

**Sydney Water Corporation Submission
to the Independent Pricing and
Regulatory Tribunal's Draft Report
and Draft Determinations on Pricing
Arrangements for Recycled Water and
Sewer Mining**

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Key Points

Guidelines

- Sydney Water supports IPART issuing guidelines for setting recycled water prices. The guidelines provide for cost recovery pricing on a scheme-by-scheme basis.
- The guidelines encompass developer charges to recover capital costs. Sydney Water supports the draft determination of a developer charges methodology for recycled water. It notes that the developer charges method is to be reviewed in 2007.
- However, the proposal to charge the potable water price for recycled water, if there is potable water top up of more than 10 per cent of the time, is not supported.
 - Sydney Water attempts to minimise the use of potable top up. But recycling plants, and associated storages, would need to be much bigger and significantly more costly if they did not have access to potable water during peak demands. The increased cost may mean fewer recycling schemes can be undertaken.

Rouse Hill

- The price at Rouse Hill is currently \$0.29/kL. This is insufficient to cover operating costs. Rouse Hill customers use a similar volume of water as people in equivalent suburbs, despite the low price of recycled water.
- Sydney Water supports IPART's proposal to increase prices at Rouse Hill to cover operating costs, consistent with the pricing guidelines. The cost recovery price would be \$0.75/kL. IPART's recommendation for a use charge set at 80 per cent of the potable water price combined with a fixed charge of \$10.25 per year poses two difficult issues:
 - The combination of use and fixed charges in the draft determination would result in 25 per cent of consumers at Rouse Hill paying more for recycled water than they would for an equivalent amount of potable water elsewhere.
 - More generally, there is a tension between setting recycled water use charges at a fixed percentage of the potable price and the guidelines proposed by IPART for cost recovery pricing.

Integrated Water Resources Plan

- The existing Metropolitan Water Plan (MWP) provides a planning framework for water management. The MWP is to be reviewed in 2010 or sooner if required. Rather than adopt an additional planning framework at this time, it may be better to consider the ways in which the MWP needs to be changed at the time it is reviewed. In the meantime, Sydney Water could provide additional information as required by IPART.

1. Introduction

Sydney Water welcomes the opportunity to comment on the draft report and determination on recycled water pricing. Appropriate pricing is an important element of providing efficient recycled water schemes. This submission should be read in conjunction with Sydney Water's submission to IPART's issues paper on recycled water prices.

The key elements of IPART's draft report and draft determination are:

- cost recovery pricing guidelines for mandated water schemes;
- a draft determination on a methodology to set recycled water developer charges;
- a draft determination for prices of recycled water for the Rouse Hill scheme; and
- a requirement that agencies develop an Integrated Water Resources Plan (IWRP) as part of the decision making process for recycled water charges.

These issues are discussed in turn.

2. Pricing guidelines

Sydney Water supports the adoption of pricing guidelines for 'mandated' recycled water schemes (as presented in Box 7.1 of IPART's Report). Cost recovery guidelines provide efficiency and flexibility, which are desirable in an evolving market.

The guidelines provide for cost recovery pricing on a scheme-by-scheme basis. Costs of recycling schemes may differ because of a wide range of factors including:

- topography;
- the size, density and mix of the development;
- proximity to sources of effluent;
- any existing wastewater treatment infrastructure; and
- the recycling technology adopted.

Under cost recovery pricing, where costs differ between schemes, these differences will be reflected in prices to consumers. Different prices across schemes could take the form of variations in developer charges, annual fixed charges and use charges.

As noted in Sydney Water's original submission, even if more uniform prices across schemes were desirable over time, at this stage there is not enough information to determine what those prices should be. IPART agrees, in its draft report, that it does not have enough information to determine a method to set prices at this time, let alone to set a uniform price.

In relation to the structure of prices, Sydney Water's submission to IPART's issues paper on recycled water prices suggested that, for residential schemes, capital costs should be recovered through developer charges and operating costs should be recovered through volumetric charges. Sydney Water has applied this methodology to two recycled water schemes: Hoxton Par/Glenfield Road and East St Mary's/Ropes Crossing. At Hoxton Park, Sydney Water intends to set a developer charge as well as a use charge of \$0.86 kL. At

Ropes Crossing, the developer is providing the capital for the project so there is no developer charge. The recycled water price has been set \$0.62 kL.

