

INFORMATION PAPER

Infrastructure cost comparison – Comparison of costs in contribution plans reviewed by IPART

May 2013

1 Introduction

1.1 Purpose of this paper

IPART has completed reviews of 5 contributions plans from 2 councils - The Hills Shire Council (THSC) and Blacktown City Council.

This information paper has been prepared to show the main drivers of costs in each of these plans. It provides IPART and stakeholders with a basis for comparing plans that are submitted to IPART in the future, whilst promoting awareness that the reasonable cost of infrastructure can vary significantly between development areas.

1.2 Plans included in the analysis

This information paper compares the cost of infrastructure in the following 5 contributions plans that IPART has reviewed:

- ▼ THSC's Contribution Plan 12 (CP12) - Balmoral Road Release Area (Balmoral Road)
- ▼ THSC's Contribution Plan 13 (CP13) - North Kellyville Precinct (North Kellyville)
- ▼ Blacktown City Council's Contribution Plan 20 (CP20) - Riverstone and Alex Avenue
- ▼ Blacktown City Council's Contribution Plan 21 (CP21) - Marsden Park Industrial Precinct (MPIP)
- ▼ Blacktown City Council's Contribution Plan 22 (CP22) - Area 20 Precinct (Area 20).

All of the plans are for greenfield areas and, with the exception of CP12 (Balmoral Road), these areas are within Sydney's North West Growth Centre.

The plans vary in the size of the area that they cover and the expected residential population of the precincts. With the exception of CP21 (Marsden Park Industrial Precinct), the plans are for precincts that are expected to contain mostly residential development. A summary of the net developable area (NDA), anticipated number of additional residents, dwellings and jobs for each precinct is provided in Table 1.

Table 1 Summary of the plans reviewed by IPART

Council	Contributions plan	NDA (ha)	Additional residents	Dwellings	Jobs
The Hills Shire Council	CP12 - Balmoral Road	247	12,096	5,990	not available
	CP13 - North Kellyville	470	15,563	5,185	729
Blacktown City Council	CP20 - Riverstone & Alex Avenue	958	44,228	15,140	2,550
	CP21 – MPIP	363	3,504	1,228	10,000
	CP22 - Area 20	130	6,400	2,500	900

Note: The NDA of each plan shown in this table may not correspond to the contributions catchment for each category of infrastructure.

Source: Various contributions plans, Precinct Planning Reports and IPART calculations.

2 Methodology

There are various ways to compare the costs in contributions plan. These include analysis based on:

- ▼ cost 'per hectare'
- ▼ cost 'per person'
- ▼ cost 'per standard dwelling'.

The most suitable method of comparison depends on factors such as the way the council presents the cost data in its plans and the mix of development types within the precinct.

For example, all 5 plans submitted to IPART to date levy contributions for **open space and community services** (land only) on a per person basis. This is appropriate because the demand for open space and community facilities tends to be generated by the new residential population of the precincts.

For **transport and stormwater management** infrastructure, comparing costs on a per person basis is problematic because demand is also generated by non-residential development in some precincts. Further, for stormwater management infrastructure, the relationship between additional residents and demand for facilities is not clear. A more relevant factor is the area of impervious surface created by the development.

We have estimated the cost of transport and stormwater management infrastructure on a per hectare basis by dividing total costs in these categories by the size of the 'catchment' that the infrastructure services (in hectares). A catchment is an area within the precinct that will be serviced by the infrastructure to be provided by the council.

The comparison of cost by infrastructure category (per hectare and per person analysis) reflects, to the extent possible, IPART's recommendations from our reviews.¹

In this information paper we have also included a comparison of costs on a 'standardised dwelling' basis (standard dwelling analysis – see section 3). This allows a comparison of costs for residential development across plans. It also shows differences between sub-catchments within plans. For example, CP21 has several catchments for stormwater contributions (and only some contain low-density residential development). This is not evident in the cost comparison by infrastructure category.

The standard dwelling analysis is based on the contributions rates submitted to IPART for review. That is, they do not reflect the impact of IPART's recommendations from our reviews.

For all of the analysis, we have not adjusted the costs to reflect the different base years of the plans (ie, we have not adjusted the costs for the effect of inflation). The costs for:

- ▼ CP13 (North Kellyville) are in 2008 dollars
- ▼ CP20 (Riverstone & Alex Avenue) are in 2010 dollars
- ▼ CP12 (Balmoral Road), CP21 (MPIP) and CP22 (Area 20) are in 2011 dollars.

As our analysis only focuses on significant differences between plans, the impact of different base years is not material to the conclusions drawn.

