evidence in the technical studies being reviewed, including the Stage 5 concept design by SMEC. The new roads along with associated intersections and bridges are shown in the current s94 plan (WCC 2015a) and included in the costing spreadsheet supplied on 17 June 2016. WCC in the August 2016 response confirms that this transport item will operate as a local road and can be removed from the Plan. 	AECOM 2010, GHD 2010, SMEC 2015, WCC 2015a

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Public Transport							
Bus Shelters	214 shelters					<ul style="list-style-type: none"> The 2010 integrated transport plan provides an indicative planned network of four bus feeder routes that overlap and intersect one another to enable a high level of accessibility the new Darkes Rd and Bong Bong district centres. The bus stop will be equipped with a shelter, timetable and route information display. The method of calculating the number of bus shelters is based on a provision of one stop on both sides every 400 m. WCC supplied on 27 June 2016 a map of conceptual bus routes, which is used to estimate the route distance and in turn the number of bus stops. The estimated 214 shelters based on the total distance of 42,790 m are accepted. It is noted that the total stop number could be reduced if some routes (or in part) run unidirectional in a loop as they currently are for part of Routes 31, 33 and 43 services in the Dapto district. 	AECOM 2010
Bus Transport Kiosks	7 kiosks					<ul style="list-style-type: none"> The nexus of the seven kiosk sites located in the villages and town centres, including one site on Bong Bong Rd near the existing Horsley settlement, is supportive. 	AECOM 2010, GHD 2010

Transport Item						Comment	Reference
Road Name	Length (m)	Road Type	Intersection	Bridge	Land (ha)		
Dapto Multi-Modal Interchange			1 station			<ul style="list-style-type: none"> The nexus of upgrading the existing Dapto station to a multi-modal, sub-regional transport interchange is supported, especially from a transport sustainability perspective. As per the integrated transport plan (AECOM 2010), West Dapto will benefit from this transport item primarily via a better provision of bus interchange with other modes (e.g. rail, coach, taxi, walking and cycling). There is an issue with the cost apportionment assumption. The benefit of the interchange should also take into account the population growth in the Dapto area as well as the distance from the interchange. The closer the area to the interchange, the greater the benefit likely to occur, especially 'Area A' (refer to Figure 1.1) in the town centre as part of Transit-Oriented Development. The Council in the August 2016 response argues that based on a sustainable transport approach, West Dapto would have a high degree of accessibility to the station (i.e. frequent bus services). However, it is our opinion that users from the (East) Dapto area will have more sustainable transport options of walking, cycling and public transport to access the station than those in West Dapto; thus receiving potentially greater benefits from implementing this transport item. 	AECOM 2010, GHD 2010

4 REASONABLE COSTS

4.1 Overview

The proposed development contribution shall be based on a reasonable estimate of the cost of the proposed transport facilities. The first review step, included in Section 4.2, was to consider the questions as outlined in the appendices of the Practice Note.

Where there are deviations of cost from the recommendations in the technical studies, the deviations together with the outstanding, cost-related matters from the nexus review are assessed and documented in Section 4.3.

4.2 Main Cost Assessment against IPART Practice Note

As demonstrated in Table 4.1, the reasonable cost review involves considering the information provided in the application for assessment of the Plan prepared by WCC against the assessment criteria and guidance in the Practice Note.

Table 4.1: Assessment of a reasonable cost estimate

IPART Practice Note		WCC Application for S94 Plan Assessment		ARRB Comment
Item	Consideration	ARRB Review	Ref	
C1	How were the Plan and cost estimates for the land and works prepared?	<ul style="list-style-type: none"> Cost estimate of road, intersection and bridge upgrade works for Stages 1–4 is primarily based on advice from draft 2010 GHD report. Cost of Stage 5 infrastructure upgrade is based on 2015 SMEC design and report. Land acquisition and valuation for Stages 1–4 is based on the MMJ report. 10% design and project management and bus kiosk cost are based on Council advice. 20% construction contingency and bus shelter cost are based on IPART Infrastructure Benchmark Costs report. Concept design cost estimate, prepared by R O'Sullivan, for the Fowlers Rd extension is supplied by WCC at the time of finalising this report in August 2016 Given the scope and scale of the project, a detailed cost breakdown of the GHD, Muller and R O'Sullivan estimate is considered reasonable within a $\pm 10\%$ tolerance subject to points raised in the ARRB comment column. 	Section 3.3, p. 1–3 and further info from WCC	<ul style="list-style-type: none"> For road (pavement) works, GHD at WCC's request did not differentiate the rates between existing and new roads. This assumption is considered unreasonable as for the most part less effort (including material, time and cost) is required for upgrading the existing roads. While the estimated rates of land acquisition for Stages 1–4 can be verified based on the advice in the MMJ report, the quantity of land required for the transport facilities in hectares is taken at face value due to lack of design information being available. Stage 5 cost estimate contingent on the SMEC concept design should be subject to different assumptions (base and contingency rates) than those of the earlier stages, which are based on strategic, preliminary design. Stage 5 construction contingency rate of 20% should be reduced as both construction contingency and identified risk items have been allowed in the design process. The more recent cost estimate (September 2015) by R O'Sullivan should be used for the 'Fowlers Rd extension' transport item with the \$22.5m grant reduction and a contingency rate lower than 37%.

IPART Practice Note		WCC Application for S94 Plan Assessment		ARRB Comment
Item	Consideration	ARRB Review	Ref	
C2	Are the costs up-to-date?	<ul style="list-style-type: none"> The cost estimate of the majority of transport items (Stages 1-4) is based on the draft GHD report issued in 2010. Costs of Stage 5 transport infrastructure are based on SMEC and Muller's design estimate in 2015. Costs of Fowlers Road upgrade is based on R O'Sullivan in 2015. 	Section 3.3, p. 1-3, and further info from WCC	<ul style="list-style-type: none"> The dated costs are indexed using a Consumer Price Index, which is not considered appropriate as it is too broad in its inclusions and not specifically related to civil road works. Cost escalation factors (e.g. labour, material and plant) for road construction can be better estimated using BITRE's Road Construction and Maintenance Prince Index (RCMPI) or ABS's Road and Bridge Construction Index (RBCI) according to Raniga (2015). Cost indexing of most transport items is based on the 2010 rates. However, more up-to-date design, notably the 2015 SMEC design for Stage 5 and the 2015 concept design for Fowlers Road extension, should not be subject to the same 2010 cost adjustment process for reasons discussed in the main body of this report.
C3	Do the cost estimates include all of the costs required to bring the transport facilities on the essential works list into operation (e.g. land, capital, fitout, design and project management costs)?	<ul style="list-style-type: none"> Yes 		<ul style="list-style-type: none"> The breakdown cost estimate of \$5m for the Dapto multi-modal transit station is not provided. Cost estimate for off-road cycle paths, if they are to be included in Transport, has not been verified.
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?	<ul style="list-style-type: none"> Unclear 		<ul style="list-style-type: none"> Cost estimate of bus kiosks (larger bus stops) and the transit station is undertaken by the applicant, WCC.
C5	How has WCC taken Consumer Price Index (CPI) into account?	<ul style="list-style-type: none"> Yes, CPI is used for adjusting contributions at the time of payment and for indexing the GHD cost estimates. 	Refer to the Plan and costing document	<ul style="list-style-type: none"> As earlier indicated, other indices with different escalation rates are considered more appropriate for indexing road infrastructure upgrade costs.
C6	Are the assumptions and calculations robust?			
C7	Has a Net Present Value (NPV) methodology been utilised? If so, has an appropriate discount rate been used?	<ul style="list-style-type: none"> No 	Section 3.3, p. 1	<ul style="list-style-type: none"> The assumptions and calculation methods are considered further in the next section.

IPART Practice Note		WCC Application for S94 Plan Assessment		ARRB Comment
Item	Consideration	ARRB Review	Ref	
C8	Does the plan seek to recoup funds?	<ul style="list-style-type: none"> Unclear 	–	<ul style="list-style-type: none"> There are a number of upgrade works that have been completed (fully or in part) and included in the Plan. These are: <ul style="list-style-type: none"> Shone Ave upgrade, including intersection 'Int14' Bong Bong Rd upgrade, including intersection 'Int16' Cleveland Rd, including intersections 'Int23' and 'Int25' Fairwater Dr upgrade, including Intersections 'Int26' and 'Int42' and bridge 'B33' New roads 'NR14A' and 'NR14B' as a two-lane road. It is therefore apparent that the Plan seeks to recoup funds.