Potable top-up and charging

The Report proposes that:

If recycled water demand exceeds supply more than 10 per cent of the time, the usage charge should equal the potable water price.

Sydney Water designs recycling schemes to minimise the use of potable water while also seeking to ensure the efficiency of investment expenditure.

The optimal capacity of a recycled water treatment plant depends on a number of factors including the volume of effluent, variability in effluent flows, level of storage available, average demands and peak demands. Usually there are significant peaks in demand at particular times of the day and at different times of the year. For residential schemes supplying water for garden use during summer months, peak daily demands are up to two to three times the average demand.

In some cases effluent is not available to service peak day demand. Even where effluent is available, it may not be cost effective to build a plant that is able to meet peak daily demands by using effluent. This would require either building significant excess capacity in the treatment plant, or significant additional storage capacity. Therefore, top up by potable water can be an element of the cost effective supply of recycled water. Without this input the costs to consumers of recycled water could be considerably higher. A consequence would be that fewer recycling schemes could be built.

Potable top up at Rouse Hill is expected to be below 10 per cent per annum. However, Sydney Water would not wish to rule out cases where potable top up by volume could exceed this level yet still be the optimal solution.

3. Rouse Hill recycled water scheme

Under the draft determination for Recycled water at Rouse Hill, use charges are to rise from \$0.29/kL to \$1.08/kL in 2008/09. The price in 2009 would represent a recycled water price of 80 per cent of the potable water price. The fixed charge would decrease from \$25.32 to \$10.25 over the same period.

The rationale for the draft Determination is twofold: to deter over-consumption of recycled water and to cover the operating costs of the Rouse Hill scheme.

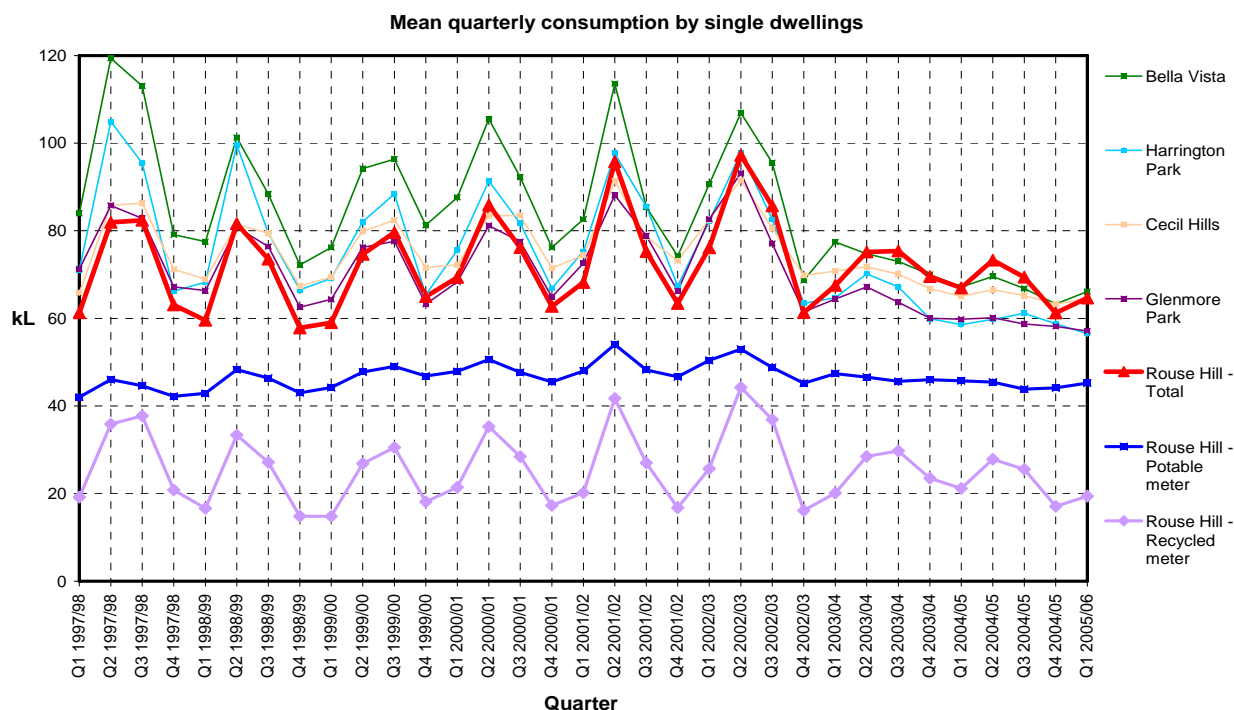
Consumption and potable top up at Rouse Hill