¹ The impacts of some recommendations in our assessment reports are not quantifiable.

3 Standard dwelling comparison

The standard dwelling used for this analysis has a lot size of 600 square metres and will accommodate a household of 3.4 people. This is a hypothetical dwelling but is typical of a low density dwelling that will be constructed in parts of the precincts.²

For the 2 plans from THSC, the contributions reflect this council’s use of a Net Present Value (NPV) approach. As a result, they are higher than if calculated by simply dividing the total cost for each infrastructure category by the number of demand units (the latter is the approach used by Blacktown City Council).³ Table 2 shows that the contributions range from \$40,762 in the Bells Creek SWQ2 catchment of CP21 (MPIP) to \$63,301 in CP22 (Area 20).

Both Table 2 and Table 3 show that the main drivers of the costs are:

- ▼ acquisition of land and capital works for stormwater management in the plans submitted by Blacktown City Council
- ▼ acquisition of land (in particular for CP12 submitted by THSC) and the cost of facilities for open space.

Table 2 Development contribution per standard dwelling (\$)

	Council	THSC	THSC	THSC	BCC	BCC	BCC	BCC
	Plan	CP12	CP12	CP13	CP20	CP21	CP21	CP22
	Catchment	Eastern	Non-Eastern	n/a	First Ponds	Bells Ck SWQ2	Little Ck SWQ4	n/a
Transport - land		-	-	1,652	753	-	-	962
Transport - works		8,549	8,549	12,299	7,766	-	-	11,596
Stormwater qual. - land		-	-	3,060	-	-	-	2,620
Stormwater qual. – works		1,036	-	1,345	5,639	11,217	7,772	16,988
Stormwater quant. – land		-	-	-	10,804	4,958	6,024	3,529
Stormwater quant. - works		-	-	-	15,366	9,461	16,377	4,218
Open Space - land		31,889	31,889	20,903	6,978	7,294	7,294	11,496
Open Space - works		11,335	11,335	3,265	7,296	7,591	7,591	11,710
Community fac. – land		842	842	698	173	241	241	183
Community fac. – works		Exc.	Exc.	Exc.	Exc.	-	-	-
Total		53,651	52,615	43,221	54,774	40,762	45,299	63,301

Note: Contributions for all plans exclude administration costs and (for Blacktown City Council plans) the Reserve 867 conservation zone.

Source: Various contributions plans and IPART calculations.

² Low density residential development comprises around 12.5 to 20 dwellings per hectare.

³ Council’s expenditure on infrastructure occurs early in the life of a contribution plan. In contrast, contributions revenue is not typically collected until later in the life of a contributions plan. When discounting in an NPV model, this difference in timing means a higher contribution rate is required to equalise the present value of costs and revenue.

Table 3 Development contribution per standard dwelling (%)

	Council	THSC	THSC	THSC	BCC	BCC	BCC	BCC
	Plan	CP12	CP12	CP13	CP20	CP21	CP21	CP22
	Precinct	Eastern	Non-Eastern	n/a	First Ponds	Bells Ck SWQ2	Little Ck SWQ4	n/a
Transport - land		-	-	4	1	-	-	2
Transport – works		16	16	28	14	-	-	18
Stormwater qual. - land		-	-	7	-	-	-	4
Stormwater qual. – works		2	-	3	10	28	17	27
Stormwater quant. – land		-	-	-	20	12	13	6
Stormwater quant. - works		-	-	-	28	23	36	7
Open space – land		59	61	48	13	18	16	18
Open space - works		21	22	8	13	19	17	18
Community fac. – land		2	2	2	0	1	1	0
Community fac.– works		Exc.	Exc.	Exc.	Exc.	-	-	-
Total		100	100	100	100	100	100	100

Note: Contributions for all plans exclude administration costs and (for Blacktown City Council plans) the Reserve 867 conservation zone.

Source: Various contributions plans and IPART calculations.

4 Cost comparison by infrastructure category

We have compared the costs in each of the plans under the essential infrastructure categories. That is, transport, stormwater management, open space and recreation, and community services.

The total costs for each infrastructure category are summarised in Table 4. They are discussed in more detail in the following sub-sections.

Table 4 Summary of reasonable costs in plans reviewed by IPART (\$)

Plan	Transport	Stormwater	Open space	Community services	Total
CP12 - Balmoral Road	23,388,697	2,166,279	128,280,204	1,905,028	155,740,208
CP13 - North Kellyville	49,749,131	15,370,975	84,153,197	2,260,913	151,534,216
CP20 - Riverstone & Alex Avenue	116,228,000	385,078,000	185,280,000	2,248,000	688,834,000
CP21 – MPIP	38,116,615	125,293,203	14,031,490	245,966	177,687,274
CP22 - Area 20	20,864,390	23,823,614	40,941,828	344,000	85,973,833

Note: The total reasonable cost for all plans exclude administration costs and (for Blacktown City Council plans) the Reserve 867 conservation zone.

