

**Sydney Water Corporation
Hunter Water Corporation
Sydney Catchment Authority**

**Prices of Water Supply,
Wastewater and Stormwater
Services**

**Draft Report and Draft
Determination**



**From 1 October 2005 to
30 June 2009 for the SWC
and SCA**

**From 1 November 2005 to
30 June 2009 for HWC**

**INDEPENDENT PRICING AND
REGULATORY TRIBUNAL
of New South Wales**

IPART

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Hunter Water Corporation
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Draft Determination Nos 5, 6 and 7, 2005

June, 2005

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Mr James Cox, Full Time Member
Ms Cristina Cifuentes, Part Time Member
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The Tribunal invites interested parties to comment on this draft report and determination. Submissions are due by close of business Friday 15 July 2005. Following consideration of submissions, the Tribunal expects to issue a final determination by September 2005.

The Tribunal exercises its discretion not to exhibit any submissions based on their length or content (containing material that is defamatory, offensive, or in breach of any law).

Submissions should be sent to:

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Draft Determination No 5, 2005

**Section 11(1)
Independent Pricing and Regulatory Tribunal Act 1992**

Sydney Water Corporation

**Independent Pricing and Regulatory Tribunal
of New South Wales**

Reference No: 05/222

1 Background

- (a) Section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992* provides the Tribunal with a standing reference to conduct investigations and make reports to the Minister on the determination of the pricing for a government monopoly service supplied by a government agency specified in schedule 1 of the IPART Act.
- (b) Sydney Water Corporation (the **Corporation**) is listed as a government agency for the purposes of schedule 1 of the IPART Act. The services of the Corporation declared as monopoly services (**Monopoly Services**) under the *Independent Pricing and Regulatory Tribunal (Water, Sewerage and Drainage Services) Order 1997* (**Order**) are:
 - (1) water supply services;
 - (2) sewerage services;
 - (3) stormwater drainage services;
 - (4) trade waste services;
 - (5) services supplied in connection with the provision or upgrading of water supply and sewerage facilities for new developments and, if required, drainage facilities for such developments;
 - (6) ancillary and miscellaneous customer services for which no alternative supply exists and which relate to the supply of services of a kind referred to in paragraphs (1) to (5);
 - (7) other water supply, sewerage and drainage services for which no alternative supply exists.Accordingly, the Tribunal may determine the prices for the Corporation's Monopoly Services.
- (c) In investigating and reporting on the pricing of the Corporation's Monopoly Services, the Tribunal has had regard to a broad range of matters, including the criteria set out in section 15(1) of the Act.
- (d) In accordance with section 13A of the Act, the Tribunal has fixed a maximum price for the Corporation's Monopoly Services or has established a methodology for fixing the maximum price.
- (e) By section 18(2) of the Act, the Corporation may not fix a price below that determined by the Tribunal without the approval of the Treasurer.

2. Application of this determination

- (a) This determination fixes the maximum prices (or sets a methodology for fixing the maximum prices) that the Corporation may charge for the Monopoly Services.
- (b) This determination commences on the later of 1 October 2005 and the date that it is published in the NSW Government Gazette (**Commencement Date**).
- (c) The maximum prices in this determination apply from the Commencement Date to 30 June 2009. The maximum prices in this determination prevailing at 30 June 2009 continue to apply beyond 30 June 2009 until this determination is replaced.

3. Replacement of Determination No. 4 of 2003

Subject to clause 2.4(b) of schedule 8, this determination replaces Determination No. 4 of 2003 from the Commencement Date. The replacement does not affect anything done or omitted to be done, or rights or obligations accrued, under Determination No. 4 of 2003 prior to its replacement.

4. Monitoring

The Tribunal may monitor the performance of the Corporation for the purposes of:

- (a) establishing and reporting on the level of compliance by the Corporation with this determination; and
- (b) preparing a periodic review of pricing policies in respect of the Monopoly Services supplied by the Corporation.

5. Schedules

Schedules 1- 7 (inclusive) and the Tables in those schedules set out the maximum prices that the Corporation may charge for the Monopoly Services specified in the schedules.

6. Definitions and Interpretation

Definitions and interpretation provisions used in this determination are set out in schedule 8.

Schedule 1

Water Supply Services

1. Application

This schedule sets the maximum prices that the Corporation may charge for services under paragraph (a) of the Order (water supply services) (other than those set out in schedule 7).

2. Categories for pricing purposes

Prices for water supply services have been determined for 4 categories:

- (a) Metered Properties;
- (b) Metered Standpipes;
- (c) Unmetered Properties; and
- (d) Properties not connected to the Water Supply System.

3. Charges for water supply services to Metered Properties

3.1 Metered Residential Properties – Filtered Water

The maximum price that may be levied by the Corporation for the provision of Filtered Water to a Metered Residential Property connected to the Water Supply System for a Billing Cycle is the sum of the following:

- (a) the water service charge in Table 1 for each Meter for Filtered Water (with that Metered Residential Property taken to have a 20mm Meter size regardless of its actual Meter size), corresponding to the applicable Period in that table, divided by the number of quarters in that Period; and
- (b) the water usage charge for Filtered Water calculated as follows:
 - (i) **for each kL of water used up to and including the Tier 1 Water Consumption** - the Tier 1 water usage charge in Table 2, per kL of Filtered Water used up to and including the Tier 1 Water Consumption during the Meter Reading Period, corresponding to the applicable Period in that table;
 - (ii) **for each kL of water used in excess of the Tier 1 Water Consumption** - the Tier 2 water usage charge in Table 2, for each kL of Filtered Water used in excess of the Tier 1 Water Consumption during the Meter Reading Period, corresponding to the applicable Period in that table.

3.2 Metered Residential Properties – Unfiltered Water

The maximum price that may be levied by the Corporation for the provision of Unfiltered Water to a Metered Residential Property connected to the Water Supply System for a Billing Cycle is the sum of the following:

- (a) the water service charge in Table 1 for each Meter for Unfiltered Water (with that Metered Residential Property taken to have a 20mm Meter size regardless of its actual Meter size), corresponding to the applicable Period in that table, divided by the number of quarters in that Period; and

- (b) the water usage charge for Unfiltered Water in Table 3, per kL of Unfiltered Water used during the Meter Reading Period, corresponding to the applicable Period in that table.

3.3 Metered Non Residential Property – Filtered Water

The maximum price that may be levied by the Corporation for the provision of Filtered Water to a Metered Non Residential Property connected to the Water Supply System for a Billing Cycle is the sum of the following:

- (a) the water service charge in Table 1 for each Meter for Filtered Water, corresponding to the applicable Meter size and Period in that table, divided by the number of quarters in that Period; and
- (b) the Tier 1 water usage charge for Filtered Water in Table 2, per kL of Filtered Water used during the Meter Reading Period, corresponding to the applicable Period in that table .

3.4 Metered Non Residential Property – Unfiltered Water

The maximum price that may be levied by the Corporation for the provision of Unfiltered Water to a Metered Non Residential Property connected to the Water Supply System for a Billing Cycle is the sum of the following:

- (a) the water service charge in Table 1 for each Meter for Unfiltered Water, corresponding to the applicable Meter size and Period in that table, divided by the number of quarters in that Period; and
- (b) the water usage charge for Unfiltered Water in Table 3, per kL of Unfiltered Water used during the Meter Reading Period , corresponding to the applicable Period in that table.

4. Charges for water supply services to Metered Standpipes

4.1 Filtered Water

The maximum price that may be levied by the Corporation for the provision of Filtered Water to a Metered Standpipe connected to the Water Supply System for a Billing Cycle is the sum of the following:

- (a) the water service charge in Table 1 for each Meter for Filtered Water, corresponding to the applicable Meter size and Period in that table, divided by the number of quarters in that Period; and
- (b) the Tier 1 water usage charge for Filtered Water in Table 2, per kL of Filtered Water used during the Meter Reading Period , corresponding to the applicable Period in that table.

4.2 Unfiltered Water

The maximum price that may be levied by the Corporation for the provision of Unfiltered Water to a Metered Standpipe connected to the Water Supply System for a Billing Cycle is the sum of the following:

- (a) the water service charge in Table 1 for each Meter for Unfiltered Water, corresponding to the applicable Meter size and Period in that table, divided by the number of quarters in that Period; and
- (b) the water usage charge for Unfiltered Water in Table 3, per kL of Unfiltered Water used during the Meter Reading Period, corresponding to the applicable Period in that table.

5. Charges for water supply services to Unmetered Properties

5.1 Unmetered Residential Property

The maximum price that may be levied by the Corporation for water supply services to an Unmetered Residential Property connected to the Water Supply System for a Billing Cycle is the water service charge in Table 4, corresponding to the applicable Period in that table, divided by the number of quarters in that Period.

5.2 Unmetered Non Residential Property

The maximum price that may be levied by the Corporation for water supply services to an Unmetered Non Residential Property for a Billing Cycle is the water service charge in Table 5, corresponding to the applicable Period in that table, divided by the number of quarters in that Period.

6. Charges for water supply services to a Property not connected to the Water Supply System

The maximum water service charge and water usage charge that may be levied by the Corporation for a Property not connected to the Water Supply System is zero for the Periods commencing on the Commencement Date and ending on 30 June 2009.

7. Levying water supply charges on Multi Premises

7.1 Water supply charges for Multi Premises

Clause 7 of this schedule prescribes how the maximum prices in this schedule are to be levied on Multi Premises, specifically how they are to be levied on persons who own, control or occupy those Multi Premises.

7.2 Strata Title Lot and Community Development Lot

7.2.1 For a Strata Title Building or a Community Parcel:

- (a) which is connected to the Water Supply System; and
- (b) which has a Common Water Meter or multiple Common Water Meters,

the maximum price that may be levied by the Corporation for the provision of water supply services for a Billing Cycle is:

- (c) the water service charge calculated as follows:

the water service charge in Table 1 for a Common Water Meter corresponding to the applicable Meter size and Period in that table/the number of quarters in that Period

the number of Strata Title Lots within that Strata Title Building or the number of Community Development Lots within that Community Parcel (as the case may be),

(Multi Water Service Charge) and;

- (d) the Tier 1 water usage charge in Table 2, per kL of Filtered Water used during the Meter Reading Period, corresponding to the applicable Period in that table **(Multi Tier 1 Water Usage Charge)**; and
- (e) the water usage charge for Unfiltered Water in Table 3, per kL of Unfiltered Water used during the Meter Reading Period, corresponding to the applicable Period in that table **(Multi Unfiltered Water Usage Charge)**.

7.2.2 The Multi Water Service Charge is to be levied on a Strata Title Lot (within the Strata Title Building) or a Community Development Lot (within the Community Parcel) (as the case may be); and

7.2.3 The Multi Tier 1 Water Usage Charge and the Multi Unfiltered Water Usage Charge are to be levied on the Owners Corporation of that Strata Title Building (within which the Strata Title Lot in clause 7.2.2 is situated) or the owner of that Community Parcel (within which that Community Development Lot in clause 7.2.2 is situated) (as the case may be).

7.3 Company Title Building

For a Company Title Building:

- (a) which is connected to the Water Supply System; and
- (b) which has a Common Water Meter or multiple Common Water Meters,

the maximum price that may be levied by the Corporation on the owner of that Company Title Building for the provision of water supply services to that Company Title Building for a Billing Cycle is the sum of the following:

- (c) the water service charge in Table 1 for each Common Water Meter, corresponding to the applicable Meter size, divided by the number of quarters in that Period;
- (d) the Tier 1 water usage charge for Filtered Water in Table 2, per kL of Filtered Water used during the Meter Reading Period; and
- (e) the water usage charge for Unfiltered Water in Table 3, per kL of Unfiltered Water used during the Meter Reading Period,

each corresponding to the applicable Period in their respective tables.

7.4 Multi Premises which is not a Strata Title Building, Company Title Building or Community Parcel

For a Multi Premises which is not a Strata Title Building, a Company Title Building or a Community Parcel and:

- (a) which is connected to the Water Supply System; and
- (b) which has a Common Water Meter or multiple Common Water Meters,

the maximum price for the provision of water supply services under this schedule is to be levied by the Corporation based on its practice at the Commencement Date.

7.5 Strata Title Lot, Company Title Dwelling or Community Development Lot with its own Meter

For the avoidance of doubt, a Strata Title Lot, a Company Title Dwelling or a Community Development Lot (as the case may be) with its own Meter within a Multi Premises is deemed to be a single Property for the purposes of levying water charges under this schedule.

Tables 1, 2, 3, 4 and 5

Table 1 Water service charge for Metered Properties

Charge (\$)	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Metered Residential Properties – water service charge	56.84	$62.66 \times (1+\Delta CPI_1)$	$52.85 \times (1+\Delta CPI_2)$	$43.87 \times (1+\Delta CPI_3)$
Metered Non Residential Properties and Multi Premises (which are Residential Properties with a Meter) – water service charge based on Meter size				
20mm	56.84	$62.66 \times (1+\Delta CPI_1)$	$52.85 \times (1+\Delta CPI_2)$	$43.87 \times (1+\Delta CPI_3)$
25mm	88.81	$97.90 \times (1+\Delta CPI_1)$	$82.58 \times (1+\Delta CPI_2)$	$68.54 \times (1+\Delta CPI_3)$
30mm	127.89	$140.98 \times (1+\Delta CPI_1)$	$118.91 \times (1+\Delta CPI_2)$	$98.70 \times (1+\Delta CPI_3)$
32mm	145.51	$160.40 \times (1+\Delta CPI_1)$	$135.30 \times (1+\Delta CPI_2)$	$112.30 \times (1+\Delta CPI_3)$
40mm	227.36	$250.63 \times (1+\Delta CPI_1)$	$211.40 \times (1+\Delta CPI_2)$	$175.47 \times (1+\Delta CPI_3)$
50mm	355.25	$391.61 \times (1+\Delta CPI_1)$	$330.32 \times (1+\Delta CPI_2)$	$274.17 \times (1+\Delta CPI_3)$
65mm	600.37	$661.82 \times (1+\Delta CPI_1)$	$558.23 \times (1+\Delta CPI_2)$	$463.35 \times (1+\Delta CPI_3)$
80mm	909.44	$1,002.53 \times (1+\Delta CPI_1)$	$845.61 \times (1+\Delta CPI_2)$	$701.88 \times (1+\Delta CPI_3)$
100mm	1,421.00	$1,566.45 \times (1+\Delta CPI_1)$	$1,321.26 \times (1+\Delta CPI_2)$	$1,096.68 \times (1+\Delta CPI_3)$
150mm	3,197.25	$3,524.50 \times (1+\Delta CPI_1)$	$2,972.84 \times (1+\Delta CPI_2)$	$2,467.54 \times (1+\Delta CPI_3)$
200mm	5,684.00	$6,265.78 \times (1+\Delta CPI_1)$	$5,285.05 \times (1+\Delta CPI_2)$	$4,386.74 \times (1+\Delta CPI_3)$
For Meter sizes not specified above, the following formula applies		$(\text{Meter size})^2 \times 20\text{mm charge}/400$		

Table 2 Water usage charge for Filtered Water to Metered Properties

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Tier 1 water usage charge (\$ per kL)	1.13	$1.19 \times (1+\Delta CPI_1)$	$1.20 \times (1+\Delta CPI_2)$	$1.23 \times (1+\Delta CPI_3)$
Tier 2 water usage charge (\$ per kL)	1.44	$1.56 \times (1+\Delta CPI_1)$	$1.70 \times (1+\Delta CPI_2)$	$1.84 \times (1+\Delta CPI_3)$

Table 3 Water usage charges for Unfiltered Water to Metered Properties

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Unfiltered Water – water usage charge (\$ per kL)	0.78	$0.78 \times (1 + \Delta CPI_1)$	$0.78 \times (1 + \Delta CPI_2)$	$0.78 \times (1 + \Delta CPI_3)$

Table 4 Water service charge for Unmetered Residential Properties

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Water usage charge (\$)	269.29	$360.16 \times (1 + \Delta CPI_1)$	$351.86 \times (1 + \Delta CPI_2)$	$351.07 \times (1 + \Delta CPI_3)$

Table 5 Water service charge for Unmetered Non Residential Properties

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Water usage charge (\$)	158.82	$205.46 \times (1 + \Delta CPI_1)$	$196.37 \times (1 + \Delta CPI_2)$	$191.32 \times (1 + \Delta CPI_3)$

Schedule 2

Sewerage services

1. Application

This schedule sets the maximum prices that the Corporation may charge for services under paragraph (b) of the Order (sewerage services).

2. Categories for pricing purposes

Prices for sewerage services have been determined for 6 categories:

- (a) Residential Properties connected to the Sewerage System;
- (b) Non Residential Properties connected to the Sewerage System;
- (c) Properties not connected to the Sewerage System;
- (d) Blue Mountains septic pump out services;
- (e) Exempt Land connected to the Sewerage System; and
- (f) Sewage Extraction.

3. Charges for sewerage services to Residential Properties

The maximum price that may be levied by the Corporation for sewerage services to a Residential Property connected to the Sewerage System for a Billing Cycle is the sewerage service charge in Table 6 corresponding to the applicable Period in that table, divided by the number of quarters in that Period.

4. Charges for sewerage services to Non Residential Properties

The maximum price that may be levied by the Corporation for sewerage services to a Non Residential Property that is connected to the Sewerage System for a Billing Cycle is the sum of the following:

- (a) the sewerage service charge equal to the higher of:
 - (i) the sewerage service charge in Table 7, corresponding to the applicable Period and Meter size in that table, divided by the number of quarters in that Period; and
 - (ii) the sewerage service charge calculated under clause 4.2 of this schedule, divided by the number of quarters in that Period; and
- (b) the sewerage usage charge in Table 8 for the Meter Reading Period, (corresponding to the applicable Period in that table), multiplied by the relevant Discharge Factor.

- 4.2 For the purposes of clause 4.1(a) of this schedule, if a Non Residential Property:
- (a) has an actual Meter size that is less than 20mm and a Discharge Factor less than 100%; or
 - (b) does not have a Meter,

then the sewerage service charge levied on that Non Residential Property is taken to be a sewerage service charge for a Meter size of 20mm and a Discharge Factor of 100%.

5. Charges for sewerage services to Properties not connected to the Sewerage System

The maximum price that may be levied by the Corporation for sewerage services (other than the Blue Mountains Septic Services) to a Property not connected to the Sewerage System is zero for the Periods commencing on the Commencement Date and ending on 30 June 2009.

6. Charges for Blue Mountains Septic Services

The maximum price that may be levied by the Corporation for Blue Mountains Septic Services for a Billing Cycle is the sum of the following:

- (a) the septic pump out service charge in Table 9, corresponding to the applicable Period in that table, divided by the number of quarters for that Period; and
- (b) the septic pump out usage charge in Table 10 for the Meter Reading Period corresponding to the applicable Period in that table.

Note: It is understood that from 1 July 2007, the Corporation will no longer be required to provide the Blue Mountains Septic Services to Properties located in the Blue Mountains City Council Area that are able to connect to the Sewerage System regardless of whether they are connected or not.

7. Charges for sewerage services to Exempt Land

The maximum price that may be levied by the Corporation for sewerage services to Exempt Land that is connected to the Sewerage System is the charge per water closet or urinal closet in Table 11, corresponding to the applicable Period in that table.

8. Levying sewerage service charges on Multi Premises

8.1 Sewerage service charges on Multi Premises

Clause 8 of this schedule prescribes how the maximum prices in this schedule are to be levied on Multi Premises, specifically how they are to be levied on persons who own, control or occupy those Multi Premises.

8.2 Strata Title Building (which is a Residential Property)

8.2.1 For a Strata Title Building:

- (a) which is connected to the Sewerage System; and
- (b) which has a Common Water Meter or multiple Common Water Meters, or is not serviced by a Meter; and
- (c) where the majority of the Strata Title Lots (within that Strata Title Building) are Residential Properties,

the maximum price that may be levied by the Corporation for the provision of sewerage services for a Billing Cycle is:

- (d) the sewerage service charge in Table 12 corresponding to a Meter size of 20mm and the applicable Period in that table, divided by the number of quarters in that Period (**Residential Strata Sewerage Service Charge**).

8.2.2 The Residential Strata Sewerage Service Charge is to be levied on that Strata Title Lot.

8.3 Strata Title Building (which is a Non Residential Property)

8.3.1 For a Strata Title Building:

- (a) which is connected to the Sewerage System; and
- (b) which has a Common Water Meter or multiple Common Water Meters or is not serviced by a Meter; and
- (c) where the majority of the Strata Title Lots (within that Strata Title Building) are Non Residential Properties,

the maximum price that may be levied by the Corporation for the provision of sewerage services for a Billing Cycle is:

- (d) the sewerage service charge in Table 12 corresponding to a Meter size of 20mm and the applicable Period in that table, divided by the number of quarters in that Period (**Non Residential Strata Sewerage Service Charge**); and
- (e) the sewerage usage charge in the second row of Table 8 for the Meter Reading Period (corresponding to the applicable Period in that table) multiplied by the number of Strata Title Lots in that Strata Title Building, with the resulting number then multiplied by the Discharge Factor (**Strata Sewerage Usage Charge**).

8.3.2 The Non Residential Strata Sewerage Service Charge is to be levied on that Strata Title Lot.

8.3.3 The Strata Sewerage Usage Charge is to be levied on the Owners Corporation of the Strata Title Building.

8.4 Multi Premises (other than a Strata Title Building)

For a Multi Premises (which is not a Strata Title Building) and:

- (a) which is connected to the Sewerage System; and
- (b) which has a Common Water Meter or multiple Common Water Meters; and
- (c) where the majority of the Properties (other than Properties falling within paragraphs (a) and (e) of the definition of 'Property') within that Multi Premises are Non Residential Properties,

the maximum price that may be levied by the Corporation on the owner of that Multi Premises for the provision of sewerage services to that Multi Premises for a Billing Cycle is the sum of the following:

- (d) the sewerage service charge equal to the higher of:
 - (i) the sewerage service charge in Table 7 for each Common Water Meter, corresponding to the applicable Period and Meter size in that table, divided by the number of quarters in that Period; and

- (ii) the sewerage service charge calculated under clause 8.5 of this schedule, divided by the number of quarters in that Period; and
- (e) the sewerage usage charge in Table 8 for each Common Water Meter for the Meter Reading Period (corresponding to the applicable Period in that table) , multiplied by the relevant Discharge Factor.

8.5 For the purposes of clause 8.4(d) of this schedule, if a Multi Premises:

- (a) has a Meter size less than 20mm and a Discharge Factor less than 100%; or
- (b) does not have a Meter,

then the sewerage service charge levied on that Multi Premises is taken to be a sewerage service charge for a Meter size of 20mm and a Discharge Factor of 100%.

Tables 6, 7, 8, 9, 10, 11 and 12

Table 6 Sewerage service charge for Residential Properties

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Wastewater service charge – all customers (\$)	276.48	$373.69 \times (1+\Delta\text{CPI}_1)$	$378.81 \times (1+\Delta\text{CPI}_2)$	$384.00 \times (1+\Delta\text{CPI}_3)$

Table 7 Sewerage service charge for Non Residential Properties

Sewerage service charge (\$) assuming 100% Discharge Factor	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Meter size				
20mm	276.48	$373.69 \times (1+\Delta\text{CPI}_1)$	$378.81 \times (1+\Delta\text{CPI}_2)$	$384.00 \times (1+\Delta\text{CPI}_3)$
25mm	432.00	$583.89 \times (1+\Delta\text{CPI}_1)$	$591.89 \times (1+\Delta\text{CPI}_2)$	$600.00 \times (1+\Delta\text{CPI}_3)$
30mm	622.08	$840.80 \times (1+\Delta\text{CPI}_1)$	$852.32 \times (1+\Delta\text{CPI}_2)$	$864.00 \times (1+\Delta\text{CPI}_3)$
32mm	707.79	$956.64 \times (1+\Delta\text{CPI}_1)$	$969.75 \times (1+\Delta\text{CPI}_2)$	$983.04 \times (1+\Delta\text{CPI}_3)$
40mm	1,105.92	$1,494.75 \times (1+\Delta\text{CPI}_1)$	$1,515.23 \times (1+\Delta\text{CPI}_2)$	$1,536.00 \times (1+\Delta\text{CPI}_3)$
50mm	1,728.00	$2,335.55 \times (1+\Delta\text{CPI}_1)$	$2,367.55 \times (1+\Delta\text{CPI}_2)$	$2,400.00 \times (1+\Delta\text{CPI}_3)$
65mm	2,920.32	$3,947.08 \times (1+\Delta\text{CPI}_1)$	$4,001.16 \times (1+\Delta\text{CPI}_2)$	$4,056.00 \times (1+\Delta\text{CPI}_3)$
80mm	4,423.68	$5,979.01 \times (1+\Delta\text{CPI}_1)$	$6,060.93 \times (1+\Delta\text{CPI}_2)$	$6,144.00 \times (1+\Delta\text{CPI}_3)$
100mm	6,912.00	$9,342.21 \times (1+\Delta\text{CPI}_1)$	$9,470.21 \times (1+\Delta\text{CPI}_2)$	$9,600.00 \times (1+\Delta\text{CPI}_3)$
150mm	15,552.00	$21,019.97 \times (1+\Delta\text{CPI}_1)$	$21,307.97 \times (1+\Delta\text{CPI}_2)$	$21,600.00 \times (1+\Delta\text{CPI}_3)$
200mm	27,648.00	$37,368.83 \times (1+\Delta\text{CPI}_1)$	$37,880.83 \times (1+\Delta\text{CPI}_2)$	$38,400.00 \times (1+\Delta\text{CPI}_3)$
For Meter sizes not specified above, the following formula applies		$(\text{Meter size})^2 \times 20\text{mm charge}/400 \times \text{df}\%$		

Table 8 Sewerage usage charge for Non Residential Properties

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Sewerage usage (\$ per kL) $\leq 500\text{kL}$	0	0	0	0
Sewerage usage (\$ per kL) $> 500\text{kL}$	1.19	$1.21 \times (1+\Delta\text{CPI}_1)$	$1.22 \times (1+\Delta\text{CPI}_2)$	$1.24 \times (1+\Delta\text{CPI}_3)$

Table 9 Blue Mountains Septic Service charge

	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Septic pump out service (\$)	384.00	$512.00 \times (1+\Delta CPI_1)$	$512.00 \times (1+\Delta CPI_2)$	$512.00 \times (1+\Delta CPI_3)$

Table 10 Blue Mountains Septic Service usage charge

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Septic pump out usage charge ≤ 100 kL per annum (\$ per kL)	0	0	0	0
Septic pump out usage charge > 100 kL per annum (\$ per kL)	12.29	$12.29 \times (1+\Delta CPI_1)$	$12.29 \times (1+\Delta CPI_2)$	$12.29 \times (1+\Delta CPI_3)$

Table 11 Sewerage charge for Exempt Land

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Per water closet or urinal closet (\$)	82.35	$82.35 \times (1+\Delta CPI_1)$	$82.35 \times (1+\Delta CPI_2)$	$82.35 \times (1+\Delta CPI_3)$

Table 12 Sewerage service charge to a Strata Title Lot which is a Non Residential Property with a Common Water Meter or not serviced by a Meter

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Sewerage service charge (\$)	276.48	$373.69 \times (1+\Delta CPI_1)$	$378.81 \times (1+\Delta CPI_2)$	$384 \times (1+\Delta CPI_3)$

Schedule 3

Stormwater drainage services

1. Application

This schedule sets the maximum prices that the Corporation may charge for services under paragraph (c) of the Order (stormwater drainage services).

2. Categories for pricing purposes

Prices for stormwater drainage services have been determined for 2 categories:

- (a) Residential Properties and Vacant Land; and
 - (b) Non Residential Properties,
- that are within a Stormwater Drainage Area.

3. Charges for stormwater drainage to Residential Properties and Vacant Land

The maximum price that may be levied by the Corporation for stormwater drainage services to a Residential Property or Vacant Land, (each within a Stormwater Drainage Area) for a Billing Cycle is the stormwater drainage service charge in Table 13, corresponding to the applicable Period in that table, divided by the number of quarters in that Period.

4. Charges for stormwater drainage to Non Residential Properties

The maximum price that may be levied by the Corporation for stormwater drainage services to a Non Residential Property that is within a Stormwater Drainage Area for a Billing Cycle is the stormwater service charge in Table 14, corresponding to the applicable Period in that table, divided by the number of quarters in that Period.

Tables 13 and 14

Table 13 Stormwater drainage service charge for Residential Properties and Vacant Land

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Stormwater drainage service charge (\$)	24.58	$36.86 \times (1 + \Delta CPI_1)$	$40.96 \times (1 + \Delta CPI_2)$	$45.06 \times (1 + \Delta CPI_3)$

Table 14 Stormwater service charge for Non Residential Properties

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Stormwater drainage service charge (\$)	61.44	$94.21 \times (1 + \Delta CPI_1)$	$106.50 \times (1 + \Delta CPI_2)$	$114.69 \times (1 + \Delta CPI_3)$

Schedule 4

Rouse Hill Development Area

1. Application

- 1.1 This schedule sets the maximum prices that the Corporation may charge the Properties in the Rouse Hill Development Area for services under paragraph (g) of the Order (other water supply, sewerage and drainage services for which no alternative supply exists).
- 1.2 The maximum prices in this schedule are in addition to the prices applying to the Properties in the Rouse Hill Development Area under schedules 1, 2, 3, 5, 6 and 7.

2. Categories for pricing purposes

The prices in this schedule have been determined only for Properties in the Rouse Hill Development Area.

3. Charges to Properties in the Rouse Hill Development Area.

The maximum price that may be levied by the Corporation for the provision of recycled water and other drainage services to the Properties in the Rouse Hill Development Area for a Billing Cycle is the sum of the following:

- (a) the recycled water usage charge in Table 15 for the Meter Reading Period, corresponding to the applicable Period in that table; and
- (b) the recycled water service access charge in Table 16, corresponding to the applicable Meter size and Period in that table, divided by the number of quarters in that Period; and
- (c) the river management charge (drainage) in Table 17, corresponding to the applicable Period and the relevant land size in that table, divided by the number of quarters in that Period.

Tables 15, 16 and 17

Table 15 Recycled water usage charge

Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Recycled water usage charge (\$ per kL)	0.293	$0.293 \times (1+\Delta CPI_1)$	$0.293 \times (1+\Delta CPI_2)$	$0.293 \times (1+\Delta CPI_3)$

Table 16 Recycled Water Service Access Charge

Recycled water service access charge (\$) Meter size	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
20mm	18.97	$25.29 \times (1+\Delta CPI_1)$	$25.29 \times (1+\Delta CPI_2)$	$25.29 \times (1+\Delta CPI_3)$
For Properties with Meter size >20mm the formula to apply is	$(\text{nominal diameter})^2 \times (\text{charge for 20mm Meter})/400$			

Table 17 River Management Charge (Drainage)

River management charge (drainage) (\$)	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Properties with land size $\leq 1000\text{m}^2$	80.91	$107.88 \times (1+\Delta CPI_1)$	$107.88 \times (1+\Delta CPI_2)$	$107.88 \times (1+\Delta CPI_3)$
Properties with land size $> 1000\text{m}^2$	$80.91 \times ((\text{land area m}^2)/1000)$	$107.88 \times ((\text{land area m}^2)/1000) \times (1+\Delta CPI_1)$	$107.88 \times ((\text{land area m}^2)/1000) \times (1+\Delta CPI_2)$	$107.88 \times ((\text{land area m}^2)/1000) \times (1+\Delta CPI_3)$

Schedule 5

Trade waste services

1. Application

This schedule sets the maximum prices that the Corporation may charge for services under paragraph (d) of the Order (trade waste services).

2. Categories for pricing purposes

Prices for trade waste services have been determined for 2 categories:

- (a) Industrial Customers that discharge trade waste into the Sewerage System; and
- (b) Commercial Customers that discharge trade waste into the Sewerage System.

3. Charges for trade waste services to Industrial Customers

3.1 The maximum price that may be levied by the Corporation for trade waste services to Industrial Customers is the sum of the following:

- (a) **from the Commencement Date to 30 June 2006:**
 - (i) the industrial agreement charge in Table 18, corresponding to the applicable risk index determined by the Corporation; and
 - (ii) the charge in Table 19 and the charge corresponding to the threat level (determined by the Corporation) in Table 20 for the total mass of waste substances discharged that are in excess of the domestic equivalent for waste substance concentrations; and
- (b) **for each Period from 1 July 2006 to 30 June 2009:**
 - (i) the industrial agreement charge in Table 18, corresponding to the applicable risk index determined by the Corporation, as varied under clause 5 of this schedule; and
 - (ii) the charge in Table 19 and the charge corresponding to the threat level (determined by the Corporation) in Table 20 for the total mass of waste substances discharged that are in excess of the domestic equivalent for waste substance concentrations, as varied under clause 5 of this schedule.

3.2 For the purpose of clauses 3.1(a)(ii) and 3.1(b)(ii) of this schedule, a reference to “domestic equivalent for waste substance concentrations” is a reference to average concentrations of that substance over time and/or volume of discharge, determined in accordance with the Trade Waste Policy.