4.3 Detailed Cost Assessment of Transport Items

Taking into account the outcome of the nexus review in Section 3.3 and the main assessment of the cost reasonableness in Section 4.2, the detailed assessment entails considering the outstanding transport facilities (e.g. intersections and bridges) of the transport items with an aim to determine whether the cost deviations are reasonable. As can be seen in Table 4.2, certain assessment points are applicable to a number of transport elements whereas specific comments are made towards individual items due to their unique circumstances. Unless specified otherwise, the costs indicated in Table 4.2 are unindexed.

Applied to the transport items in Stages 1-4, the estimate rates for roads, intersections and bridges recommended in the GHD report are reasonable as they are within the acceptable ranges for such estimates. The higher rates for upgrading (widening) of existing bridges reflect the added complexity of modifying existing structures. However, it is considered unreasonable for an overall 10% 'design and project management' contingency to be applied to the roads and intersections in Stages 1-4 because as per the cost estimate report (GHD 2010) the adopted rates already include detailed design investigation and management plus project costs (environmental approvals and project management) and overheads. Applying this 10% allowance to the bridges is reasonable, except for bridges 'B44' and 'B45' as the recently supplied cost estimate for the Fowlers Road extension includes contingency as high as 40% for the infrastructure components.

For Stage 5 transport items, the base rates and the overall design and project management allowance of 10% are reasonable. Nevertheless, both construction contingency (9.09%) and identified risk items (ranging from 2.96% to 5.61%) have been allowed in the concept design estimates by Muller Partnership (SMEC 2015). The WCC cost estimate for the s94 contribution exclude Muller's construction contingency (see Appendix D), but is eventually subject to the overall 20% construction contingency. Given a more detailed design with the identified risk items taken into account, a lower rate of 15% is recommended for the Stage 5 facilities.

Table 4.2: Detailed assessment of cost reasonableness of transport items

Transport Facility	Outstanding Matter	Transport Item		Cost Estimate	
		Main	Individual	The Plan	ARRB Response
Overall	<ul style="list-style-type: none"> BITRE's Road Construction and Maintenance Price Index (RCMPI) is more appropriate than Consumer Price Index (CPI) for transport cost indexing. Recent index update is available in BITRE (2015). 	All		CPI	RCMPI
	<ul style="list-style-type: none"> Cost recoup through the Plan for transport items that have been constructed should reflect actual capital expenditure (CAPEX). 	As listed in item C8 of Table 4.1.		2010 base rates from GHD	Actual CAPEX plus CPI from completion date
	<ul style="list-style-type: none"> The GHD estimate rates used for Stages 1–4 facilities have already included design and project management costs. The 20% construction contingency is accepted. 	Stages 1-4, All		10%	0%
	<ul style="list-style-type: none"> It is unreasonable to apply the overall 20% construction contingency to Stage 5 transport items as both construction contingency and identified risk items have been allowed. 	Stage 5	Yallah Rd, Marshall Mount Rd, NR1-NR3, Local Rd, NR100-NR103	20%	15%
	<ul style="list-style-type: none"> Similar to Stages 1–4, costs of Stage 5 facilities, estimated in 2015, are incorrectly indexed from 2010. 			Indexing from 2010	Indexing from 2015
Road Network	<ul style="list-style-type: none"> Upgrade cost of existing rural or urban roads should not be based on a full capital cost of a new build. The revised rates suggested by ARRB are derived by modifying the scope of the sub items (e.g. earthworks and road furniture) in the detailed review estimate (Appendix E) of the 2010 GHD report. No change has been made to the overheads, margins, design investigation and management and project costs. 	Urban, 2 to 2 lanes	Shone Ave, Bong Bong Rd	\$4,700/m	\$3,000/m
		Rural, 2 to 2 lanes	West Dapto Rd, Sheaffes Rd, Wongawilli Rd, Darkes Rd, Shone Ave, Avondale Rd, Cleveland Rd	\$4,700/m	\$4,300/m
		Rural, 2 to 4 lanes	West Dapto Rd, Avondale Rd, Cleveland Rd, Huntley Rd, Reddalls Rd	\$5,300/m	\$4,900/m
	<ul style="list-style-type: none"> The most western section of Sheaffes Rd (550 m) does not form a network of collector roads as per the AECOM report. 	Sheaffes Rd	S4	\$2,585,000	\$0

Transport Facility	Outstanding Matter	Transport Item		Cost Estimate	
		Main	Individual	The Plan	ARRB Response
	<ul style="list-style-type: none"> The four-lane formation of Marshall Mount Rd is unsupported. 	Marshall Mount Rd	Northern Segment (SMEC Section 4)	\$44,208,137 (Option 1)	\$29,188,079 (Option 2)
			Southern segment (SMEC Sections 1–2)	\$27,040,616 (See Appendix D)	\$17,853,356 (proportional reduction based on the northern segment scenario)
	<ul style="list-style-type: none"> Nexus of upgrading 490 m of the existing rural road is not supported. 	Paynes Rd	P2	\$2,303,000	\$0
	<ul style="list-style-type: none"> More design and cost estimate information for the Fowlers Rd extension works is provided by WCC in August 2016. The cost schedule prepared by R O'Sullivan in September 2015 supersedes the costing information in the Plan for this transport item. An average construction contingency of 37% used in the detailed estimate is excessive given design advancement and the level of costing details. A 20% contingency is more appropriate and is applied to the ARRB estimate. It is noted that with the contingency consideration above, this transport item is no longer subject to an overall 20% contingency applied to other Stages 1-4 transport items. 	Fowlers Rd extension		\$92,971,200 (total cost subject to a \$22.5m grant reduction)	\$85,433,096 (total cost subject to a \$22.5m grant reduction)
	<ul style="list-style-type: none"> Future four-lane roads 'NR14A–NR14B' were partially constructed to a two-lane road in 2013 (Based on NearMap). The s94 funding is to include the actual CAPEX plus a revised upgrade cost to a final four-lane arrangement. 	NR12–NR22	NR14A, NR14B	5,300/m	Actual, CAPEX plus \$4,900/m
	<ul style="list-style-type: none"> Without evidence of nexus, this transport item is likely to operate as a local road servicing a local traffic catchment. 	NR100-NR103		\$10,061,934 (50% apportionment)	\$0
Bridge	<ul style="list-style-type: none"> Cost of bridge 'B1' upgrade work seems to be based on a four-lane bridge. The Bong Bong Rd upgrade is for a two-lane road. 	Bong Bong Rd	B1	\$9,324,000	\$6,216,000
	<ul style="list-style-type: none"> Although design deviation in length to 150, 150, 50 metres is accepted, the width of the three bridges should be based on a two-lane cross section (14 m wide x \$6,600 / m2). 	West Dapto Rd	B9A, B9B, B9C	\$54,390,000	\$32,340,000 ¹

Transport Facility	Outstanding Matter	Transport Item		Cost Estimate	
		Main	Individual	The Plan	ARRB Response
	<ul style="list-style-type: none"> Duplicated rail bridge work designed by SMEC is no longer required as confirmed by WCC on 27 June 2016. 	Marshall Mount Rd	Rail Bridge A	\$7,221,877	\$0
	<ul style="list-style-type: none"> The nexus of the two bridges is not supported. 	Paynes Rd	B52	\$393,211	\$0
	<ul style="list-style-type: none"> Extent of the upgrade of the rail bridge 'B44' and watercourse bridge 'B45' was unknown as the 'Fowlers Rd extension' was reintroduced post the 2010 GHD cost estimate. Concept design and cost estimate for the Fowlers Rd extension, including the two bridges, are provided in August 2016. 	Fowlers Rd extension	B44	\$30,000,000 (total cost with 76% apportionment to West Dapto)	The bridge costs now are included in the total estimate for the 'Fowlers Rd extension' transport item.
			B45	\$40,000,000 (total cost with 76% apportionment to West Dapto)	
	<ul style="list-style-type: none"> Currently, the Plan includes construction of four-lane bridges. If only two lanes are required for the new road construction, costs of the bridges (345 m in total length) can be significantly reduced due to the reduced width of 7 m. 	NR40-NR47A	B26A, B26B, B27, B28, B29A, B29B, B29C	\$24,633,000	\$16,422,000
Public Transport	<ul style="list-style-type: none"> Distance from the interchange is an important factor beside the population to determine the benefit of providing the Dapto multi-modal interchange to the West Dapto catchment (without 'Area A' in the town centre being included). A 40%–45% apportionment is suggested based on the distance from the interchange to the centre of mass of Dapto and West Dapto and a high degree of public transport accessibility in West Dapto. 	Dapto Station Multi-Modal Transit Interchange		\$3m (60% apportionment of the \$5m total cost)	\$2m–\$2.25m (40%–45% apportionment)

5 FINDINGS AND RECOMMENDATIONS

The findings of the review of the Plan in terms of its essential works, nexus and cost reasonableness along with our recommendations are presented in Table 5.1. They take into account the WCC responses received, included in Appendix A, which addressed a number of clarification questions raised in the draft revised report issued on 30 June 2016.