Source: Various contributions plans and IPART calculations.

4.1 Transport

Table 5 shows the cost of land and facilities for transport in each of the plans. Our observations are:

- ▼ The construction of facilities accounts for a far larger share of the cost of transport management than the acquisition of land.
- ▼ The major driver of construction costs for transport management is the length of roads. Where road bridges are required, these add significantly to the cost.
- ▼ The per hectare cost of transport management facilities in CP22 is high compared to other plans. This is because:
 - the catchment area for the works is relatively small and
 - the costs include 2 road bridges (together almost \$7 million).
- ▼ CP12 does not include any land for transport management in the Balmoral Road Release Area as the plan utilises existing roads. The works included are for intersections (roundabouts and signals) on existing roads, a bridge and for bus shelters and cycleways.

Table 5 Transport costs (\$)

Council	Contributions plan	Land	Facilities	Total	Cost per hectare
The Hills Shire Council	CP12 - Balmoral Road	0	23,388,697	23,388,697	87,451
	CP13 - North Kellyville	4,457,460	45,291,671	49,749,131	155,112
Blacktown City Council	CP20 - Riverstone & Alex Avenue	10,273,000	105,955,000	116,228,000	141,976
	CP21 – MPIP	12,445,000	25,671,615	38,116,615	120,618
	CP22 - Area 20	1,654,000	19,210,390	20,864,390	202,230

Note: The cost of transport management in the MPIP is not apportioned to residential development. This is because there are no new transport being provided by the council for the new residents in the precinct.

Source: Various contributions plans and IPART calculations.

4.2 Stormwater management

Table 6 shows the cost of stormwater management in each of the plans. Our observations are:

- ▼ The per hectare costs of stormwater management in the plans submitted by Blacktown City Council are almost 20 times higher than the costs in the plans submitted by THSC.
 - The disposal of excavated material accounts for around half of the cost of stormwater management works in each of the Blacktown contributions plans.
- ▼ The cost to council of stormwater management is reduced in 3 of the precincts (Balmoral Road, North Kellyville and Area 20) because the precincts are within Sydney Water's Rouse Hill Development Area (RHDA). Within the RHDA Sydney Water will provide trunk drainage facilities, and is responsible for the drainage corridor up to the 100-year ARI flood boundary.⁴ Sydney Water will fund land and facilities for stormwater management in the RHDA through the Rouse Hill Land Charge and through revenue from sewerage customers.⁵
 - THSC does not need to acquire any land for stormwater management in the Balmoral Road Precinct (CP12) because the water quality measures it provides will take the form of constructed wetlands within detention basins constructed by Sydney Water.

⁴ The ARI (Average Recurrence Interval) flood boundary designates the level of flooding that has a 1% chance of occurring in any one year. Sydney Water owns and manages the trunk drainage system as well as 256ha of flood-prone land in the Rouse Hill Development Area (RHDA). This is part of an integrated water cycle management program designed to help protect the Hawkesbury Nepean River system.

⁵ IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services - Final Report*, June 2012.

- In contrast, THSC and Blacktown City Council do need to acquire land for stormwater management in the North Kellyville Precinct (CP13) and the Area 20 Precinct (CP22) respectively. This is because the stormwater quality measures are located outside of the 100-year ARI flood boundary.
- ▼ For all types of development other than low-density residential development, Blacktown City Council only provides stormwater quality measures for run-off from roads. This is because development in medium density residential and non-residential catchments are required to address stormwater quality issues on site (ie, at the developers expense, not the council's).⁶
 - The per hectare analysis obscures the different contributions rates for stormwater quality management for different types of development within the Blacktown precincts. For example, in CP21 the stormwater quality contribution in SWQ2 (a low-density residential catchment) is \$187,890 per hectare compared to \$45,464 per hectare in SWQ3 (a mostly non- residential catchment).⁷

Table 6 Stormwater management costs (\$)

Council	Contributions plan	Land	Facilities	Total	Cost per hectare	
The Hills Shire Council	CP12 - Balmoral Road		0	2,166,279	2,166,279	27,984
	CP13 - North Kellyville	10,343,231	5,027,744	15,370,975		47,925
Blacktown City Council	CP20 - Riverstone & Alex Avenue	139,895,000	245,183,000	385,078,000		512,058
	CP21 – MPIP	36,607,000	88,686,203	125,293,203		453,643
	CP22 - Area 20	7,722,000	16,101,614	23,823,614		413,617

Note: The cost per hectare for stormwater management in CP13 assumes that the stormwater contribution catchment excludes land zoned E4 Environmental Living. THSC advised that much of this land is not developable due to constraints such as vegetation, topography and bushfire risk.