3.3 [The maximum price that may be levied by the Corporation for the total waste substance concentrations in excess of the acceptance standard in Tables 21 and 22 is:

- (a) **from the Commencement Date to 30 June 2006** - the corresponding charge in those tables; and
- (b) **for each Period from 1 July 2006 to 30 June 2009** - the corresponding charge in those tables as varied under clause 5 of this schedule, are to be doubled and applied to the entire mass of the substance discharged that is in excess of the domestic equivalent (rather than only to the amount that is in excess of the

acceptance standard, excluding sulphate.] *[SWC to provide further information on the application of this clause]*

3.4 [If the Corporation determines that a substance is either a critical substance or an over capacity substance, (in accordance with the Trade Waste Policy), then:

- (a) **from the Commencement Date to 30 June 2006** - the charges in Tables 19 and 20; and
- (b) **for each Period from 1 July 2006 to 30 June 2009** - the charges in Tables 19 and 20 as varied under clause 5 of this schedule,

are to be multiplied by the charging rate multiplier in Table 21, and applied to the mass of the substance that is 1.5 times in excess of the Industrial Customer's long term average daily mass (LTADM), as defined in the Corporation's Trade Waste Policy. (This is in addition to the charges that apply to the mass of the substance that is equal to or less than the customer's LTADM). *[SWC to provide further information on the application of this clause]*

3.5 For the avoidance of doubt, a charge may be adjusted in accordance with both clauses 3.3 and 3.4 of this schedule.

4. Charges for trade waste services to Commercial Customers

4.1 The maximum price that may be levied by the Corporation for trade waste services to Commercial Customers is the sum of the following:

- (a) **from the Commencement Date to 30 June 2006:**
 - (i) the commercial agreement charge in Table 22;
 - (ii) the volumetric charge equal to the higher of:
 - (A) the minimum annual charge in Table 23; and
 - (B) the volumetric charge in Table 23, corresponding to the applicable charging code determined in accordance with the Trade Waste Policy; and
 - (iii) the wastesafe charge in Table 24;
- (b) **for each Period from 1 July 2006 to 30 June 2009:**
 - (i) the commercial agreement charge as in Table 22 as varied under clause 5 of this schedule;
 - (ii) the volumetric charge equal to the higher of:
 - (A) the minimum annual charge in Table 23 as varied under clause 5 of this schedule; and
 - (B) the volumetric charge in Table 23 as varied under clause 5 of this schedule, corresponding to the applicable charging code determined in accordance with the Trade Waste Policy; and
 - (iii) the wastesafe charge in Table 24 as varied under clause 5 of this schedule.

5 Variation of charges

Each charge in Tables 18, 19, 20, 22, 23 and 24 (inclusive) is varied as follows:

- (a) **from 1 July 2006 to 30 June 2007** - that charge is to be multiplied by $(1+\Delta\text{CPI}_1)$;
- (b) **from 1 July 2007 to 30 June 2008** - that charge is to be multiplied by $(1+\Delta\text{CPI}_2)$; and
- (c) **from 1 July 2008 to 30 June 2009** - that charge is to be multiplied by $(1+\Delta\text{CPI}_3)$.

Tables 18, 19, 20, 21, 22, 23 and 24

Table 18 Industrial Agreement Charges

Industrial agreement fees (\$ per quarter) Commencement Date to 30 June 2006				
Risk index	Standard	With direct electronic reporting (DER)	With on-line monitoring (OLM)	With DER and OLM
1	\$5,397.36	\$4,857.62	\$4,317.89	\$3,778.15
2	\$4,872.20	\$4,384.98	\$3,897.76	\$3,410.53
3	\$2,275.65	\$2,047.75	\$1,820.52	\$1,592.95
4	\$1,283.69	\$1,155.32	\$1,026.95	\$898.58
5	\$495.95	\$446.35	\$396.77	\$347.17
6	\$175.03	\$157.58	\$140.03	\$122.52
7	\$116.68	\$105.02	\$93.35	\$81.67
Hourly rate for processing applications and determining agreement fees where an assessment of pollutant(s) not currently covered in <i>Trade Waste Policy</i> is required				\$108 per hour. The total charge must not be more than \$20,000 per processing application and determining agreement fee

Table 19 Acceptance Standards and Quality Charges for Domestic Substances

Substance	Acceptance standard (mg/L)	Domestic equivalent (mg/L)	Charges (\$/kg) Commencement Date to 30 June 2006
Suspended solids	600	200	0.744
BOD – to primary STP	see notes 2 and 3	230	0.103+[0.0169x (BOD mg/L) / 600]
BOD – to secondary/tertiary STP	see notes 2 and 3	230	0.587+[0.0169x (BOD mg/L) / 600]
Grease	Primary 110 Secondary/tertiary 200	50	1.049
Ammonia (as N)	100	35	1.740
Nitrogen (inland only)	150 see note 4	50	0.146
Phosphorus (inland only)	50 see note 4	10	1.163
Sulfate	2,000	50	0.115x[SO ₄ mg/L]/2000
Total dissolved solids (ocean systems, no discharge limitation)	10,000	450	0.005
Total dissolved solids (inland systems and ocean systems, with discharge limitation)	Determined by system	450	0.005
Total Dissolved Solids (inland and ocean systems, with advanced treatment to remove TDS)	Determined by system	450	0.15 x fraction of average dry weather flow treated

Notes:

1. The mass of any substance (with the exception of sulfate) discharged at a concentration which exceeds the nominated acceptance standard will be charged at double the rate for the entire mass for non-domestic substances (including any critical substance charges), and for the mass above domestic equivalent for domestic substances. Concentration is determined by daily composite sampling by either the customer or Sydney Water. Customers who enter into an approved water conservation program may be eligible for flat rate BOD and sulfate charges and will not incur the doubling of the charging rate if certain acceptance standards are exceeded.
2. The oxygen demand of effluent is specified in terms of BOD₅. Where a reliable correlation can be shown to exist between BOD and another test, Sydney Water may be prepared to accept results based on this alternative test.
3. Acceptance standards for BOD and total dissolved solids are to be determined by the transportation and treatment capacity of the receiving system and the end use of sewage treatment products.
4. Nitrogen and phosphorus limits do not apply where a sewage treatment plant (to which the customer's sewerage system is connected) discharges directly to the ocean.

Table 20 Threat Level based on the Acceptance Standards and Associated Charges for Non Domestic Substances

Threat level	Acceptance standard (mg/L)	Charge (\$/kg) Commencement Date to 30 June 2006
0	Provisional	0
1	10,000	\$0.01
2	5,000	\$0.01
3	1,000	\$0.06
4	500	\$0.11
5	300	\$0.21
6	100	\$0.59
7	50	\$1.16
8	30	\$1.93
9	20	\$2.88
10	10	\$5.83
11	5	\$11.66
12	3	\$19.24
13	2	\$29.14
14	1	\$58.34
15	0.5	\$116.70
16	0.1	\$583.47
17	0.05	\$1,166.99
18	0.03	\$1,925.50
19	0.01	\$5,834.60
20	0.005	\$11,669.19
21	0.0001	\$583,459.88

Table 21 Charges for Critical Substances and Over Capacity Substances

Substance status	Charging rate multiplier
Critical	2
Over capacity	3

Table 22 Commercial Agreement Charge

Commercial agreement fees – (\$ per quarter)	Commencement Date to 30 June 2005 \$
First process	17.50
Each additional process	5.83

Table 23 Volumetric charge for Commercial Customers

Charging code	Volumetric charge (\$/kL)	Charging code	Volumetric charge (\$/kL)
A	0.00	K	3.24
B	0.00	L	5.41
C	0.02	M	7.57
D	0.05	N	10.80
E	0.10	O	12.96
F	0.32	P	16.22
G	0.54	Q	21.62
H	0.75	R	32.43
I	1.08	S	54.05
J	2.15		

Where the volume of trade wastewater is 58.72
assessed, a minimum annual charge (all codes)

Table 24 Wastesafe charge for Commercial Customers

Commencement Date to 30 June 2006	
Wastesafe charge (\$ per kL)	0.108

Schedule 6

Ancillary and miscellaneous customer services

1. Application

This schedule sets the maximum prices that the Corporation may charge for services under paragraph (f) of the Order (ancillary and miscellaneous customer services for which no alternative supply exists).

2. Charges for ancillary and miscellaneous services

2.1 The maximum charge that may be levied by the Corporation for an ancillary and miscellaneous service in Table 25 is:

- (a) **from the Commencement Date to 30 June 2006** - the corresponding charge in Table 25;
- (b) **from 1 July 2006 to 30 June 2007** - the corresponding charge in Table 25 multiplied by $(1+\Delta\text{CPI}_1)$;
- (c) **from 1 July 2007 to 30 June 2008** - the corresponding charge in Table 25 multiplied by $(1+\Delta\text{CPI}_2)$; and
- (d) **from 1 July 2008 to 30 June 2009** - the corresponding charge in Table 25 multiplied by $(1+\Delta\text{CPI}_3)$.

2.2 A reference in Table 25 to "NA" means that the Corporation does not provide the relevant service.

Table 25 Charges for ancillary and miscellaneous services

No.	Ancillary and miscellaneous services	Charges from Commencement Date to 30 June 2006
1	Conveyancing Certificate a) Over the Counter b) Electronic	\$17.50 \$7.00
2	Property Sewerage Diagram-up to and including A4 size- (where available) <i>(Diagram showing the location of the house-service line, building and sewer for a property)</i> a) Certified b) Uncertified i. Over the Counter ii. Electronic	NA \$20.00 \$10.00
3	Service Location Diagram <i>(Location of sewer and/or Water Mains in relation to a property's boundaries)</i> a) Over the Counter b) Electronic	\$20.00 \$10.00
4	Special Meter Reading Statement	\$26.00
5	Billing Record Search Statement – up to and including 5 years.	\$33.00
6	Building over or Adjacent to Sewer Advice <i>(Statement of Approval Status for existing Building Over or Adjacent to a Sewer)</i>	\$29.00
7	Water Reconnection a) During business hours b) Outside business hours	\$30.00 \$134.00
8	Workshop Test of Water Meter <i>(Removal and full mechanical test of the meter by an accredited organisation at the customer's request to determine the accuracy of the water meter. This involves dismantling and inspection of meter components)</i> 20mm 25mm 32mm 40mm 50mm 60mm 80mm 100mm 150mm Strip test 20mm >20mm	\$165.50 \$165.50 \$165.50 \$165.50 \$165.50 NA \$165.50 NA NA NA NA NA
9	Water main disconnection a) Application for Disconnection-(all sizes) b) Physical Disconnection	\$72.00 NA
10	Application for Water Service Connection-(up to and including 25mm) <i>(This covers the administration fee only. There will be a separate charge payable to the utility if they also perform the physical connection)</i>	\$35.00
11	Application for Water Service Connection-(32-65mm) <i>(This covers administration and system capacity analysis as required)</i>	\$226.00

No.	Ancillary and miscellaneous services	Charges from Commencement Date to 30 June 2006
12	Application for Water Service Connection-(80mm or greater) <i>(This covers administration and system capacity analysis as required)</i> Multiple and large services	\$246.00
13	Application to assess a Water main Adjustment <i>(Moving a fitting and/or adjusting a section of water main up to and including 25 metres in length)</i> <i>This covers preliminary advice as to the feasibility of the project and will result in either:</i> <i>1. A rejection of the project in which cases the fee covers the associated investigation costs</i> <i>Or</i> <i>2. Conditional approval in which case the fee covers the administrative costs associated with the investigation and record amendment.</i>	NA NA
14	Standpipe Hire Security Bond (25mm) Security Bond (63mm)	NA NA
15	Standpipe Hire Annual Fee (20mm) (32mm) (50mm) Quarterly Fee (20mm) (32mm) (50mm) Monthly Fee (20mm) (32mm) (50mm) Tri-annual Fee (20mm) (32mm) (50mm)	see meter size price schedule NA NA NA NA NA NA NA NA NA
16	Standpipe Water Usage Fee	see water usage price schedule
17	Backflow Prevention Device Application and Registration Fee <i>(This fee is for initial registration of the backflow device)</i>	NA
18	Backflow Prevention Application Device Annual Administration Fee <i>(This fee is for the maintenance of records including logging of inspection reports)</i>	NA
19	Major Works Inspections Fee. <i>(This fee is for the inspection, for the purposes of approval of water and sewer mains, constructed by others, that are longer than 25 metres and/or greater than 2 metres in depth)</i> Water Mains (\$ per metre) Gravity Sewer Mains (\$per Metre) Rising Sewer Mains (\$per Metre) Reinspection	NA NA NA
20	Statement of Available Pressure and Flow <i>(This fee covers all levels whether modelling is required or not)</i>	\$160.00

No.	Ancillary and miscellaneous services	Commencement Date to 30 June 2006	
		Fixed charges	Hourly charges
21	Diagram Discrepancy – known as HS85 <i>Application for Sydney Water to undertake a Property Sewerage Diagram estimation for a property where no diagram currently exists</i>	\$ 130.00	
22	Request for Asset Construction Details <i>Detailed map of Sydney Water assets indicating water, sewer and drainage.</i>	\$ 70.00	
23	Sydney Water Supply System Diagram <i>Large Hydra Plan showing water, sewer and drainage assets, covering a large area in a single plot.</i>	\$ 30.00	\$105.00 plus \$1.00 per lot for water, \$1.25 for water and sewerage.
24	Building Plan Approval <i>Approval of building/development plans certifying that the proposed construction does not adversely impact on Sydney Water's assets.</i>	\$ 23.00	
25	Water main Adjustment Application <i>Application for Sydney Water to investigate the feasibility of relocating or adjusting an existing water main.</i>	\$ 156.00	
26	Water main Fitting Adjustment Application <i>Application for an Accredited Supplier to lower or raise an existing water main fitting.</i>	\$ 102.00	
27	Pump Application – Water <i>Application for approval of an installation of a pump on the domestic or fire service, serving a property.</i>	\$ 131.00	
28	Extended Private Service Application <i>Application for Sydney Water to investigate the feasibility of permitting an extended private water service to provide a point of connection.</i>	\$ 101.00	
29	Sewer Junction Connection Application <i>Application for an Accredited Supplier to insert a junction into Sydney Water's sewer line.</i>	\$ 121.00	
30	Sewer Sideline Connection Application <i>Application for an Accredited Supplier to extend a junction to provide a suitable point of connection.</i>	\$ 121.00	
31	Sewer main Adjustment Application <i>Application for Sydney Water to investigate the feasibility of relocating or adjusting a sewer main.</i>	\$ 156.00	
32	Vent Shaft Adjustment Application <i>Application for Sydney Water to investigate the feasibility of relocating or disusing a sewer vent shaft and an Accredited Supplier to undertake the work.</i>	\$ 213.00	
33	Disuse of Sewer Application <i>Application for a Sydney Water to investigate the feasibility to disuse an existing Sydney Water sewer.</i>	\$ 134.00	
34	Pier Supervision Application	\$ 73.00	\$ 105.00

No.	Ancillary and miscellaneous services	Commencement Date to 30 June 2006	
		Fixed charges	Hourly charges
	<i>Application for Sydney Water to supervise the piercing of an existing sewer. The application and work must be carried out by an approved supplier.</i>		
35	Concrete Encasement Supervision Application <i>Application for Sydney Water to supervise the encasement of an existing sewer. The application and work must be carried out by an approved supplier.</i>	\$ 73.00	\$ 105.00
36(a)	Plumbing and Drainage Inspection Application <i>Application for Sydney Water to inspect any new sewer or drainage connections. This includes the drawing up of property sewerage diagrams on completion.</i>	\$ 59.00	
36(b)	Plumbing and Drainage Inspection Fee <i>Fee per inspection for Sydney Water to inspect any new sewer or drainage connections. NB: Application fee also applies.</i>	\$ 72.00	
36(c)	Plumbing and Drainage Re-inspection Fee <i>Fee per re-inspection for Sydney Water to inspect any sewer or drainage connections. NB: Application fee does not apply.</i>	\$ 72.00	
37	Connection to Stormwater Channel Approval Application <i>Application for approval to connect to Sydney Water's stormwater channel greater than 300mm.</i>	\$ 255.00	
38	Inspection of Break In Stormwater Channel Application <i>Application for an inspection of a connection to Sydney Water's stormwater channel greater than 300mm</i>	\$ 204.00	
39	Inspection of Drainage Lines Application <i>Application for an inspection of drainage lines from stormwater connection to silt arrestor and updating of records.</i>	\$ 112.00	
40	Review of Hydraulic Plans <i>Application for Sydney Water to examine hydraulic drawings to determine if internal drainage meets plumbing regulations. Water and fire hydraulics to be submitted and examined individually.</i>	\$ 43.00	\$ 105.00
41(a)	Subdivider/Developer Compliance Certificate (also known as a Section 73) <i>Application for a subdivider/developer compliance certificate stating whether a proposed development complies with Section 73 of the Sydney Water Act (1994). In addition, developer charges and various requirements may apply.</i>	\$ 325.00	
41(b)	Feasibility application <i>Lodgement of an application for an indication of potential servicing requirements. This also includes an indication on developer charges for a development proposal. Formerly included in subdivider development application.</i>	\$ 325.00	
41(c)	Road Closure Application <i>Lodgement of an application for a permanent road closure. Formerly included in subdivider development application</i>	\$ 197.00	
42	Developer Investigation Fee <i>Investigation of expanding reticulation systems to cater for developments requirements and to safeguard Sydney Water's assets.</i>	see service 41	\$ 105.00

No.	Ancillary and miscellaneous services	Commencement Date to 30 June 2006	
		Fixed charges	Hourly charges
43	Design and Construct Contract Administration <i>Performance of various activities to ensure the quality of the work under contract during the development and to safeguard Sydney Water's assets.</i>	NA	\$ 105.00
44	Minor Extension Approval Application (changed name to Water and Sewer Extension Application) <i>Application for approval to undertake a minor extension of an existing service or for expanding reticulation systems for a development.</i>	\$180.00	
45	Hydrant Resealing <i>Charge levied on the property owner to reseal a fire hydrant to prevent illegal use of unmetered water.</i>	\$ 17.00	
46	Dishonoured or Declined Payment Fee <i>Fee for dishonoured reversal/payment processing where a financial institute declined a payment to Sydney Water.</i>	\$ 18.20	
47(a)	Cancellation of Plumbers Permit <i>Application for Sydney Water to cancel a plumber's permit where both parties sign the application</i>	\$ -	
47(b)	Cancellation of Plumbers Permit <i>Application for Sydney Water to cancel a plumber's permit where only one signatory is received.</i>	\$ 52.00	
48	Plumbing and Drainage Quality Assurance Application <i>New charge which is expected to be utilised when Sydney Water's Quality Assurance audit role becomes effective. With Sydney Water's Plumbing and Drainage inspectors moving towards a Quality Assurance role.</i>	\$ 150.00	
49	Hourly Rate – Technical Services <i>Hourly rate for provision of expertise and technical services</i>	NA	\$ 105.00
50(a)	Trade waste miscellaneous charges Industrial and commercial trade waste inspections - with one Sydney Water representative - with two Sydney Water representative Minimum increment	NA NA \$ 30.00	\$ 60.00 \$ 120.00 NA
50(b)	Trade waste application fees <i>Applicable to industrial customers only</i> - Variation	\$ 240.00 \$ 288.00	NA NA
50(c)	Product authorisation / assessment <i>Applicable to commercial customers only</i> - Application fee - Assessment fee	\$ 216.00 NA	NA \$ 105.00
50(d)	Sale of trade waste data	NA	\$ 105.00
51	Alternative Water Inspection Fee <i>Alternative Water Inspection application for Sydney Water to review the proposed connection to an alternative water source i.e. bore water, grey water. This includes updating the sewerage service diagram on completion.</i>	\$ 210.00	NA

Schedule 7

Minor Service Extensions

1. Application

This schedule sets the maximum prices that the Corporation may charge for certain services under paragraph (a) of the Order (water supply services) and paragraph (b) of the Order (sewerage services).

2. Prices for minor service extensions

- 2.1 The maximum price that the Corporation may charge for the provision of water and sewerage services that constitute a Minor Service Extension is the price calculated under clause 3 of this schedule.
- 2.2 The price calculated under clause 3 of this schedule may only be levied by the Corporation on a Property after the Application Date corresponding to that Property.

3. Calculating the price

- 3.1 The maximum price for the services described in clause 2.1 of this schedule, when the Connection Date is the same as the Availability Date, is the price determined by the following formula:

$$P0 = \left[\frac{PV(K) - PV(R - C)}{PV(S)} \right]$$

- 3.2 The maximum price for the services described in clause 2.1, when the Connection Date is within the Year following the Availability Date, is the price determined by the following formula:

$$P1 = P0 \times (\theta CPI_B)$$

- 3.3 The maximum price for the services described in clause 2.1 of this schedule, when clauses 3.1 and 3.2 of this schedule do not apply, is the price determined by the following formula:

$$Pt = P0 \times [(\theta CPI_A) \times \dots \times (\theta CPI_B)]$$

- 3.4 In clauses 3.1, 3.2 and 3.3 of this schedule:

P0 is the price per Equivalent Tenament that the Corporation may levy under clause 2.2 of this schedule calculated on the Availability Date.

P1 is the price per Equivalent Tenament that the Corporation may levy under clause 2.2 of this schedule when the Connection Date is within the Year following the Availability Date.

Pt is the price per Equivalent Tenament that the Corporation may levy under clause 2.2 of this schedule when clauses 3.1 and 3.2 of this schedule do not apply.

PV means:

- (a) when applied to *K* or (*R-C*) , the present value of *K* or (*R-C*) (as the case may be), applying a discount rate of 7 per cent;
- (b) when applied to *S*, the present value of *S* (over the same period as that used to calculate *R*), applying a discount rate of 7 per cent.

K is the total capital cost of the Minor Service Extension to which this schedule applies.

R is the estimated future revenue to be derived in a given Year from the provision of a Minor Service Extension to the owners of the Properties capable of being connected to the Water Supply System or Sewerage System, following a Minor Service Extension.

C is the estimated future operating, maintenance and administration costs expected to be spent on customers serviced by the Minor Service Extension.

S is so much of Equivalent Tenament that the Corporation estimates is attributable to connections in each of the Years, following a Minor Service Extension.

Equivalent Tenament in relation to a Minor Service Extension is a unit of measure of the additional load that the Corporation estimates is placed on its Water Supply System or Sewerage System from a Property being connected to those systems following the Minor Service Extension when compared to the load placed on those systems by an [average] Residential Property [*SWC to advise what is an average Residential Property*].

θCPI_A is:

- (a) the sum of the CPI's for each of the four quarters in the Year immediately following the Availability Date

divided by

- (b) the sum of the CPI's for each of the four quarters in the Year of the Availability Date.

θCPI_B is:

- (a) the sum of the CPI's for each of the four quarters in the Year immediately preceding the Connection Date

divided by

- (b) the sum of the CPI's for each of the four quarters in the Year immediately preceding the earliest quarter in paragraph (a).

“...” denotes:

- (a) the number of Years between the Year following the Availability Date and the Connection Date; and
- (b) that in each of the Years in paragraph (a) there is to be applied an index which is:
 - (i) the sum of the CPI’s for each of the four quarters of that Year;
 divided by
 - (ii) the sum of the CPI’s for each of the four quarters of the Year immediately preceding the Year in paragraph (i).

3.5 For example, if the proposed Availability Date for a Property is January 2005, and the Connection Date for that Property is May 2008, the charge under clause 2.2 of this schedule is calculated by applying the formula in clause 3.3 of this schedule as follows:

$$P_{example} = \text{Connection price}_{2005} \times (\theta\text{CPI}_{2006}) \times (\theta\text{CPI}_{2007}) \times (\theta\text{CPI}_{2008})$$

Where:

$P_{example}$ means the price that may be levied by the Corporation in this example,

Connection price₂₀₀₅ means the price for connection at the Availability Date, which is the amount derived from $\left[\frac{(PV(K) - PV(R - C))}{PV(S)} \right]$

$$\theta\text{CPI}_{2006} = \left(\frac{\text{CPI}_{Sept2005} + \text{CPI}_{Dec2005} + \text{CPI}_{Mar2006} + \text{CPI}_{Jun2006}}{\text{CPI}_{Sept2004} + \text{CPI}_{Dec2004} + \text{CPI}_{Mar2005} + \text{CPI}_{Jun2005}} \right)$$

$$\theta\text{CPI}_{2007} = \left(\frac{\text{CPI}_{Sept2006} + \text{CPI}_{Dec2006} + \text{CPI}_{Mar2007} + \text{CPI}_{Jun2007}}{\text{CPI}_{Sept2005} + \text{CPI}_{Dec2005} + \text{CPI}_{Mar2006} + \text{CPI}_{Jun2006}} \right)$$

$$\theta\text{CPI}_{2008} = \left(\frac{\text{CPI}_{Sept2006} + \text{CPI}_{Dec2006} + \text{CPI}_{Mar2007} + \text{CPI}_{Jun2007}}{\text{CPI}_{Sept2005} + \text{CPI}_{Dec2005} + \text{CPI}_{Mar2006} + \text{CPI}_{Jun2006}} \right)$$

The application of the formula in clause 3.3 of this schedule given the definitions in clause 3.4 results in $\theta\text{CPI}_{2007} = \theta\text{CPI}_{2008}$ in this example.

Assume in this example PV(S) is calculated in the following way:

The Corporation estimates that the total Equivalent Tenament for the minor service extension is 20. S is so much of the 20 Equivalent Tenament that the Corporation estimates is attributable to connections in each of the following Years.

If 10 Equivalent Tenement were expected to connect to the system in the first Year it became available, 4 in the next and the remaining 6 in the third, then applying a discount rate of 7 per cent:

$$PV(S) = 10 + \frac{4}{1.07} + \frac{6}{1.07^2} \approx 18.99$$

Schedule 8

Definitions and Interpretation

1. Definitions

1.1 General definitions

In this determination:

Application Date is the date on which a person applies to the Corporation for connection of a Property to the Water Supply System and/or the Sewerage System, following a Minor Service Extension to the Water Supply System and/or the Sewerage System.

Area of Operations has the meaning given to that term in the Operating Licence.

Availability Date is the date on which a Property is capable of being connected to the Water Supply System and/or Sewerage System, following a Minor Service Extension, irrespective of whether the Property is connected on that date.

Billing Cycle means each quarter during a Period.

Blue Mountains City Council Area means the Blue Mountains City Council area proclaimed under the Local Government Act.

Blue Mountains Septic Service means the service provided by the Corporation, of pumping out effluent from Properties with septic tanks, within the Blue Mountains City Council Area proclaimed under the Local Government Act.

Check Meter means [SWC to provide].

Commencement Date means the Commencement Date as defined in clause 2(b) of section 1 (Background) of this determination.

Commercial Customer has the meaning given to that term in the Trade Waste Policy.

Common Water Meter means a Meter (other than a Check Meter) which is connected or available for connection to Multi Premises, where the Meter measures the water usage to that Multi Premises but not to each relevant Property located on or within that Multi Premises.

Community Development Lot has the meaning given to that term under the *Community Land Development Act 1989*.

Community Parcel has the meaning given to that term under the *Community Land Development Act 1989*.

Company Title Building means a building owned by a company where the issued shares of the company entitle the legal owner to exclusive occupation of a specified dwelling within that building.

Company Title Dwelling means a dwelling within a Company Title Building.

Connection Date means the date on which a Property is connected to the Water Supply System and/or Sewerage System, following a Minor Service Extension.

Corporation means the Corporation as defined in clause 1(b) of section 1 (**Background**) of this determination, constituted under the *Sydney Water Act 1994*.

df% or Discharge Factor means the ratio of the amount of waste water the Corporation determines is discharged from a Property into the Sewerage System, to the metered water entering that Property, expressed as a percentage.

Exempt Land means land described in part 1, schedule 2 of the *Sydney Water Act, 1994*.

Filtered Water means water that has been treated at a water filtration plant.

GST means the Goods and Services Tax as defined in *A New Tax System (Goods and Services Tax) Act, 1999*.

Industrial Customer has the meaning given to that term in the Trade Waste Policy.

IPART Act means the *Independent Pricing and Regulatory Tribunal Act 1992*.

kL means kilolitre or one thousand litres.

Local Government Act means the *Local Government Act, 1993 (NSW)*.

Meter means an apparatus for the measurement of water.

Metered Non Residential Property means a Non Residential Property that is serviced by a Meter.

Metered Property means a Metered Residential Property or a Metered Non Residential Property.

Meter Reading Period means the period used by the Corporation to calculate the water usage charge or sewerage usage charge levied in a Billing Cycle and is equal to the number of days between:

- (a) the date on which the Meter was last read (or taken to have been read by the Corporation); and
- (b) the date on which the Meter was read (or taken to have been read by the Corporation) immediately preceding the date in paragraph (a).

Metered Residential Property means a Residential Property that is serviced by a Meter.

Metered Standpipe means a metered device for connecting to one of the [Corporation's fire hydrants] [SWC to provide further information] to enable water to be extracted.

Minor Service Extension means a service provided by the Corporation to extend the Sewerage System and/or the Water Supply System to Properties which are not connected to the Sewerage System and the Water Supply System where the owners of those Properties (which are capable of being connected) request to be connected to the Sewerage System and/or the Water Supply System.

Monopoly Services means the Monopoly Services defined in clause 1(b) of section 1 (**Background**) of this determination.

Multi Premises means land where there are two or more Properties (other than Properties which fall within paragraph (e) of the definition of 'Property') located on it, excluding land where there are hotels, motels, guest houses or backpacker hostels, each as defined in the Local Government Act, located on it.

Non Residential Property means a Property that is not a Residential Property or Vacant Land.

Order means the Order defined in clause 1(b) of section 1 (**Background**) of this determination and published in Government Gazette No. 18, on 14 February 1997.

Operating Licence means the Corporation's operating licence in force under part 5 of the *Sydney Water Act, 1994*.

Owners Corporation has the meaning given to that term under the *Strata Schemes Management Act 1996*.

Period means the Commencement Date to 30 June 2006, 1 July 2006 to 30 June 2007, 1 July 2007 to 30 June 2008 or 1 July 2008 to 30 June 2009 (as the case may be).

Property includes:

- (a) a Strata Title Lot;
- (b) a Company Title Dwelling;
- (c) a Community Development Lot;
- (d) a part of a building lawfully occupied or available for occupation for residential purposes; or
- (e) land.

Rateable Land has the meaning given to that term under the Local Government Act.

Residential Property means a Property where:

- (a) in the case of that Property being Rateable Land, that Property is categorised as residential under section 516 of the Local Government Act; or
- (b) in the case of that Property not being Rateable Land, the dominant use of that Property is residential applying the classifications in section 516 of the Local Government Act.

Rouse Hill Development Area means that area in the map bounded by the broken line in Attachment A excluding that area described as “Kellyville existing residential area” and the “cemetery”.

Sewerage System means the sewerage system owned and operated by the Corporation.

Stormwater Drainage Area has the meaning given to that term under the *Sydney Water Act 1994*.

Strata Title Building means a building that is subject to a strata scheme under the *Strata Schemes (Freehold Development) Act 1973*.

Strata Title Lot means a lot as defined under the *Strata Schemes (Freehold Development) Act 1973*.

Tier 1 Water Consumption means 1.1kL per day multiplied by the number of days in the relevant Meter Reading Period.

Trade Waste Policy means the Corporation’s *Trade Waste Policy and Management Plan* (July 2001) as amended from time to time.

Tribunal means the Independent Pricing and Regulatory Tribunal of New South Wales established under the IPART Act.

Unfiltered Water means water that has been chemically treated but not treated at a water filtration plant.

Unmetered Non Residential Property means a Non Residential Property that is not serviced by a Meter.

Unmetered Property means an Unmetered Residential Property or an Unmetered Non Residential Property.

Unmetered Residential Property means a Residential Property that is not serviced by a Meter

Vacant Land means land with no capital improvements and no connection to the Water Supply System.

Water Supply System means the water supply system owned and operated by the Corporation.

Year means a period of twelve months commencing 1 July and ending on 30 June in the ensuing calendar year.

1.2 Consumer Price Index

- (a) CPI means the consumer price index All Groups index number for the, weighted average of eight capital cities, published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Tribunal

$$(b) \Delta CPI_1 = \left(\frac{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

$$\Delta CPI_2 = \left(\frac{CPI_{Jun2006} + CPI_{Sep2006} + CPI_{Dec2006} + CPI_{Mar2007}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

$$\Delta CPI_3 = \left(\frac{CPI_{Jun2007} + CPI_{Sep2007} + CPI_{Dec2007} + CPI_{Mar2008}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

each as calculated by the Tribunal and notified in writing by the Tribunal to the Corporation.

- (c) The subtext (for example Jun 2005) when used in relation to paragraph (b) above means the CPI for the quarter and Year indicated (in the example the June quarter for 2005).

2. Interpretation

2.1 General provisions

In this determination:

- (a) headings are for convenience only and do not affect the interpretation of this determination;
- (b) a reference to a schedule, annexure, attachment, clause or table is a reference to a schedule, annexure, attachment, clause or table to this determination;
- (c) words importing the singular include the plural and vice versa;
- (d) a reference to a law or statute includes all amendments or replacements of that law or statute;
- (e) a reference to a “quarter” is a reference to a consecutive period of three months ending on 31 March, 30 June, 30 September or 31 December, as the case may be.

2.2 Explanatory notes, examples and clarification note

- (a) Explanatory notes and examples do not form part of this determination, but in the case of uncertainty may be relied on for interpretation purposes.
- (b) The Tribunal may publish a clarification notice in the NSW Government Gazette to correct any manifest error in this determination as if that clarification note formed part of this determination.

2.3 Prices exclusive of GST

Prices or charges specified in this determination do not include GST.

2.4 Billing

- (a) For the avoidance of doubt nothing in this determination affects when the Corporation may issue a bill to a customer for prices or charges under this determination.
- (b) If a Meter Reading Period commences before the Commencement Date and ends after the Commencement Date, the water usage charge or sewerage usage charge (as the case may be) applying to the whole of that Meter Reading Period is the charge calculated under Determination No 4 of 2003, prior to that determination being replaced by this determination.