Table 5.1: Project findings and recommendations

Findings		Recommendations	
Essential Works			
1	The proposed transport facilities are on the essential works list, with the exception of the off-street parking of the multi-modal transport interchange. The on-street car parking of road upgrade is considered an essential work.	a	The non-essential work (and cost) of the off-street car parking should be excluded from the Plan.
		b	The definition of essential transport works in the Practice Note should be improved to specifically mention the on-street aspect of the car parking as acceptable essential transport works.
2	The off-road cycle paths are included in the open space and recreation facilities of the Plan.	c	For integrated planning and design, the off-road paths could be included as a transport item.
3	As advised by IPART, transport sub-items (e.g. small bridges or localised intersection improvements) that are required for local network purposes can be implemented under land use or subdivision conditions of consent (except works-in-kind) and as such they can be excluded from the s94 plan.	d	The 'essential works' definition for transport can be revised to better guide the assessment process given this situation can be considered under both 'essential works' and 'nexus' criteria.
Nexus			
4	Output from TRACKS traffic modelling in different transport/land use scenarios is a key determining factor of the nexus review, including justification of new collector roads (e.g. Local Rd and NR100–NR103), the extent of the upgrade works (e.g. two vs four-lane road formation).and the apportionment between existing and proposed developments. A review of the model outputs provided by WCC has been undertaken.	e	The revised points about nexus, documented in Section 3.3, are adopted by IPART.
5	There were a number of outstanding nexus issues listed in Section 3.3. Where they are related to costing, those issues are addressed in the detailed review as shown in Table 4.2. The following nexus and costing issues have been updated, taking into account the responses from Council: <ul style="list-style-type: none">design justification for bridges B9A, B9B, B9C, B11, B12, B26A, B26B, B27, B28, B29A-B29C, B44, B45 and B52method of allocating sub-items in the Yallah Rd/NR1–NR3/Local Road package to each transport itemnexus evidence from a network planning perspective for Local Road to be included in the Planthe extent of the upgrade of NR40–NR47Anexus evidence of NR100-NR103the use of a culvert in place of a small bridge as demonstrated in the SMEC design		

Findings		Recommendations	
6	A section of existing Sheaffes Rd (S4) to the west is likely to continue to function as a local road.	f	Upon review by WCC and as documented in Appendix A, the portion of Sheaffes Road will function as a local road. This transport item should be excluded from the Plan.
7	A section of existing Paynes Rd (P2) to is unlikely to form a collector road network in the future.	g	Upon review by WCC and as documented in Appendix A, the portion of Paynes Road will function as a local road. This transport item should be excluded from the Plan.
8	There is no nexus evidence in any of the technical studies for the inclusion of NR100–NR103 in the Plan.	h	Upon review by WCC and as documented in Appendix A, the portion of roads NR100–NR103 will function as a local road. This transport item should be excluded from the Plan.
Reasonable Cost			
9	As documented in Table 4.2, there are costing discrepancies the Plan and reasonable costs, taking into account the outstanding matters from the nexus review. The ARRB response to the cost estimate has been updated to account for the WCC response in August 2016.	i	IPART to adopt ARRB's reasonable cost suggestions listed in Table 4.2.

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WCC 2016, *Draft West Dapto Section 94 Development Contributions Plan*, Wollongong City Council, Wollongong.

APPENDIX A COUNCIL RESPONSES IN AUGUST 2016

Aut Karndacharuk (Dr)

From: Marcelle Daunoras <Marcelle_Daunoras@ipart.nsw.gov.au>
Sent: Monday, 8 August 2016 10:33 AM
To: Aut Karndacharuk (Dr); David McTiernan
Cc: Nicole Haddock; Adrienne Bailey
Subject: FW: Response to IPART - Review of Transport Items in the Draft West Dapto Contributions Plan
Attachments: Section 1, 2, 3, 4, 5, 6, & 7 SMEC report cost breakdown.pdf; Capital expenditure.pdf; 100% concept design- Fowlers Rd bridge.pdf; 100% concept design Fowlers Rd bridge - Concept Estimate.pdf

From: David Tuszyński [mailto:DTuszyński@wollongong.nsw.gov.au]
Sent: Thursday, 4 August 2016 6:58 PM
To: Marcelle Daunoras
Cc: Milan Marecic; Emma Struys; Edith Barnes; Andrew Byers; Ron Zwicker
Subject: WCC: Response to IPART - Review of Transport Items in the Draft West Dapto Contributions Plan

Hi Marcelle,

Thank you for the opportunity to discuss and clarify IPART's queries in today's telephone meeting.

As was mentioned, please find Council's responses in red below to the questions raised by IPART. We hope this further clarifies and assists ARRB's final report.

Please note due to the file size, the attached design plans of Fowlers Rd bridge are an incomplete set, however Council is able to DropBox the complete set if requested. In addition the TRACKS model files will be issued in a consecutive email.

Feel free to contact myself if you require any further assistance.

Regards



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From: Marcelle Daunoras [mailto:Marcelle_Daunoras@ipart.nsw.gov.au]
Sent: Thursday, 21 July 2016 4:59 PM
To: Ron Zwicker; David Tuszyński; Milan Marecic
Cc: Nicole Haddock
Subject: DRAFT REPORT - Review of Transport Items in the Draft West Dapto Contributions Plan

Dear all,

IPART has now received a draft report in relation to the *Review of Transport Items in the Draft West Dapto Contributions Plan* (draft transport report) carried out by our consultants ARRB Group Limited. A copy of this draft report is attached for your review and comment.

Further, can we please request that you address the specific questions below;



1. We note that the Practice Note excludes carparking under 'essential' transport facilities. Could you please provide further information about the nature of the carparking facilities to be included as part of the Multi-Modal Transport Interchange. There is no concept plan for a multi-modal transit interchange at Dapto Station. However, it has been identified in a several studies, including the Dapto Town Centre Access and Movement Strategy, which recommends the interchange include parking, kiss and ride facilities, taxi ranks and long distance bus/coach facilities. Furthermore, the report recommends 200 parking spaces be provided at the station, based on an earlier "Illawarra Urban Transport Opportunities Study" (DJA Maunsell for DUAP, 1997). Notwithstanding this, it is difficult to put a cost to the provision of this parking, as it is unknown at this stage whether it would be provided through an at-grade car park or multi-deck car park, which have substantially different costs to deliver.

Car parking is a critical component of the multi-modal transport options for the interchange, and the exclusion of this as an essential infrastructure element could be detrimental to the successful transition of a 15% modal shift which failure to achieve this target has greater implications in terms of increased traffic/4 lane roads and congestion issues on the RMS M1 road network.

2. In relation to nexus can you please provide clarification on the items listed below and specific information /evidence (for example page no. /reference) in the output report provided to ARRB of the TRACKS modelling;

• design justification for bridges B9A, B9B, B9C, B11, B12, B26A, B26B, B27, B28, B29A-B29C, B44, B45 and B52

B9A-C relates to West Dapto Rd, B11-12 relates to Shone Ave, B26A/B-29C relates to Jersey Farm, Rd B44-45 relates to Fowlers Rd and B52 relates to Paynes Rd. These structures are nominated for funding under S94 due to their significance in connecting collector roads and are deemed essential to service the current/proposed communities.

The Tracks time-slice report does not provide any commentary on the justification for the bridge types selected in the draft s94 plan. However, the network and modelling undertaken for this report essentially reflects the current s94 plan proposal. The following clarification is provided for the bridge types in the plan. The Tracks model files for the draft s94 network model have been provided separately for information.