Source: Various contributions plans, correspondence with THSC and IPART calculations.

⁶ Blacktown City Council, *Draft Section 94 Contributions Plan No 21 – Marsden Park Industrial Precinct*, January 2012, p 10.

⁷ Blacktown City Council, *Draft Section 94 Contributions Plan No 21 – Marsden Park Industrial Precinct*, January 2012, p 57. Note: these contribution's rates are from the draft plan – no adjustment has been made to reflect any impact from IPART's recommendations from our review of the plan.

4.3 Open space

Table 7 shows the cost of land and facilities⁸ (base level embellishment) for open space in each of the plans. Our observations are:

- ▼ The per person cost of open space is by far the highest in CP12 (Balmoral Road) at \$10,605 per person. This appears to be due to the high unit cost of land for open space (average cost per square metre).⁹
- ▼ In CP13 (North Kellyville) land accounts for 86% of total open space costs and in CP12 (Balmoral Road) land accounts for 76% of total open space costs.
- ▼ In the Blacktown City Council plans, the acquisition of land accounts for around half of the total cost of open space.
- ▼ None of the plans apportion any costs for open space to non-residential development.

Table 7 Open space costs (\$)

Council	Contributions plan	Land	Facilities	Total	Cost per person
The Hills Shire Council	CP12 - Balmoral Road	97,016,387	31,263,817	128,280,204	10,605
	CP13 - North Kellyville	72,006,194	12,147,003	84,153,197	5,407
Blacktown City Council	CP20 - Riverstone & Alex Avenue	90,768,000	94,512,000	185,280,000	4,189
	CP21 – MPIP ^a	6,875,430	7,156,060	14,031,490	4,378
	CP22 - Area 20	21,640,000	19,301,828	40,941,828	6,397

a The cost of open space in this table is only that which is apportioned to the MPIP. The total cost of open space in CP21 (\$148,873,890) also includes land and facilities that are required to meet the demand for open space arising from new development in the adjacent Marsden Park Precinct.

Note: IPART considers that the cost of open space land acquisition in CP21 (MPIP) is only reasonable as an interim measure, and that it should be updated when planning for the Marsden Park Precinct is complete. [See: IPART, Assessment of Blacktown City Council's Draft Section 94 Contributions Plan No 21 - Marsden Park Industrial Precinct, September 2012.]

Source: Various contributions plans and IPART calculations.

⁸ Base level embellishment of open space is considered to be those works required to bring the open space up to a level where the site is secure and suitable for passive recreation (see: Department of Planning, *Local Development Contributions Practice Note for the assessment of Local Contributions Plans* by IPART, November 2010).

⁹ THSC has been pro-actively acquiring land in the Balmoral Road Release Area, largely using pooled funds collected from development under other contributions plans. As at March 2011, the council had locked in around two thirds of total land costs – saving about \$15m from the original cost estimates.

4.4 Community services (land only)

Table 8 shows the cost of land for community services in each of the plans. The construction of community service facilities is not on the Government's Essential Works List so we have not included it in this analysis.

Our observations about the cost of land are:

- ▼ In all plans submitted, the per person cost of land for community services is very low. This is because very little land is required for community services.
- ▼ The costs of land for community services is highest in the 2 plans submitted by THSC. This is because the land is strata space needed for the extension of a regional library.

Table 8 Cost of land for community services (\$)

Council	Contributions plan	Land	Facilities	Total	Cost per person
The Hills Shire Council	CP12 - Balmoral Road	1,905,028	Excluded	1,905,028	157
	CP13 - North Kellyville	2,260,913	Excluded	2,260,913	145
Blacktown City Council	CP20 - Riverstone & Alex Avenue	2,248,000	Excluded	2,248,000	51
	CP21 – MPIP ^a	245,966	0	245,966	70
	CP22 - Area 20	344,000	0	344,000	54

^a The cost of land for community services in this table is only that which is apportioned to the MPIP. The total cost of land for community services in CP21 (\$2,408,000) also includes land which is required to meet the demand for community services arising from new development in the adjacent Marsden Park Precinct.

Source: Various contributions plans and IPART calculations.