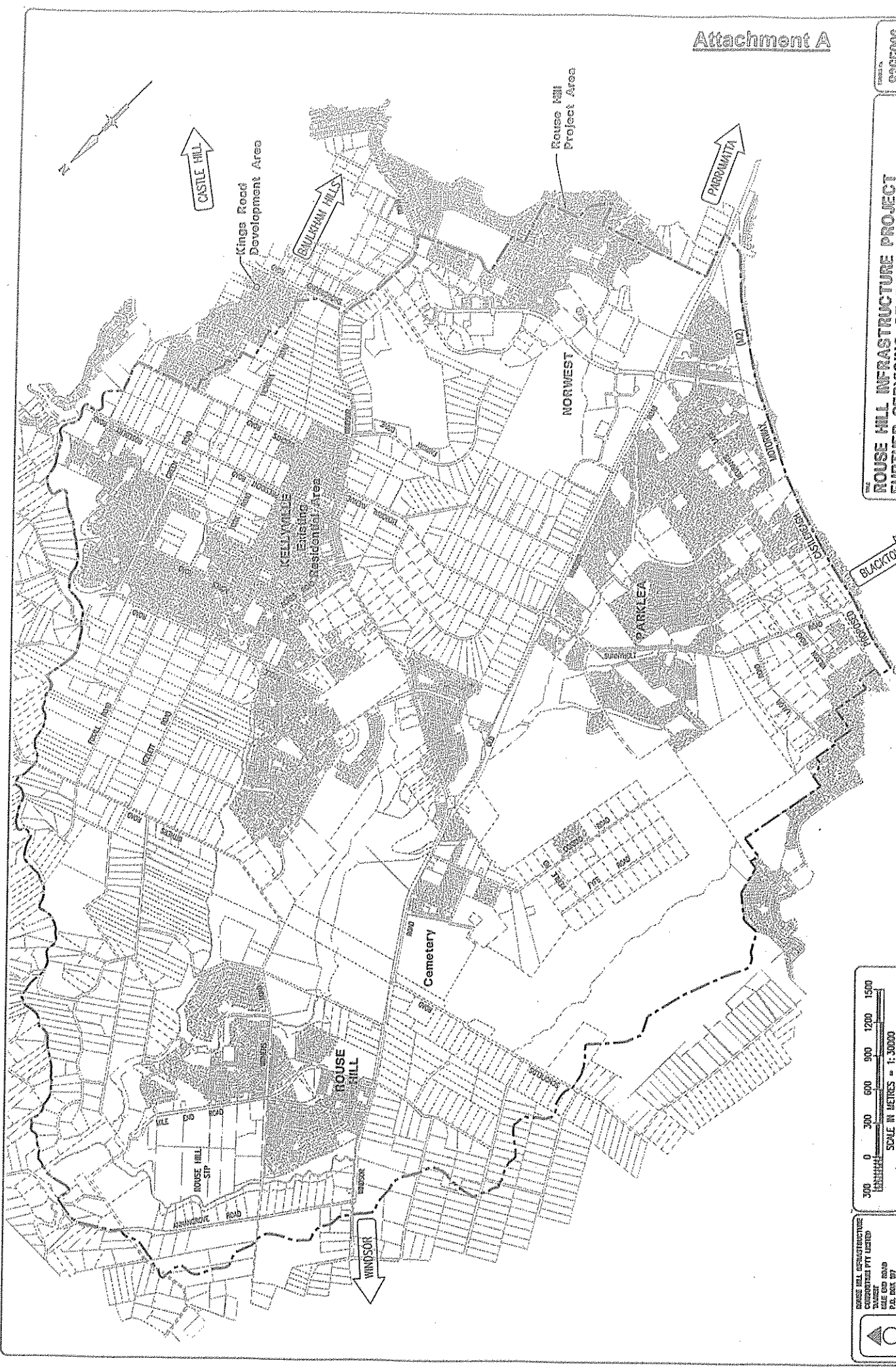
ROUSE HILL INFRASTRUCTURE PROJECT
 FURTHER SERVING OF ROUSE HILL - STAGE 3
 CONSTRUCTION SITE

FINAL



CAD FILENAME: S306N6.DWG
 THIS PLOT DATE: 11/04/00
 DRAWN BY: CKB
 ORIGINATED BY: BAF

RHIC
 Rouse Hill Infrastructure
 CONSULTING PTY LIMITED
 1/100 Rouse Hill Road
 Rouse Hill NSW 2158
 PHONE: 02 9350 2300
 TELEPHONE: 02 9350 4300
 FAX: 02 9350 4300
 E-MAIL: info@rhic.com.au



Draft Determination No 6, 2005

**Section 11(1)
Independent Pricing and Regulatory Tribunal Act 1992**

Hunter Water Corporation

**Independent Pricing and Regulatory Tribunal
of New South Wales**

Reference No: 05/223

1. Background

- (a) Section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992* provides the Tribunal with a standing reference to conduct investigations and make reports to the Minister on the determination of the pricing for a government monopoly service supplied by a government agency specified in Schedule 1 of the IPART Act.
- (b) The Hunter Water Corporation (**Corporation**) is listed as a government agency for the purposes of Schedule 1 of the IPART Act. The services of the Corporation declared as monopoly services (**Monopoly Services**) under the *Independent Pricing and Regulatory Tribunal (Water, Sewerage and Drainage Services) Order 1997* (**Order**) are:
 - (1) water supply services;
 - (2) sewerage services;
 - (3) stormwater drainage services;
 - (4) trade waste services;
 - (5) services supplied in connection with the provision or upgrading of water supply and sewerage facilities for new developments and, if required, drainage facilities for such developments;
 - (6) ancillary and miscellaneous customer services for which no alternative supply exists and which relate to the supply of services of a kind referred to in paragraphs (1) to (5);
 - (7) other water supply, sewerage and drainage services for which no alternative supply exists.

Accordingly the Tribunal may determine the prices for the Corporation's Monopoly Services.

- (c) In investigating and reporting on the pricing of the Corporation's Monopoly Services, the Tribunal has had regard to a broad range of matters, including the criteria set out in section 15(1) of the IPART Act.
- (d) In accordance with section 13A of the IPART Act, the Tribunal has fixed a maximum price for the Corporation's Monopoly Services or established a methodology for fixing the maximum price.
- (e) By section 18(2) of the IPART Act, the Corporation may not fix a price below that determined by the Tribunal without the approval of the Treasurer.

2. Application of this determination

- (a) This determination sets out the maximum prices (or sets a methodology for fixing the maximum prices) that the Corporation may charge for the Monopoly Services specified in this determination.
- (b) This determination commences on the later of 1 November 2005 and the date that it is published in the NSW Government Gazette (**Commencement Date**).
- (c) The maximum prices in this determination are to apply from the Commencement Date to 30 June 2009. The prices specified in this determination prevailing as at 30 June 2009 continue to apply beyond 30 June 2009 until this determination is replaced.

3. Replacement of Determination No. 3 of 2003

Subject to clause 2.4(b) of schedule 7, this determination replaces Determination No. 3 of 2003 from the Commencement Date. The replacement does not affect anything done or omitted to be done, or rights and obligations accrued, under Determination No. 3 of 2003 prior to its replacement.

4 Monitoring

The Tribunal may monitor the performance of the Corporation for the purposes of:

- (a) establishing and reporting on the level of compliance by the Corporation with this determination; and
- (b) preparing a periodic review of pricing policies in respect of the Monopoly Services supplied by the Corporation.

5. Schedules

Schedules 1-6 (inclusive) and the Tables in those Schedules set out the maximum prices that the Corporation may charge for the Monopoly Services specified in the Schedules.

6. Definitions and Interpretation

Definitions and interpretation provisions used in this determination are set out in Schedule 7.

Schedule 1

Water Supply Services

1. Application

This Schedule sets the maximum prices that the Corporation may charge for services under paragraph (a) of the Order (water supply services).

2. Categories for pricing purposes

Prices for water supply services have been determined for 3 categories:

- (a) Metered Properties;
- (b) Unmetered Properties; and
- (c) water supplied to the Dungog Shire Council.

3. Charges for water supply services of Filtered Water to Metered Properties

The maximum price that may be levied by the Corporation for the provision of Filtered Water to a Metered Property connected to the Water Supply System for a Billing Cycle is the sum of the following:

- (a) the water service charge set out in Table 1 corresponding to the applicable Meter size and Period in that table divided by the number of four monthly cycles in that Period; and
- (b) the water usage charge which is:
 - (i) **for each kL of Filtered Water used up to and including 1000kL per Year** – the Tier 1 water usage charge in Table 2, per kL of Filtered Water used during the Meter Reading Period, corresponding to the applicable Period in that table; and
 - (ii) **for each kL of Filtered Water used in excess of 1000kL per Year and up to and including 50,000kL per Year** – the Tier 2 water usage charge in Table 2, per kL of Filtered Water used during the Meter Reading Period, corresponding to the applicable Period in that table.; and
 - (iii) **for each kL of Filtered Water used above 50,000kL per Year** – the charge in Table 3, per kL of Filtered Water used during the Meter Reading Period, corresponding to the applicable Period in that table and location of that Metered Property.

Note: The maximum price currently levied by the Corporation for the provision of water supply services to Gosford City Council and Wyong Shire Council (the **Councils**) is the sum of the water service charge in Table 1 and the water usage charge in Tables 2 and 3. It is understood that the Councils are currently negotiating with the Corporation as to the maximum price payable for the provision of water supply services to the Councils and maximum price in the final determination for the provision of water supply services to the Councils may be different from the maximum price payable by the Councils under this determination.

4. Charges for water supply services of Unfiltered Water to Metered Properties

The maximum price that may be levied by the Corporation for the provision of Unfiltered Water to a Metered Property for a Billing Cycle is the sum of the following:

- (a) the water service charge set out in Table 1 corresponding to the applicable Meter size and Period in that table divided by the number of four monthly cycles in that Period; and
- (b) the water usage charge which is:
 - (i) **for each kL of Unfiltered Water used up to and including 1000kL per Year** – the Tier 1 water usage charge in Table 2 (discounted by \$0.07 per kL), per kL of Unfiltered Water used during the Meter Reading Period, corresponding to the applicable Period in that table; and
 - (ii) **for each kL of Unfiltered Water used in excess of 1000kL per Year and up to and including 50,000kL per Year** – the Tier 2 water usage charge in Table 2 (discounted by \$0.07 per kL), per kL of Unfiltered Water used during the Meter Reading Period, corresponding to the applicable Period in that table; and
 - (iii) **for each kL of Unfiltered Water used above 50,000kL per Year** – the charge in Table 3 (discounted by \$0.07 per kL), per kL of Unfiltered Water used during the Meter Reading Period, corresponding to the applicable Period in that table and location of that Metered Property.

5. Charges for water supply services to Unmetered Properties

The maximum price that may be levied by the Corporation for the provision of water supply services to an Unmetered Property connected to the Water Supply System for a Billing Cycle is the water service charge set out in Table 1 corresponding to the applicable Period and the Diameter Pipe size in that table, divided by the number of four monthly cycles in that Period.

6. Water charges for the Dungog Shire Council

The maximum price that may be levied by the Corporation for water supply services to the Dungog Shire Council for a Billing Cycle is the sum of the following:

- (a) the water service charge set out in Table 1 corresponding to the applicable Meter size and Period in that table divided by the number of four monthly cycles in that Period;
- (b) **for each kL of water used up to and including 1000kL per Year** - the Tier 1 water usage charge set out in Table 4, per kL of water used during the Meter Reading Period, corresponding to the applicable Period in that table;
- (c) **for each kL of water used in excess of 1000kL per Year and up to and including 50,000kL per Year** - the Tier 2 water usage charge in Table 4, per kL of water used during the Meter Reading Period, corresponding to the applicable Period in that table; and
- (d) **for each kL of water used above 50,000kL per Year** - the Tier 3 water usage charge in Table 4, per kL of water used during the Meter Reading Period, corresponding to the applicable Period in that table.

7. Levying charges on Multi Premises

7.1 Water supply charges for Multi Premises

Clause 7 of this schedule prescribes how the maximum prices in this schedule are to be levied on Multi Premises, specifically how they are to be levied on persons who own, control or occupy the Multi Premises.

7.2 Strata Title Lot with Common Water Meter

For a Strata Title Lot within a Strata Title Building which:

- (a) is connected to the Water Supply System; and
- (b) has a Common Water Meter or multiple Common Water Meters,

the maximum price that may be levied by the Corporation on that Strata Title Lot for the provision of water supply services to that Strata Title Lot for a Billing Cycle is:

- (c) if the Corporation has not been requested by the Owners Corporation of the Strata Title Building to levy the maximum price based on Unit Entitlement, the Corporation must levy that Strata Title Lot based on the following:

$$\left(\begin{array}{l} \text{the water service charge in Table 1 for each} \\ \text{Common Water Meter corresponding to the} \\ \text{applicable Period and Meter size in that} \\ \text{table/the number of four monthly cycles in that} \\ \text{Period} \end{array} \right) + \begin{array}{l} \text{water usage charge for each Common Water} \\ \text{Meter calculated by applying clause 3(b) of this} \\ \text{schedule for the Meter Reading Period} \end{array}$$

total number of Strata Title Lots in that Strata Title Building

or

- (d) if the Corporation has been requested by the Owners Corporation of the Strata Title Building to levy the maximum price based on Unit Entitlement, the Corporation must levy that Strata Title Lot based on the following:

$$\left(\begin{array}{l} \text{the water service charge in} \\ \text{Table 1 for each Common Water} \\ \text{Meter corresponding to the} \\ \text{applicable Period and Meter} \\ \text{size in that table/the number of} \\ \text{four monthly cycles in that} \\ \text{Period} \end{array} \right) + \begin{array}{l} \text{water usage charge for each} \\ \text{Common Water Meter calculated} \\ \text{by applying clause 3(b) of this} \\ \text{schedule for for the Meter} \\ \text{Reading Period} \end{array}$$

total Unit Entitlement of that Strata Title Building

X Unit Entitlement of that Strata Title Lot

7.3 Strata Title Lot with individual Meter and Strata Title Building with Common Water Meter

For a Strata Title Lot which:

- (a) is connected to the Water Supply System; and
- (b) has its own Meter; and
- (c) is situated in a Strata Title Building which has a Common Water Meter or multiple Common Water Meters,

the maximum price that may be levied by the Corporation for a Billing Cycle on:

- (d) that Strata Title Lot for the provision of water supply services to that Strata Title Lot is the price calculated by applying clause 3 of this schedule; and
- (e) the Owner Corporations of that Strata Title Building for water usage is the water usage charge in clause 3(b) of this schedule applied to so much of the water (recorded by all the Common Water Meters) that is in excess of the water recorded by the Meters servicing all the Strata Title Lots within that Strata Title Building.

7.4 Multi Premises (which is not a Strata Title Building)

For a Multi Premises (which is not a Strata Title Building) and:

- (a) which is connected to the Water Supply System; and
- (b) which has a Common Water Meter or multiple Common Water Meters,

the maximum price that may be levied by the Corporation on the owner of that Multi Premises for the provision of water supply services to that Multi Premises for a Billing Cycle is:

- (c) the water service charge in Table 1 for each Common Water Meter, corresponding to the applicable Meter size and Period, divided by the number of four monthly cycles in that Period; and
- (d) the water usage charge for each Common Water Meter calculated by applying clause 3(b) of this schedule for the Meter Reading Period.

Tables 1, 2, 3, and 4

Table 1 Water service charge for Metered Properties and Unmetered Properties

Basis of charge Meter size/Diameter Pipe size)	Commencement Date to 30 June 2006 (\$)	1 July 2006 to 30 June 2007 (\$)	1 July 2007 to 30 June 2008 (\$)	1 July 2008 to 30 June 2009 (\$)
20mm	20.14	$31.12 \times (1+\Delta CPI_1)$	$32.04 \times (1+\Delta CPI_2)$	$32.98 \times (1+\Delta CPI_3)$
25mm	31.47	$48.63 \times (1+\Delta CPI_1)$	$50.06 \times (1+\Delta CPI_2)$	$51.53 \times (1+\Delta CPI_3)$
32mm	51.56	$79.67 \times (1+\Delta CPI_1)$	$82.02 \times (1+\Delta CPI_2)$	$84.43 \times (1+\Delta CPI_3)$
40mm	80.56	$124.48 \times (1+\Delta CPI_1)$	$128.16 \times (1+\Delta CPI_2)$	$131.92 \times (1+\Delta CPI_3)$
50mm	125.87	$194.50 \times (1+\Delta CPI_1)$	$200.25 \times (1+\Delta CPI_2)$	$206.13 \times (1+\Delta CPI_3)$
65mm	212.73	$328.71 \times (1+\Delta CPI_1)$	$338.42 \times (1+\Delta CPI_2)$	$348.35 \times (1+\Delta CPI_3)$
80mm	322.24	$497.92 \times (1+\Delta CPI_1)$	$512.64 \times (1+\Delta CPI_2)$	$527.68 \times (1+\Delta CPI_3)$
100mm	503.50	$778.00 \times (1+\Delta CPI_1)$	$801.00 \times (1+\Delta CPI_2)$	$824.50 \times (1+\Delta CPI_3)$
150mm	1132.87	$1,750.50 \times (1+\Delta CPI_1)$	$1,802.25 \times (1+\Delta CPI_2)$	$1,855.13 \times (1+\Delta CPI_3)$
200mm	2014.00	$3,112.00 \times (1+\Delta CPI_1)$	$3,204.00 \times (1+\Delta CPI_2)$	$3,298.00 \times (1+\Delta CPI_3)$
300mm	4531.50	$7,002.00 \times (1+\Delta CPI_1)$	$7,209.00 \times (1+\Delta CPI_2)$	$7,420.50 \times (1+\Delta CPI_3)$
350mm	6167.87	$9,530.50 \times (1+\Delta CPI_1)$	$9,812.25 \times (1+\Delta CPI_2)$	$10,100.13 \times (1+\Delta CPI_3)$
375mm	7080.47	$10,940.63 \times (1+\Delta CPI_1)$	$11,264.06 \times (1+\Delta CPI_2)$	$11,594.53 \times (1+\Delta CPI_3)$
400mm	8056.00	$12,448.00 \times (1+\Delta CPI_1)$	$12,816.00 \times (1+\Delta CPI_2)$	$13,192.00 \times (1+\Delta CPI_3)$
500mm	12587.50	$19,450.00 \times (1+\Delta CPI_1)$	$20,025.00 \times (1+\Delta CPI_2)$	$20,612.50 \times (1+\Delta CPI_3)$
For Meter sizes not specified above, the following formula applies: $(\text{Meter size})^2 \times 20\text{mm charge} / 400$				

Table 2 Water usage charge for water consumption of 50,000kL or less

	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Tier 1 water usage charge (\$ per kL)	1.08	$1.10 \times (1+\Delta CPI_1)$	$1.11 \times (1+\Delta CPI_2)$	$1.13 \times (1+\Delta CPI_3)$
Tier 2 water usage charge (\$ per kL)	1.02	$1.05 \times (1+\Delta CPI_1)$	$1.09 \times (1+\Delta CPI_2)$	$1.13 \times (1+\Delta CPI_3)$

Table 3 Water usage charge where water consumption exceeds 50,000kL

Basis of charge Per kilolitre of metered water used above 50,000kL by Properties in the following location	Commence- ment Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Kooragang / Stockton (\$ per kL)	0.858	$0.870 \times (1+\Delta\text{CPI}_1)$	$0.882 \times (1+\Delta\text{CPI}_2)$	$0.894 \times (1+\Delta\text{CPI}_3)$
Tomago (\$ per kL)	0.898	$0.910 \times (1+\Delta\text{CPI}_1)$	$0.923 \times (1+\Delta\text{CPI}_2)$	$0.936 \times (1+\Delta\text{CPI}_3)$
South Wallsend (\$ per kL)	0.864	$0.876 \times (1+\Delta\text{CPI}_1)$	$0.888 \times (1+\Delta\text{CPI}_2)$	$0.900 \times (1+\Delta\text{CPI}_3)$
Warner's Bay/Valentine (\$ per kL)	0.898	$0.910 \times (1+\Delta\text{CPI}_1)$	$0.923 \times (1+\Delta\text{CPI}_2)$	$0.936 \times (1+\Delta\text{CPI}_3)$
Seaham Hexham (\$ per kL)	0.933	$0.946 \times (1+\Delta\text{CPI}_1)$	$0.959 \times (1+\Delta\text{CPI}_2)$	$0.972 \times (1+\Delta\text{CPI}_3)$
Newcastle Highfields (\$ per kL)	0.944	$0.957 \times (1+\Delta\text{CPI}_1)$	$0.970 \times (1+\Delta\text{CPI}_2)$	$0.984 \times (1+\Delta\text{CPI}_{0-3})$
Raymond Terrace (\$ per kL)	0.959	$0.972 \times (1+\Delta\text{CPI}_1)$	$0.986 \times (1+\Delta\text{CPI}_2)$	$0.999 \times (1+\Delta\text{CPI}_3)$
Port Stephens (\$ per kL)	0.962	$0.975 \times (1+\Delta\text{CPI}_1)$	$0.989 \times (1+\Delta\text{CPI}_2)$	$1.002 \times (1+\Delta\text{CPI}_3)$
Kurri Cessnock (\$ per kL)	0.965	$0.978 \times (1+\Delta\text{CPI}_1)$	$0.992 \times (1+\Delta\text{CPI}_2)$	$1.005 \times (1+\Delta\text{CPI}_{0-3})$
Lookout (\$ per kL)	0.964	$0.977 \times (1+\Delta\text{CPI}_1)$	$0.991 \times (1+\Delta\text{CPI}_2)$	$1.004 \times (1+\Delta\text{CPI}_3)$
Edgeworth West Wallsend (\$ per kL)	0.990	$1.004 \times (1+\Delta\text{CPI}_1)$	$1.018 \times (1+\Delta\text{CPI}_2)$	$1.032 \times (1+\Delta\text{CPI}_3)$
All other locations (Tier 3 price) (\$ per kL)	1.020	$1.050 \times (1+\Delta\text{CPI}_1)$	$1.090 \times (1+\Delta\text{CPI}_2)$	$1.130 \times (1+\Delta\text{CPI}_3)$

Table 4 Water charges for Dungog Shire Council

	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Tier 1 water usage charge - (\$ per kL)	1.08	$1.10 \times (1+\Delta\text{CPI}_1)$	$1.11 \times (1+\Delta\text{CPI}_2)$	$1.13 \times (1+\Delta\text{CPI}_3)$
Tier 2 water usage charge - (\$ per kL)	1.02	$1.05 \times (1+\Delta\text{CPI}_1)$	$1.09 \times (1+\Delta\text{CPI}_2)$	$1.13 \times (1+\Delta\text{CPI}_3)$
Tier 3 water usage charge - (\$ per kL)	0.586	$0.594 \times (1+\Delta\text{CPI}_1)$	$0.603 \times (1+\Delta\text{CPI}_2)$	$0.611 \times (1+\Delta\text{CPI}_3)$

Schedule 2

Sewerage Services

1. Application

This Schedule sets the maximum prices that the Corporation may charge for services under paragraph (b) of the Order (sewerage services).

2. Categories for pricing purposes

Prices for sewerage services have been determined for 4 categories:

- (a) Residential Single Properties with a 20mm Meter;
- (b) Metered Properties (other than a Residential Single Property with a 20mm Meter);
- (c) Unmetered Properties connected to the Water Supply System; and
- (d) Residential Single Properties which do not have a Meter and which are not connected to the Water Supply System but are connected to the Sewerage System.

3. Charges for sewerage services to Residential Single Properties with a 20mm Meter

The maximum price that may be levied by the Corporation for sewerage services to a Residential Single Property with a 20mm Meter size, connected to the Water Supply System and the Sewerage System for a Billing Cycle, is the sum of the following:

- (a) the sewerage service charge in Table 5, corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period; and
- (b) the sewerage usage charge in Table 8 for the Meter Reading Period, corresponding to the applicable Period in that table..

4. Charges for sewerage services to Metered Properties (other than Residential Single Properties with a 20mm Meter)

The maximum price that may be levied by the Corporation for sewerage services to a Metered Property (other than a Residential Single Property with a 20mm Meter) connected to the Water Supply System and the Sewerage System for a Billing Cycle, is the sum of the following:

- (a) the sewerage service charge in Table 7, corresponding to the applicable Meter size and Period in that table, divided by the number of four monthly cycles in that Period; and
- (b) the sewerage usage charge in Table 8 for the Meter Reading Period, corresponding to the applicable Period in that table.

5. Charges for sewerage services to Unmetered Properties connected to the Water Supply System

The maximum price that may be levied by the Corporation for sewerage services to an Unmetered Property connected to the Water Supply System and the Sewerage System for a Billing Cycle is:

$$\left[\begin{array}{l} \text{the sewerage service charge in Table 7} \\ \text{corresponding to the applicable Period and} \\ \text{Diameter Pipe size in that table divided by the} \\ \text{number of four monthly cycles in that Period} \end{array} \right] \times \text{Discharge Factor for that Unmetered Property}$$

6. Charges for sewerage services to Residential Single Properties which do not have a Meter and are not connected to the Water Supply System

The maximum price that may be levied by the Corporation for sewerage services to a Residential Single Property which does not have a Meter and which is not connected to the Water Supply System but is connected to the Sewerage System for a Billing Cycle is the sewerage service charge in Table 6, corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period.

7. Levying sewerage service charges on Multi Premises

7.1 Sewerage service charges on Multi Premises

Clause 7 of this schedule prescribes how the maximum prices in this schedule are to be levied on Multi Premises, specifically how they are to be levied on persons who own, control or occupy those Multi Premises.

7.2 Strata Title Lot (which is a Residential Property)

For a Strata Title Lot (which is a Residential Property) within a Strata Title Building which:

- (a) is connected to the Sewerage System; and
- (b) has a Common Water Meter or multiple Common Water Meters,

the maximum price that may be levied by the Corporation on that Strata Title Lot for the provision of sewerage services to that Strata Title Lot for a Billing Cycle is the sum of the following:

- (c) if the Corporation has not been requested by the Owners Corporation of the Strata Title Building to levy the maximum price based on Unit Entitlement, the Corporation must levy that Strata Title Lot based on the following:
 - (i) the sewerage service charge equal to the higher of:
 - (1) the sewerage service charge in Table 9 corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period; and

- (2) $\left(\frac{\text{the sewerage service charge in Table 7, corresponding to the Meter size of each Common Water Meter, divided by the number of four monthly cycles in that Period}}{\text{the total number of Strata Title Lots in that Multi Premises;}} \right)$

and

- (ii) the sewerage usage charge for the Meter Reading Period calculated as follows:

$$\left(\frac{\text{the sewerage usage charge in Table 8 for each Common Water Meter, as if the water used by that Strata Title Lot was equal to total quantity of water used by that Strata Title Building}}{\text{the total number of Strata Title Lots in that Multi Premises;}} \right)$$

or

- (d) if the Corporation has been requested by the Owners Corporation of the Strata Title Building to levy the maximum price based on Unit Entitlement, the Corporation must levy that Strata Title Lot based on the following:

- (i) the sewerage service charge for that Billing Cycle equal to the higher of:

- (1) the sewerage service charge in Table 9, corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period; and

- (2) the sewerage service charge calculated as follows:

$$\left(\frac{\text{the sewerage service charge in Table 7, corresponding to the Meter size of each Common Water Meter, divided by the number of four monthly cycles in that Period}}{\text{total Unit Entitlement for the Multi Premises}} \right) \times \text{Unit Entitlement for that Strata Title Lot}$$

and

- (ii) the sewerage usage charge for the Meter Reading Period calculated as follows:

$$\left(\frac{\text{the sewerage usage charge in Table 8 for each Common Water Meter, as if the water used by that Strata Title Lot was equal to total quantity of water used by that Strata Title Building}}{\text{total Unit Entitlement for that Strata Title Building}} \right) \times \text{Unit Entitlement for that Strata Title Lot}$$

7.3 Strata Title Lot (which is a Non Residential Property)

For a Strata Title Lot (which is a Non Residential Property) within a Strata Title Building which:

- (a) is connected to the Sewerage System; and
- (b) has a Common Water Meter or multiple Common Water Meters,

the maximum price that may be levied by the Corporation on that Strata Title Lot for the provision of sewerage services to that Strata Title Lot for a Billing Cycle is the sum of the following:

- (c) if the Corporation has not been requested by the Owners Corporation of the Strata Title Building to levy the maximum price based on Unit Entitlement, the Corporation must levy that Strata Title Lot based on the following:
 - (i) the sewerage service charge in Table 7 for each Common Water Meter, corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period;
 - and
 - (ii)

the sewerage usage charge in Table 8 for each Common Water Meter, corresponding to the applicable Period in that table as if the water used by that Strata Title Lot was equal to total quantity of water used by that Strata Title Building

the total number of Strata Title Lots in that Strata Title Building;

or

- (d) if the Corporation has been requested by the Owners Corporation of the Strata Title Building to levy the maximum price based on Unit Entitlement, the Corporation must levy that Strata Title Lot based on the following:
 - (i) the sewerage service charge in Table 7 for each Common Water Meter, corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period; and
 - and
 - (ii) the sewerage usage charge for the Meter Reading Period calculated as follows:

the sewerage usage charge in Table 8 for each Common Water Meter, as if the water used by that Strata Title Lot was equal to total quantity of water used by that Strata Title Building

total Unit Entitlement for that Strata Title Building

X

Unit Entitlement for that Strata Title Lot

7.4 Multi Premises (which is not a Strata Title Building and which is a Residential Property)

For a Multi Premises (which is not a Strata Title Building):

- (a) which is connected to the Sewerage System; and
- (b) which has a Common Water Meter or multiple Common Water Meters; and
- (c) where the majority of the Properties (other than Properties falling within paragraphs (a) and (e) of the definition of 'Property') within that Multi Premises are Residential Properties,

the maximum price that may be levied by the Corporation on the owner of that Multi Premises for the provision of sewerage services to that Multi Premises for a Billing Cycle is the sum of the following:

- (d) the sewerage service charge for that Billing Cycle equal to the higher of:
 - (i) the sewerage service charge in Table 7 for each Common Water Meter, corresponding to the applicable Meter size and Period in that table divided by the number of four monthly cycles in that Period;

and

- (ii) the sewerage service charge calculated as follows:

$$\left[\begin{array}{l} \text{the sewerage service charge in Table 9, corresponding to} \\ \text{the applicable Period in that table/the Number of four} \\ \text{monthly cycle in that Periods} \end{array} \right] \times \begin{array}{l} \text{the number of Properties (other than} \\ \text{Properties falling within paragraphs (a)} \\ \text{and (e) of the definition of 'Property')} \\ \text{within that Multi Premises} \end{array}$$

and

- (e) the sewerage usage charge in Table 8 for the Meter Reading Period, corresponding to the applicable Period in that table.

7.5 Multi Premises (which is not a Strata Title Building and which is a Non Residential Property)

For a Multi Premises (which is not a Strata Title Building) and:

- (a) which is connected to the Sewerage System; and
- (b) which has a Common Water Meter or multiple Common Water Meters; and
- (c) where the majority of the Properties (other than Properties falling within paragraphs (a) and (e) of the definition of 'Property') within that Multi Premises are Non Residential Properties,

the maximum price that may be levied by the Corporation on the owner of that Multi Premises for the provision of sewerage services to that Multi Premises for a Billing Cycle is the sum of the following:

- (c) the sewerage service charge in Table 7 for each Common Water Meter, corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period; and
- (d) the sewerage usage charge in Table 8 for each Common Water Meter for the Meter Reading Period corresponding to the applicable Period in that table.