The Report states:

Given the high proportion of potable water currently used to top-up the Rouse Hill recycled water system, the Tribunal considers that the usage component of the charge should be increased relative to the fixed charge to encourage more efficient use of recycled water, and to better reflect the incremental cost of topping up the scheme. If potable top-ups continue to be significant, the Tribunal will consider increasing this charge further at the next price review, to bring it in line with the potable water price. (p.47)

However, it is important to note that Rouse Hill customers use a similar total volume of water as people in equivalent suburbs, despite the existing low price of recycled water (see Box 1). At Rouse Hill, the main uses of recycled water are toilet flushing and external use – particularly garden watering. The garden watering component introduces a high level of seasonality into the usage pattern.

Box 1: Water use in Rouse Hill compared with other new suburbs



This graph is based on data from all residential properties constructed in Rouse Hill and the comparison suburbs up until early 2004. It compares Rouse Hill single dwelling water use with single dwelling residential water use in similar suburbs.

It is important to compare like-with-like because establishing suburbs may use more water than average as they fill pools, establish landscaping, complete small construction and painting jobs, etc. Newer suburbs are also more likely to have larger and younger families. Established suburbs are more likely to have a wider mix of household types, including “empty nester” and other low water using households.

Total Rouse Hill water use, although comparable with similar suburbs, tends to track on the low side when compared with the rest of the group, particularly before restrictions were introduced in 2002-03. Since restrictions, water use has declined in all areas as shown by the decline of all plots in the right hand side of the graph.

Rouse Hill drinking water use is very steady at around 65% of the volumes used by non-recycling suburbs. Recycled water use, although seasonal, is generally about 35% of total use.

The reasonable variation in recycled water use at Rouse Hill has been less pronounced since restrictions commenced in 2002-03, even though recycled water is not subject to water restrictions. Overall, the graph indicates that recycled water use has been consistent with potable water use despite the absence of restrictions and the lower prices.

Up to October 2005, the production capacity of the plant was limited by the daily output capability of the continuous microfiltration (CMF) units, which totalled just under 5 ML per day. During summer, recycled water usage can approach 14 ML per day and the shortfall is addressed by topping up recycled water service reservoirs with drinking water. As a result, around 20 per cent of water used from the recycled water system was potable water.

Planning for the Stage Two upgrade for the recycled water plant is based on an assumption that recycled water production should be matched to average dry weather flows to the plant. In October 2005, the CFM units were upgraded so that plant capacity increased from 5ML to 8ML per day. In 2005/06 potable top up was 11.28 per cent. If the plant's capacity was 8ML for the whole year, potable top up would have totalled 9.4 per cent and would have only occurred on 35 days. As mentioned above, this top up can be an input to the cost effective supply of recycled water. Without this input, the costs to consumers of recycled water could be considerably higher.

Draft determination on prices at Rouse Hill

Sydney Water supports IPART's proposal to increase prices at Rouse Hill. The current charges do not cover the operating costs of the scheme. Operating costs over the life of the scheme are estimated to be around \$0.75/kL. This would be an appropriate level to set recycled water prices at Rouse Hill to facilitate cost recovery.