B9A-B9C (West Dapto Rd)

This is part of the main movement network for West Dapto, providing access between the Darkes Town Centre and residential areas and the south western parts of the development area. It is also part of the concept bus route network and a road type 3A is proposed. Volumes from the tracks model are approaching 10,000vpd. The draft s94 plan proposes 4L bridges at these locations. It is acknowledged that whilst parking lanes are being provided, the volume level will not require 4 traffic lanes at the bridges. These can be reduced to a 2 lane cross section.

B11-B12 (Shone Ave)

This road is an important north-south collector, however has lower volumes (Tracks shows circa 4000-5000vpd), and a Type 3 road is proposed. It also forms part of the bus route network, however given the lower forecast volumes and relatively short length, it is considered buses could easily utilise the road. This road will require only 2-lane bridges, which are shown in the plan, and have been recently constructed.

B26A-29C (western ring road)

This is the major north-south collector in the western part of the release area. Volumes on this road range from 11000 – 19000vpd, which is at the upper level of capacity for a 2 lane road. Given its major collector status, the anticipated future traffic volumes and the fact that it forms a large part of the bus network, a Road Type 3A was selected. This allows for 'future proofing' of the road, as it can be easily converted to a 4 traffic lane road by removal of the kerbside planter boxes, should the 15% mode shift target not be fully realised or more detailed intersection or microsimulation modelling reveals congestion and delay issues that could not be ascertained through the TRACKS strategic level modelling. Consequently, it is considered that a 4-lane bridge capacity should be preserved along this route and the plan thus shows 4 lane bridges.

B44-B45 (Fowlers Rd extension)

This is the major east-west entry road into West Dapto, providing a direct connection to Dapto Town Centre and the M1 motorway/Princes Hwy. Tracks shows volumes of 37000vpd, which requires a 4 traffic lane bridge. Refer to information provided on Fowlers Rd bridge design and costing for more information.

method of allocating sub-items in the Yallah Rd/NR1–NR3/Local Road package to each transport item As per the attached pdf (Section 1,2,3,4,5,6,&7 SMEC cost report breakdown) individual sub-items are represented as a portion of the total cost. The SMEC report packaged totals for Sections 1&2 and 3-7 only, then Council further separated the total costs per section based on the equivalent length of each section as compared to the overall lengths to give a percentage. This percentage rate was applied resulting in the costs quoted in the S94 plan.

- **nexus evidence from a network planning perspective for local roads to be included in the Plan** The “Local Road” south of Yallah Rd was included in the preferred road network as part of further specific planning work carried out for Yallah-Marshall Mount in circa 2011. The previous network (as per AECOM 2010) was based on 1300 lots in Marshall Mount, however, following an Enquiry By Design workshop in 2011, the master planning adopted 4000 lots for Marshall Mount. The planning work considered the role and function of the Yallah-Marshall Mount town centre, and it was agreed that because of the much greater development levels being considered, the town centre would function much more effectively if through traffic could be diverted away from Marshall Mount Rd/Yallah Rd intersection. The concept of a bypass road (the Local Road) was then included in the master plan road network, and in TRACKS modelling. It is noted that the traffic demand at this location is also made up of a substantial proportion of Calderwood development area traffic. The northern precincts of the Calderwood Valley release area would utilise the connectivity provided by Marshall Mt Rd/Yallah Rd to the M1 motorway and Princes Hwy to head north, rather than “back-tracking” through Albion Park along Tongarra Rd etc. This has been demonstrated through the TRACKS model, whereby apportionments were determined for both West Dapto and Calderwood s94 contributions.

- **the extent of the upgrade of NR40–NR47A (north-south transport item)** NR40-47 includes Jersey Farm Rd/Hayes Lane and an extension to Avondale Rd. Currently Jersey Farm Rd is formalised for approx. 300m from then on is only a paper road, similarly Hayes Lane is formalised for approx. 600m to access 3 rural properties. This road is included as a 4-lane road under the current s94 plan. Further modelling was undertaken in the preparation of the preferred draft s94 road network, which proposes the road as a Type 3A (2 travel lane, 2 parking lane) road. This was selected using the TRACKS modelling as a guide, but also considering the fact that the road passes through residential areas and adjacent to a town centre, meaning that parking would be desirable. It is noted that there is no difference between a Type 3A and Type 4 road cross section other than the Type 3A includes planter boxes in the kerbside lanes, and the costs used in the s94 worksheet are the same for both types. Given that the link volumes along this route from TRACKS are towards the upper limit of capacity for a 2 lane road, it was decided to utilise the Type 3A layout which provides parking, but also allows for 4-lane capacity through simple removal of the planter boxes. This “future-proofs” this road section in the case that the 15% mode shift is not fully realised, or more detailed intersection or microsimulation modelling reveals congestion and delay issues that could not be ascertained through the TRACKS strategic level modelling. It is also noted that NR40-NR47A is a major western ring road through the release area, the majority of which caters for bus routes (refer conceptual bus route plans). It is therefore considered that the Type 3A cross section is appropriate. In addition large portions of this road is currently rural land and therefore full construction will be required.

- **nexus evidence of NR100-NR103 (Stage 5)** NR 100-103 has been recently reviewed, and Council confirms that it will no longer be required on the basis Marshall Mount Rd and Local Rd proceed.

- **the use of a culvert in place of a small bridge as demonstrated in the SMEC design** Council’s typical principal regarding culverts Vs. bridges is to replace like for like, therefore if an existing culvert was located to service a watercourse crossing, it should be replaced with a culvert sized appropriately to convey the level of flow required for the road traffic ability required. The SMEC design adhered to this approach resulting in numerous culverts in the Marshall Mount project.

- **A section of existing Sheaffes Rd (S4) to the west is likely to continue to function as a local road. Unless a nexus evidence can be demonstrated, this transport item should be excluded from the Plan. Upon review, Council confirms that this portion of road will remain as a local road and therefore be deleted from the S94 plan.**

- **A section of existing Paynes Rd (P2) to is unlikely to form a collector road network in the future. Unless nexus evidence can be demonstrated, this transport item should be excluded from the Plan. Upon review, Council confirms that this portion of road will remain as a local road and therefore be deleted from the S94 plan.**

*There is no nexus evidence in any of the technical studies for the inclusion of NR100–NR103 in the Plan. Unless a nexus evidence can be demonstrated, this transport item should be excluded from the Plan. Upon review, Council confirms that this portion of road will remain as a local road and therefore be deleted from the S94 plan.

3. Future four-lane roads 'NR14A–NR14B' were partially constructed to a two-lane road in 2013 (Based on NearMap). The s94 funding is to include the actual CAPEX plus a revised upgrade cost to a final four-lane arrangement. (NR14A) - \$5,300/m rate in the Plan replaced with \$4,900/m recommended by ARRB. - Please provide details of actual CAPEX. Attached is a financial output of "Extension of Fairwater Drive – East" capital expenditure. Works totals \$7,216,687 and include S94 items F2, B33, F3, Int 26, NR14A-B as per the below plan. Portions 14A&B were constructed as a temporary 2 lane connection linking Fairwater Dr to Cleveland Rd. As per the attached Fowlers bridge design plans, up to CH 60 Daisy Bank Dr is a 4 trafficable lane road. These design plans transition back to 2 lanes and the existing pavement, however from

TRACKS it is estimated at ultimate development (2036+) in excess of 30,000 VMPD will travel to Cleveland Rd hence a 4 lane configuration is included in the proposed S94 plan



4. Future four-lane roads 'NR14A–NR14B' were partially constructed to a two-lane road in 2013 (Based on NearMap). The s94 funding is to include the actual CAPEX plus a revised upgrade cost to a final four-lane arrangement. (NR14B) - \$5,300/m rate in the Plan replaced with \$4,900/m recommended by ARRB. - Please provide details of actual CAPEX. *Please refer to the above question and associated supporting documents.*

5. Extent of the upgrade of the rail bridge 'B44' and watercourse bridge 'B45' is unknown as the 'Fowlers Rd extension' was reintroduced post the 2010 GHD cost estimate. (Fowlers Rd Ext - B44) (Current value in the Plan is \$22,749,731) - Please provide further design information/advice from a quantity surveyor. *Please refer the attached 100% design plans and cost estimate. The combined works value of B44&45 and associated road works is currently \$ 97,300,000. This amount includes approx. \$22mil in government grant funding in support of linking West Dapto to the Dapto communities. Preliminary site construction works have commenced.*