Tables 5, 6, 7, 8 and 9

Table 5 Sewerage service charge for Residential Single Properties with a 20mm Meter

Basis of charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Sewerage service charge (\$)	174.69	$268.06 \times (1 + \Delta CPI_1)$	$274.19 \times (1 + \Delta CPI_2)$	$280.41 \times (1 + \Delta CPI_3)$

Table 6 Sewerage service charge for Unmetered Property not connected to the Water Supply System

Basis of charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Sewerage Service charge (\$)	188.34	$288.54 \times (1 + \Delta CPI_1)$	$294.67 \times (1 + \Delta CPI_2)$	$300.89 \times (1 + \Delta CPI_3)$

Table 7 Sewerage service charges for Metered Properties (other than Residential Single Properties with a 20mm Meter)

Basis of charge Meter size / Diameter Pipe size	Commencement Date to 30 June 2006 (\$ x df%**)	1 July 2006 to 30 June 2007 (\$ x df%**)	1 July 2007 to 30 June 2008 (\$ x df%**)	1 July 2008 to 30 June 2009 (\$ x df%**)
20mm	349.37	$536.12 \times (1 + \Delta CPI_1)$	$548.37 \times (1 + \Delta CPI_2)$	$560.82 \times (1 + \Delta CPI_3)$
25mm	545.90	$837.69 \times (1 + \Delta CPI_1)$	$856.83 \times (1 + \Delta CPI_2)$	$876.28 \times (1 + \Delta CPI_3)$
32mm	894.40	$1,372.47 \times (1 + \Delta CPI_1)$	$1,403.83 \times (1 + \Delta CPI_2)$	$1,435.70 \times (1 + \Delta CPI_3)$
40mm	1,397.49	$2,144.48 \times (1 + \Delta CPI_1)$	$2,193.48 \times (1 + \Delta CPI_2)$	$2,243.28 \times (1 + \Delta CPI_3)$
50mm	2,183.58	$3,350.75 \times (1 + \Delta CPI_1)$	$3,427.31 \times (1 + \Delta CPI_2)$	$3,505.13 \times (1 + \Delta CPI_3)$
80mm	5,589.97	$8,577.92 \times (1 + \Delta CPI_1)$	$8,773.92 \times (1 + \Delta CPI_2)$	$8,973.12 \times (1 + \Delta CPI_3)$
100mm	8,734.33	$13,403.00 \times (1 + \Delta CPI_1)$	$13,709.25 \times (1 + \Delta CPI_2)$	$14,020.50 \times (1 + \Delta CPI_3)$
150mm	19,652.25	$30,156.75 \times (1 + \Delta CPI_1)$	$30,845.81 \times (1 + \Delta CPI_2)$	$31,546.13 \times (1 + \Delta CPI_3)$
200mm	34,937.33	$53,612.00 \times (1 + \Delta CPI_1)$	$54,837.00 \times (1 + \Delta CPI_2)$	$56,082.00 \times (1 + \Delta CPI_3)$
250mm	54,589.58	$83,768.75 \times (1 + \Delta CPI_1)$	$85,682.81 \times (1 + \Delta CPI_2)$	$87,628.13 \times (1 + \Delta CPI_3)$
300mm	78,609.00	$120,627.00 \times (1 + \Delta CPI_1)$	$123,383.25 \times (1 + \Delta CPI_2)$	$126,184.50 \times (1 + \Delta CPI_3)$
350mm	106,995.58	$164,186.75 \times (1 + \Delta CPI_1)$	$167,938.31 \times (1 + \Delta CPI_2)$	$171,751.13 \times (1 + \Delta CPI_3)$
400mm	139,749.33	$214,448.00 \times (1 + \Delta CPI_1)$	$219,348.00 \times (1 + \Delta CPI_2)$	$224,328.00 \times (1 + \Delta CPI_3)$
500mm	218,358.33	$335,075.00 \times (1 + \Delta CPI_1)$	$342,731.25 \times (1 + \Delta CPI_2)$	$350,512.50 \times (1 + \Delta CPI_3)$

For Meter sizes not specified above, the following formula applies: $(\text{Meter size})^2 \times 20\text{mm charge} / 400$

** A Discharge Factor of 50% is applied for Residential Properties. For Non Residential Properties a variable Discharge Factor (as determined by the Corporation) is applied, depending on the type of business.

Table 8 Sewerage usage charge for Metered Properties

Basis of charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Per kL of water used multiplied by Discharge Factor**	0.43	$0.43 \times (1 + \Delta CPI_1)$	$0.43 \times (1 + \Delta CPI_2)$	$0.43 \times (1 + \Delta CPI_3)$

** A Discharge Factor of 50% is applied for Residential Properties. For Non Residential Properties a variable Discharge Factor (as determined by the Corporation) is applied, depending on the type of business.

Table 9 Sewerage service charge for Multi Premises which are Residential Properties

Basis of charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Sewerage service charge for each Strata Title Lot which is a Residential Property (\$)	93.33	$155.79 \times (1 + \Delta CPI_1)$	$170.66 \times (1 + \Delta CPI_2)$	$184.64 \times (1 + \Delta CPI_3)$

Schedule 3

Stormwater Drainage Services

1. Application

This Schedule sets the maximum prices that the Corporation may charge for services under paragraph (c) of the Order (stormwater drainage services).

2. Categories for pricing purposes

Prices have been determined for 2 categories:

- (a) Residential Properties; and
- (b) Non Residential Properties.

3. Stormwater drainage charges for Residential Properties

The maximum price that may be levied by the Corporation for stormwater drainage services to a Residential Property for a Billing Cycle is the stormwater drainage service charge in Table 10 corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period.

4. Stormwater drainage charges for Non Residential Properties

4.1 Non Residential Properties constructed after March 1991

The maximum price that may be levied by the Corporation for stormwater drainage services to a Non Residential Property constructed after March 1991 for a Billing Cycle is the stormwater service charge set out in Table 11, corresponding to the applicable period and land size in that table, divided by the number of four monthly cycles in that Period.

4.2 Non Residential Properties constructed on or before March 1991

The maximum price that may be levied by the Corporation for stormwater drainage services to a Non Residential Property constructed on or before March 1991 for a Billing Cycle is the sum of the following:

- (a) the stormwater service charge in Table 11, corresponding to the applicable Period and land size in that table, divided by the number of four monthly cycles in that Period; and
- (b) the property value based charge in Table 12, corresponding to the applicable Period in that table, divided by the number of four monthly cycles in that Period.

Tables 10, 11 and 12

Table 10 Stormwater service charge for Residential Properties

Basis of charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Stormwater service charge (\$)	31.16	$50.41 \times (1 + \Delta CPI_1)$	$54.38 \times (1 + \Delta CPI_2)$	$58.66 \times (1 + \Delta CPI_3)$

Table 11 Stormwater service charge for Non Residential Properties

Basis of charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Non Residential Property – small (<1,000 m ²) (\$)	31.16	$50.41 \times (1 + \Delta CPI_1)$	$54.38 \times (1 + \Delta CPI_2)$	$58.66 \times (1 + \Delta CPI_3)$
Non Residential Property – medium (1,001 to 10,000 m ²) (\$)	62.32	$100.82 \times (1 + \Delta CPI_1)$	$108.76 \times (1 + \Delta CPI_2)$	$117.32 \times (1 + \Delta CPI_3)$
Non Residential Property – large (10,001 to 45,000 m ²) (\$)	436.24	$705.74 \times (1 + \Delta CPI_1)$	$761.32 \times (1 + \Delta CPI_2)$	$821.24 \times (1 + \Delta CPI_3)$
Non Residential Property – very large (>45,000 m ²) (\$)	1,402.20	$2,268.45 \times (1 + \Delta CPI_1)$	$2,447.10 \times (1 + \Delta CPI_2)$	$2,639.70 \times (1 + \Delta CPI_3)$

Table 12 Stormwater Property value based charge for a Non Residential Property developed on or before March 1991

Basis of charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Property value based charge (\$/\$AAV)	0.0096	$0.0064 \times (1 + \Delta CPI_1)$	$0.0032 \times (1 + \Delta CPI_2)$	0.0000

Schedule 4

Trade Waste Services

1. Application

This Schedule sets the maximum prices that the Corporation may charge for services under paragraph (d) of the Order (trade waste services).

2. Categories for pricing purposes

Prices have been determined for 2 categories:

- (a) trade waste permits and inspection fees; and
- (b) trade waste services.

3. Charges for trade waste permits or inspection fees

The maximum price that may be levied by the Corporation for a trade waste permit (a Major Permit or a Minor Permit) or for inspection fees is the corresponding charge in Table 13 for the applicable Period in that table.

4. Charges for trade waste services

The maximum price that may be levied by the Corporation for trade waste services is:

- (a) the trade waste high strength charge in Table 14, corresponding to the applicable Period and wastewater treatment catchment area in that table; and
- (b) the trade waste services and tankering charges in Table 15 corresponding the applicable Period in that table.

Tables 13, 14 and 15

Table 13 Trade waste permit and inspection fees

Fee	Commence ment Date to 30 June 2006 \$	1 July 2006 to 30 June 2007 \$	1 July 2007 to 30 June 2008 \$	1 July 2008 to 30 June 2009 \$
Minor permits				
New minor permits establishment fee	146.43	$146.43 \times (1+\Delta\text{CPI}_1)$	$146.43 \times (1+\Delta\text{CPI}_2)$	$146.43 \times (1+\Delta\text{CPI}_3)$
Existing Minor Permit Holders:				
Annual Permit Fee*	68.95	$103.42 \times (1+\Delta\text{CPI}_1)$	$103.42 \times (1+\Delta\text{CPI}_2)$	$103.42 \times (1+\Delta\text{CPI}_3)$
Inspection fee*	93.18	$93.18 \times (1+\Delta\text{CPI}_1)$	$93.18 \times (1+\Delta\text{CPI}_2)$	$93.18 \times (1+\Delta\text{CPI}_3)$
Existing Renew / Reissue	108.54	$108.54 \times (1+\Delta\text{CPI}_1)$	$108.54 \times (1+\Delta\text{CPI}_2)$	$108.54 \times (1+\Delta\text{CPI}_3)$
Major permits				
New major permits establishment fee	808.96	$808.96 \times (1+\Delta\text{CPI}_1)$	$808.96 \times (1+\Delta\text{CPI}_2)$	$808.96 \times (1+\Delta\text{CPI}_3)$
Existing major Permit Holders:				
Annual Permit Fee	212.99	$319.49 \times (1+\Delta\text{CPI}_1)$	$319.49 \times (1+\Delta\text{CPI}_2)$	$319.49 \times (1+\Delta\text{CPI}_3)$
Inspection	93.18	$93.18 \times (1+\Delta\text{CPI}_1)$	$93.18 \times (1+\Delta\text{CPI}_2)$	$93.18 \times (1+\Delta\text{CPI}_3)$

* The cost of one inspection is covered by the Annual Permit Fee. Additional inspections, if necessary, are charged an Inspection Fee for each inspection.

Table 14 Trade Waste High Strength Charges**

Wastewater treatment catchment area	Commencement Date to 30 June 2006 \$/kg	1 July 2006 to 30 June 2007 \$/kg	1 July 2007 to 30 June 2008 \$/kg	1 July 2008 to 30 June 2009 \$/kg
Belmont	2.14	$2.14 \times (1+\Delta\text{CPI}_1)$	$2.14 \times (1+\Delta\text{CPI}_2)$	$2.14 \times (1+\Delta\text{CPI}_3)$
Boulder Bay	2.69	$2.69 \times (1+\Delta\text{CPI}_1)$	$2.69 \times (1+\Delta\text{CPI}_2)$	$2.69 \times (1+\Delta\text{CPI}_3)$
Branxton	3.89	$3.89 \times (1+\Delta\text{CPI}_1)$	$3.89 \times (1+\Delta\text{CPI}_2)$	$3.89 \times (1+\Delta\text{CPI}_3)$
Burwood Beach	1.85	$1.85 \times (1+\Delta\text{CPI}_1)$	$1.85 \times (1+\Delta\text{CPI}_2)$	$1.85 \times (1+\Delta\text{CPI}_3)$
Cessnock	2.49	$2.49 \times (1+\Delta\text{CPI}_1)$	$2.49 \times (1+\Delta\text{CPI}_2)$	$2.49 \times (1+\Delta\text{CPI}_3)$
Dora Creek	2.37	$2.37 \times (1+\Delta\text{CPI}_1)$	$2.37 \times (1+\Delta\text{CPI}_2)$	$2.37 \times (1+\Delta\text{CPI}_3)$
Edgeworth	2.15	$2.15 \times (1+\Delta\text{CPI}_1)$	$2.15 \times (1+\Delta\text{CPI}_2)$	$2.15 \times (1+\Delta\text{CPI}_3)$
Farley	1.93	$1.93 \times (1+\Delta\text{CPI}_1)$	$1.93 \times (1+\Delta\text{CPI}_2)$	$1.93 \times (1+\Delta\text{CPI}_3)$
Karuah	12.69	$12.69 \times (1+\Delta\text{CPI}_1)$	$12.69 \times (1+\Delta\text{CPI}_2)$	$12.69 \times (1+\Delta\text{CPI}_3)$
Kurri Kurri	3.36	$3.36 \times (1+\Delta\text{CPI}_1)$	$3.36 \times (1+\Delta\text{CPI}_2)$	$3.36 \times (1+\Delta\text{CPI}_3)$
Morpeth	2.34	$2.34 \times (1+\Delta\text{CPI}_1)$	$2.34 \times (1+\Delta\text{CPI}_2)$	$2.34 \times (1+\Delta\text{CPI}_3)$
Raymond Terrace	2.80	$2.80 \times (1+\Delta\text{CPI}_1)$	$2.80 \times (1+\Delta\text{CPI}_2)$	$2.80 \times (1+\Delta\text{CPI}_3)$
Shortland	2.76	$2.76 \times (1+\Delta\text{CPI}_1)$	$2.76 \times (1+\Delta\text{CPI}_2)$	$2.76 \times (1+\Delta\text{CPI}_3)$
Tanilba Bay	3.33	$3.33 \times (1+\Delta\text{CPI}_1)$	$3.33 \times (1+\Delta\text{CPI}_2)$	$3.33 \times (1+\Delta\text{CPI}_3)$
Toronto	2.27	$2.27 \times (1+\Delta\text{CPI}_1)$	$2.27 \times (1+\Delta\text{CPI}_2)$	$2.27 \times (1+\Delta\text{CPI}_3)$

** These charges apply where the concentration strength is greater than 350mg/L for BOD or NFR, whichever is the higher.

Table 15 Charges for trade waste services

Treatment charges	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Heavy Metal – Burwood Beach WWTW Catchment (\$/kg)	29.53	$29.53 \times (1+\Delta\text{CPI}_1)$	$29.53 \times (1+\Delta\text{CPI}_2)$	$29.53 \times (1+\Delta\text{CPI}_3)$
Heavy Metal – All other catchments (\$/kg)	24.21	$24.21 \times (1+\Delta\text{CPI}_1)$	$24.21 \times (1+\Delta\text{CPI}_2)$	$24.21 \times (1+\Delta\text{CPI}_3)$
Phosphorus (concentrations >11mg/L (\$/kg)	2.84	$2.84 \times (1+\Delta\text{CPI}_1)$	$2.84 \times (1+\Delta\text{CPI}_2)$	$2.84 \times (1+\Delta\text{CPI}_3)$
Sulphate (\$/kg)	$\{ \$0.11 \times (\text{SO}_4 \text{mg/L}) / 2000 \}$	$\{ [\$0.11 \times (\text{SO}_4 \text{mg/L}) / 2000] \times (1+\Delta\text{CPI}_1) \}$	$\{ [\$0.11 \times (\text{SO}_4 \text{mg/L}) / 2000] \times (1+\Delta\text{CPI}_2) \}$	$\{ [\$0.11 \times (\text{SO}_4 \text{mg/L}) / 2000] \times (1+\Delta\text{CPI}_3) \}$
Tankering permit				
Tankering agreement (\$)	146.43	$146.43 \times (1+\Delta\text{CPI}_1)$	$146.43 \times (1+\Delta\text{CPI}_2)$	$146.43 \times (1+\Delta\text{CPI}_3)$
Establish/renew agreement (\$)	108.54	$108.54 \times (1+\Delta\text{CPI}_1)$	$108.54 \times (1+\Delta\text{CPI}_2)$	$108.54 \times (1+\Delta\text{CPI}_3)$
Monthly invoicing fee (\$/month)	20.48	$20.48 \times (1+\Delta\text{CPI}_1)$	$20.48 \times (1+\Delta\text{CPI}_2)$	$20.48 \times (1+\Delta\text{CPI}_3)$
Delivery processing fee (\$/delivery docket)	2.05	$2.05 \times (1+\Delta\text{CPI}_1)$	$2.05 \times (1+\Delta\text{CPI}_2)$	$2.05 \times (1+\Delta\text{CPI}_3)$
Portable Toilet \$/kL	14.76	$14.76 \times (1+\Delta\text{CPI}_1)$	$14.76 \times (1+\Delta\text{CPI}_2)$	$14.76 \times (1+\Delta\text{CPI}_3)$
Septic Effluent \$/kL	3.09	$3.09 \times (1+\Delta\text{CPI}_1)$	$3.09 \times (1+\Delta\text{CPI}_2)$	$3.09 \times (1+\Delta\text{CPI}_3)$
Sludge \$/kL	28.54	$28.54 \times (1+\Delta\text{CPI}_1)$	$28.54 \times (1+\Delta\text{CPI}_2)$	$28.54 \times (1+\Delta\text{CPI}_3)$
High Strength Waste \$/kL [plus charges in Table 14]	2.61	$2.61 \times (1+\Delta\text{CPI}_1)$	$2.61 \times (1+\Delta\text{CPI}_2)$	$2.61 \times (1+\Delta\text{CPI}_3)$

Schedule 5

Environmental levies and other sewerage charges

1. Application

This Schedule sets the maximum prices that the Corporation may charge under paragraph (b) of the Order (sewerage services), to recover the capital costs of backlog sewerage services (under the Hunter Sewerage Project and the Priority Sewerage Program) that are not recovered through either direct beneficiary contributions or NSW Government community service obligation payments.

2. Categories for pricing purposes

Prices have been determined for Residential Properties and Non Residential Properties.

3. Environmental improvement charge for residential and non-residential properties

- 3.1 The maximum price that may be levied by the Corporation on a Residential Property or Non Residential Property to recover the Corporation's capital costs related to the backlog sewerage programs (under the Hunter Sewerage Project and the Priority Sewerage Program) for a Billing Cycle is the environmental improvement charge in Table 16 for the applicable Period, divided by the number of four monthly cycles in that Period.
- 3.2 For the purposes of clause 3.1 of this schedule, the environment improvement charge in Table 16 does not apply where:
- (a) the Property is not currently connected to the Sewerage System and a scheme to provide a point of connection has not been approved for funding by the NSW Government; or
 - (b) the Property is owned and occupied by an Eligible Pensioner.

4. Sewer service access charge for Vacant Land located in an area serviced by the Hunter Sewerage Project

The maximum price that may be levied by the Corporation on Vacant Land not connected to the Sewerage System but reasonably available for connection to the Sewerage System and located in an area serviced by the Hunter Sewerage Project is the sewer service access charge in Table 17, corresponding to the applicable Period in that table. That maximum price may be only levied by the Corporation at the time:

- (a) that Vacant Land is subdivided; or
- (b) that Vacant Land connects to the Sewerage System.

Tables 16 and 17

Table 16 Environmental improvement charge

Basis of Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Environment improvement charge (\$)	33.42	$50.12 \times (1 + \Delta CPI_1)$	$50.12 \times (1 + \Delta CPI_2)$	$50.12 \times (1 + \Delta CPI_3)$

Table 17 Sewer service access charge

Basis of Charge	Commencement Date to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Sewer service access charge (\$)	3181.57	$3,181.57 \times (1 + \Delta CPI_1)$	$3,181.57 \times (1 + \Delta CPI_2)$	$3,181.57 \times (1 + \Delta CPI_3)$

Schedule 6

Ancillary and miscellaneous customer services

1. Application

This Schedule sets the maximum prices that the Corporation may charge services under paragraph (g) of the Order (ancillary and miscellaneous customer services for which no alternative supply exists).

3. Ancillary and miscellaneous charges

3.1 The maximum charge that may be levied by the Corporation for an ancillary and miscellaneous service in Table 18 is:

- (a) **from the Commencement Date to 30 June 2006** - the corresponding charge in Table 18;
- (b) **from 1 July 2006 to 30 June 2007** - the corresponding charge in Table 18 multiplied by $(1+\Delta CPI_1)$;
- (c) **from 1 July 2007 to 30 June 2008** - the corresponding charge in of Table 18 multiplied by $(1+\Delta CPI_2)$;
- (d) **from 1 July 2008 to 30 June 2009** - the corresponding charge in Table 18 multiplied by $(1+\Delta CPI_3)$.

3.2 A reference in Table 18 to “NA” means that the Corporation does not provide the relevant service.

Table 18 Charges for ancillary and miscellaneous services

No.	Ancillary and miscellaneous service	Charge from Commencement Date to 30 June 2006
1	Conveyancing Certificate	
	a) Over the Counter	\$19.10
	b) Electronic	\$7.50
2	Property Sewerage Diagram-up to and including A4 size- (where available) <i>(Diagram showing the location of the house-service line, building and sewer for a property)</i>	
	a) Certified	NA
	b) Uncertified	
	i. Over the Counter	\$13.80
	ii. Electronic	NA
3	Service Location Diagram <i>(Location of sewer and/or Water Mains in relation to a property's boundaries)</i>	
	a) Over the Counter	\$13.80
	b) Electronic	\$8.00
4	Special Meter Reading Statement	\$60.50
5	Billing Record Search Statement – up to and including 5 years.	\$48.85
6	Building over or Adjacent to Sewer Advice <i>(Statement of Approval Status for existing Building Over or Adjacent to a Sewer)</i>	\$23.35
7	Water Reconnection – after restriction	
	a) During business hours	\$52.95
	b) Outside business hours	\$159.10
8	Workshop Test of Water Meter <i>(Removal and full mechanical test of the meter by an accredited organisation at the customer's request to determine the accuracy of the water meter. This involves dismantling and inspection of meter components)</i>	
	20mm	\$171.50
	25mm	\$171.50
	32mm	\$213.30
	40mm	\$229.30
	50mm [<i>HWC – to advise what constitutes 'light' and 'heavy'?</i>]	light \$253.50 heavy \$465.00
	65mm	\$465.00
	80mm	\$469.00
	100mm	\$545.50
	150mm	\$545.50
9	Application for disconnection	

No.	Ancillary and miscellaneous service	Charge from Commencement Date to 30 June 2006
	a) Application for Disconnection-(all sizes)	\$27.60
	b) Physical Disconnection	NA
10	Application for Water Service Connection-(up to and including 25mm) <i>(This covers the administration fee only. There will be a separate charge payable to the utility if they also perform the physical connection)</i>	\$31.85
11	Application for Water Service Connection-(32-65mm) <i>(This covers administration and system capacity analysis as required)</i>	\$277.00
12	Application for Water Service Connection-(80mm or greater) <i>(This covers administration and system capacity analysis as required)</i>	\$507.00
	Multiple and large services	
13	Application to assess a Water main Adjustment <i>(Moving a fitting and/or adjusting a section of water main up to and including 25 metres in length)</i> <i>This covers preliminary advice as to the feasibility of the project and will result in either:</i> <i>1. A rejection of the project in which cases the fee covers the associated investigation costs</i> <i>Or</i> <i>2. Conditional approval in which case the fee covers the administrative costs associated with the investigation and record amendment.</i>	\$343.00
14	Standpipe Hire – security bond Security Bond (20mm standpipes) Security Bond (32mm and 50 mm standpipes)	\$300.00 \$700.00
15	Standpipe Hire Annual Fee (20mm) (32mm) (50mm) Quarterly Fee (20mm) (32mm) (50mm) Monthly Fee (20mm) (32mm) (50mm) Tri-annual Fee (20mm) (32mm) (50mm)	NA NA NA NA NA NA NA \$10.60 \$19.00 \$20.00 \$22.40 \$56.00 \$60.00
16	Standpipe Water Usage Fee	water usage charge as per Table 2

No.	Ancillary and miscellaneous service	Charge from Commencement Date to 30 June 2006
17	Backflow Prevention Device Application and Registration Fee <i>(This fee is for initial registration of the backflow device)</i>	\$19.10
18	Backflow Prevention Application Device Annual Administration Fee <i>(This fee is for the maintenance of records including logging of inspection reports)</i>	\$12.75
19	Major Works Inspections Fee. <i>(This fee is for the inspection, for the purposes of approval of water and sewer mains, constructed by others, that are longer than 25 metres and/or greater than 2 metres in depth)</i>	
	Water Mains (\$ per metre)	\$6.30
	Gravity Sewer Mains (\$per Metre)	\$9.50
	Rising Sewer Mains (\$per Metre)	\$6.30
	Reinspection	NA
20	Statement of Available Pressure and Flow <i>(This fee covers all levels whether modelling is required or not)</i>	\$280.00

No.	Ancillary and miscellaneous service	Commencement Date to 30 June 2006	Fixed Charge	Hourly Charge
21	Application to Connect or Disconnect Sewer or for a Special Internal Inspection Permit <i>Process applications to connect a new sewer service or to disconnect an existing sewer service or apply for a special internal inspection permit.</i>		\$35.05	NA
22	Application to Connect or Disconnect Water & Sewer Services (combined application) <i>Process combined application to connect a new water and sewer service or to disconnect an existing water and sewer service.</i>		\$37.20	NA
23	Irregular & Dishonoured Payments <i>Functions relating to cheques returned by banking authorities or payment agency as irregular or dishonoured, credit card payment declines and direct debit payment declines.</i>			
	Banking Authority:			
	- Cheques		\$20.60	
	- Credit Card decline		No charge	
	- Direct Debit decline		\$13.10	
	Australia Post:			
	- Cheques		\$25.60	
24	Request for Separate Metering of Strata Units <i>Process a request from a Body Corporate for separate sub-metering of individual units within a registered Strata Plan</i>			

No.	Ancillary and miscellaneous service	Commencement Date to 30 June 2006	
		Fixed Charge	Hourly Charge
	Up to 4 units	\$66.65	
	5 to 10 units	\$84.30	
	> 10 units	\$108.90	
25	Water Meter Re-Read <i>Re-read a water meter because a Customer has not returned a self read card left during the normal reading cycle because the meter was inaccessible.</i>	\$47.25	NA
26	Wyee East Water Contribution <i>Special charge to connect to Wyee East water reticulation system</i>	\$1,293.00	NA
27	Determining Requirements for Building Over/Adjacent to Sewer <i>Statement of conditional requirements to Council approved building plans to safeguard Hunter Water's sewer assets.</i>	\$55.75	NA
28	Application for a Metered Stand Pipe <i>Process applications for the hire of portable metered standpipes</i>	\$111.50	NA
29	Meter Affixtures <i>Installation of meters for new connections</i>	\$20.00	NA
30	Inspection of Non-compliant Meters <i>Inspection of properties to assess requirements to make a meter accessible and/or where a second inspection is required for strata metering (where initial application was non-compliant)</i>		
	- up to 4 units	\$31.60	NA
	- 5 to 10 units	\$38.60	NA
	>10 units	\$52.60	NA
	Inaccessible meters	\$31.60	NA
31	Special Inspections <i>Inspection of rainwater tanks and water storage tanks to ensure adequate backflow for protection of Hunter Water supply and inspection of temporary toilet connections to the sewer on large building sites</i>	\$60.55	NA
32	Connect to or Building Over/Adjacent to Stormwater Channel for a Single Residence <i>Process applications from customers connecting a single residence to a stormwater channel or erecting a single residence over/adjacent to a stormwater channel held by Hunter Water</i>	\$65.10	NA
33	Stormwater Channel Connection <i>New developments unable to drain to the street drainage system maybe serviced by a Hunter Water stormwater channel if available. The fee covers the cost of assessment.</i>	\$258.00	
34	Hydraulic Assessment Application - less than 80mm service <i>The NSW Code of Practice: Plumbing and Drainage requires developments with large domestic or fire water demands and/or trade waste discharges to lodge hydraulic designs for Hunter Water's approval. This service is normally provided to redevelopments using an existing meter.</i>	\$245.00	NA

No.	Ancillary and miscellaneous service	Commencement Date to 30 June 2006	
		Fixed Charge	Hourly Charge
35	Pump Station Design Assessment <i>Pump station designs prepared by consultants are audited to ensure compliance with Hunter Water standards.</i>		
	Water Pump Station	\$2,552.00	NA
	Sewer Pump Station	\$2,808.00	NA
36	Application to Assess Sewer main Adjustment <i>(Moving a fitting and/or adjusting a section of sewer main up to and including 25 metres in length)</i>	\$343.00	NA
37	Indicative Developer Charge Application <i>This fee covers assessment of the proposed development and determination of developer charges.</i>	\$227.00	NA
38	Revised Notice Letter Application <i>The revision fee covers the cost of recalculating the developer charge and reviewing the construction requirements.</i>	\$289.00	NA
39	Bond Application <i>This fee covers the lodging and release of a bond, and an estimation of the cost of outstanding works, where a developer wishes to provide security in lieu of constructing works to facilitate early release of Hunter Water compliance certificates.</i>	\$1,122.00	NA
40	Bond Variation <i>This charge covers Hunter Water's administration cost for adjustment of securities.</i>	\$163.00	NA
41	Application Fee - Section 50 <i>The application fee covers the basic processing of each application to determine if there are any requirements such as developer charges or the construction of works.</i>	\$343.00	NA
42	Application for Water/Sewer main Extensions <i>Unserviced property owners can apply for approval to extend water and/or sewer mains. Hunter Water calculates appropriate developer charges and extension options based on system capacity and topographical constraints.</i>	\$343.00	NA
43	Assessment of Minor Works <i>Some applications required relatively minor works - typically 1 into 2 lot subdivisions in urban areas where water and sewer facilities are connected to the lot being subdivided. The resources required to assess minor works designs are considerably less than those required for large developments.</i>	\$542.00	NA
44	Assessment of Major Works <i>This category consists principally of large subdivisions or 'greenfield' sites. As a result of the works being large scale, including not only reticulation systems but also lead-in works, pump stations and rising mains, applicants are required to engage consultants to prepare the designs. Following approval of the designs, construction is supervised by Hunter Water which also carries out the work-as-executed survey and connections to live water mains. These fees are separately charged.</i>	\$1,948.00	NA
45	Connection to Existing Water System (major works) <i>This fee covers shut down to allow connections to existing fittings and</i>	\$614.00	NA

No.	Ancillary and miscellaneous service	Commencement Date to 30 June 2006	
		Fixed Charge	Hourly Charge
	<i>recharging the main.</i>		
46	Insertion or Removal of Tee & Valve <i>Hunter Water is required to identify the shutdown area, issue pre-shutdown notices to affected customers, shutdown the water system to allow the contractor to connect new water systems and restore the water supply following connection.</i>		
	Shutdown and charge up only	\$614.00	NA
	Shutdown, insert tee & valve, and charge up	\$769.00	NA
47	Application for Additional Sewer Connection <i>Development requiring alternative sewer connection points must make an application to Hunter Water. Review of options and assessment of drawings or designs.</i>	\$258.00	NA
48	Tee and Valve Connection <i>Water services greater than 80mm diameter require special connection arrangements to Hunter Water's mains and are covered by an agreement and technical specification prepared on application.</i>	\$149.00	NA
49	Minor Works Inspection Fee <i>Auditing of works constructed under minor works contracts to ensure that specified quality is being achieved.</i>	\$147.00	NA
50	Major Works Inspection and WAE Fee <i>Comprises inspection/audit of works constructed under major works contracts to ensure that specified quality is achieved. Work-as-executed comprises survey of the constructed work and modifying plans to detail the precise location of the work for inclusion in Hunter Water information systems.</i>		
	Water Pump Stations	\$3,950.00	NA
	Sewer Pump Stations	\$5,350.00	NA
51	Application to Assess Encroachment on Hunter Water Land, Easement Rights or Assets <i>This fee is for a first pass review of an application, to allow Hunter Water to advise requirements to be met and a quote for additional, more detailed assessment.</i>	\$251.00	NA
52	Technical Services (Fee per hour) <i>This fee provides an hourly rate for additional technical work to be undertaken as agreed upfront with the client/applicant.</i>	NA	\$ 91.00
53	Remote Application Fee <i>This fee covers applications made for a compliance certificate in an area remote from Hunter Water Services and includes the basic processing of each application to issue a certificate</i>	\$207.00	NA
54	Indicative Requirements Fee <i>This charge covers technical assessment of a proposed development and general advice on the level of developer servicing plan charges</i>	\$343.00	NA
55	Strategy Review <i>Major developments often require the preparation of a servicing strategy for the whole development. Consulting engineers are engaged to prepare this strategy on behalf of a developer and Hunter Water reviews these strategies to ensure they are provide optimal</i>	\$516.00	NA

No.	Ancillary and miscellaneous service	Commencement Date to 30 June 2006	
		Fixed Charge	Hourly Charge
	<i>connection options and are consistent with current guidelines</i>		
56	Hydraulics Assessment Application - 80mm service and above <i>This service covers administration and system capacity analysis, as required. This includes hydraulic assessment and processing. Assessment and in-principle approval of meter sizes and services.</i>	\$327.00	NA

Schedule 7

Definitions and Interpretation

1. DEFINITIONS

1.1 General definitions

In this determination:

AAV means the assessed annual value of land as defined by the *Valuation of Land Act, 1916*.

Area of Operations has the meaning given to that term in the Operating Licence.

Billing Cycle means each four monthly cycle during a Period.

Commencement Date means the Commencement Date defined in clause 2(b) of section 1 (**Background**) of this determination.

Common Water Meter means a Meter which is connected or available for connection to Multi Premises, where the Meter measures the water usage to that Multi Premises but not to each relevant Property located on or within that Multi Premises.

Community Development Lot has the meaning given to that term under the *Community Land Development Act 1989*.

Community Parcel has the meaning given to that term under the *Community Land Development Act 1989*.

Company Title Building means a building owned by a company where the issued shares of the company entitle the legal owner to exclusive occupation of a specified dwelling within that building.

Company Title Dwelling means a dwelling within a Company Title Building.

Corporation means the Corporation defined in clause 1(b) of section 1 (**Background**) of this determination, constituted under the *Hunter Water Act 1991*.

Dungog Shire Council means the Dungog Shire Council as constituted under the Local Government Act.

df% or Discharge Factor means in relation to a Property, the percentage of water supplied to that property which the Corporation assesses or deems to be discharged into the Sewerage System.

Diameter Pipe means the service pipe connecting a Property to the Water Supply System.

Eligible Pensioner means [a person who is the owner and occupier of a Property and who holds a pensioner concession card from Centrelink or an equivalent concession card from the Department of Veterans' Affairs].

Filtered Water means water that has been treated at a water filtration plant.

GST means the Goods and Services Tax as defined in *A New Tax System (Goods and Services Tax) Act, 1999*.

Hunter Sewerage Project means the program established in 1988 by the NSW Government to provide sewer services to specific unsewered areas in the Corporation's Area of Operations.