IPART proposes to set the price of recycled water at Rouse Hill to be 80 per cent of the potable water price. Table 1 demonstrates that some of the consequences of this price, combined with an annual fixed charge of \$10.25, are that:

- for an average household, recycled water charges would make up more than 85 per cent of the charges that would be paid for the same amount of potable water;
- for households that consume less than 40 kL of recycled water a year, total recycled water charges would be higher than the charges paid for the same amount of potable water in another suburb. Around 25 per cent of total properties at Rouse Hill consume less than 40 kL per year.

Table 1: Recycled water bills vs an equivalent potable water bill in 2009 (Real 2006-07 dollars)

Volume recycled water consumed	Additional cost of recycled water (fixed + use)	Cost of the same amount of additional potable water in another suburb ¹	Recycled water as a proportion of equivalent potable water
kL	\$	\$	%
10	21.05	13.47	156
20	31.85	26.94	118
30	42.65	40.41	106
40	53.45	53.88	99
45	58.85	60.62	97
50	64.25	67.35	95
60	75.05	80.82	93
70	85.85	94.29	91
80	96.65	107.76	90
90	107.45	121.23	89
100	118.25	134.70	88
110	129.05	148.17	87
120	139.85	161.64	87
130	150.65	175.11	86
140	161.45	188.58	86
150	172.25	202.05	85

Notes. 1. Based on a potable water price of \$1.3417 per kL. 2. This table represents the cost of an incremental volume of recycled water compared to potable water. It does not include the fixed charge for potable water because this cost is borne by customers at Rouse Hill as well as customers who do not receive recycled water.

Sydney Water suggests that prices set at this level may create a perverse incentive to use potable water rather than recycled water where consumers have discretion in the type of

water they use. These prices may also be perceived as penalising low water consuming households.

Finally, there is a tension between the pricing guidelines and the draft determination's charge for recycled water at Rouse Hill. The guidelines provide for cost recovery. However, if use charges were set at a constant proportion of the potable water price for all schemes (for Rouse Hill this proportion is 80 per cent) it would effectively put in place a form of postage stamp pricing. This would obscure differences in costs across schemes. As the draft report notes, there is not enough information at this stage to determine a method to set a uniform price.

4. Draft determination on developer charges

Sydney Water supports the release of a developer charge determination for recycled water.

It notes, however, that section 6.2 implies that there is a uniform charge across all recycled water schemes. IPART may wish to review this clause for consistency with the pricing guidelines.

5. Integrated Water Resources Plan

IPART's draft report and draft determination recognise that:

- Water agencies may avoid costs elsewhere in their networks because of a recycling project (ie. avoided costs are planned expenditures that are no longer required as a result of a recycling scheme).
- These costs may not always be reflected in the current potable water prices.
- To allow water agencies to deduct avoided costs from the cost of recycling schemes, provision needs to be made for avoided costs to be recovered from the general customer base.

To demonstrate that avoided costs are real, IPART recommends that water agencies develop and implement an Integrated Water Resources Plan (IWRP). The IWRP would compare the costs and benefits of a range of water management options to identify the optimum set and sequencing of options to satisfy the community's water needs at the lowest cost. Avoided costs would be calculated as the difference between an IWRP that includes a recycling scheme and an IWRP that does not include the scheme but meets the same demand/supply outcome.

Sydney Water supports the need to demonstrate that avoided costs are real. However, it does not follow that a new planning framework is required in addition to the Metropolitan Water Plan (MWP). To the extent that the MWP does not meet the requirements of an IWRP, as envisaged by IPART, this should be considered as part of the next review of the MWP. The next review is due to be conducted when conditions fundamentally alter or at least by 2010.

In the meantime, Sydney Water would be able to provide supplementary information as required by IPART. In this context, it is noted that Sydney Water is developing Local Area Plans within the MWP framework. Local Area Plans will outline a least-cost, integrated set of initiatives for providing potable water, recycled water, wastewater and stormwater services in new development areas. For existing areas of Sydney, Sydney Water has a

range of plans outlining future investment in water and wastewater infrastructure. Sydney Water's Water Conservation and Recycling Implementation Report also sets out demand management and supply augmentation initiatives.