6. Extent of the upgrade of the rail bridge 'B44' and watercourse bridge 'B45' is unknown as the 'Fowlers Rd extension' was reintroduced post the 2010 GHD cost estimate. (Fowlers Rd Ext - B45) (Current value in the Plan is \$30,332,975) - Please provide further design information/advice from a quantity surveyor. *Please refer to the above question and associated supporting documents.*

7. Distance from the interchange is an important factor beside the population to determine the benefit of providing the Dapto multi-modal interchange to the West Dapto catchment (without 'Area A in the town centre being included). A 33% apportionment is suggested based on the distance from the interchange to the centre of mass of Dapto and West Dapto (Dapto Station Multi-Modal Transit Interchange).- The Plan includes a value of \$3,000,000 (60% apportionment of the \$5M total cost), ARRB recommends value of \$1,670,000 based on 33% apportionment. - Please comment on this recommended change in apportionment. *Whilst the factor of distance from the station to residential catchment areas is acknowledged, Council considers that the apportionment should be based on an 'accessibility index' approach rather than just strictly distance. The West Dapto Release Area planning is based on a sustainable transport approach, whereby the new community will have a high degree of accessibility to the station via a system of frequent shuttle buses. This means that the further distance will be balanced by a higher degree of station accessibility than East Dapto. Therefore Council is of the opinion that the 1/3 apportionment to West Dapto is too low, and perhaps a 50/50 split may be more appropriate.*

The information provided to the specific questions 1 – 7 above along with your general comments on the draft transport report will be provided to ARRB so that the information can be incorporated in their final report. IPART will use the final report to inform it's recommendations in its assessment of the transport items in the draft West Dapto CP.

APPENDIX B COUNCIL RESPONSES IN JUNE 2016

Aut Karndacharuk (Dr)

From: David Tuszyński <DTuszyński@wollongong.nsw.gov.au>
Sent: Monday, 27 June 2016 4:29 PM
To: Aut Karndacharuk (Dr); Marcelle_Daunoras@ipart.nsw.gov.au
Subject: WCC: Council response to IPART Transport Review query
Attachments: West Dapto road nomenclature equivalence table (new vs old s-94 plans).xlsx

Hi Aut,

Please find below responses to your road queries. Council is still trying to confirm some items and will forward these shortly.

Regards

David Tuszyński
 Senior Civil Design Engineer
 Wollongong City Council
 41 Burrelli Street | Locked Bag 8821 | Wollongong DC NSW 2500 | Australia
 ph: (02) 4227 7111
 email: dtuszyński@wollongong.nsw.gov.au

From: Aut Kamdacharuk (Dr) [<mailto:auttapone.kamdacharuk@srb.com.au>]
Sent: Thursday, 23 June 2016 4:15 PM
To: Milan Marecic; Ron Zwickler; David Tuszyński
Cc: Nicole Haddock; Marcelle Daunoras; David McTieman; Arjan Rensen
Subject: RE: HPRM: Draft West Dapto s94 DC Plan - IPART Transport Review - Further Information Request #2

Dear Milan

Following Marcelle's email, please find below additional questions regarding the Plan.

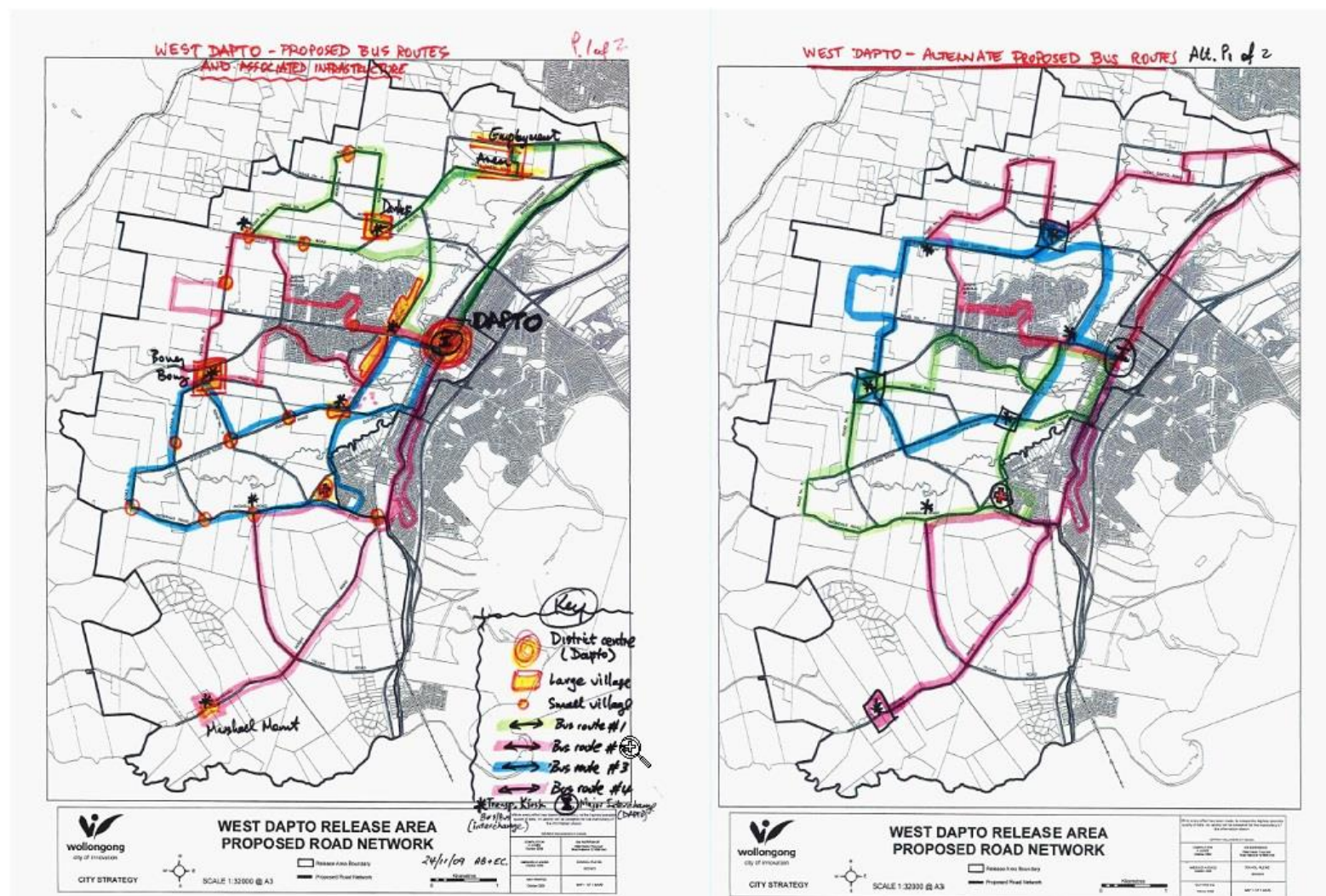
- a) Int41 – Give that (i) the Princes Highway / West Dapto Rd intersection has been signalised with an additional leg (with a benefit) to the racecourse and (ii) this solution is an interim one until West Dapto rail crossing is closed post Northcliffe Dr extension, to what extent the \$1.1M base rate for the 'West Dapto Rd Rail Crossing' item contributes to the essential works for West Dapto? The intersection at West Dapto Rd/Princes Hwy was designed and constructed with the primary objective to allow safe priority access and timely access to the approximate 500 new dwellings since rezoning Stages 1 & 2 of the West Dapto Urban Release Area. The previous intersection prioritised through traffic into Dapto via the Princes Hwy with a Give Way right turn into West Dapto Rd and a Stop sign for vehicles entering Princes Hwy travelling north east (as per the image on top – 2009). As per the current usage of Kembla Grange as industrial lands, large proportions of heavy vehicles utilise the intersection which has resulted in unreasonable/unacceptable queuing of vehicles as well as being a site of numerous vehicular accidents. The upgraded intersection (image on the bottom - 2014) addresses the influx of additional residential vehicle movements as well as safety issues.
 This intersection was upgraded in light of an expected 6000 new dwellings in Stages 1 & 2. Some of the benefits directly related to the West Dapto release area are: prioritised right turn lane for the current and future Stage 1 & 2 community and minimised queuing. A minor secondary benefit was the improved access to the Turf Club, however the usage of this entrance is considered insignificant compared to the traffic volume to the West Dapto area. West Dapto Road will remain the only northern entrance into the release area until Northcliffe Drive extension is constructed (approx. 2036) with expected volumes of in excess of 17,000 VMD. The Turf Club features approx. 20 meets per year with car parking between 200-250 vehicles therefore its contribution to the intersection usage is minor. The upgraded intersection provides safe and reliable servicing to the current and future community of West Dapto and will facilitate all northern traffic for a 20 year timeframe until the Northcliffe Dr extension therefore it is considered essential infrastructure and is included within the proposed S94 Plan.