IPART Act means the *Independent Pricing and Regulatory Tribunal Act, 1992*.

kL means kilolitre or one thousand litres.

Local Government Act means the *Local Government Act, 1993 (NSW)*.

Major Permit, in relation to a trade waste permit, has the meaning given to that term in the Trade Waste Policy.

Meter means an apparatus for the measurement of water.

Metered Property means a Residential Property or Non Residential Property (as the case may be) that has a Meter.

Meter Reading Period means the period used by the Corporation to calculate the water usage charge or sewerage usage charge levied in a Billing Cycle and is equal to the number of days between:

- (a) the date on which the Meter was last read (or taken to have been read by the Corporation); and
- (b) the date on which the Meter was read (or taken to have been read by the Corporation) immediately preceding the date in paragraph (a).

Minor Permit, in relation to a trade waste permit, has the meaning given to that term in the Trade Waste Policy.

Monopoly Services means the Monopoly Services as defined in clause 1(b) of section 1 (**Background**) of this determination.

Multi Premises means land where there are two or more Properties (other than Properties which fall within paragraph (e) of the definition of 'Property') located on it, excluding land where there are hotels, motels, guest houses or backpacker hostels, each as defined in the Local Government Act, located on it.

Non Residential Property means a Property that is not a Residential Property or Vacant Land.

Operating Licence means the Corporation's operating licence in force under section 12 of the *Hunter Water Act 1991*.

Order means the Order defined in clause 1(b) of section 1 (**Background**) of this determination and published in Government Gazette No. 18 dated 14 February 1997.

Owners Corporation has the meaning given to that term under the *Strata Schemes Management Act 1996*.

Period means the Commencement Date to 30 June 2006, 1 July 2006 to 30 June 2007, 1 July 2007 to 30 June 2008 or 1 July 2008 to 30 June 2009 (as the case may be).

Priority Sewerage Program means the program established in 1998 by the NSW Government to provide sewer services to unsewered areas based on a priority ranking developed by the Environment Protection Authority and New South Wales Department of Health and Ageing.

Property includes:

- (a) a Strata Title Lot;
- (b) a Company Title Dwelling;
- (c) a Community Development Lot;
- (d) a part of a building lawfully occupied or available for occupation for residential purposes; or
- (e) land.

Rateable Land has the meaning given to that term under the Local Government Act.

Residential Single Property means a Residential Property which is not a Strata Title Lot, a Company Title Dwelling or a Community Development Lot and where there is a single dwelling on that Residential Property. [*HWC, to provide further information on this.*]

Residential Property means a Property where:

- (a) in the case of that Property being Rateable Land, that Property is categorised as residential under section 516 of the Local Government Act; or
- (b) in the case of that Property not being Rateable Land, the dominant use of that Property is residential applying the classifications in section 516 of the Local Government Act.

Sewerage System means the sewerage system owned and operated by the Corporation.

Strata Title Building means a building that is subject to a strata scheme under the *Strata Schemes (Freehold Development) Act 1973*.

Strata Title Lot means a lot as defined under the *Strata Schemes (Freehold Development) Act 1973*.

Trade Waste Policy means the Corporation's Trade Waste Policy and Management Plan (as amended from time to time).

Tribunal means the Independent Pricing and Regulatory Tribunal of New South Wales established under the IPART Act.

Unfiltered Water means water that has not been treated or filtered by the Corporation.

Unmetered Property means a Property that is not serviced by a Meter.

Unit Entitlement when applied to a Strata Title Lot, has the meaning given to that term under the *Strata Schemes (Freehold Development) Act 1973*.

Vacant Land means:

- (a) in relation to schedules 1, 2, 3, 4 and 6, land that has no capital improvements and no connection to the Water Supply System; and
- (b) in relation to schedule 5, land that has no capital improvements and no connection to the Water Supply System at the time the backlog sewerage services (under the Hunter Sewerage Project and the Priority Sewerage Program) were announced by the NSW Government.

Water Supply System means the water supply system owned and operated by the Corporation.

Year means a period of twelve months commencing on 1 July and ending on 30 June in the ensuing calendar year.

1.2 Consumer Price Index

- (a) **CPI** means the consumer price index All Groups index number for the, weighted average of eight capital cities, published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Tribunal

$$(b) \quad \Delta CPI_1 = \left(\frac{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

$$\Delta CPI_2 = \left(\frac{CPI_{Jun2006} + CPI_{Sep2006} + CPI_{Dec2006} + CPI_{Mar2007}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

$$\Delta CPI_3 = \left(\frac{CPI_{Jun2007} + CPI_{Sep2007} + CPI_{Dec2007} + CPI_{Mar2008}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

each as calculated by the Tribunal and notified in writing by the Tribunal to the Corporation.

- (c) The subtext (for example $_{Jun2005}$) when used in relation to paragraph (b) above means the CPI for the quarter and Year indicated (in the example the June quarter for 2005).

2. INTERPRETATION

2.1 General provisions

In this determination:

- (a) headings are for convenience only and do not affect the interpretation of this determination;
- (b) a reference to a schedule, annexure, clause or table is a reference to a schedule, annexure, clause or table to this determination;
- (c) words importing the singular include the plural and vice versa;
- (d) a reference to a law or statute includes all amendments or replacements of that law or statute.;
- (e) a reference to a “four monthly cycle” is a reference to a consecutive period of four months ending on 28 February, 30 June or 31 October, as the case may be.

2.2 Explanatory Notes and clarification note

- (a) Explanatory notes do not form part of this determination, but in the case of uncertainty may be relied on for interpretation purposes.
- (b) The Tribunal may publish a clarification notice in the NSW Government Gazette to correct any manifest error in this determination as if that clarification note formed part of this determination.

2.3 Prices exclusive of GST

Prices or charges specified in this determination do not include GST.

2.4 Billing

- (a) For the avoidance of doubt nothing in this determination affects when the Corporation may issue a bill to a customer for prices or charges under this determination.
- (b) If a Meter Reading Period commences before the Commencement Date and ends after the Commencement Date, the water usage charge or sewerage usage charge (as the case may be) applying to the whole of that Meter Reading Period is the charge calculated under Determination No 4 of 2003, prior to that determination being replaced by this determination.

Draft Determination No 7, 2005

**Section 11(1)
Independent Pricing and Regulatory Tribunal Act 1992**

Sydney Catchment Authority

**Independent Pricing and Regulatory Tribunal
of New South Wales**

Reference No: 05/127

1. Background

- (a) Section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992*, permits the Tribunal to conduct investigations and make reports to the Minister on the determination of the pricing for a government monopoly service supplied by a government agency specified in Schedule 1 of the IPART Act.
- (b) Sydney Catchment Authority (**Authority**) is listed as a government agency for the purposes of Schedule 1 of the IPART Act. The services of the Authority declared as monopoly services (**Monopoly Services**) under the *Independent Pricing and Regulatory Tribunal (Water Supply Services) Order 2000* (**Order**) are:
 - (1) water supply services; and
 - (2) ancillary and miscellaneous services for which no alternative supply exists and which relate to the supply of those water services.Accordingly, the Tribunal may determine the prices for the Authority's Monopoly Services.
- (c) In investigating and reporting on the pricing of the Authority's Monopoly Services, the Tribunal has had regard to a broad range of matters, including the criteria set out in section 15(1) of the IPART Act.
- (d) In accordance with section 13A of the IPART Act, the Tribunal has fixed the maximum price for the Authority's Monopoly Services or has established a methodology for fixing the maximum price.
- (e) Under section 18(2) of the IPART Act, the Authority may not fix a price below that determined by the Tribunal without the approval of the Treasurer.

2. Application of this determination

- (a) This determination fixes the maximum prices (or sets a methodology for fixing the maximum prices) that the Authority may charge for the Monopoly Services.
- (b) This determination commences on the later of 1 October 2005 and the date that it is published in the NSW Government Gazette (**Commencement Date**).
- (c) The maximum prices in this determination apply from the Commencement Date to 30 June 2009. The maximum prices in this determination prevailing at 30 June 2009 continue to apply beyond 30 June 2009 until this determination is replaced.

3. Replacement of Determination No. 4 of 2005

This determination replaces Determination No. 4 of 2005 from the Commencement Date. The replacement does not affect anything done or omitted to be done, or rights or obligations accrued, under Determination No. 4 of 2005 prior to its replacement.

4 Monitoring

The Tribunal may monitor the performance of the Authority for the purposes of:

- (a) establishing and reporting on the level of compliance by the Authority with this determination; and
- (b) preparing a periodic review of pricing policies in respect of the Monopoly Services supplied by the Authority.

5. Schedules

Schedules 1-3 (inclusive) and the Tables in those Schedules set out the maximum prices that the Authority may charge for the Monopoly Services specified in the Schedules.

6. Definitions and Interpretation

Definitions and interpretation provisions used in this determination are set out in Schedule 4.

Schedule 1

Water Supply Services

1. Application

This schedule sets the maximum prices that the Authority may charge for services to a person (other than a Customer) under paragraph (a) of the Order (water supply services).

2. Water supply services to the Corporation

The maximum charge for water supplied by the Authority to the Corporation is the sum of:

- (a) the Fixed Availability Charge in Table 1, corresponding to the applicable period in that table; and
- (b) the Volumetric Charge (per ML) in Table 2, corresponding to the applicable period in that table.

3 Water supply services to Wingecarribee Shire Council

The maximum charge for water supplied by the Authority to Wingecarribee Shire Council is the Volumetric Charge (per ML) in Table 3, corresponding to the applicable period in that table.

4 Water supply services to Shoalhaven City Council

4.1 Supply to Kangaroo Valley

The maximum charge for water supplied by the Authority to Shoalhaven City Council for use in Kangaroo Valley is the Volumetric Charge (per ML) in Table 4, corresponding to the applicable period in that table.

4.2 Tallowa Dam Releases to Shoalhaven City Council

The maximum charge for water supplied by the Authority to Shoalhaven City Council from the Tallowa Dam Releases during times of drought (as determined by Shoalhaven City Council) is the Volumetric Charge (per ML) in Table 5, corresponding to the applicable period in that table.

Tables 1, 2, 3, 4 and 5

Table 1 Fixed Availability Charges to the Corporation

Charge	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Fixed Availability Charge (\$ per calendar month)	5,124,000	$5,124,000 \times (1 + \Delta CPI_1)$	$5,124,000 \times (1 + \Delta CPI_2)$	$5,124,000 \times (1 + \Delta CPI_3)$

Table 2 Volumetric Charges to the Corporation

Charge	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Volumetric Charge (\$ per ML)	153.53	$163.83 \times (1 + \Delta CPI_1)$	$177.18 \times (1 + \Delta CPI_2)$	$190.28 \times (1 + \Delta CPI_3)$

Table 3 Volumetric charges for Wingecarribee Shire Council

Basis of Charge	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Volumetric Charge (\$ per ML)	153.53	$163.83 \times (1 + \Delta CPI_1)$	$177.18 \times (1 + \Delta CPI_2)$	$190.28 \times (1 + \Delta CPI_3)$

Table 4 Volumetric charges for Kangaroo Valley

Charge	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Volumetric Charge (\$ per ML)	153.53	$163.83 \times (1 + \Delta CPI_1)$	$177.18 \times (1 + \Delta CPI_2)$	$190.28 \times (1 + \Delta CPI_3)$

Table 5 Volumetric Charges for Tallowa Dam Releases to Shoalhaven City Council in times of drought

Charge	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Volumetric Charge (\$ per ML)	153.53	$163.83 \times (1 + \Delta CPI_1)$	$177.18 \times (1 + \Delta CPI_2)$	$190.28 \times (1 + \Delta CPI_3)$

Schedule 2

Water Supply Services

Raw Water

1. Application

This schedule sets the maximum prices that the Authority may charge for services of Raw Water to a Customer under paragraph (a) of the Order (water supply services).

2 Raw water

The maximum charge for Raw Water supplied by the Authority to a Customer is the Volumetric Charge (per kL) in Table 6, corresponding to the applicable period in that table.

Table 6 Volumetric Charges for Raw Water

Charge	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Raw Water charges - Volumetric Charge (\$ per kL)	0.45	$0.45 \times (1 + \Delta \text{CPI}_1)$	$0.45 \times (1 + \Delta \text{CPI}_2)$	$0.45 \times (1 + \Delta \text{CPI}_3)$

Schedule 3

Water Supply Services

Unfiltered Water

1. Application

This schedule sets the maximum prices that the Authority may charge for services of Unfiltered Water to a Customer under paragraph (a) of the Order (water supply services).

2 Unfiltered Water

The maximum charge for Unfiltered Water supplied by the Authority to a Customer is the sum of:

- (a) the Fixed Availability Charge determined as follows:
 - (i) **from the Commencement Date to 30 June 2006** – 75% of the Fixed Availability Charge in Table 7, corresponding to the service connection size; and
 - (ii) **from 1 July 2006 to 30 June 2007, 1 July 2007 to 30 June 2008 or 1 July 2008 to 30 June 2009** – 100% of the Fixed Availability Charge in Table 7, corresponding to the service connection size; and
- (b) the Volumetric Charge (per kL) in Table 8, corresponding to the applicable period.

Tables 7 and 8

Table 7 Fixed Availability Charges for Unfiltered Water

Fixed Availability Charge (\$ per financial year) - service connection size (nominal diameter)	1 July 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
20mm	75.00	75.00	75.00	75.00
25mm	117.20	117.20	117.20	117.20
30mm	168.75	168.75	168.75	168.75
32mm	192.00	192.00	192.00	192.00
40mm	300.00	300.00	300.00	300.00
50mm	468.75	468.75	468.75	468.75
80mm	1200.00	1200.00	1200.00	1200.00
100mm	1875.00	1875.00	1875.00	1875.00
150mm	4218.75	4218.75	4218.75	4218.75
200mm	7500.00	7500.00	7500.00	7500.00
>200mm	(nominal diameter) ² x 75/400	(nominal diameter) ² x 75/400	(nominal diameter) ² x 75/400	(nominal diameter) ² x 75/400

Table 8 Volumetric Charges for Unfiltered Water

Charge	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Unfiltered Water Volumetric Charge (\$ per kL)	0.77	$0.77 \times (1 + \Delta CPI_1)$	$0.77 \times (1 + \Delta CPI_2)$	$0.77 \times (1 + \Delta CPI_3)$

Schedule 4

Definitions and Interpretation

1. Definitions

1.1 General definitions

In this determination:

Authority means the Authority as defined in clause 1(b) of section 1 (**Background**) of this determination, constituted under the *Sydney Water Catchment Management Act 1998*.

Commencement Date means the Commencement Date as defined in clause 2(b) of section 1 (**Background**) of this determination.

Corporation means the Sydney Water Corporation constituted under the *Sydney Water Corporation Act, 1994*.

Customer means a person to whom the Authority supplies water, other than:

- (a) the Corporation; or
- (b) a water supply authority, a local council or a county council each as defined in the *Sydney Water Catchment Management Act, 1998*.

Fixed Availability Charge means a fixed charge imposed by the Authority for making water available for supply to a person, irrespective of the amount of water consumed by that person.

GST means the Goods and Services Tax as defined in *A New Tax System (Goods and Services Tax) Act, 1999*.

IPART Act means the *Independent Pricing and Regulatory Tribunal Act, 1992*.

Kangaroo Valley means the township of Kangaroo Valley within the local government area of the Shoalhaven City Council.

kL means kilolitre or one thousand litres.

ML means megalitre or one million litres.

Monopoly Services means the Monopoly Services as defined in clause 1(b) of section 1 (**Background**) of this determination.

Order means the Order defined in clause 1(b) of section 1 (**Background**) of this determination and published in Gazette No. 22 dated 11 February 2000.

Raw Water means water that has not been managed in any way.

Shoalhaven City Council means the Shoalhaven City Council as constituted under the *Local Government Act, 1993* (NSW).

Tallowa Dam Releases describes the circumstance where the Shoalhaven City Council requests the Authority to release from Tallowa Dam water in excess of that which would usually be released by the Authority so as to enable the Shoalhaven City Council to provide water to towns within its local government area in times of drought.

Tribunal means the Independent Pricing and Regulatory Tribunal of New South Wales established under the IPART Act.

Unfiltered Water means Raw Water that has been managed for quality, whether by chemical treatment or otherwise but not treated at a water filtration plant.

Volumetric Charge means a charge imposed by the Authority for water supplied by the Authority to a person where the charge is based on the amount of water consumed by that person.

Wingecarribee Shire Council means the Wingecarribee Shire Council as constituted under the *Local Government Act, 1993* (NSW).

1.2 Consumer Price Index

- (a) **CPI** means the consumer price index, All Groups index number for the weighted average of eight capital cities as published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Tribunal.

$$(b) \quad \Delta CPI_1 = \left(\frac{CPI_{Jun2005} + CPI_{Sep2005} + CPI_{Dec2005} + CPI_{Mar2006}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

$$\Delta CPI_2 = \left(\frac{CPI_{Jun2006} + CPI_{Sep2006} + CPI_{Dec2006} + CPI_{Mar2007}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

$$\Delta CPI_3 = \left(\frac{CPI_{Jun2007} + CPI_{Sep2007} + CPI_{Dec2007} + CPI_{Mar2008}}{CPI_{Jun2004} + CPI_{Sep2004} + CPI_{Dec2004} + CPI_{Mar2005}} \right) - 1$$

each as calculated by the Tribunal and notified in writing by the Tribunal to the Authority.

- (c) The subtext (for example $_{Jun2005}$) when used in relation to paragraph (b) above means the CPI for the quarter and year indicated (in the example the June quarter for 2005).

2. Interpretation

2.1 General provisions

In this determination:

- (a) headings are for convenience only and do not affect the interpretation of this determination;
- (b) a reference to a schedule, annexure, clause or table is a reference to a schedule, annexure, clause or table to this determination;
- (c) words importing the singular include the plural and vice versa;
- (d) a reference to a law or statute includes all amendments or replacements of that law or statute; and
- (e) a reference to a person includes any company, partnership, joint venture, association, corporation, other body corporate or government agency.

2.2 Explanatory Notes and clarification note

- (a) Explanatory notes do not form part of this determination, but in the case of uncertainty may be relied on for interpretation purposes.
- (b) The Tribunal may publish a clarification notice in the NSW Government Gazette to correct any manifest error in this determination as if that clarification note formed part of this determination.

2.3 Prices exclusive of GST

Prices or charges specified in this determination do not include GST.

2.4 Billing cycle of the Authority

For the avoidance of doubt nothing in this determination affects when the Authority may issue a bill to a customer for prices or charges under this determination.

**Sydney Water Corporation
Hunter Water Corporation
Sydney Catchment Authority**

**Prices of Water Supply,
Wastewater and Stormwater
Services**

Draft Report

From 1 October 2005 to
30 June 2009 for the SWC
and SCA

From 1 November 2005 to
30 June 2009 for HWC

Draft Report Nos 5, 6 and 7, 2005

June, 2005



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1 INTRODUCTION

The Independent Pricing and Regulatory Tribunal of NSW (the Tribunal) is responsible for setting the maximum prices that can be charged by metropolitan water agencies for monopoly water and wastewater services. These agencies include the Sydney Catchment Authority, Sydney Water Corporation (Sydney Water), and Hunter Water Corporation (Hunter Water).

The current price path for the Sydney Catchment Authority expires at 30 June 2005.¹ The price determinations for the other agencies have no formal expiry date, but at the time these determinations were made, the Tribunal intended that new determinations would apply from 2005. It has therefore conducted a price review for all three agencies, and made a draft determination on prices for the Sydney Catchment Authority and Sydney Water to apply from 1 October 2005, and on prices for Hunter Water to apply from 1 November 2005.² This report explains the Tribunal's draft decisions and sets out its draft determination.

Please note that the Tribunal has made a separate one-year determination on the maximum prices that can be charged by Gosford City Council and Wyong Shire Council for monopoly water and wastewater services.³

1.1 Need for price increases and price restructuring

In making its draft determination for each agency, the Tribunal was strongly influenced by four significant issues affecting the metropolitan water industry. The first is the scarcity of water. NSW is currently experiencing one of the longest droughts in its recorded history. Even when this drought breaks, there will be a need to manage the demand for water. Pricing can be used to help send signals to water users about the cost of water and the need to conserve it. Step increases⁴ in prices when consumption goes above a certain level can provide even more effective signals.

Additional expenditure will be incurred in demand management initiatives. Sydney Water is required to contribute \$30 million per year to the Water Savings Fund established by the Minister for Energy and Utilities. This fund will make money available to support water conservation and demand management initiatives proposed by the agencies and the private sector.

The second issue is the importance of maintaining and renewing water, wastewater and other services. For many years now, the people of Sydney and Newcastle have benefited from the early construction of a vast network of infrastructure that provides water, wastewater and stormwater drainage services. However, operating this network involves costs, and it requires constant maintenance, renewal and expansion to ensure that all residents continue to enjoy an acceptable standard of service.

¹ Steps have been taken to extend the operation of the Sydney Catchment Authority's existing determination until a new determination is made.

² The determination commencement dates are based on the billing cycles of the agencies; the Sydney Catchment Authority and Sydney Water bill on a 90 day cycle whereas Hunter Water has a 120 billing day cycle.

³ Determinations Nos 1 and 2, 2005, Gosford City Council, Wyong Shire Council Prices of Water Supply, Wastewater and Stormwater Services from 1 July 2005 to 30 June 2006.

⁴ Such as a two tiered variable usage charge where the first tier price is less than the second tier.

The third issue is population growth. The Sydney Greater Metropolitan Region (which comprises Sydney, Wollongong, the Central Coast and the Hunter region) is growing rapidly. The water industry will need to make major capital investments to reduce demand, augment supply, and explore new ways of delivering water and wastewater services to meet the needs of an increasing population and ensure the environment is protected. For example, alternative water sources (such as recycled water and the Shoalhaven Transfer Scheme) and innovative approaches in the provision of wastewater services will be required.

The final issue is higher operating costs and increasing complexity. The use of alternative water sources and innovative approaches to meeting service requirements may increase the costs involved in day-to-day service delivery. For example, the supply of water from alternative sources often involves pumping or additional treatment, which will involve additional costs. In addition, the private sector is expected to play an important role in innovation in wastewater services, which will mean the arrangements for service delivery will be more complex than they are today.

Together, these issues mean that prices need to increase significantly over the medium to long term, and be restructured to send better signals to customers and service providers.

1.2 Overview of draft determination

In relation to the Sydney Catchment Authority, the Tribunal's draft decision is to:

- Set prices for the period 1 October 2005 to 30 June 2009 to generate total revenue of \$633.3 million,⁵ which the Tribunal has assessed as adequate to meet the Sydney Catchment Authority's efficient costs of supplying water services to Sydney Water and its other customers. This means that, on average, prices will increase by 12 per cent above inflation (real increase) in the first year of the 2005 determination period, and by 4.5 per cent above inflation (real increase) in each of the remaining years.
- Rebalance the tariff charged to Sydney Water to place a greater focus on the volumetric charge and better reflect the cost of harvesting and transporting bulk water. Overall, the volumetric charge will increase by 60 per cent above inflation (real increase) over the determination period, while the fixed charge will decrease by 6.7 per cent⁶ (real decrease). This rebalancing should provide a stronger incentive to Sydney Water to encourage sustainable water use by its customers.

In relation to Sydney Water, the Tribunal's draft decision is to:

- Set prices for the period 1 October 2005 to 30 June 2009 to generate total revenue of \$6,014 million,⁷ which the Tribunal has assessed as adequate to meet Sydney Water's efficient costs of providing water, wastewater and stormwater services. This means that, on average, prices will increase by 5 per cent above inflation (real increase) in the first year of the 2005 determination period, and by 1.1 per cent above inflation (real increase) in each of the remaining years.

⁵ \$2004/05 and assumes these prices are applied from 1 July 2005. While the determination will apply from 1 October 2005, the forecasts, information and advice considered by the Tribunal applied for the financial year commencing 1 July 2005.

⁶ Before inflation - the fixed charge is forecast to increase in dollars of the day, but decrease in real terms.

⁷ Assuming these prices were applied from 1 July 2005. While the determination will apply from 1 October 2005, the forecasts, information and advice considered by the Tribunal applied for the financial year commencing 1 July 2005.

- Restructure water charges for residential customers, to provide a strong conservation signal in relation to discretionary water use. The restructured charges apply to single dwellings, and include a higher two-tiered variable usage charge and a lower fixed service charge. Under this structure, water usage up to 400 kilolitres per year⁸ will be charged at \$1.13/kL in 2005/06 (increasing to \$1.23/kL⁹ in 2008/09), while usage beyond this amount will be charged at \$1.44/kL (increasing to \$1.84/kL¹⁰ in 2008/09). The water service charge will be reduced by 42 per cent over the determination period.
- Increase non-residential wastewater usage charges from the current \$1.15/kL to \$1.24/kL in 2008/09 (\$2005/06), and the wastewater service charge for all customers from the current \$346.66 per annum to \$384 per annum (\$2004/05), to reflect the increased costs of providing these services to a growing population.
- Set stormwater drainage tariffs to better reflect the costs of providing these services. The residential stormwater service charge will increase by \$20 (from the current \$25.04) or 80 per cent above inflation (real increase) over the 2005 determination period. The non-residential stormwater service charge will increase by \$44 (from \$70.64) or 62 per cent above inflation (real increase) over the determination period.

In relation to Hunter Water, the Tribunal's draft decision is to:

- Set prices for the period 1 November 2005 to 30 June 2009 to generate total revenue of \$603.7 million,¹¹ which the Tribunal has assessed as adequate to meet Hunter Water's efficient costs of providing water, wastewater and stormwater drainage services. This means that, on average, prices will increase by 6 per cent above inflation (real increase) in the first year of the determination period, and by 1.8 per cent above inflation (real increase) in each of the remaining years.
- Restructure water prices so that the declining block tariff (where the average price for water decreases as consumption increases above a certain threshold) is removed over the determination period. This will mean that the price for customers that currently use less than 1,000 kilolitres of water per year will increase by 4.5 per cent above inflation (real increase) in 2005/06, and by 1.4 per cent above inflation (real increase) in each of the following years to 2008/09. For customers using more than 1,000 kilolitres per year, the price will increase by 6.8 per cent above inflation (real increase) in 2005/06, and approximately 3.5 per cent above inflation (real increase) in each of the following years to 2008/09.
- Retain the location-based usage price for very large users and increase this by 4.5 per cent above inflation (real increase) in 2005/06, and 1.4 per cent above inflation (real increase) in the following years.
- Set the wastewater service charge to increase by 6.9 per cent above inflation (real increase) in 2005/06, and by 2.3 per cent above inflation (real increase) in each of the following years. Maintain the wastewater usage charge at the current level in 2004/05 and limit adjustment in the following years to the movement in the CPI.

⁸ To be expressed as a daily limit of approximately 1.1kL/day. It should be noted that given the seasonality of water consumption, some consumers who consume less than 400kL over the year may exceed the 1.1kL daily limit.

⁹ In 2005/06 dollars.

¹⁰ Ibid.

¹¹ Assuming these prices were applied from 1 July 2005. While the determination will apply from 1 November 2005, the forecasts, information and advice considered by the Tribunal applied for the financial year commencing 1 July 2005.

- Restructure stormwater drainage tariffs to remove the property-value-based charges and establish a more equitable and cost-reflective system.

In making these draft decisions, the Tribunal has had regard to the proposals and information submitted by each agency, the independent analysis of these proposals it commissioned, and information and submissions provided by other interested parties (see Box 1.1 for more information on the review process).

Box 1.1 Tribunal's approach to information collection and decision-making

The Tribunal's review included an extensive investigation and public consultation process. As part of this review, the Tribunal:

- released an issues paper in July 2004
- invited the Sydney Catchment Authority, Sydney Water and Hunter Water to provide submissions detailing their pricing proposals, and required them to provide extensive financial and performance data on the future capital and operating expenditure they believe will be necessary to maintain their customer service levels and respond to regulatory and customer demands
- invited other interested parties to make submissions after reviewing the agencies' submissions. A total of 32 written responses were received
- engaged McLennan Magasanik Associates (McLennan Magasanik) to independently review the agencies' forecasts of water consumption and customer numbers over the period 2004/05 to 2009/10 and advise the Tribunal on the validity of these forecasts for the purposes of setting prices
- engaged a consortium of WS Atkins International Ltd. and Cardno MBK (Atkins/Cardno) to conduct a review of the Sydney Catchment Authority, Sydney Water and Hunter Water's capital expenditure, asset management and operating expenditure proposals across their water, wastewater and stormwater drainage businesses
- held a combined public hearing in Sydney on 10 March 2005 for the five metropolitan water agencies regulated by the Tribunal and invited some of the parties who made written submissions to present their views on issues raised in their submissions
- engaged RSM Bird Cameron to review the agencies' proposals in relation to miscellaneous charges
- gave the Sydney Catchment Authority, Sydney Water and Hunter Water the opportunity to respond to the findings and recommendations of all the independent reviews referred to above.

The Tribunal's pricing decisions also explicitly take account of their impact on the agencies' businesses, the State Government (as owner), the agencies' customers, and the environment.

In addition, the Tribunal took into account the State Government's Metropolitan Water Plan (the Plan), which was released in October 2004. The Plan has significant implications for the prices determined for Sydney Water and the Sydney Catchment Authority. In determining these prices, the Tribunal considered Government decisions on the nature and timing of major water infrastructure projects within the Plan as at April 2005.

The Tribunal recognises that there is significant uncertainty associated with the exact timing and cost of some of these projects, due to the long-term nature of the Plan. This is particularly the case with the Shoalhaven Transfer Scheme, on which the Sydney Catchment Authority plans to begin work during the determination period. The Tribunal has decided that it will adjust the Sydney Catchment Authority's prices in the 2009 determination period

if the costs this agency incurs in implementing the Shoalhaven Transfer Scheme are lower than provided for in the 2005 determination.

1.3 Overview of implications for customers, agencies and environment

The Tribunal's draft decisions have been made in accordance with the requirements set out in the *Independent Pricing and Regulatory Tribunal of New South Wales Act 1992* (IPART Act), including the factors contained in Section 15 of this Act (see Appendix 1). In summary, the Act requires the Tribunal to consider the impacts of the maximum prices it determines on customers, on the agencies (as owners, operators and managers of the assets), and on the environment. The Tribunal explicitly considered these impacts and is satisfied that they achieve a reasonable balance between the competing Section 15 matters.

In terms of customer impacts, the Tribunal's analysis shows that, in general, its draft decisions will increase customers' bills for water and wastewater services, with the greatest increase occurring in 2005/06. The key implications for each agency's customers are as follows:

- For the Sydney Catchment Authority, the draft determination is expected to increase Sydney Water's bill by 17.4 per cent in 2005/06, and by a further 6.8 per cent in 2006/07, 7.2 per cent in 2007/08, and 6.4 per cent in 2008/09. It is expected to increase the Wingecarribee and Shoalhaven Councils' bills by 46.1 per cent in 2005/06, and by a further 9.6 per cent in 2006/07, 11.1 per cent in 2007/08, and 10.3 per cent in 2008/09. The size of the initial increase is due to the Tribunal's draft decision to increase the volumetric charge to the Councils to the same level as the volumetric charge to Sydney Water. All these increases include the effect of inflation (nominal increase) and are based on the consumption forecasts adopted by the Tribunal for the determination period.
- For Sydney Water's residential customers, the draft determination is expected to increase the bill of a customer with average water consumption (250kL per year) by 7 per cent in 2005/06, and by a further 4 per cent in 2006/07, 2 per cent in 2007/08 and 3 per cent in 2008/09. It will increase the bill of a customer using 500kL per year by 12 per cent in 2005/06, and a further 5 per cent in 2006/07, 4 per cent in 2007/08 and 5 per cent in 2008/09. These increases include the effect of inflation (nominal increase). An average customer could avoid any real increase in their water bill by reducing their consumption by 11.7 per cent (which is slightly less than the reduction in total consumption of 12.1 per cent achieved between October 2003 and the beginning of June 2005 in response to water restrictions).
- For large low-income families served by Sydney Water, the draft determination provides for special measures to be introduced to moderate the impact of the price changes. The Premier has expressed to the Tribunal the Government's concern at the impact increases in bills may have on vulnerable households which may consume large amounts of water for essential purposes. To moderate the impact of price increases on large low-income families the Tribunal will be requiring Sydney Water to develop a rebate system where each member of a large low-income household will be able to use up to 80kL per annum at the lower tier 1 price.
- For Sydney Water's commercial and industrial customers, the draft determination will also increase their bills. The size of the increase will depend on the customer's level of consumption.

- For Hunter Water's residential customers, the draft determination is expected to increase the bill of a customer with average consumption (206kL per year) by 7.8 per cent in 2005/06, and by a further 4.4 per cent in each of the following years to 2008/09. These increases include the effect of inflation (nominal increase).
- For Hunter Water's commercial and industrial customers, the draft determination will increase their bills, particularly those of customers using more than 1,000 kilolitres per year.

In terms of agency impacts, the Tribunal's analysis indicates that the draft decisions will allow the agencies to recover the costs of providing water, wastewater and stormwater services, including meeting the relevant regulatory and maintaining current service standards.

For the Sydney Catchment Authority,¹² these decisions will allow the agency to deliver the following outcomes:

- Extensive works (\$280 million) on the Shoalhaven Transfer Scheme, including the installation of gates, new pumps, and the construction of pipelines from Burrawang to Avon Dam to enhance the catchment yield and reduce the impact of abstractions on the environment.
- Construction of a by-pass around Tallowa Dam (\$5.6 million) to allow fish to migrate to the upper reaches of the Shoalhaven River.
- Work on Warragamba Dam (\$14.8 million), including work on major outlet valves and electrical support systems to maintain water supply.
- Construction of the Prospect Reservoir Raw Water Pumping Station (\$42 million) to ensure back-up supply in the event of damage to the Upper Canal or Warragamba Pipeline.
- Construction of the Fish River Water Supply Scheme pipeline to provide increased supplies to the Blue Mountains.

For Sydney Water,¹³ the Tribunal's pricing decisions will allow the agency to:

- invest \$421 million in renewing and expanding water mains to service new growth and maintain existing standards
- undertake works on pressure management and leakages to reduce mains breaks and water losses
- invest \$179 million in recycling schemes in new development areas to further support efforts to balance long-term demand and supply
- invest \$211 million in wastewater infrastructure to reduce both wet and dry weather overflows
- spend \$290 million to service new urban development
- upgrade sewage treatment plants, including plants in Hawkesbury/Nepean (\$139 million), Illawarra (\$10 million) and Bondi (\$26 million)

¹² All expenditure is in real \$2004/05 over the 2005 determination period, before capital expenditure efficiencies.

¹³ Ibid.

- invest \$306 million in improving the reliability of Sydney's sewer network
- implement an extensive demand management program to address the demand and supply imbalance
- continue existing demand management initiatives, including the retrofit, rain water tank rebate and educational programs for residential customers, and the Every Drop Counts program for business customers.

For Hunter Water, the Tribunal's pricing decisions will allow it to:

- complete the Grahamstown Dam augmentation to increase water supply capacity and security
- replace a trunk water main between Tarro and Shortland to improve security of supply and cater for growth
- construct a new trunk main on Kooragang Island to cater for growth
- undertake work on the water delivery system to replace assets that have reached the end of their useful lives
- upgrade the wastewater transport and treatment systems to reduce wet and dry weather overflows and cater for growth
- provide sewerage services to backlog areas at Fern Bay, Kitchener, Lochinvar, Millfield and Ellalong under the State Government's Priority Sewerage Program.

In addition, the Tribunal's analysis of the impacts of its draft decisions on the agencies shows that these decisions will ensure the agencies' financial viability over the 2005 determination period. The maximum prices it has set for the Sydney Catchment Authority are expected to enable the agency to earn a pre tax real rate of return of between 5.9 per cent and 6.1 per cent over the determination period. This is lower than the return of 6.5 per cent assumed by Sydney Catchment Authority in its submission, but higher than its current return of 4.9 per cent.¹⁴

The maximum prices it has set for Sydney Water and Hunter Water are expected to enable these agencies to earn a pre tax real rate of return that increases from 5.8 per cent to 6.1 per cent over the 2005 determination period. This is lower than the return of 6.5 per cent proposed by Sydney Water, but higher than the return of 5.6 per cent (by 2008/09) proposed Hunter Water. It is also higher than these agencies' current returns of 5 per cent (Sydney Water) and 4.9 per cent (Hunter Water).¹⁵

Further, the draft decisions are not expected to impact adversely on the agencies' ability to pay dividends to the State Government over the 2005 determination period.

In terms of impacts on the environment, the Tribunal considers that its draft decisions will help increase customers' awareness of the scarcity and value of water, and encourage them to use this resource carefully. In addition, the draft decisions explicitly take account of capital and operating expenditure associated with meeting environmental licence requirements.

¹⁴ As calculated by the Tribunal based on information supplied by the Sydney Catchment Authority.

¹⁵ As calculated by the Tribunal based on information supplied by Sydney Water and Hunter Water.

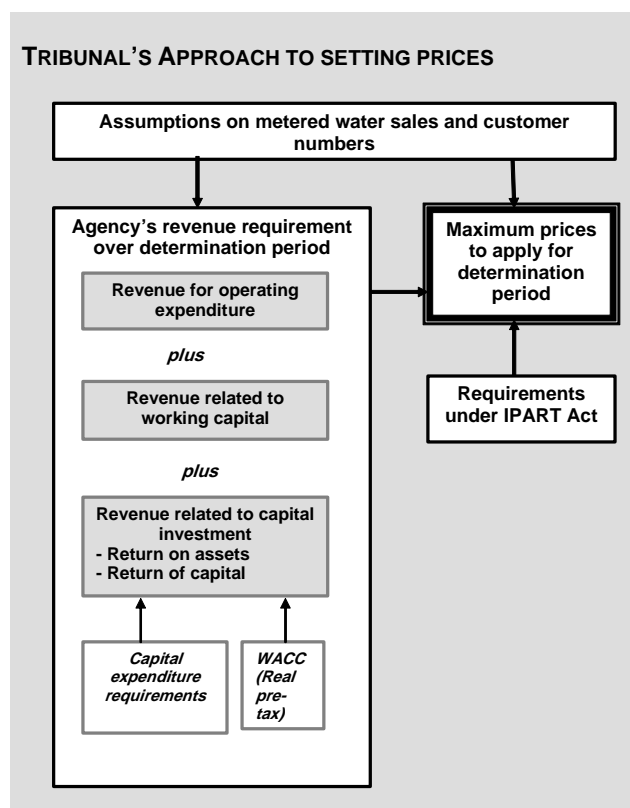
1.4 Regulatory approach adopted by the Tribunal to set maximum prices

As in previous metropolitan water price determinations, the Tribunal has adopted a $CPI \pm X$ regulatory approach to setting prices. Within this approach, maximum prices for the determination period have been set by:

- establishing the revenue required by each water agency to efficiently provide water and related services for each year of the determination period using the 'building block method',¹⁶ and
- setting maximum prices and a $CPI \pm X$ price path that take account of this revenue requirement, the demand for water services, and the other matters the Tribunal must consider under Section 15 of the IPART Act.

An overview of this approach is shown in Figure 1.1.

Figure 1.1 Tribunal's approach to setting prices



¹⁶ The building block methodology is the main method used by economic regulators in Australia and abroad for determining prices for monopoly services. The building block methodology was used at each of the previous metropolitan water reviews conducted by the Tribunal. For information on the building block methodology see *Sydney Water Corporation – Prices of Water Supply, Wastewater and Stormwater Services – From 1 July 2003 to 30 June 2005*, May 2003, Appendix 4, available on www.ipart.nsw.gov.au.

1.5 Structure of this report

This report explains the Tribunal's draft determination in detail, including how and why it reached its draft decisions and what those decisions mean for the water agencies, their customers and other stakeholders:

- Chapter 2 discusses the background and context for this price review, including outlining the metropolitan water industry, the current supply position in metropolitan NSW, and recent government policy and other initiatives aimed at achieving a sustainable balance between supply and demand
- Chapter 3 sets out the Tribunal's draft decisions on the regulatory framework to apply for the 2005 determination period, including the length of the determination period; the need for mechanisms to manage risks associated with consumption volatility, unforeseen costs, and uncertainty about the cost and timing of the Shoalhaven Transfer Scheme; and the regulatory arrangements for pricing recycled water
- Chapter 4 sets out the Tribunal's assumptions on metered water sales and customer numbers that affect the agencies' expenditure requirements and their ability to recover revenue
- Chapter 5 describes the building block method the Tribunal used to calculate the agencies' notional revenue requirements, and provides an overview of its decisions on the notional revenue requirement for each agency
- Chapters 6 to 8 discuss the findings related to the calculation of the notional revenue requirement over the 2005 determination period in more detail:
 - Chapter 6 explains the Tribunal's assessment of the prudence of the agencies' past capital expenditure and the efficiency of their forecast capital expenditure, which is a key input into the decision on the revenue required for capital investment
 - Chapter 7 explains the Tribunal's findings on the revenue required for capital investment, including an appropriate return on assets and a return of capital (depreciation)
 - Chapter 8 explains the Tribunal's findings on the revenue required for operating expenditure, and for an allowance for the costs associated with working capital
- Chapter 9 sets out the Tribunal's draft decisions on prices for specific water services, and explains its decisions on changing the structure of water supply charges
- Chapter 10 analyses the impact of the pricing decisions for the agencies, their customers, and the environment.

2 BACKGROUND AND CONTEXT FOR THE REVIEW

This chapter discusses a range of factors that affect the metropolitan water agencies' water, wastewater and stormwater operations. These factors have influenced the Tribunal's decisions in relation to each agency's forecast water sales, and forecast capital and operating expenditures, and ultimately its decisions on the maximum prices agencies can charge over the 2005 determination period:

- section 2.1 describes the roles, functions and key operating statistics for all five metropolitan water agencies, including the Sydney Catchment Authority, Sydney Water, and Hunter Water, which are the subject of this report
- section 2.2 discusses the current water supply position in metropolitan NSW
- section 2.3 outlines the various policy and infrastructure initiatives being developed to address the current imbalance between water supply and demand in this region
- section 2.4 provides an overview of water pricing issues that are relevant to this review, including the current pricing levels and the findings of the Tribunal's earlier investigation into price structures
- section 2.5 outlines the changes to Sydney Water's operating licence, made as a result of the Tribunal's recent review of this licence, that may have implications for costs.

2.1 Structure of the metropolitan water industry

The metropolitan water agencies are responsible for providing water, sewerage and some drainage services to almost 5 million people. They service a region that stretches from south of Wollongong to north of Newcastle.

The Sydney Catchment Authority is a wholesale water supplier, while Sydney Water, Hunter Water, Gosford Council and Wyong Council are retail water suppliers. The geographic areas that the retail suppliers cover vary significantly (see Table 2.1), as do the characteristics of the communities they serve. The structure and functions of each metropolitan water agency are summarised below.

Table 2.1 Operating statistics for the metropolitan retail water agencies

	Sydney Water	Hunter Water	Gosford Council	Wyong Council
Operating area (sq km)	13,000	5,366	1,028	827
Estimated population with water supply service	4,197,527	496,346	147,462	145,000
No. of properties with water supply service (including vacant properties)	1,665,073	216,041	64,932	57,187

2.1.1 Sydney Catchment Authority

The Sydney Catchment Authority's two key functions are to manage and protect the city's drinking water catchments and to provide untreated bulk water of a high standard to Sydney Water and a number of smaller customers. It harvests water from the catchments of four major river systems – the Warragamba, Upper Nepean, Woronora and Shoalhaven. It also manages 21 impounding reservoirs, large diameter water mains and open canals.

2.1.2 Sydney Water

Sydney Water is responsible for providing water and wastewater services to some four million people in the greater Sydney area. It also provides stormwater drainage services to more than half a million properties.

Sydney Water purchases bulk water from the Sydney Catchment Authority. It treats and distributes over 1.5 billion litres of water per day via a network of 260 service reservoirs, 152 water pumping stations, 10 water filtration plants and 20,867 km of water mains. It collects and treats more than 1.3 billion litres of wastewater each day through its 23,014 km of sewer pipes in 28 separate sewerage systems with 31 sewerage treatment plants. Sydney Water also provides stormwater drainage facilities through 436 km of stormwater channels.

2.1.3 Hunter Water

Hunter Water provides water and wastewater services to around half a million people in the Lower Hunter region. This region includes the city of Newcastle, and other local centres distributed along the coast and inland.

Hunter Water draws water from three major water sources (Chichester and Grahamstown Dams and the Tomago Sandbeds), which supply around 200 million litres of water per day. It also has access to groundwater sources at Anna Bay and Lemon Tree Passage.

Its water supply system consists of 4,400 km of pipes, 73 reservoirs and 77 pumping stations. Its wastewater transportation system comprises 4,870 km of sewer main pipes, 17 treatment works and 366 pumping stations. It has close to 100 km of stormwater channels.

2.1.4 Gosford Council and Wyong Council

The Tribunal has previously made a determination of water, sewerage and stormwater drainage prices for the Gosford and Wyong Councils for the 2005/06 financial year. These Councils are to submit to the Tribunal in the latter part of the year to enable the Tribunal to determine prices for the period 1 July 2006 to 30 June 2009. As a consequence, the activities and price levels for these Councils do not feature in this report.

2.2 The current water supply position in metropolitan NSW

The capacity of the water system is a major issue for the greater Sydney region. Over the past 20 years, the demand for water in the region has regularly exceeded the sustainable yield of existing infrastructure. In addition, the region is currently experiencing a prolonged drought, which has left many of the dams on which the agencies rely at historically low levels. As a consequence of this, mandatory water restrictions were introduced in October 2003 for Sydney Water customers and level 3 restrictions have recently been announced. Furthermore, Sydney's population is expected to grow considerably over the next 25 years, which will place further pressure on the already stretched infrastructure base.

The Hunter region has been less affected by the drought. Hunter Water's reservoirs are at or close to capacity, and no mandatory water restrictions are in place. However, the drought has further increased community awareness that water is a limited resource.

2.3 Government policy and infrastructure initiatives

The State Government is currently developing policies and implementing programs to ensure the long-term sustainability of water supplies and protect the environment. Current initiatives for the Sydney region include the Metropolitan Water Plan for Sydney, the Metropolitan Recycled Water Strategy, the establishment of a demand management fund (the Water Savings Fund), and a review of the structure of the Sydney water industry. New regulatory requirements to reduce the impact of overflows from sewerage systems on the community and environment are also being implemented. These initiatives are discussed below.

2.3.1 Metropolitan Water Plan

The State Government released its Metropolitan Water Plan for Sydney in October 2004.¹⁷ This plan sets out a range of actions to be implemented over the next 25 years to ensure sustainable water supplies. These actions include short-term drought management measures (such as accessing deep water in the dams and establishing emergency supplies) as well as measures to address the long-term water demand-supply imbalance (such as water recycling and securing additional supplies for the greater Sydney region by increasing the frequency of transfers from the Shoalhaven).

In the immediate term, most of these measures will be undertaken by the Sydney Catchment Authority and Sydney Water. However, the plan also aims to encourage private sector involvement, particularly in the provision of recycled water services.

2.3.2 Metropolitan Strategy: Recycled Water

The Metropolitan Water Plan identified the potential for recycled water to substitute for up to 80GL per year of potable water by 2029. To progress this, the Government is developing a metropolitan strategy for recycled water, which aims to maximise the use of recycled water to replace potable water where feasible.

2.3.3 Water Savings fund

The Government is to establish the Water Savings Fund to stimulate private sector investment in water savings measures and water recycling in the Sydney area, and to increase public awareness and acceptance of the importance of these initiatives. The measures are expected to save between 30 and 80 billion litres of water per year, which represents 5 – 12 per cent of Sydney's total water use. Funds of \$30 million per year over four years will be made available on a contestable basis, through regular public calls for expressions of interest, beginning in late 2005. The fund was announced as part of the Metropolitan Water Plan and will be administered by the Department of Energy Utilities and Sustainability (DEUS). Sydney Water will be required to contribute to the fund.

¹⁷ State Government, *Meeting the challenges: Securing Sydney's water future, The Metropolitan Water Plan*, October 2004.

2.3.4 Review of the industry arrangements for water and wastewater services

One of the key aims of the Metropolitan Water Plan is to encourage the involvement of the private sector in developing innovative solutions to Sydney's water supply/demand imbalance, and in particular the provision of recycled water services. In December 2004, the Government asked the Tribunal (under Section 9 of the IPART Act) to provide independent advice on the pricing and alternative arrangements, including possible private sector involvement, for the delivery of water and wastewater services in the greater Sydney region.

The Tribunal is examining the way in which Sydney Water provides water and wastewater services in the Greater Sydney region, with a view to recommending options for the efficient, effective and sustainable delivery of services. The Tribunal released an issues paper for this review in May 2005.¹⁸

2.3.5 Environment protection licence requirements to reduce sewer overflows

For the 2005 determination period, expenditure in the wastewater area continues to be a major component of capital programs for Sydney Water and Hunter Water. The key drivers of this expenditure are requirements in the agencies' Environment Protection Licences for higher treatment standards and to address environmental and customer impacts of wet weather sewer overflows.

2.4 Pricing issues

The Tribunal has based its decisions on maximum prices on the notional revenue requirement for each agency established using the building block method. However, these decisions draw on a range of analysis and investigations that form the wider context for this review – including an assessment of the current relative pricing levels of the NSW metropolitan water retailers, research on customers' attitudes to water pricing, the results of the Tribunal's investigation into pricing structures, and recent analysis of the long run marginal cost (LRMC) of water in Sydney. Each of these matters is discussed below.

2.4.1 Comparison of prices for water and wastewater services

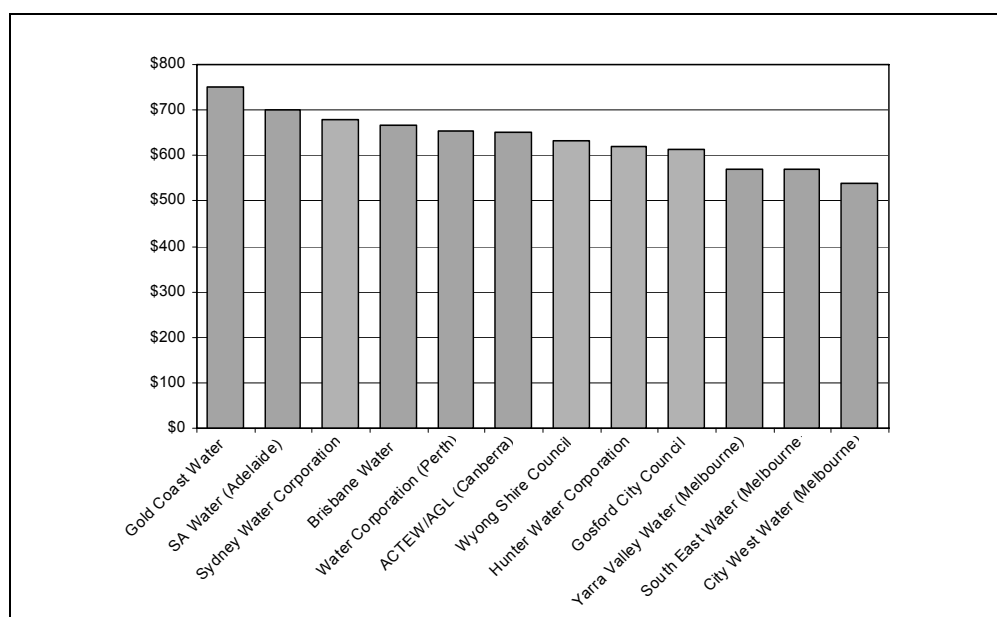
The prices charged for water and wastewater services by each of the four metropolitan water retailers vary. For example, a Sydney Water residential customer using 250kL of water per annum pays around \$47 more a year in total water and wastewater charges than a Wyong Council customer using the same amount of water (Table 2.2). Some of the price variations are due to differences in the costs associated with meeting regulatory standards, and differences in Government policy requirements.

¹⁸ IPART, *Investigation into Water and Wastewater Service Provision in the Greater Sydney Region - Issues Paper*, S9-12, May 2005.

Table 2.2 Residential water and wastewater charges and bills for a customer using 250kL water per annum (\$2004/05)

	Sydney Water	Hunter Water	Gosford Council	Wyang Council
Water usage price (per kL)	1.013	1.01	0.755	0.755
Water service charge (per annum)	77.62	25.37	72.47	82.82
Wastewater usage price (per kL)	Na	0.42 ¹⁹	Na	Na
Wastewater service charge (per annum)	346.66	239.35	352.02	359.25
Environmental Improvement	Na	48.95	Na	Na
Total water and wastewater bill	677.53	618.67	613.24	630.82
Stormwater charge ²⁰	Na	Na	42.00	Na
Total estimated bill	677.53	618.67	655.24	630.82

Compared with the bills in other regions of Australia, current average NSW metropolitan water bills are neither particularly high nor low (Figure 2.1).

Figure 2.1 2004/05 National household water and wastewater bills (250kL/a)

Source: Based on published tariffs.

¹⁹ Only applies to 50 per cent of water consumption.

²⁰ Sydney Water and Hunter Water charge for stormwater services to a limited number of customers. Therefore, their stormwater charge has been excluded for comparison purposes. Wyong Council has no stormwater charge.

2.4.2 Customer attitudes to water pricing

In late 2004, the Tribunal commissioned Taverner Research to conduct a household survey to provide input to the 2005 metropolitan water price review. The survey was designed to explore customer values and attitudes toward water usage and services, and assess the potential acceptability and effectiveness of various pricing options. It covered households served by Sydney Water, Hunter Water, Gosford Council and Wyong Council.

The results of this survey indicated that:

- Most households support the introduction of a two-tier inclining block pricing structure, with nearly two-thirds of respondents (63 per cent) believing that two-tier pricing is fairer than the current system.
- One-in-four households believe water is too cheap, and more than 33 per cent say they would be prepared to pay more for water.
- Almost 40 per cent of households expect that they will reduce their water consumption as a result of any price changes.
- Just over half of all respondents are opposed to a flexible system where prices are higher during a drought and lower when supplies are plentiful, while 41 per cent are in favour of such a system.
- There is strong support for the current mandatory water restrictions. More than 60 per cent of respondents believe the restrictions are about right, and 28 per cent want even tougher controls. Almost 70 per cent support some form of permanent water restrictions.

These results indicate that the current water restrictions are an appropriate measure to encourage water conservation, but that there is scope for introducing stronger pricing incentives to encourage high water consumers to save water.

2.4.3 Tribunal's investigation into price structures

In September 2003, the Premier asked the Tribunal to investigate alternative structures for retail and wholesale water prices, to assess their potential to reduce demand for water in the Sydney Basin. The investigation was to inform the Government's broad water policy development process, and to provide input to this price review.

A key finding of the investigation was that the most suitable price structure for Sydney at the present time is likely to be an 'inclining block' structure that includes a two-tiered variable usage charge and a lower fixed access charge. The Tribunal found that this price structure could potentially be used to send a strong signal about the need to reduce water consumption that particularly targets discretionary water consumption. In addition, it concluded that the potential adverse impacts of this price structure on vulnerable customers could be minimised by setting the consumption level at which the higher tier 2 usage charge applies (the step quantity) at a level that ensures that the bulk of households can meet their basic, non-discretionary needs without incurring this charge.

The Tribunal concluded that it may be appropriate to increase the level of the usage charge to send a stronger signal about the scarcity of all water and, in particular, to set the charge with reference to a reliable estimate of the long run marginal cost (LRMC) of achieving and maintaining a supply/demand balance.

2.4.4 Long run marginal cost of water supply

Economic theory suggests that water prices should be set at the LRMC of supply to achieve efficiency. The LRMC represents the incremental cost of funding measures to bring the demand and supply of water into balance.

The Tribunal has previously stated that its preference is to set water prices with reference to the LRMC. However, attempting to calculate the LRMC can be complex and uncertain. It involves estimating the costs and water savings associated with available demand management and supply augmentation options.

The Government's Metropolitan Water Plan provides a basis for determining these costs. The Tribunal engaged a consultant to undertake preliminary work to estimate a range for the LRMC based on different scenarios for the Greater Sydney region. This preliminary work suggests that the LRMC of water supply in Sydney is likely to be in the range of \$1.20 to \$1.50/kL (\$2004/05), which means that current water usage prices are lower than the LRMC of water supply.²¹

2.5 Operating licence review

The Tribunal is responsible for administering the operating licences for the Sydney Catchment Authority, Sydney Water and Hunter Water, and monitoring the agencies' compliance with these licences. Operating licences are key instruments for regulating the agencies' operating performance and ensuring their accountability. Water and wastewater prices are set to allow the agencies to recover the efficient costs of meeting their operating licence obligations, including agreed standards of service and demand management initiatives.

The Tribunal has recently completed its review of Sydney Water's Operating Licence, which led to amendments to the licence. It is currently reviewing the Sydney Catchment Authority's Operating Licence. This review is expected to be completed and a new Licence in place by 1 January 2006.

Key changes to Sydney Water's operating licence that will affect the agency during the 2005 determination period include:

- **Asset management.** New asset management requirements were introduced into the licence to ensure the maintenance of service delivery capacity over the long term. These requirements comprise an asset management obligation, reporting requirements and auditing arrangements.

²¹ For further discussion of the issues associated with LRMC, see the Tribunal's Investigation into Price Structures to Reduce Demand for Water in the Sydney Basin (July 2004).

- **Water leakage.** Reducing leakage from Sydney's water supply system is part of the Metropolitan Water Plan. A leakage target for Sydney Water of 105ML/day by 2008/09 was introduced into its licence at the last review. The leakage target is supplemented by performance measures and a requirement to expedite a bulk meter installation program.
- **Response time for water main breaks.** New targets for Sydney Water's response time for water main breaks.
- **More closely integrating the Tribunal's water licensing and pricing functions.** At present, Sydney Water's compliance with the operating licence is enforced through annual audits and potentially severe statutory penalties for breaches of licence conditions. The Tribunal included a more comprehensive set of indicators in the licence, to assist with monitoring performance.

3 DECISIONS ON THE REGULATORY FRAMEWORK

In addition to deciding on maximum prices for monopoly services over the determination period, the Tribunal has taken a number of other regulatory decisions including decisions on:

- the length of the determination period
- the need for a mechanism to address the risks associated with variations between the agencies' forecast consumptions used in setting prices and their actual consumptions
- the need for a cost pass-through mechanism to address the risks associated with unforeseen costs
- the need for a mechanism to address the risks associated with uncertainty about the timing and cost of the Shoalhaven Transfer Scheme
- the regulatory arrangements for pricing recycled water.

Each of these decisions and the Tribunal's deliberations in reaching them are discussed below.

3.1 Length of determination period

For the Sydney Catchment Authority and Sydney Water, the Tribunal's draft decision is that the length of the determination period will be 3 years and 9 months, starting on 1 October 2005 and ending 30 June 2009. For Hunter Water, its draft decision is that the determination period will be 3 years and 8 months, starting from 1 November 2005 and ending on 30 June 2009.

In deciding on the length of the 2005 determination period, the Tribunal considered the incentives for efficiency improvement, the predictability and stability of the regulatory environment, and the effectiveness of regulation. In general, a longer determination period provides:

- greater incentives for achieving increased efficiency, by allowing agencies to retain more of any gains (in the form of higher profits) that arise from cost reductions
- a more stable and predictable regulatory environment, which may lower agencies' business risk and lead to better investment decisions
- lower regulatory costs.

However, a longer determination period can also have undesirable impacts, including:

- delaying the delivery of benefits from efficiency gains to consumers
- increasing the risk that industry and technological changes (and other factors) will create significant disparities between costs and revenues.

As foreshadowed in the issues paper for this review, the Tribunal also took into account agency and shareholder inputs, forward financial projections and the adequacy of available information.²²

²² IPART, *Review of Metropolitan Agency Water Prices from 1 July 2005 - Issues Paper*, p 5.

The water agencies prepared submissions based on a four-year determination period. In previous determinations for other industries, the Tribunal has generally opted for a five-year period, but it has decided on shorter periods when the regulated industry is undergoing change or there is uncertainty within the industry or the business.

For this determination, the Tribunal believes that a determination period of approximately four years will strike the appropriate balance between providing incentives for improving efficiency, reducing regulatory uncertainty, and minimising the risk that changes in the industry will affect the appropriateness of the determination.

3.2 Mechanism to address metropolitan water agency risks associated with variation between forecast and actual consumption

The Tribunal's draft finding for each agency is that, where the difference between the forecast water consumption used to set prices for the 2005 determination period and actual water consumption for this period is greater than a defined 'deadband', it may consider adjusting the revenue requirement for the subsequent determination to account for the effect of the difference.

In addition, the Tribunal's draft finding is that the manner in which this adjustment is made will be determined during the subsequent determination period.

In its issues paper for this review, the Tribunal noted that it would consider the need for a mechanism to address forecasting risk and revenue volatility of the water agencies. The Tribunal invited comment on the need for, and the form of, possible revenue volatility adjustment mechanisms to address variations between the forecast consumption used to set prices and actual consumption.

Sydney Water proposed an annual revenue adjustment mechanism to account for any revenue excess or shortfall due to a difference between forecast and actual consumption above/below a 10 per cent 'deadband'.²³ It also proposed a final 'wash-up' adjustment as part of the price review for the subsequent determination, to account for any revenue excess/shortfall not already accounted for.

The Sydney Catchment Authority agreed that the Tribunal should consider a mechanism to address forecast risk. It supported an adjustment in the subsequent determination period, based on the cumulative difference between forecast and actual consumption that was above or below a 2–3 per cent deadband. It proposed that the adjustment should be referenced to the cumulative unsmoothed revenue requirement.

The Tribunal considered several options to address the impact of consumption volatility, including:

- the current position, where no adjustment is made for demand variation
- price adjustment in the subsequent determination period to account for variation outside a certain deadband

²³ The "deadband" refers to the consumption variation within which no adjustment would be required. That is, if consumption is less than 90 per cent of the forecast consumption or greater than 110 per cent of the forecast consumption the adjustment would apply.

- annual price adjustment mechanism to account for variation outside a deadband of +/-10 per cent, combined with a final wash-up adjustment as part of the subsequent determination for all variations unrecovered/not passed through (Sydney Water's proposal).

The Tribunal assessed the implications of these options for pricing certainty, efficient risk allocation and financial performance. Its assessment of the customer price implications and the risk allocation is set out in Table 3.1.

Table 3.1 Price implications and risk allocation for consumption volatility mechanisms

Option	Price implications for customers	Risk allocation
Status Quo	None	100% to agency
Adjustment in the subsequent determination period	If the deadband is breached, the adjustment occurs in the subsequent determination period	Consumption within the deadband allocated to the agency, the remainder to customers
Sydney Water's proposal	Adjustments in the current determination period for breaches of the deadband, and a wash-up adjustment in subsequent determination period	100% to customers

Based on this assessment, the Tribunal considers that the status quo option may result in excessive risk being borne by the agencies. It considers that Sydney Water's proposal is contrary to its objectives of pricing certainty, and effectively allocates all risk to customers. Therefore, on balance, the Tribunal considers that the following approach is likely to be the most appropriate way to address the risks associated with revenue volatility due to consumption variation:

- To give consideration to adjusting subsequent determination period revenue for losses (or gains) of revenue associated with differences between forecast and actual consumption in the 2005 determination period, but only if variations are above or below a deadband of, say, 10 per cent. The level of the deadband will be based on analysis of variations between:
 - actual and forecast consumption over the last five years
 - forecast consumption over the 2005 determination period based on restricted and unrestricted assumptions.
- The Tribunal will consider and approve the manner of any adjustment under this mechanism during its review of prices for the subsequent determination period.

3.3 Cost pass-through mechanism for unforeseen costs

The Tribunal's draft finding is not to introduce a general cost pass-through mechanism. However, it is prepared to consider re-opening the 2005 determination under the IPART Act in the event that there are changes in certain taxation, Government policy or regulatory obligations that give rise to costs or cost savings that are significantly greater than allowed for in this determination.

The Tribunal considered Sydney Water's proposal to introduce a mechanism to deal with material non-controllable external events. It also considered the Sydney Catchment Authority's proposal for a cost pass-through mechanism to manage the risks of material non-controllable external events, such as those relating to regulatory, licence or Government policy obligations. Under this proposal, prices would be adjusted within the determination period in response to pre-specified trigger events.

The IPART Act does not allow the Tribunal to review costs for the water sector during a determination period without reopening the determination. This means that without such a reopening, the costs associated with the pass-through event would be passed through without being subject to scrutiny by the Tribunal. This would be inconsistent with the cost pass-through mechanisms the Tribunal has adopted in the electricity sector, and with the Tribunal's approach to regulation.

For these reasons, the Tribunal's draft decision is that it will not introduce a mechanism to pass through unforeseen costs. However, it is willing to consider an agency request to reopen the determination under the IPART Act in the event that there are material differences in costs associated with changes in certain taxation, Government policy²⁴ and regulatory obligations.

The Tribunal considers that reopening the determination should be possible to address both increases and decreases in costs. That is, if a tax, Government policy or regulatory event occurs that materially decreases a water agency's costs, then the Tribunal may reopen the determination with a view to passing cost savings on to customers.

3.4 Mechanism to address risks associated with uncertainty about the Shoalhaven Transfer Scheme

The Tribunal's draft decision is to adjust the Sydney Catchment Authority's revenue requirement in the subsequent determination period to account for any unspent monies allowed by the Tribunal in this determination for the Shoalhaven Transfer Scheme.

There is significant uncertainty about the timing and level of the Sydney Catchment Authority's forecast capital expenditure on the Shoalhaven Transfer Scheme. To address the risks associated with this uncertainty, the Tribunal considered a number of options for recovering costs and adjusting prices if the agency's actual expenditure on this Scheme is less than that allowed for in the determination.

The Tribunal concluded that it would allow for the efficient forecast costs of the project in the 2005 determination. If changes to the timing and scope of the project result in the actual costs being lower than these forecast costs, the agency's revenue requirement in the subsequent determination period will be adjusted to reflect the cost difference. This means that the cost savings will be passed through to customers in the subsequent determination period.

The Tribunal considers that, in general, an end of period adjustment mechanism may encourage agencies to propose highly uncertain projects and to overstate costs. Therefore, its draft decision is to limit the scope of this mechanism to the Shoalhaven Transfer Scheme.

²⁴ Such as a government direction to construct a desalination plant.

3.5 Regulatory arrangements for pricing recycled water

Other than for Sydney Water's Rouse Hill development, the Tribunal has not previously set recycled water charges even though it has accepted the view that it has the power to do so. In the issues paper for this review, it foreshadowed that it would reconsider its approach to pricing recycled water after considering the pricing principles that Sydney Water submitted to the review and any other proposals related to recycled water.