- 1) B9A, B9C and B9C – Please explain with supporting documents why the length of the three bridges increases from 30m, 20m and 30m in the GHD report to 150m, 150m and 50m in the Plan. Council's flood consultant is reviewing the flood model and we will advise shortly
- 2) Sheaffes Rd – Based on the masterplan with a new parallel road (between Sheaffes and West Dapto), this existing road is unlikely to perform a collector road function or to become a bus route. Would you substantiate why the road and associated intersection upgrade works should be included in the Plan? Can you please clarify which road numbers are you referring to? If you are referring to Paynes Rd (P1-P4) the existing road requires amending to facilitate the adjacent residential developments. Due to the proposed lot yield and therefore vehicle movements, the existing road is insufficient to accommodate the future demands and provides a link to a major collector road (Sheaffes Rd) from several

- developments and internal subdivision roads. In addition Bridges 52 & 53 (included in S94) are currently the only accessible watercourse crossings for residents of the future developments. Paynes Rd also provides a direct link to a proposed district level park with community leisure centre.
- d) **Darkes RD** – the Plan indicates a 2-lane upgrade for this existing road whereas the technical studies allow for a 4-lane link. Please advise. Darkes Road was originally identified as a major access route to West Dapto. Following the Growth Centres Commission review which identified other access routes with higher significance/strategic value. Council evaluated the recommendations of the Growth Centres Commission report and reintroduced Fowlers Road as the primary cross point with the intent to close Darkes Road in the future. State Rail also objected to providing future level crossings and is slowly phasing out existing level crossing (due to collision risks) in favour of overpasses. With the Growth Centres Commission and State Rail recommendations Council elected Fowlers road to proceed, therefore the application of a 4 lane road which will be closed in the future isn't the best use of community's money and as such only a 2 lane upgrade is proposed.
- e) **B12** – Similar to the earlier three bridges, the length of the B12 bridge increases from 18m in the GHD report to 75m in the Plan. Council's flood consultant is reviewing the flood model and we will advise shortly.
- f) **Int43** – this intersection as documented in the Plan and the 2010 GHD report is for an upgrade to Marshall St / Osbourne St intersection. The costing spreadsheet, however, allocated \$520,400 (base rate, unindexed) for the (different) signalised Princes Highway intersection. Please clarify. This appears to be an error in our mapping as Int 43 should have represented Marshall and Osbourne Street.
- g) **B1** – the interim upgrade work in the 'Bong Bong Rd Rail Crossing' item has allowed for Bong Bong Rd to be accessible in the 1 in 10 year flood event. Bong Bong Rd as per the WCC flood access routes plan is not designed to be trafficable to 1 in 100 year flood events. The question can then be raised as to what the B1 stream bridge work of \$9.3M (unindexed) is for? Bong Bong Rd remains a major transport corridor linking the future West Dapto and existing Horsley communities to the retail/commercial hub of Dapto. Currently the existing Bridge 1 has an approx. deck length of 33m and frequently is inaccessible due to flood waters rising (most recently 2 weeks ago). Council proposes to increase the serviceability of this creek crossing with a bridge designed to Q10 levels and therefore increased deck length. A rate of \$7,400m2 (as per the GHD 2010 recommendations) is applied due to construction proposed under live traffic conditions resulting in half bridge construction methodology which expands the construction period justifying the rate used.
- h) **Int23 and Int25** – Both intersections are outside the Plan area and have been signalised. WCC is to justify the based rate allocation of \$757k and \$520k, and also the reason why the costs are indexed from 2010 when for example the Marshall intersection was signalised in 2011 (based on NearMap). The upgrade to these intersections is a direct result from increased vehicle movements from the new West Dapto residents. The rates are as per the GHD 2010 recommendations report. It is agreed that the cost of these intersection upgrades should only reflect the actual construction cost (if constructed) and not be indexed into the future, however the spreadsheet is simple in nature and indexes the total amount for all intersections.
- i) **Huntly Rd (B41) and Marshall Mount Rd (new rail overbridge)** – This issue is about a duplication of rail overbridge upgrade cost, involving the existing bridge B41 on Huntly Rd and a proposed rail bridge on Marshall Mt Rd. The two bridges cost the same at \$7.2M in the WCC costing spreadsheet. Given its proximity (approx. 100m apart), it is a choice of one or the other and not both I believe. While there is a nexus of the upgrade of the existing B41 Huntly Rd rail bridge based on the supporting studies, I am unable to find, besides the SMEC concept road design, a network planning evidence to justify the need for a new grade separated rail crossing along this realigned Marshall Mt Rd. Council agrees that two bridges are not required in this location. B41 on Huntly Rd is deemed required (the SMEC designed rail bridge crossing was an option however after review was deemed not appropriate). Council concluded \$7,221,877 should be deleted from the S94 costing spreadsheet – (Marshall Mount Rd – Section 4 – Option 1).
- j) **B20A and B20B** – these two are two bridges in the Plan; however, the 2015 SMEC design identifies one bridge and one culvert for the road section. Please confirm. Correct the SMEC design indicates a bridge and culvert design. For sake of simplicity all watercourse crossings are labelled as bridges on the S94 plans, however the S94 cost spreadsheet assumes culvert structures as 6m wide bridges. Until detailed analysis and watercourse crossing designs are performed Council assumes any crossing length less than 6m as a culvert structure.
- k) **Land acquisition cost for Yallah and Marshall Mount Rd** – there are cost discrepancies between what in the Plan (p36) and the costing spreadsheet (provided on 17 June) i.e. \$3.5M vs \$3.8M and \$6.7M vs \$8.4M. The higher values are the total land acquisition costs based on the additional area required by the rate per zoning. However appointment has been applied to the total land acquisition as per the usage of existing vs future community. Council assumes the gap in land acquisition will be funded via general revenue.
- l) **Paynes Rd** – the upgrade of this road is not explicitly identified in the technical studies. The nexus of the associated infrastructure such as bridges B52 and B53 is therefore questionable and whether they are for flood / stormwater management purposes. Please advise. As per above response to item(c).
- m) **Bus stop location** – the road sections that form the basis of calculating the number of bus stops are acknowledged, but with overlaps of planned bus routes, it is difficult to verify the route length. Would you be able to supply a map showing the location of the routes? Council is awaiting a report from TfNSW on West Dapto bus routes and servicing to achieve the mode split target. Council has produced its own conceptual bus routes (see below) which have been used to estimate the quantum of bus infrastructure required.



I note the questions here are not exhaustive as we are still reviewing the nexus of the new roads. Regardless, the review of the Plan and associated information is to be finalised next week as mentioned by Marcelle. Therefore any feedback from the Council this week is much appreciated.

Thank you

Aut Karndacharuk (Dr)
Senior Research Engineer
Road Safety & Traffic Management

ARRB Group Ltd
2-14 Mountain Street
Ultimo NSW 2007
AUSTRALIA

From: Marcelle Daunoras [mailto:Marcelle_Daunoras@ipart.nsw.gov.au]

Sent: Thursday, 23 June 2016 2:18 PM

To: Milan Marecic <MMarecic@wollongong.nsw.gov.au>; Ron Zwicker <RZwicker@wollongong.nsw.gov.au>; David Tuszyński <DTuszyński@wollongong.nsw.gov.au>

Cc: Nicole Haddock <Nicole_Haddock@ipart.nsw.gov.au>; Aut Karndacharuk (Dr) <auttapone.karndacharuk@arrb.com.au>

Subject: FW: HPRM: Draft West Dapto s94 DC Plan - IPART Transport Review - Further Information Request

Hi Milan,

Nicole and I met with ARRB today in relation to their review and progress to date. The project timeframe is tight and ARRB will be finalising their draft report next week.