However, since the issues paper was released, the State Government has released its Metropolitan Water Plan (see section 2.3.2), which identified the potential for recycled water to substitute up to 80GL per year of potable water. To progress this issue, DIPNR is currently leading a taskforce to develop a metropolitan strategy for recycled water.

In addition, the Tribunal has been asked to undertake a Section 9 review of the Sydney's water industry structure. This review is considering the pricing and alternative arrangements for the delivery of water and wastewater services in the greater Sydney region, which will have implications for recycled water pricing. It is scheduled for completion in late 2005.

Both of these developments have important implications for recycled water pricing. Accordingly, the Tribunal has decided that, apart from the Rouse Hill development, it will not consider recycled water pricing as part of the 2005 review of metropolitan water prices. Rather, it will make a determination on recycled water pricing following the completion of its Section 9 inquiry.

4 TRIBUNAL'S FINDINGS ON FORECAST METERED WATER SALES AND CUSTOMER NUMBERS

The Tribunal needs to consider the agencies' forecast metered water sales and customer numbers over the determination period for two reasons:

- First, under the building block method for calculating notional revenue requirements, underlying assumptions about how the demand for water and wastewater services will grow over the determination period affect the agencies' forecast capital and operating costs. The Tribunal's findings on efficient levels of capital and operating expenditure (discussed in Chapter 6) need to reflect reasonable assumptions about this growth – particularly growth in the number of water and sewerage connections and the volume of water sales.
- Second, once the Tribunal has decided on the revenue requirement for each agency, it sets the prices of individual services (discussed in Chapter 9) by taking into account this revenue requirement and forecast water sales and customer numbers. If these forecasts are not reasonable, there is a risk that the prices the Tribunal sets will lead to the agency significantly over or under recovering its required revenue.

The Tribunal is concerned that forecasts that unduly understate demand will result in customers paying prices that exceed efficient levels, while unduly high forecasts may result in the agencies not earning a sustainable revenue stream over the determination period. Therefore, it has sought to ensure that the forecasts on which the pricing determinations are based have been subject to rigorous, systematic and objective review. It engaged McLennan Magasanik Associates (McLennan Magasanik) to independently review the agencies' forecasts for the period 2004/05 to 2009/10, and to provide alternative forecasts where necessary. McLennan Magasanik finalised its report and recommendations in December 2004.

This chapter explains the Tribunal's draft findings on the metered water sales forecasts and customer numbers to be used in establishing the cost building blocks and setting prices for the respective agencies. Section 4.1 provides a summary of its findings on forecast metered water sales. Section 4.2 discusses the key factors that influence metered sales, and the uncertainty surrounding many of these factors. The remaining sections explain the Tribunal's considerations in making its findings on each agency's forecasts for metered sales and customer numbers.

4.1 Summary of Tribunal's draft findings on metered water sales

The Tribunal's draft finding is to adopt the metered water sales forecasts shown in Table 4.1 when setting prices for 2005/06 to 2008/09.

Table 4.1 Metered water sales forecasts adopted in draft determination (ML)

Financial year	2005/06	2006/07	2007/08	2008/09
Sydney Water	527,702	529,857	529,589	525,686
Hunter Water	62,697	62,752	63,128	63,646
Sydney Catchment Authority	591,802	591,957	586,689	577,786

4.2 Key factors influencing water consumption

As part of its review, McLennan Magasanik noted a range of key factors that will influence the demand for water, wastewater and stormwater drainage services over the 2005 determination period. These factors include:

- **Population growth**, which is a key driver of growth in residential water demand. Sydney Water has forecast population growth of 1.0 per cent per annum over the 2005 determination period, compared with the historical 0.8 per cent per annum growth. Hunter Water has forecast population growth of 0.5 per cent in the 2005 determination period, compared with approximately 0.7 per cent growth during the 2003 determination period.
- **Household formation patterns and dwelling density**, particularly the shift towards multi-unit dwellings and flats, which affect residential water consumption. The proportion of multi-unit dwellings has increased over the last 10 years. In addition, the trend towards smaller households increases internal water usage on a per capita basis (although the difference is likely to be relatively small),²⁵ and potentially reduces external water usage.
- **Economic growth rates**, which affect water usage in several ways. High economic growth will accelerate other trends such as the purchase of more efficient appliances. Economic growth and process and plant efficiency are significant factors in determining the future trends of non-residential water consumption. Conversely, experience shows that higher real incomes brought about by favourable economic conditions result in increased water use.
- **Pricing structure and level**. The price structures and levels that the Tribunal determines will have some effect on water consumption.
- **Trends in appliance purchases and usage**, which affect residential water consumption. There has been a move towards the installation of larger appliances in residences, such as spa baths, which can increase water usage. The installation of automatic sprinkler systems is also likely to increase water usage.²⁶ Countering this has been the trend towards more water efficient appliances, such as dual-flush toilets and low-flow showerheads and, more recently, front-loading washing machines.
- **Demand management programs**. There has been an increased effort by most agencies to invest in actions and programs that will reduce demand. Examples include Sydney Water's Every Drop Counts program. In addition, Government initiatives such as the BASIX program also seek to reduce demand.
- **Weather and the impact of current and proposed water restrictions**. External water usage is strongly influenced by weather and water restrictions, while internal water usage is affected to a lesser degree. Water restriction policies affect consumption while the restrictions are in place, and have a residual effect for a period after the restrictions are lifted.

However, there is considerable uncertainty about the likely impact of several of these drivers. This price review was undertaken during a period of extensive debate about water resources and conservation measures in NSW. There is uncertainty about the duration of the drought currently affecting the Sydney Basin, and whether the water restrictions imposed on

²⁵ WA Water Corporation, 2003, *Domestic Water Use Study in Perth, Western Australia 1998-2001*, Perth, March.

²⁶ Ibid.

customers in these areas will continue to apply, be strengthened or be removed over the determination period.

4.3 Tribunal's considerations on metered sales forecasts

In making its draft decisions on each agency's metered water sales forecasts, the Tribunal considered the submissions it received from the agencies and other stakeholders, McLennan Magasanik's findings and recommendations, and its own analysis. In relation to Sydney Water and the Sydney Catchment Authority, the Tribunal also took into account the impact that its draft decisions on prices are likely to have on forecast sales.

4.3.1 Analysis of agencies' historic demand and forecasting performance

As Table 4.2 shows, the Sydney Catchment Authority's and Sydney Water's actual and projected metered sales were lower than the forecasts the agencies submitted for the 2003 mid-term review and 2003 determination respectively. They were also lower than the forecasts the Tribunal adopted for those determinations. Both the agencies and the Tribunal did not take into consideration the impact of the water restrictions on metered sales.

Hunter Water's actual and projected metered sales were very similar to the forecasts submitted by the agency and adopted by the Tribunal. This may be because Hunter Water's area of operations was not as severely affected by the drought as the Sydney Basin, as it has had more rain and its water storages are at reasonable levels.

Table 4.2 Forecast and actual metered water sales over the current determination period (GL)

Financial Year	2002/03	2003/04	2004/05
Sydney Catchment Authority			
Agency forecast 2003	616	606	588
Tribunal mid-term review 2003	616	606	588
Actual (2002/03 and 2003/04) and projected (2004/05) sales	636	560	562
Sydney Water			
Agency forecast 2003	533	533	517
Tribunal determination 2003	533	533	517
Actual (2002/03 and 2003/04) and projected (2004/05) sales	550	492	496
Hunter Water			
Agency forecast 2003	64	61	62
Tribunal determination 2003	64	62	62
Actual (2002/03 and 2003/04) and projected (2004/05) sales	65	62	60

In making its findings on metered water sales to be used for setting prices for the 2005 determination, the Tribunal has taken account of:

- the impact of the current drought on the Sydney Catchment Authority and Sydney Water
- the impact of the measures Sydney Water is undertaking to manage demand
- the longer term history of consumption patterns and drought cycles
- the relative stability of Hunter Water's metered sales volumes.

4.3.2 Agency forecasts, McLennan Magasanik findings and Tribunal's draft findings on metered water sales forecasts

Table 4.3 sets out the metered water sales forecasts submitted by the agencies, those recommended by McLennan Magasanik, and the Tribunal's draft findings on the metered water sales to be used to set prices for the 2005 determination period.

Table 4.3 Metered water sales forecasts submitted by agencies versus Tribunal's draft findings (ML)

Financial Year	2005/06	2006/07	2007/08	2008/09
Sydney Water				
Sydney Water original submission ²⁷	527,041	521,768	515,993	508,554
McLennan Magasanik base case without IBT ²⁸	531,476	533,920	532,904	529,289
McLennan Magasanik base case with IBT	527,702	529,857	529,589	525,686
Tribunal draft finding	527,702	529,857	529,589	525,686
Hunter Water				
Hunter Water submission	61,640	62,250	63,220	64,190
McLennan Magasanik baseline	62,902	63,191	63,838	64,782
McLennan Magasanik with Demand Management	62,697	62,752	63,128	63,646
Tribunal draft finding	62,697	62,752	63,128	63,646
Sydney Catchment Authority				
Sydney Catchment Authority submission	591,100	583,100	573,100	561,100
McLennan Magasanik base case (without SWC IBT)	595,576	596,020	590,024	581,389
McLennan Magasanik base case (with SWC IBT)	591,802	591,957	586,689	577,786
Tribunal draft finding	591,802	591,957	586,689	577,786

The agencies' forecasts reflect the agencies views on restrictions and the effect of demand management measures (which become more effective in the latter years of the 2005 determination period) over the forecast period. However, as McLennan Magasanik noted, the agencies use different approaches to forecasting.

²⁷ The metered water sales forecast in Sydney Water's original submission was consistent with the Metropolitan Water Strategy and assumed that restrictions would be lifted before the commencement of the new price path. The agency subsequently provided a supplementary forecast incorporating the impact of restrictions in the first year.

²⁸ Inclining block tariff.

The Sydney Catchment Authority's forecasts are based on the forecasts of its customers, particularly Sydney Water. McLennan Magasanik found this to be appropriate, given Sydney Water buys 99 per cent of the water the Sydney Catchment Authority supplies. However, McLennan Magasanik also noted that the Sydney Catchment Authority should play a greater role in critically reviewing Sydney Water's forecasts, particularly in the area of demand management.

Sydney Water's forecasts are consistent with the Metropolitan Water Strategy, in that they are based on the assumption that restrictions will be lifted before the commencement of the 2005 determination period. McLennan Magasanik's noted the uncertainty surrounding the duration of restrictions. Therefore it recommended two forecasts based on different assumptions—the first assumed that water restrictions are in place and calculated consumption scenarios with and without an inclining block tariff (IBT); the second mirrored Sydney Water's assumption that water restrictions are lifted and calculated consumption scenarios with and without an IBT.

While Sydney Water does not contest most of McLennan Magasanik's analysis, it disagrees about the following two issues:

- **The effect of the BASIX initiative for new houses on water savings.** McLennan Magasanik has incorporated a lower saving (35 per cent) compared to Sydney Water's assumption of 40 per cent relative to the average household. The different assumptions are driven by different views on factors such as the use of recycled water and the effect of dual-flush toilets. In addition, McLennan Magasanik has applied the reduced saving to a lower number of households; it based its household growth assumption on the mid-point between DIPNR's and the Housing Industry Association's forecast. Sydney Water's forecasts are based on the DIPNR forecast.
- **The savings from Every Drop Counts (EDC) program.** McLennan Magasanik noted that there are two valid approaches for calculating savings from the EDC program: estimated savings based on expenditure (Sydney Water's approach) and savings based on current experience. The two approaches provide different results. In the absence of any further information indicating which is better, McLennan Magasanik has taken the mid-point between the two results.

Hunter Water's forecast did not consider demand management and water savings programs. The forecast was derived using estimated average consumption figures. McLennan Magasanik developed a baseline forecast for Hunter Water and then adjusted this forecast to take account of demand management programs.

The Tribunal notes that McLennan Magasanik's final report ultimately found that the forecasts submitted by each agency were reasonable. However, it did differ in its application of some elements of the forecasts and provided alternative forecasts for each agency for the purposes of the 2005 price review.

The Tribunal believes that it is important that the metered water sales forecasts used to set prices reflect consistent underlying assumptions and approaches. One important assumption relates to how the implications of the current drought and water restrictions are factored into the agencies' forecasts. When considering this issue, the Tribunal was mindful of its previous position that consumers should not face increased prices because of temporary restrictions.

In the case of Sydney Water and the Sydney Catchment Authority, the Tribunal notes that the current agencies' expectation is that restrictions will be lifted approximately one year into the 2005 determination period. Given this, the Tribunal considers that these restrictions should be seen as temporary restrictions. Therefore, consistent with its previous position on this issue, it believes that restrictions should not be factored into these agencies' forecasts to be used in setting prices for the 2005 determination.

For all the reasons outlined above, the Tribunal decided to adopt McLennan Magasanik's recommended forecasts assuming no restrictions will apply for the Sydney Catchment Authority²⁹ and Sydney Water, and its recommended forecasts taking into account the effect of demand management for Hunter Water.

4.4 Tribunal's assumptions on growth in customer numbers

To set prices for the 2005 determination period, the Tribunal needs to make assumptions about the growth in customer numbers. The Tribunal bases its findings about what assumptions are reasonable on the forecasts and information about growth in residential and non-residential property numbers provided by the agencies as part of their annual information returns. The Tribunal considers that each agency's forecast is generally appropriate for the purposes of this determination.

Table 4.4 below summarises Sydney Water's and Hunter Water's forecasts of growth in residential and non-residential properties in their areas of operations. The Tribunal has used these projections in setting prices for the 2005 determination.

²⁹ In reviewing the consumption forecasts, the Tribunal noted a small error in McLennan Magasanik's calculation of Sydney Catchment Authority's forecast. The McLennan Magasanik model had assumed all of Sydney Water's bulk water requirements would be provided by Sydney Catchment Authority. However, Sydney Water does receive a small amount of bulk water from other sources. Therefore, the Tribunal has adjusted the McLennan Magasanik forecast for the Sydney Catchment Authority to reflect this.

Table 4.4 Agency forecasts of residential and non-residential properties

Financial year	2005/06	2006/07	2007/08	2008/09
Sydney Water				
<i>Customer base - water supplies</i>				
Total residential properties	1,625,617	1,652,871	1,679,871	1,706,871
Total non-residential properties	121,246	123,246	125,246	127,246
Total properties	1,746,863	1,776,117	1,805,117	1,834,117
<i>Customer base - wastewater services</i>				
Total residential properties	1,578,327	1,605,327	1,632,327	1,659,327
Total non-residential properties	111,747	113,747	115,747	117,747
Total properties	1,690,074	1,719,074	1,748,074	1,777,074
<i>Customer base - stormwater drainage services</i>				
Total residential properties	432,139	442,139	452,139	462,139
Total non-residential properties	41,899	43,899	45,899	47,899
Total properties	474,038	486,038	498,038	510,038
Hunter Water				
<i>Customer base - water supplies</i>				
Total residential properties	208,278	210,787	213,429	216,071
Total non-residential properties	13,286	13,336	13,386	13,436
Total properties	221,564	224,123	226,815	229,507
<i>Customer base - wastewater services</i>				
Total residential properties	199,743	202,252	204,894	207,536
Total non-residential properties	10,886	10,929	10,973	11,016
Total properties	210,629	213,181	215,867	218,552
<i>Customer base - Stormwater drainage services</i>				
Total residential properties	60,851	61,248	61,644	62,041
Total non-residential properties	3,607	3,607	3,607	3,607
Total properties	64,458	64,855	65,251	65,648

5 ESTABLISHING THE NOTIONAL REVENUE REQUIREMENT FOR REGULATED SERVICES

One of the key inputs to the Tribunal's decisions on maximum prices is its calculation of the amount of revenue required by each agency to efficiently provide water, wastewater and stormwater drainage services. This amount is known as the agency's 'notional revenue requirement'.³⁰

As Chapter 1 discussed, the Tribunal used the building block method to calculate each agency's notional revenue requirement for the 2005 determination period. This method entails estimating the amount of revenue the agency needs to cover its 'cost blocks', then adding these amounts together. The cost blocks include:

- **Operating and maintenance expenditure.** This cost block represents the Tribunal's assessment of the agency's efficient level of operating and maintenance costs associated with providing regulated water services to the required standards
- Capital investment, which is based on two cost blocks:
 - **An allowance for a return on assets.** This cost block represents the Tribunal's assessment of the opportunity cost of capital invested in the agency by its owner. It is derived by multiplying the value of the agency's regulatory asset base (RAB) by an appropriate rate of return. The value of the RAB is established by 'rolling forward' the RAB used in making the current determination, to incorporate the agency's past capital expenditure that the Tribunal deems was prudent and its forecast capital expenditure that the Tribunal considers to be efficient (net of asset disposals and regulatory depreciation). The rate of return is established by using the Weighted Average Cost of Capital approach to determine a range for this rate, then making a judgement about what rate within the range is most appropriate, having regard to the matters in Section 15 of the IPART Act.
 - **A return of capital (depreciation).** This cost block represents the Tribunal's assessment of the agency's efficient level of costs in maintaining its capital asset base. It is calculated using straight-line depreciation on the RAB.
- **An allowance for the costs associated with working capital.** This cost block represents the Tribunal's assessment of the agency's costs of maintaining an investment in working capital. It is derived by calculating the agency's working capital, then multiplying it by the rate of return used for calculating the allowance for a return on assets.

The sections below provide a summary of the Tribunal's draft findings on the notional revenue requirement to be used in setting prices for each agency, and compare these findings to the agencies' forecast revenue requirements. Detailed discussion of the Tribunal's findings in relation to the revenue required to recover the individual cost blocks is provided in the following chapters. Chapters 6 and 7 explain findings related to revenue required for capital investment, including those on the prudence of past capital expenditure and the efficiency of forecast capital expenditure, an allowance for a return on assets, and a return of

³⁰ The "notional revenue requirement" is an input to the price setting process whereas the "target revenue" is an output of the price setting process. The Tribunal uses the notional revenue requirement in conjunction with assumptions about each agency's metered sales (see in Chapter 4) in setting prices. It also considers the factors listed in Section 15 of the IPART Act (see section 1.2). The target revenue is the actual revenue that the Tribunal expects the agency to recover based on the prices it has set.

capital (depreciation). Chapter 8 explains findings on efficient operating expenditure and an allowance for the costs associated with working capital.

5.1 Summary of draft findings on notional revenue requirements

The Tribunal's draft findings on the agencies' notional revenue requirements to be taken into account in setting prices for the 2005 determination period are set out in Table 5.1.

The Tribunal considers that these notional revenue requirements will enable each agency to recover the efficient costs of providing the services on a sustainable basis while maintaining appropriate standards of quality, reliability and safety, and to earn an appropriate rate of return.

Table 5.1 Tribunal's draft finding on notional revenue requirements for Sydney Catchment Authority, Sydney Water and Hunter Water (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority	148.7	157.4	163.0	167.5	636.6
Sydney Water	1,475.4	1,499.0	1,524.1	1,544.5	6,043.0
Hunter Water	148.2	150.9	154.1	156.9	610.1

While the determination will apply from 1 October 2005 for the Sydney Catchment Authority and Sydney Water, and from 1 November for Hunter Water, the forecasts, information and advice considered by the Tribunal applied for the financial year commencing 1 July 2005.

The Tribunal notes that these findings specifically recognise the significant adjustments to prices required in the longer term, to reflect fundamental changes in expenditure requirements and/or consumption. These findings also recognise the need for transitional arrangements to balance and manage the impact of these adjustments on customers and other stakeholders.

5.2 Tribunal's findings compared with agencies' proposed revenue requirements

Table 5.2 sets out the forecast revenue requirements included in the agencies' proposals broken down into cost blocks, and compares them with the Tribunal's draft findings on the base case notional revenue requirements.³¹

In relation to the Sydney Catchment Authority, the Tribunal's finding on the overall revenue requirement is \$1.6 million (or 0.3 per cent) more than the agency forecast for the whole determination period. For Sydney Water, it is \$378 million (or 5.9 per cent) less and for Hunter Water, it is around \$2.1 million (or 0.3 per cent) more than these agencies forecast for the whole determination period. In all cases, the Tribunal's findings reflect its views on the efficient level of operating expenditure and efficient costs of financing capital investment for each agency.

³¹ This revenue requirement reflects a case where the full rate of return is recovered in every year. It does not reflect the price structure determined by the Tribunal.

**Table 5.2 Agencies' forecast notional revenue requirements compared to Tribunal's draft findings, 2006 to 2009
(\$ million, 2004/05)**

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority					
Agency forecast³²					
Operating expenditure	79.7	81.1	81.3	80.2	322.4
Return of capital (depreciation)	13.3	14.7	15.9	16.9	60.7
Allowance for return on assets	48.5	57.3	68.7	82.9	257.4
Allowance for costs associated with working capital	-	0.1	0.1	0.1	0.3
Less other regulatory revenue	-1.5	-1.5	-1.5	-1.5	-6.0
Notional revenue requirement	140.2	151.7	164.5	178.6	635.0
Tribunal's draft finding					
Operating expenditure	79.6	79.7	78.2	76.1	313.6
Return of capital (depreciation)	13.2	14.4	15.6	16.6	59.8
Allowance for return on assets	57.7	64.5	70.5	75.7	268.5
Allowance for costs associated with working capital	-0.3	0.2	0.2	0.5	0.7
Other regulatory revenue	-1.5	-1.5	-1.5	-1.5	-6.0
Notional revenue requirement	148.7	157.4	163.0	167.5	636.6
<i>Difference between Tribunal's draft finding and Agency forecast</i>	<i>8.5</i>	<i>5.7</i>	<i>-1.5</i>	<i>-11.1</i>	<i>1.6</i>
Sydney Water					
Agency forecast³³					
Operating expenditure (including Sydney Water estimates of bulk water costs)	883	882	883	889	3537
Return of capital (depreciation)	116	123	129	133	501
Allowance for return on assets (including working capital)	553	582	611	636	2382
Notional revenue requirement	1,552	1,587	1,623	1,658	6,420
Tribunal's draft finding					
Operating expenditure (including the Tribunal's determination of bulk water costs)	882	880	879	871	3512
Return of capital (depreciation)	108	113	117	123	460
Allowance for return on assets	481	502	522	544	2,050
Allowance for costs associated with working capital	4	5	6	6	21
Notional revenue requirement	1,475	1,499	1,524	1,544	6,043
<i>Difference between Tribunal's draft finding and Agency forecast</i>	<i>- 77</i>	<i>- 88</i>	<i>- 99</i>	<i>- 113</i>	<i>- 378</i>

³² Agency forecast has been adjusted to reflect the Tribunal's inflation estimates for comparison purposes.

³³ Ibid.

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Hunter Water					
Agency forecast³⁴					
Operating expenditure	69.0	69.5	70.5	71.5	280.5
Return of capital (depreciation)	15.0	15.6	16.3	16.9	63.7
Allowance for return on assets	61.1	63.9	66.8	69.4	261.1
Allowance for costs associated with working capital	0.6	0.6	0.7	0.8	2.7
Notional revenue requirement	145.6	149.6	154.3	158.5	608.0
Tribunal's draft finding					
Operating expenditure	68.8	68.7	69.2	69.1	275.8
Return of capital (depreciation)	14.9	15.4	15.9	16.4	62.6
Allowance for return on assets	63.8	66.0	68.2	70.5	268.5
Allowance for costs associated with working capital	0.7	0.8	0.8	0.9	3.2
Notional revenue requirement	148.2	150.9	154.1	156.9	610.1
<i>Difference between Tribunal's draft finding and Agency forecast</i>	<i>2.6</i>	<i>1.3</i>	<i>-0.2</i>	<i>-1.6</i>	<i>2.1</i>

The differences between the agencies' forecasts and the Tribunal's draft findings on their overall revenue requirements are primarily due to the Tribunal's findings that it was appropriate to:

- apply additional efficiencies to the forecast operating expenditure, which reduced the required revenue for operating expenditure
- re-phase the forecast operating expenditure for Sydney Water
- adjust Sydney Water's estimate of its bulk water costs to reflect the Tribunal's draft decision on the Sydney Catchment Authority's charges
- apply efficiencies to the forecast capital expenditure, which reduced the required revenue for a return on assets and a return of capital (depreciation)
- re-phase the capital expenditure for Sydney Water and Hunter Water, the main effect of which was to change the profile of the required revenue for the capital expenditure cost block within the 2005 determination period
- allow a lower rate of return on capital than proposed or assumed by the Sydney Catchment Authority and Sydney Water (both agencies proposed 6.5 per cent compared with the Tribunal's draft finding of 6.1 per cent – see chapter 7).

³⁴ Ibid.

6 TRIBUNAL'S ASSESSMENT OF AGENCIES' PAST AND FORECAST CAPITAL EXPENDITURE

The Tribunal considered each agency's actual capital expenditure during the current determination period and forecast expenditure for the 2005 determination period, as an input to its finding on the revenue required by the agency for capital investment. Past capital expenditure that the Tribunal deems to be prudent and forecast capital expenditure that it considers to be efficient are incorporated into the regulatory asset base (RAB) when rolling it forward to establish its value at the start of each year in the determination period.³⁵ These opening values are then used in calculating the allowance for a return on assets and a return of capital (see Chapter 7).

This chapter explains the Tribunal's draft findings on the prudent past capital expenditure and efficient forecast capital expenditure to be included when rolling forward the RAB. Section 6.1 summarises the Tribunal's draft findings for each agency. Section 6.2 outlines the approach it used to assess past and forecast capital expenditure. Sections 6.3 and 6.4 discuss its draft findings on prudent past capital expenditure and efficient forecast capital expenditure in detail, including the key issues the Tribunal considered in making these findings. Section 6.5 discusses a range of other issues the Tribunal considered in relation to the agencies' capital programs.

6.1 Summary of Tribunal's draft finding

The Tribunal's draft finding is that the capital expenditure for the period 2002/03 to 2004/05 shown in Table 6.1 was prudent, and the forecast capital expenditure shown on Table 6.2 is efficient.

**Table 6.1 Prudent past capital expenditure net of capital contributions
(\$ million, 2004/05)**

Financial Year	2002/03	2003/04	2004/05	Total
Sydney Catchment Authority	13.4	18.9	73.1	105.4
Sydney Water	477.6	469.9	457.7	1,405.2
Hunter Water	30.9	30.4	60.8	122.2

Table 6.2 Forecast capital expenditure net of capital contributions (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority	152.4	109.7	122.5	84.6	469.1
Sydney Water	499.8	516.6	525.5	496.3	2,038.2
Hunter Water	55.1	51.1	56.9	52.1	215.2

³⁵ Capital expenditure included in the RAB is net of growth capital expenditure funded by developer charges.

6.2 Tribunals' approach to assessing capital expenditure

As foreshadowed in the issues paper for this review, the Tribunal's approach to assessing capital expenditure for the purpose of rolling forward the RAB includes a backward-looking prudence test of the agencies' actual capital expenditure in the current determination period, and an assessment of the efficiency of their forecast capital expenditure for the 2005 determination period.

As part of this assessment, the Tribunal commissioned a consultant, Atkins/Cardno, to undertake an independent review of the agencies' proposals on capital expenditure. Specifically, it asked Atkins/Cardno to provide advice on:

- the prudence of each agency's capital expenditure findings in the period from 1 July 2003 to 30 June 2005
- the efficiency of each agency's capital expenditure program for the period from 2005/2006 to 2009/2010.

Atkins/Cardno evaluated the prudence of past expenditure by sampling completed schemes and reviewing the project management and cost outcomes. In assessing the efficiency of forecast capital expenditure, it specifically considered both the quantum and timing of this expenditure, and assessed the efficiency of the expenditure by considering the concepts of continuing and catch-up efficiency.³⁶

The Tribunal considered Atkins/Cardno's recommendations when making its own findings on the amount of past capital expenditure that was prudent and the amount of forecast capital expenditure that is efficient. It also considered:

- the agencies' submissions on their actual capital expenditure during the current determination period and proposed capital expenditure for the 2005 determination period
- other stakeholders' submissions that commented on these expenditures
- its own analysis of issues related to capital expenditure
- important contextual factors, particularly the short- and long-term balance between demand and supply
- the factors set out in Section 15 of the IPART Act.

6.3 Prudence of past capital investment

To decide what portion of each agency's capital expenditure in the current determination period was prudent, the Tribunal considered each agency's actual expenditure over this period and Atkins/Cardno's advice. It also compared these expenditures with the forecast expenditure for 2002/03 to 2004/05 submitted by the agency during the 2003 price review, and the capital expenditure it allowed for in its 2003 determination. Table 6.3 sets out each of these expenditures and the Tribunal's finding for each agency on the amount of actual expenditure that was prudent.

³⁶ Atkins/Cardno defined continuing efficiency as the scope for top performing or frontier companies (agencies) to continue to improve their efficiency and catch-up efficiency as the scope for all other utilities to reach the performance of a frontier utility.

**Table 6.3 Capital expenditure over the current determination period
(\$ million, 2004/05)**

Financial Year	2002/03	2003/04	2004/05	Total
Sydney Catchment Authority				
Agency forecast 2003	24.7	35.9	36.7	97.2
Tribunal mid-term review 2003	24.7	36.1	37.0	97.9
Actual/(2002/03 and 2003/04) projected (2004/05) expenditure	13.0	19.4	73.1 ³⁷	105.4
Tribunal's finding on prudent expenditure	12.2	18.9	72.9	104.2
Sydney Water				
Agency forecast 2003	548.7	557.0	573.7	1,679.5
Tribunal determination 2003	Na	526.3	515.5	Na
Actual/(2002/03 and 2003/04) projected (2004/05) expenditure	539.2	519.1	506.7	1,565.1
Tribunal's finding on prudent expenditure	539.2	519.1	506.7	1,565.1
Hunter Water				
Agency forecast 2003	57.0	67.0	77.6	201.6
Tribunal determination 2003	Na	64.9	73.4	Na
Actual/(2002/03 and 2003/04) projected (2004/05) expenditure	50.6	52.5	78.7	181.8
Tribunal's finding prudent expenditure	50.0	52.5	78.7	181.2

In making these findings, the Tribunal considered Atkins/Cardno's recommendations and advice. In relation to the Sydney Catchment Authority, Atkins/Cardno noted that actual capital expenditure was significantly higher than the expenditure allowed for in the Tribunal's 2003 mid-term review of the current determination, even though many of the schemes in the original capital program are being implemented later than originally planned. Consistent with this slippage, it also noted there was a shortfall in the outputs planned for delivery in 2004 and 2005. Despite these shortfalls, it concluded that, with the exception of certain expenditure on upgrading of historic cottages and recreational facilities (\$0.5 million in 2004/05), all other capital expenditure was prudent.

The Tribunal notes that during the 2003 determination period, the Sydney Catchment Authority met the water quality compliance targets set in its operating licence and provided an uninterrupted supply of water to its direct customers, and therefore indirectly to retail customers in the Sydney area. It also upgraded the Upper Canal and refurbished the Warragamba Pipelines. In addition, it constructed the Warragamba Spillway, which is intended to ensure the integrity of the dam wall in the event of a probable maximum flood.

³⁷ The \$35 million difference between forecasts made in 2002/03 and 2004/05 for the Sydney Catchment Authority's 2004/05 expenditure is due to the rephasing of expenditure over the period and unanticipated expenditure of \$24.4 million relating to the State Government's Metropolitan Water Plan.

In relation to Sydney Water, Atkins/Cardno noted that actual capital expenditure on water asset renewal was lower than forecast, while expenditure on wastewater asset renewal was 4 per cent higher than planned. It was not able to confirm whether this under or over-expenditure was due to scheme slippage, cost overruns or efficiency, as it was not possible to verify the actual outputs against those planned. However, it concluded that all actual capital expenditure was prudent and should be included when rolling forward the RAB.

For Hunter Water, Atkins/Cardno found that while total capital expenditure was slightly lower than that allowed by the Tribunal under the current determination, actual capital expenditure in relation to water services was greater than planned, while expenditure in relation to wastewater services was \$23 million less than planned due to slippage of some schemes within this program. It also noted that actual capital expenditure on corporate services had slipped, specifically the Head Office Accommodation project, which has moved beyond the end of the 2003 determination period and into 2006. Other expenditure was slightly higher than forecast, particularly expenditure on meter replacements and information technology. Atkins/Cardno concluded that all actual capital expenditure was prudent, except for \$0.6 million of corporate services expenditure on the purchase of land at the Tillegra Dam site.

Hunter Water's capital expenditure during the 2003 determination period delivered the following major outcomes:

- construction of a new wastewater treatment plant at Kurri Kurri to meet DEC effluent discharge standards and to cater for growth
- substantial completion of remaining works under the Grahamstown Dam augmentation project and completion of remedial works at Chichester Dam
- upgrade works to address low pressure and cater for growth in the Wallalong, Pokolbin and Tenambit water supply systems
- upgrade works to address wet weather overflow impacts and cater for growth in the Warners Bay-Valentine wastewater transport systems and Belmont wastewater treatment plant
- commencement of upgrade works to meet DEC effluent discharge standards, reduce wet weather flows and cater for growth in the Cessnock wastewater treatment system
- construction of new trunk water mains across the Hunter River South Arm and at Wallsend to cater for growth and improve security of supply
- commencement of the Fern Bay sewerage scheme under the State Government's Priority Sewerage Scheme
- substantial completion of the Customer Information System upgrade project
- commencement of construction of Hunter Water's new Head Office.