ARRB have advised they are yet to receive a response to their email request for information below dated 9 Jun. It is understood from the updates Aut has received that some of these issues have been escalated. In the interests of informed decision making may request that a response is provided by cob Friday 24 June please. This is the latest date ARRB can accommodate given the timeframe of their draft report. (please note I have forwarded the MMJ Valuation report dated 14 Oct 2015 to ARRB which I received during the week)

ARRB will intend to forward a set of more detailed questions shortly which will also require your prompt attention please.

Thanks and regards,
Marcelle

From: Aut Karndacharuk (Dr) [<mailto:auttapone.karndacharuk@arrb.com.au>]

Sent: Thursday, 9 June 2016 12:27 PM

To: dtuszyński@wollongong.nsw.gov.au

Cc: Marcelle Daunoras; David McTieman

Subject: HPRM: Draft West Dapto s94 DC Plan - IPART Transport Review - Further Information Request

Hi David

As per our phone conversation, I am outlining our queries and further information required for a review of the transport components of the draft s94 Plan.

Extent of transport infrastructure upgrade (Quantity)

- As discussed, I am unable to clearly identify where the upgrade works are on a plan. Sections 3.5.2.1-3.5.2.4 of the Plan list the items and quantity with naming conventions (e.g., NR12-NR22, B1-B53 and Int1-Int113) that do not necessarily match those indicated in the supporting studies (e.g. new roads in GHD 2006, roundabouts and traffic lights in KBR 2007, Road No 1-8 in AECOM 2010 and Bridge A-I in SMEC 2015) mentioned in the attached spreadsheet. Would you please

provide a cross-referenced plan showing the extent of works? Preferably in a good quality / high resolution diagram so details are readable (unlike many figures in the supporting documents) Please find attached spreadsheet with road naming configurations.

- Appendix A of the two key documents for reviewing nexus is missing: one is in the 2010 GHD report for reference plans and the other in the 2010 AECOM report for road cross-sections. It'd be great if these can be provided. Unfortunately Council doesn't have access to these missing documents.

Cost estimate

- Table 4.3 (Schedule of works and cost estimates) of the Plan shows the quantity and costs per road segment. Each road-segment item includes road (pavement), intersection and bridge components. Would you be able to provide me with a spreadsheet to demonstrate how each component is determined, particularly the rates used. The information request in the first bullet point will certainly help to understand how many intersections and bridges are in each road segment. Council has provided the supporting work schedules which provide the cost breakdown for each road and associated road works.
- Section 3.2 (page 18) of the Plan indicates 15% contingency allowance whereas Table 4.3 (page 36) a construction contingency of 20% additional to 10% design and project management provisions. Please clarify. The contingencies stated within the Work Schedules should be taken as the proposed contingencies. The text in the written document will be amended as required. The previous iterations of the West Dapto Section 94 Plan used a contingency of 15 % across all infrastructure types. This remains the same for open space, community facilities and drainage infrastructure. However for road and bridge infrastructure, Council has adopted a 20% construction and 10% design contingency to reflect the true costs being encountered in the release area with the provision of this infrastructure type. These contingencies are also consistent with IPART's benchmark recommendations
- I do not seem to have 'MMJ letter dated 14 Oct 2015 Re West Dapto Land Indicative Acquisition Values' identified in the attached. Please supply. The MMJ letter has been provided for your consideration

TRACKS modelling information

- For completeness of our review, I'd like to see what WCC intended to provide for the missing item 'TRACKS Land USE / Transport Models' listed in Part 5 of the plan (page 39). Please respond. Council is reviewing the model and will advise shortly
- I am not sure when the models were last updated, but it'd be helpful to receive the four appendices included in the 2010 WCC transport modelling & analysis report (item 26 listed in Part 5 of the Plan) to understand the modelling outputs for stages 1 and 2. Please supply. Council is reviewing the model and will advise shortly

Level of details (Stages 1-4 vs Stage 5) for design and cost estimate

- Concept design of Stage 5 of the Release Area (Yallah-Marshall Mount) has been undertaken by SMEC in 2015, which gives more accuracy to the cost estimate, and, in effect, supersedes any design and costing done prior for the area (e.g. SMEC design of the east end of Yallah Rd differs from what identified earlier). In contrast, the design of Stages 1-4 transport infrastructure is at a strategic, masterplanned level. The two levels of assessment information should be clearly established in the process of calculating both quantity and costs with different assumptions (e.g. rates and contingency). Please respond. Concept designs were undertaken for Stage 5 (Yallah-Marshall Mount) in conjunction with a Planning Proposal to rezone the area for urban purposes. This Planning Proposal is awaiting an appropriate funding mechanism to deliver the required infrastructure and the findings of the IPART assessment of the Draft West Dapto Section 94 Development Contributions Plan.

Stages 1 and 2 have been rezoned for urban development, and Council is in the process of assessing and determining Neighbourhood Plans and Development Applications. The Section 94 Infrastructure items provided as part of this development continually informs the current cost estimates within the S94 Plan.

Stage 3 and 4 are yet to be rezoned and therefore the level of infrastructure design over these precincts remains conceptual, which is reflected within the S94 Plan.

The SMEC design and associated costings relate specifically to Stage 5. The topographical and flooding constraints within this stage differ from those in stages 1 to 4. Therefore these design and cost estimates could not be generalised across stages 1-4. Council has maintained the costing approach used in the previous 2015 Plan within the Work Schedules, however the costings have been reviewed to match IPART recommendations and recent tendered prices for road and bridge infrastructure within Stages 1 and 2.

West Dapto Contributions Plan 2015

- The 2015 version of the Plan (not submitted to IPART) available on the Council website contains far more detailed justification of the proposed transport infrastructure works. Would you confirm whether the information in the 2015 report (pages 51-79) is relevant to this transport-related review of the draft 2016 Plan? The Exhibited Draft West Dapto Section 94 Plan was structured to be similar to other Section 94 Plans assessed and considered by IPART. In the process of simplifying the written document the public transport section was summarised. However, the intent and level of provision remains the same as proposed within the 2015 Plan. Therefore we can confirm that the transport-related information within the 2015 Plan can be used for the assessment of the Draft 2016 Plan

Feel free to give me a call if there is any clarification required.

APPENDIX C WEST DAPTO NOMENCLATURE EQUIVALENCE TABLE

Road Name (existing s-94 plan)	New name as per Draft s-94 (IPART)	Comments/issues
Road No. 1	NR 12-15, NR19-22	Note includes NR19, same as Fowlers Rd extension (?)
Road No. 2	NR40-41B, NR24-25, NR30-31	Check NR30
Road No. 3	NR26-27, P3, P4, NR28-29	
Road No. 4	?	
Road No. 5	NR42-47B	
Road No. 6	NR4-11	
Road No. 7	NR49-50	
Road No. 8	NR1-3	
Avondale Rd	A1-7	
Bong Bong Rd	BB1-8	
Cleveland Rd	C1-12	
Darkes Rd	D1-4	
Fairwater Dr west & east	F1-3	
Fowlers Rd	NR17-19	Where is NR16 as shown on maps? Not accounted for in worksheet! Note Fowlers Rd includes NR19, same as N-S Link Rd (?)
Huntley Rd	H1-2	
Marshall Mt Rd	MM1-6	Note - says M5 on sheet 014A but should read MM5
Northcliffe-Reddalls-West Dapto ext	NR33-36, R2, NR37-39	
Nth Marshall Mt Rd	NMM1	
N/A	Local Rd	Marshall Mt Rd to Yallah Rd
N/A	NR100-103	Nth Marshall Mt Rd to NR2
N/A	NR23	Internal road for Lynden View
Paynes Rd	P1-P4	Note - top part of Paynes Rd is part of Road No. 3 (ie P3, P4)
Reddalls Rd	Reddalls Rd	NB this is section north of WD Rd - not included in s94 plan
Sheaffes Rd	S1-4	Named the same as Shone Ave - not ideal
Shone Ave	S1-4	Named the same as Sheaffes Rd - not ideal
Smiths Lane	SL1	
West Dapto Rd	WD1-15	
Wongawilli Rd	W1-3	
Wylie Rd	Wylie Rd	NB this is section north of WD Rd - not included in s94 plan
Yallah Rd	Y1-Y3	Note the worksheet doesn't refer to Y1-3 at all, instead sections 5 & 6 from GHD/Muller concept road design & costing

APPENDIX D STAGE 5 COST BREAKDOWN OF ROAD SECTIONS 1-7

WCC Cost estimate of Sections 1, 2, 3, 5, 6 & 7 cost breakdown

Section	Road length (m)	Proportion %	Section	Road length (m)	Proportion %	SECTION	Road length (m)	Proportion
1	1500	13%	1	1500	45%	3	2300	38%
2	1800	15%	2	1800	55%	5	560	9%
3	2300	19%	Total	3300	100%	6	650	11%
4	2500	21%				7	2500	42%
5	550	5%				Sub Total	6010	100%
6	650	6%						
7	2500	21%						
Total	11800	100%						

Notes - Approx road lengths measured from SMEC concept design plans

WCC Cost Estimate Details

Item	Description	1 & 2	1	2	3, 5, 6 & 7	3	5	6	7	4 - Option 1	4 - Option 2
1.0	General - includes site establishment, contractor supervision, survey/setout, geotechnical analysis, service	\$ 854,750.00	\$ 388,522.73	\$ 466,227.27	\$ 1,834,250.00	\$ 701,959.23	\$ 170,911.81	\$ 198,379.78	\$ 762,999.17	\$ 873,250.00	\$ 873,250.00
2.0	Clearing & Demolition - includes general site clearing and vegetation, removal of existing wearing course and	\$ 439,107.00	\$ 199,594.09	\$ 239,512.91	\$ 455,694.00	\$ 174,392.05	\$ 42,460.67	\$ 49,284.71	\$ 189,556.57	\$ 307,717.00	\$ 285,361.00
3.0	Bulk Earthworks - includes cut and fill road box out and batter/verge works	\$ 1,268,163.00	\$ 576,437.73	\$ 691,725.27	\$ 3,262,142.00	\$ 1,248,407.09	\$ 303,959.99	\$ 352,810.70	\$ 1,356,964.23	\$ 3,559,883.00	\$ 2,110,697.00
4.0	Drainage - includes pipes, pits, headwalls, swale drains & scour protection	\$ 1,823,872.00	\$ 829,032.73	\$ 994,839.27	\$ 3,186,111.00	\$ 1,219,310.37	\$ 296,875.57	\$ 344,587.71	\$ 1,325,337.35	\$ 1,832,323.00	\$ 985,796.00
5.0	Pavements - includes road pavement material and construction	\$ 5,619,977.00	\$ 2,554,535.00	\$ 3,065,442.00	\$ 11,143,488.00	\$ 4,264,562.80	\$ 1,038,328.33	\$ 1,205,202.53	\$ 4,635,394.34	\$ 4,844,937.00	\$ 4,352,461.00
6.0	Concrete works - includes footpath construction, kerbing and pedestrian/traffic islands	\$ 2,683,818.00	\$ 1,219,917.27	\$ 1,463,900.73	\$ 4,960,120.00	\$ 1,898,215.64	\$ 462,174.24	\$ 536,452.25	\$ 2,063,277.87	\$ 1,617,591.00	\$ 756,729.00
7.0	Bridges and culverts -	\$ 5,350,000.00	\$ -	\$ 5,350,000.00	\$ 21,420,944.00	\$ 2,745,547.00	\$ 4,280,000.00	\$ 392,211.00	\$ 14,002,186.00	\$ 23,273,877.00	\$ 12,772,000.00
8.0	Subsoil drainage - includes subsoil pipes and flush point access	\$ 401,790.00	\$ 182,631.82	\$ 219,158.18	\$ 794,955.00	\$ 304,225.71	\$ 74,072.35	\$ 85,976.83	\$ 330,680.12	\$ 319,820.00	\$ 86,400.00
9.0	Revegetation - includes topsoil of batters, hydroseeding and 12 month landscape maintenance	\$ 149,980.00	\$ 68,172.73	\$ 81,807.27	\$ 282,214.00	\$ 108,002.03	\$ 26,296.15	\$ 30,522.31	\$ 117,393.51	\$ 159,172.00	\$ 111,478.00
10.0	Metalwork, signage & linemarking - includes safety barriers, signage and linemarking	\$ 96,984.00	\$ 44,083.64	\$ 52,900.36	\$ 336,734.00	\$ 128,866.59	\$ 31,376.21	\$ 36,418.82	\$ 140,072.38	\$ 95,327.00	\$ 90,468.00
11.0	Sediment and erosion control - includes haybales, pit inlet filters and sediment fencing	\$ 38,634.00	\$ 17,560.91	\$ 21,073.09	\$ 70,602.00	\$ 27,019.07	\$ 6,578.56	\$ 7,635.82	\$ 29,368.55	\$ 29,602.00	\$ 25,984.00
12.0	Services - includes street lighting, signalised intersections, electricity supply, optic fibre supply, potable water	\$ 5,776,640.00	\$ 2,625,745.45	\$ 3,150,894.55	\$ 9,331,580.00	\$ 3,571,153.74	\$ 869,498.30	\$ 1,009,239.10	\$ 3,881,688.85	\$ 4,208,500.00	\$ 4,208,500.00
13.0	Provisional items - excluded	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
14.0	Contractors margin -	\$ 981,285.00	\$ 446,038.64	\$ 535,246.36	\$ 2,281,166.00	\$ 872,991.98	\$ 212,554.57	\$ 246,715.12	\$ 948,904.33	\$ 1,648,001.00	\$ 1,070,876.00
15.0	Identified risk items -	\$ 1,555,616.00	\$ 707,098.18	\$ 848,517.82	\$ 3,905,109.00	\$ 1,494,467.67	\$ 363,870.39	\$ 422,349.56	\$ 1,624,421.38	\$ 1,438,137.00	\$ 1,458,079.00
SUB TOTAL		\$ 27,040,616.00	\$ 9,859,370.91	\$ 17,181,245.09	\$ 63,265,109.00	\$ 18,759,120.96	\$ 8,178,957.14	\$ 4,917,786.25	\$ 31,408,244.65	\$ 44,208,137.00	\$ 29,188,079.00

Notes - Cost of each section based on proportioned road lengths only.
An equal distribution of cost items is assumed based on the road length, however actual quantity of items may differ between sections.

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.
CP15	The Hills Shire Council, <i>Section 94 Contributions Plan No 15 – Box Hill Precinct</i> , June 2015.
CP24	Blacktown City Council, <i>Draft Section 94 Contributions Plan No 24 – Schofields Precinct</i> , October 2013.
West Dapto CP	Wollongong City Council, <i>Draft Section 94 Contributions Plan West Dapto Precinct</i> , March 2016.
CPI	Consumer Price Index
DPE	Department of Planning & Environment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>

Essential Works List (EWL)	<p>The following public amenities or public services are considered essential works:</p> <ul style="list-style-type: none"> - 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, <i>Growth Centres Development Code</i> , October 2006.
Growth Centres SEPP	<i>State Environmental Planning Policy (Sydney Region Growth Centres) 2006</i>
IPART	Independent Pricing and Regulatory Tribunal
IPART's Benchmark report	IPART, <i>Local Infrastructure Benchmark Costs - Costing Infrastructure in Local Infrastructure Plans - Final Report</i> , 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 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	<p>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:</p> <ul style="list-style-type: none"> - 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, <i>Revised Local Development Contributions Practice Note - For the assessment of Local Contributions Plans by IPART</i> , February 2014.
Precinct planning	<p>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.</p> <p>Precinct planning involves detailed investigations into appropriate land use options, physical environment constraints and infrastructure requirements.</p>
Riparian	The riparian area is defined as the part of the landscape adjoining rivers and streams that has a direct influence on the water and aquatic ecosystems within them. It includes the stream banks and a strip of land of variable width along the banks.
RMS	Roads and Maritime Services
Section 94 contributions	<p>Section 94 contributions are imposed by way of a condition of development consent or complying development, and can be satisfied by:</p> <ul style="list-style-type: none"> - 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.

WCC	Wollongong City Council
WDURA	West Dapto Urban Release Area
Works-in-kind	The construction or provision of the whole or part of a public facility that is identified in a works schedule in a contributions plan.