On balance, based on its consideration of Atkins/Cardno's conclusions, agency submissions and its own analysis, the Tribunal decided that for the purpose of rolling forward the RAB:

- all of the Sydney Catchment Authority's actual capital expenditure over the current determination period was prudent, except for \$0.5 million related to upgrading historic cottages and recreational facilities
- all of Sydney Water's actual expenditure during this period was prudent

- all of Hunter Water's actual expenditure during this period was prudent, except for \$0.6 million related to land purchases for the Tillegra Dam.

6.4 Efficient forecast capital expenditure for 2006 to 2009

The Tribunal considered the forecast capital expenditure each agency included in its submission to the price review, to decide how much of that expenditure is efficient. As part of its review process, the Tribunal took into account Atkins/Cardno's recommendations on the proposed capital expenditure programs across the agencies' water, wastewater and stormwater drainage businesses and undertook extensive public consultation.

The Tribunal's determination of efficient capital expenditure was not straightforward for Sydney Water and the Sydney Catchment Authority, as decisions about significant capital projects within the Metropolitan Water Plan are yet to be made (see Chapter 2). This creates uncertainty about the exact magnitude and timing of the capital expenditure projects that Sydney Water and the Sydney Catchment Authority will need to undertake to implement the Plan over the determination period. In addition, Sydney Water and Hunter Water are still in discussions with DEC in relation to the specific nature of environmental licence obligations.

The next section provides an overview of the agencies' forecast capital expenditure for 2005/06 to 2008/09 and the Tribunal's findings on their efficient level of capital expenditure for this period. The following section discusses the Tribunal's considerations in making its finding for each agency.

6.4.1 Overview of agencies' forecast capital expenditure compared with the Tribunal's findings

Table 6.4 below compares each agency's forecast capital expenditure for 2005/6 to 2008/09 with Atkins/Cardno's recommendations and the Tribunal's findings on their level of efficient capital expenditure over this period.

Table 6.4 Agencies' forecast capital expenditure compared with Tribunal's findings on efficient capital expenditure (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority					
Agency forecast	164.7	125.1	136.9	85.6	512.3
Atkins/Cardno recommendation	152.2	29.2	57.7	102.6	341.7
Tribunal's draft finding	152.4	109.7	122.5	84.6	469.1
Sydney Water					
Agency forecast	671.8	711.1	669.8	547.3	2,600.0
Atkins/Cardno recommendation	553.7	577.0	592.0	553.3	2,276.0
Tribunal's draft finding	553.7	577.0	592.0	553.3	2,276.0
Hunter Water					
Agency forecast	84.0	88.1	86.7	80.3	339.1
Atkins/Cardno recommendation	73.6	70.6	77.4	73.6	295.2
Tribunal's draft finding	73.6	70.6	77.4	73.6	295.2

6.4.2 Tribunal's findings in relation to the Sydney Catchment Authority

In its submission, the Sydney Catchment Authority proposed significant increases in capital expenditure for 2005/06 to 2008/09. On average, it forecast that this expenditure would increase from \$35 million³⁸ per annum over the 2003 determination period to \$128 million per annum over the 2005 determination period.

The next sections discuss the Tribunal's considerations and findings in relation to major capital expenditure items within the agency's forecast capital expenditure program and the potential for additional efficiency gains within this program, as well as the overall effect of the Tribunal's findings on the program.

Major capital expenditure items

The Sydney Catchment Authority's forecast capital expenditure program assumes the continuing supply of bulk water to Sydney Water while managing and protecting the various water catchments integral to that supply. The forecast is consistent with the Metropolitan Water Plan.

The forecast capital expenditure program includes a number of large ongoing projects designed to maintain the supply and quality of bulk water and also protect the catchments. For example, one project is a response to the requirement from the Department of Fisheries to provide a by-pass around Tallowa Dam to allow fish to migrate to the upper reaches of the Shoalhaven River. There are also a number of projects for maintaining water supply from the Warragamba Dam, including work on major outlet valves, electrical support systems and a project to ensure pipeline spare parts are quickly available in the event of damage to the Warragamba pipelines. Other projects include the construction of the Prospect Reservoir Raw Water Pumping Station to ensure back-up supply in the event of damage to the Upper Canal or Warragamba Pipeline, and the Fish River Water Supply Scheme (FRWS) pipeline to provide increased supplies to the Blue Mountains.

The Shoalhaven Transfer Scheme is the largest component of the Sydney Catchment Authority's forecast capital expenditure program. It involves \$280 million³⁹ in expenditure over the 2005 determination period, and the construction of new infrastructure including the installation of gates, new pumps and the construction of pipelines from Burrawang to Avon Dam. It is intended to enhance the catchment yield (by allowing the transfer of water at times of high flow in the Shoalhaven River), and to reduce the impact of abstractions on the environment.

The details of Shoalhaven Transfer Scheme depend on the outcome of technical studies, economic analysis, environmental evaluations and community consultation. This means that, at this stage, the costs of implementing the scheme are uncertain. Decisions on the approach to and staging of implementation are not expected until part way through the 2005 determination period.

³⁸ \$2004/05 - to allow comparison of past and forecast expenditures, unless otherwise stated, all amounts are expressed in \$2004/05. This means that past expenditure amounts has been "inflated" to the equivalent \$2004/05 amount.

³⁹ Real \$2004/05, before capital expenditure efficiencies.

Atkins/Cardno recommended the scope of the Shoalhaven Transfer Scheme be changed from twin pipelines to one pipeline, and that the costs involved be re-phased to defer major expenditure until 2008 (a year after the Sydney Catchment Authority's proposed commencement of the Shoalhaven Transfer Scheme). This would reduce the Sydney Catchment Authority's capital expenditure by \$85 million in 2007 and \$70 million in 2008, and would increase its capital expenditure by \$20 million in 2009.⁴⁰

In response to Atkins/Cardno's recommendations, the Sydney Catchment Authority noted that the Government's consultation and preliminary design process is expected to be finished by the end of calendar year 2006. In relation to the recommendations for re-phasing the Shoalhaven Transfer Scheme, it did not see any particular technical difficulties with the proposed Stage 1 works. In relation to the recommendations on re-scoping the scheme, it noted that Atkins/Cardno's reduced cost estimates are based on one pipeline, rather than two, and suggested that it would be premature to reduce total cost expectations at this stage. At the public hearing, it also noted that its cost estimates are based on the advice of its consultant (Halcrow Management Science Limited).

In addition to the major capital program outlined above, the Sydney Catchment Authority proposed to upgrade and/or demolish cottages at dam sites as part of its wider heritage and legacy obligations, and to upgrade conference facilities at Warragamba Dam.

Atkins/Cardno recommended that the forecast expenditure on cottages should be excluded from the level of efficient capital expenditure, as it falls outside the Sydney Catchment Authority's regulated business. It recommended that the forecast expenditure on conference facilities should also be excluded because it would be more efficient to incorporate conference facilities in the new Head Office or rent rooms for specific functions.

The Sydney Catchment Authority subsequently advised the Tribunal that it was the primary user of the Warragamba conference facilities, and that spare capacity is rented out as a responsible approach to defraying costs.

The Tribunal carefully considered the Sydney Catchment Authority's submissions, Atkins/Cardno's recommendations and other factors. It decided to base its findings on the Atkins/Cardno's recommendations but with the following major adjustments:

- In relation to the Shoalhaven Transfer Scheme, it decided not to accept its consultant's recommendations on re-scoping and re-phasing the scheme at this stage. Rather, as set out in Chapter 3, it has decided to address the specific risks associated with the timing and cost of the scheme by adjusting the agency's revenue requirement in the subsequent determination period to account for any unspent monies allowed by the Tribunal in this determination. Therefore, its draft finding reflects the Sydney Catchment Authority's original costing and timing for the Shoalhaven Transfer Scheme.
- In relation to the expenditure on upgrading the Warragamba Dam conference facilities, it decided not to accept Atkins/Cardno's recommendation to exclude this expenditure for the purpose of rolling forward the RAB. The Tribunal considers that, on the basis that the facility continues to be primarily used by the Sydney Catchment Authority, it is appropriate that this expenditure be included.

⁴⁰ Real \$2004/05, before capital expenditure efficiencies.

Potential for capital efficiency gains

The Tribunal has accepted Atkins/Cardno's recommendations on additional capital efficiency gains.

Based on its assessment of the Sydney Catchment Authority's main processes for managing capital expenditure, Atkins/Cardno recommended that the agency's forecast capital expenditure be reduced to factor in higher capital efficiency savings. Its recommended total efficiencies range from 3.5 per cent in 2006 to 9.5 per cent in 2009.

In its response to these recommendations, the Sydney Catchment Authority argued that cumulative capital expenditure efficiency of 9.5 per cent by 2009 is unwarranted, as its capital expenditures are unique (for example, the Warragamba Spillway) and it already uses open competitive procurement for design and construction of capital works.

On balance, the Tribunal decided to accept Atkins/Cardno's recommendations on the efficiency gains (see Table 6.5). It notes that competitive procurement processes do not, of themselves, guarantee efficiency.

Table 6.5 Tribunal's findings on capital efficiency gains for Sydney Catchment Authority (per cent per annum)

Financial Year	2005/06	2006/07	2007/08	2008/09
Atkins/Cardno recommendation	3.5	5.5	7.5	9.5
Tribunal's finding	3.5	5.5	7.5	9.5

Overall effect of Tribunal's findings on level of efficient forecast capital expenditure

The net effect of the Tribunal's draft findings is that the total level of efficient capital expenditure for the purpose of rolling forward the RAB is 8.4 per cent or \$43.2 million lower than the Sydney Catchment Authority's forecast capital expenditure (see Table 6.6).

The Tribunal notes this level of capital expenditure is still significantly greater than the Sydney Catchment Authority's current program. It is also mindful that the Sydney Catchment Authority has a track record of under-expenditure on its capital program.

Table 6.6 Sydney Catchment Authority's forecast capital expenditure compared with Tribunal's findings (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority forecast	164.7	125.1	136.9	85.6	512.3
Including:					
Shoalhaven Transfer Scheme	0.0	90.0	120.0	70.0	280.0
Atkins/Cardno recommendation	152.2	29.2	57.7	102.6	341.7
Including:					
Adjustment for non-core expenditure	(0.5)	(0.5)	(0.1)	(0.1)	(1.2)
Shoalhaven Transfer Scheme (before efficiencies)	0.0	5.0	50.0	90.0	145.0
Tribunal's findings	152.4	109.7	122.5	84.6	469.1
Including:					
Adjustment for non-core expenditure	(0.3)	(0.3)	(0.1)	(0.1)	(0.8)
Shoalhaven Transfer Scheme (before efficiencies)	0.0	90.0	120.0	70.0	280.0

6.4.3 Tribunal's findings in relation to Sydney Water

In its submission, Sydney Water proposed significant increases in capital expenditure for 2005/06 to 2008/09. On average, it forecast that this expenditure would increase from \$513.2 million⁴¹ per annum over the 2003 determination period, to \$650⁴² million per annum for the 2005 determination period.

Sydney Water's proposed capital program is set out in Table 6.7.

⁴¹ In 2004/05 dollars.

⁴² Ibid.

Table 6.7 Sydney Water's proposed capital program (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Water Services:					
• Improve Water Distribution and Treatment Systems	120.3	114.3	111.5	108.3	454.4
• Water Meter Replacement Program	5.2	5.5	6.0	6.0	22.7
• Recycled Water Projects	44.0	74.2	53.6	42.6	214.4
Wastewater Services:					
• Blue Mountains Sewerage	7.3	31.5	32.3	7.3	78.4
• Brooklyn Dangar Island Sewerage Scheme	17.0	16.3	0.0	0.0	33.3
• Mulgoa Wallacia Silverdale Sewerage Scheme	42.0	4.2	0.2	0.0	46.4
• Menangle / Menangle Park Sewerage Scheme	1.0	3.2	0.0	0.0	4.2
• Priority Sewerage Program (Other)	7.4	8.2	2.0	3.0	20.6
• Overflow Abatement	49.4	53.0	68.0	83.0	253.4
• Upgrade Illawarra Sewage Treatment Plants	4.0	0.5	0.0	0.0	4.5
• Upgrade Hawkesbury/Nepean Sewage Treatment Plants	46.0	44.5	42.0	7.0	139.5
• Bondi STP RIAMP	25.4	6.6	0.0	0.0	32.0
• Upgrade Warriewood Sewage Treatment Plant	3.0	3.5	0.0	0.0	6.5
• North Head STP Performance and Reliability	24.5	30.8	26.6	16.0	97.9
• Richmond STP Upgrade	0.4	0.0	0.0	0.0	0.4
• Upgrade reliability of sewage treatment plants	20.7	26.8	17.3	23.1	87.9
• Sewer Network Reliability Upgrades	76.0	82.0	95.0	106.0	359.0
• South Western Sydney Sewerage	24.5	35.0	48.5	5.0	113.0
Stormwater Services					
• Improve Stormwater Systems	12.9	6.2	6.2	6.2	31.5
Urban Development:					
• Growth Works to Service Urban Development	73.3	101.0	113.7	86.8	374.8
Corporate Services:					
• Security, Safety and Property Upgrades	30.6	28.0	12.0	12.0	82.6
• Information Technology Projects	17.0	16.0	15.0	15.0	63.0
• Capitalised Borrowing Costs	20.0	20.0	20.0	20.0	80.0
Total	671.9	711.3	669.9	547.3	2600.4

The next sections discuss the Tribunal's considerations and findings in relation to Sydney Water's forecast capital expenditure for each of its service areas and the potential for additional efficiency gains within its total capital expenditure program, as well as the overall effect of the Tribunal's findings on this program.

Capital expenditure for water services

Sydney Water proposed a significant increase in capital expenditure for water services over 2005/06 to 2008/09, particularly in relation to growth and asset renewals. The asset renewal program will improve service reliability, improve water pressure and reduce the potential for mains breaks and leakages.

Sydney Water's capital program for water intends to meet regulatory standards and also assist customers in reducing consumption of potable water through the implementation of large-scale recycling schemes in new development areas. The capital program for water involves a total cost of \$806 million over the determination period.

Based on its review, Atkins/Cardno found that the increase in expenditure related to water service asset renewal was efficient, as it is based on detailed asset management studies and is comparable to the expenditure of other agencies and companies with similar assets and operating environments. However, it considered that the program to replace critical water mains was too ambitious.

Atkins/Cardno also found that the growth-driven capital expenditure program was also ambitious, and questioned the achievability of some of the planned works. It commented on the gap between this growth expenditure and the forecast contributions from developers in the 2005 determination period.

Overall, Atkins/Cardno recommended that the forecast water services capital expenditure should be adjusted to re-phase:

- critical and distribution mains replacement to reflect a more gradual increase in activity over the period
- expenditure for growth funded by developers to reflect the revised expenditure proposals provided by Sydney Water
- expenditure for water recycling funded by developers to reflect the revised expenditure proposals provided by Sydney Water.

The Tribunal decided to accept Atkins/Cardno's recommendations.

Capital expenditure for wastewater services

Sydney Water's forecast capital expenditure for wastewater services totals \$1.4 billion over the 2005 determination period. On average, this translates to about \$363 million per year, which is less than its actual capital expenditure for wastewater services in 2003 and 2004.

A great proportion of this expenditure (\$422.1 million over the 2005 determination period) is due to expected growth in the Sydney area. The expected population increase requires an expansion of the network, which means considerable investment needs to be made in sewerage transport, treatment and disposal.

Atkins/Cardno found the Sydney Water's proposed expenditure related to wastewater service asset renewal was efficient. It noted that this expenditure is equivalent to about 0.4 per cent of the agency's asset stock per annum (which is higher than nearly all other utilities in Australia and England except City West Water) but that Sydney Water is performing at a level relatively close to its operating licence value for uncontrolled sewage overflows. The Tribunal notes that Sydney Water appears to have improved its performance against this standard over the past year. Therefore, the Tribunal agrees with Atkins/Cardno's assessment of expenditure to meet this standard.

In relation to Sydney Water's proposed expenditure of \$165 million for eliminating dry weather overflows to meet DEC standards, Atkins/Cardno assessed the options currently identified for meeting these standards. These include rehabilitating private sewers (which has legal constraints) and the use of storage systems and amplification of sewers. It concluded that regardless of the approach taken, actual costs are likely to exceed those included in Sydney Water's forecasts. However, it did not recommend an amount to be added to Sydney Water's level of efficient forecast capital expenditure to address this issue.

In relation to growth-driven capital expenditure for wastewater services, Atkins/Cardno noted that the timing of expenditure for new water mains, sewer and sewage treatment was uncertain, and that the proposed program was ambitious. It recommended that this expenditure be phased more evenly over a longer period.

Atkins/Cardno also observed that the forecast growth-driven capital expenditure was higher than the forecast level of developer contributions for the determination period. In particular, the increase in growth expenditure is not reflected in an increase in forecast developer contributions, which are steady over this period.

The Tribunal decided to accept Atkins/Cardno's recommendations.

Capital expenditure for stormwater drainage services

Sydney Water's forecast capital expenditure related to stormwater drainage services is \$31.5 million over the 2005 determination period. Atkins/Cardno found that this expenditure is efficient.

The Tribunal notes that historically Sydney Water has underspent against its stormwater capital expenditure allocation. The Tribunal has acknowledged that this is most likely due to the uncertainty surrounding the institutional arrangements for stormwater drainage services.⁴³ However, it now appears that the current arrangements for providing stormwater drainage services are to remain for the foreseeable future. That being the case, the Tribunal believes there is less incentive for Sydney Water to underspend. Furthermore, the Tribunal notes that ongoing renewal work, specific schemes associated with the Stormwater Environmental Improvement Program, and discretionary work on the Alexandra Canal have been agreed with DIPNR and therefore should be considered in that context.

The Tribunal decided to accept Atkins/Cardno's recommendations.

⁴³ It had previously been expected that a new authority would be created to provide stormwater services for the Sydney area. This would have required stormwater assets from Sydney Water and the relevant municipalities to be transferred to the agency.

Capital expenditure for corporate services

Sydney Water's forecast capital expenditure for corporate services relates to the new head office, further rationalisation of offices and depots, new IT projects and costs associated with borrowing to fund capital projects. Atkins/Cardno recommended that the costs of borrowing be excluded from the level of efficient forecast expenditure, but that the remainder of this expenditure was efficient. The Tribunal decided to accept Atkins/Cardno's recommendations.

Potential for capital efficiency gains

Based on its assessment of Sydney Water's main processes for managing capital expenditure, Atkins/Cardno recommended that the agency's forecast capital expenditure be reduced to factor in capital efficiency savings. Its recommended total efficiencies range from 3.5 per cent in 2006 to 9.0 per cent in 2009.

In response to these recommendations, Sydney Water commented while it agrees there is potential for some additional capital efficiency savings, it does not agree with Atkins/Cardno's assessment about the continuing efficiency gains. It argued that construction costs are increasing at a rate greater than the CPI, and as such should be taken into account when calculating efficiency levels.

On balance, the Tribunal decided to accept Atkins/Cardno's recommendations on efficiency gains (see Table 6.8).

**Table 6.8 Tribunal's findings on capital efficiency gains for Sydney Water
(per cent per annum)**

Financial Year	2005/06	2006/07	2007/08	2008/09
Atkins/Cardno recommendation	3.5	5.0	7.5	9.0
Tribunal's finding	3.5	5.0	7.5	9.0

Overall effect of Tribunal's findings on level of efficient forecast capital expenditure

The net effect of the Tribunal's draft findings is that the total level of efficient capital expenditure for the purpose of rolling forward the RAB is 12.5 per cent or \$324 million lower than Sydney Water's forecast capital expenditure (see Table 6.9).

Table 6.9 Sydney Water's forecast capital expenditure compared with Tribunal's finding, by service (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Water forecast					
Water service	202.7	244.4	229.3	192.6	869.0
Wastewater service	383.4	391.0	381.3	295.5	1,451.2
Stormwater drainage service	12.9	6.2	6.2	6.2	31.5
Corporate services	72.8	69.5	53.0	53.0	248.3
Total	671.8	711.1	669.8	547.3	2,600.0
Atkins/Cardno recommendation					
Water service	132.8	164.0	208.9	236.6	742.3
Wastewater service	357.5	360.1	346.7	281.1	1,345.4
Stormwater drainage service	12.5	5.9	5.7	5.6	29.7
Corporate services	50.9	47.0	30.5	30.0	158.4
Total	553.7	577.0	591.8	553.3	2,275.8
Tribunal's finding					
Water service	132.8	164.0	208.9	236.6	742.3
Wastewater service	357.5	360.1	346.7	281.1	1,345.4
Stormwater drainage service	12.5	5.9	5.7	5.6	29.7
Corporate services	50.9	47.0	30.5	30.0	158.4
Total	553.7	577.0	591.8	553.3	2,275.8

6.4.4 Tribunal's findings in relation to Hunter Water

In its submission, Hunter Water proposed significant increases in capital expenditure for 2005/06 to 2008/09. It forecast that this expenditure would increase from \$65.6 million⁴⁴ per annum in the 2003 determination period to \$84.8 million per annum in the 2005 determination period.

The next sections discuss the Tribunal's considerations and findings in relation to Hunter Water's forecast capital expenditure for each of its service areas, and the potential for additional efficiency gains within its total capital expenditure program, as well as the overall effect of the Tribunal's findings on this program.

Capital expenditure for water services

Apart from the completion of the Grahamstown Dam augmentation project, Hunter Water's proposed capital expenditure on water services during the 2005 determination period focuses on work on the water delivery system to cater for growth and to replace assets.

⁴⁴ \$2004/05 - to allow comparison of past and forecast expenditures, unless otherwise stated, all amounts are expressed in \$2004/05. This means that past expenditure amounts has been "inflated" to the equivalent \$2004/05 amount.

Major projects in Hunter Water's proposed program include completion of the Grahamstown dam spillway, replacement of the trunk water main from Chichester Dam between Tarro and Shortland, and the construction of a new trunk main on Kooragang Island to cater for growth. The program also includes a range of other upgrades to reservoir and water mains to improve security of supply (in line with operating licence requirements), optimise asset whole-of-life costs, and cater for growth.

Atkins/Cardno found that Hunter Water's approach to distribution main renewal is consistent with good practice and demonstrates a minimum cost approach. It also found that expenditure on the major trunk main from Tarro to Shortland is appropriate to improve security of supply based on Hunter Water's risk assessment, and cater for growth.

Hunter Water's forecast growth-driven capital expenditure for water services over the 2005 determination period is higher than in the current determination period, with significant increases proposed in 2007/08 and 2008/09. However, there is a significant gap between the level of this expenditure and the expected level of capital contributions from developers over the 2005 determination period.

Atkins/Cardno noted that proposed capital expenditure relating to forecast growth showed a significant increase in 2007/08 and 2008/09. Atkins/Cardno could find no clear reason for this marked increase, as forecasts for growth in new properties are lower than historic rates. In light of uncertainties associated with growth estimates and costs of projects, Atkins/Cardno recommended that growth expenditure in the final two years of the 2005 determination period should continue at levels similar to the first two years, which is similar to historic trends.

Hunter Water strongly objected to this recommendation. It argued that the investment is essential because the water distribution system is nearing capacity, and that the work must proceed at the proposed timing or it may not meet its operating licence requirements. In its submission, the Urban Development Industry Association also opposed Atkins/Cardno's recommendation. It argued that forecast "higher than high" levels of growth in the Lower Hunter create the need for a significant increase in investment in social and physical infrastructure, to provide the appropriate services to the increasing population.

Atkins/Cardno reviewed its recommendations in response to additional information provided by Hunter Water. It noted that because of the lag between expenditure and receipt of developer contributions for the proposed growth areas, existing customers will fund this development in the interim. Based on its review of Hunter Water's growth capital expenditure, it concluded that there are considerable uncertainties in the timing of new development and, as a result, recommended that growth expenditure be rephased from 2006/07.

The Tribunal reviewed all the available evidence. Given the uncertainties associated with forecasts towards the end of the 2005 determination period and the considerable size of proposed capital expenditure, it decided to adopt Atkins/Cardno's recommendations for the purposes of the draft determination.

If growth schemes are required during the 2005 determination period, any prudent additional costs will be considered at the next price review.

Capital expenditure for wastewater services

As for water services, Hunter Water proposed significant increases in capital expenditure for wastewater services, peaking in 2006/07. The key drivers of this expenditure are new and existing standards, growth and backlog sewerage schemes. Atkins/Cardno noted that Hunter Water has no special procedure to determine the priority of projects but considers that the entire capital program is necessary within the 2005 determination period.

Hunter Water's proposed wastewater expenditure to cater for growth peaks in 2006/07 and 2008/09. Based on its review of progress and cost estimates of sample schemes, certainty in timing and scope of the work and trends in new property development in the Hunter, Atkins/Cardno recommended that growth capital expenditure on wastewater schemes be rephased to smooth the investment profile.

Hunter Water also proposed significant capital expenditure on works to address dry and wet weather overflows in its sewerage system to meet DEC requirements. It proposed that this expenditure would peak in 2005/06 and 2006/07, and be dramatically reduced in 2008 and 2009. Atkins/Cardno found that the magnitude and timing of these works were uncertain, and recommended that the expenditure be reprofiled.

Hunter Water strongly objected to some of this reprofiling on the basis that the works are required to meet its Environment Protection Licence requirements. Subsequent consultation with the DEC confirmed that two of Hunter Water's five pollution reduction programs (in Belmont and Newcastle wastewater transport systems) must be completed by 1 July 2007 to meet licence requirements. The Tribunal has asked Atkins/Cardno to review its assessment of capital expenditure to meet DEC licence requirements and will consider any revised recommendations before making its final determination.

Based on the available evidence, and given the uncertainties associated with the scope and timing of some projects, the Tribunal has decided to adopt Atkins/Cardno's recommendations for the purposes of the draft determination.

Capital expenditure for stormwater drainage services

Hunter Water proposed to double its capital expenditure on drainage works compared to the past two years. It claims this increase is in response to a State Government directive to consult with the community for the next stormwater management-planning period, which in turn has increased the amount of channel re-naturalisation required. Atkins/Cardno found that the drainage program expenditure was efficient, and recommended that the Tribunal include it in the level of efficient forecast capital expenditure. The Tribunal decided to accept this recommendation.

Capital expenditure for corporate services

Atkins/Cardno noted that, with the exception of the costs associated with the new head office accommodation, Hunter Water's forecast corporate capital expenditure is on average lower than in the past. It recommended that the expenditure⁴⁵ be included in the forecast capital expenditure. The Tribunal decided to accept this recommendation.

⁴⁵ After adjusting for efficiency savings.

Potential for capital efficiency gains

Atkins/Cardno recommended that Hunter Water's forecast capital expenditure be adjusted to incorporate capital efficiency gains that range from 3.5 per cent in 2006 to 9.0 per cent in 2009. On balance, the Tribunal decided to accept these recommendations (see Table 6.10).

**Table 6.10 Tribunal's findings on capital efficiency gains for Hunter Water
(per cent per annum)**

Financial Year	2005/06	2006/07	2007/08	2008/09
Atkins/Cardno recommendation	3.5	5.5	7.5	9.0
Tribunal's finding	3.5	5.5	7.5	9.0

Overall effect of Tribunal's findings on level of efficient forecast capital expenditure

The net effect of the Tribunal's draft findings is that the total level of efficient capital expenditure for the purpose of rolling forward the RAB is 12.9 per cent or \$43.9 million lower than Hunter Water's forecast capital expenditure (see Table 6.11).

Table 6.11 Hunter Water's forecast capital expenditure compared with Tribunal's finding, by service (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Hunter Water forecast					
Water service	19.1	16.9	27.2	35.6	98.8
Wastewater service	53.0	66.8	54.9	39.7	214.4
Stormwater drainage service	0.1	0.7	1.0	0.6	2.2
Corporate services	11.8	3.7	3.7	4.5	23.7
Total	84.0	88.1	86.8	80.4	339.1
Atkins/Cardno recommendation					
Water service	17.9	15.5	21.8	27.3	82.5
Wastewater service	44.2	51.0	51.3	41.7	188.2
Stormwater drainage service	0.1	0.6	0.9	0.5	2.1
Corporate services	11.4	3.5	3.4	4.1	22.4
Total	73.6	70.6	77.4	73.6	295.2
Tribunal's finding					
Water service	17.9	15.5	21.8	27.3	82.5
Wastewater service	44.2	51.0	51.3	41.7	188.2
Stormwater drainage service	0.1	0.6	0.9	0.5	2.1
Corporate services	11.4	3.5	3.4	4.1	22.4
Total	73.6	70.6	77.4	73.6	295.2

6.5 Other factors

The Tribunal also considered several other factors in relation to agencies' forecast capital programs. These included project delivery, asset management and output measures.

6.5.1 Project delivery

One of the key issues the Tribunal considered was whether the agencies have the resources and capability to deliver their proposed capital projects on the proposed timelines. In previous reviews, the Tribunal's consultant, Halcrow Management Science Limited (Halcrow), raised concerns about the ability of the water agencies to deliver on proposed projects within the determination period.

In this review, Atkins/Cardno commented that these concerns have been borne out and that the same concerns apply for the 2005 determination period. Therefore, the Tribunal's draft finding has taken account of Atkins/Cardno's recommendations to re-phase programs and, in some instances, reduce the level of activity.

The Sydney Catchment Authority is implementing several processes to improve its program management capabilities. These improvements should deliver efficiencies in the medium term. It also intends to employ additional staff and consultants to assist it in delivering the proposed capital program.

Sydney Water's capital program is managed through the established Capital Project Delivery Management System. Atkins/Cardno noted significant slippage of capital maintenance schemes and considered that there were opportunities to improve the program management to reduce slippage and monitor the delivery of efficiencies. However, it concluded that Sydney Water has the resources to complete the proposed capital program.

6.5.2 Asset management

The Tribunal considers that sound asset management practices are critical to meeting system performance standards in the most efficient manner. For this reason, it continues to take a close interest in the practices and performance of regulated businesses in this area.

The Tribunal asked Atkins/Cardno, as part of its review, to consider and comment on the agencies' asset management practices. Atkins/Cardno noted that:

- The Sydney Catchment Authority has established a framework for asset management that is consistent with the State Government total asset management guidelines and with best practice in this area. This framework includes an Asset Strategy and approach to risk that are appropriate. However, the Strategy is being updated and the link from the Investment Plan through to the capital program is not yet complete.
- Sydney Water and Hunter Water are applying asset management practices that are consistent with best practice.

6.5.3 Output measures

The Tribunal's draft decision is that the agencies are to report annually to the Tribunal against the output measures recommended by Atkins/Cardno in their review.

Atkins/Cardno noted that it was difficult to assess whether past projects were prudent as it was not possible to verify actual outputs against those planned. It recommended that the Tribunal specify outputs for each agency to facilitate a more robust review as part of the next determination. The Tribunal notes that Halcrow raised similar concerns during the 2003 price review.

Atkins/Cardno's proposed output measures are included Appendix 2. These measures are less well developed for Hunter Water than for other agencies. The Tribunal will be working with Hunter Water to refine these output measures prior to finalising its determination.

The Tribunal requires the agencies during the 2005 determination period to report against these key outputs or deliverables associated with the capital expenditure forecasts and asset management plans. There may be a need for the agencies and the Tribunal to refine the proposed output measures during the 2005 determination period.

The Tribunal considers that these output measures will help ensure that decisions taken on capital expenditure are more accountable. Where the outputs are achieved under budget, the savings made could be considered efficiency gains. Failure to achieve specified outputs would need to be justified on the basis that other outputs were of a higher priority.

7 TRIBUNAL'S FINDINGS ON REVENUE REQUIREMENT FOR CAPITAL INVESTMENT

As set out in Chapter 5, the revenue requirement related to capital investment comprises two cost blocks: an allowance for a return on assets, and an allowance for a return of capital, or depreciation. Together, these allowances make up around 40 – 50 per cent of each water agency's total notional revenue requirement and therefore have a significant impact on water prices. The Tribunal considered each agency's revenue requirement for capital investment by:

- determining the value of its RAB for each year of the determination period, taking into account a range of factors, including its findings on the level of past capital expenditure that was prudent and forecast capital expenditure that is efficient (discussed in Chapter 6)
- determining an appropriate allowance for a return on assets, by deciding on an appropriate rate of return and multiplying the opening value of the RAB by this rate
- determining an appropriate allowance for depreciation, by determining the depreciation method and asset lives to be applied, then calculating depreciation on the RAB.

This chapter explains the Tribunal's draft findings on the agencies' revenue requirements for capital investment. Section 7.1 summarises the Tribunal's draft findings on this revenue requirement for each agency. Sections 7.2 to 7.4 explain the key inputs to those findings – including the Tribunal's draft findings on the methodology used in rolling forward the RAB, and on the rate of return, depreciation method and asset lives applied in determining the allowances for a return on assets and depreciation.

7.1 Summary of Tribunal's draft finding on revenue requirement for capital investment

The Tribunal's draft finding is that the allowances for a return on assets and for depreciation used to calculate the total notional revenue requirement for each agency will be those shown Table 7.1 below.

Table 7.1 Revenue requirement associated with capital investment (\$million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority					
Allowance for return on assets	57.7	64.5	70.5	75.7	268.5
Allowance for depreciation	13.2	14.4	15.6	16.6	59.8
Total revenue requirement associated with capital investment	70.9	79.0	86.1	92.3	328.2
Sydney Water					
Allowance for return on assets	481.1	501.5	522.8	544.9	2,050.3
Allowance for depreciation	108.3	112.6	117.0	121.7	459.6
Total revenue requirement associated with capital investment	589.4	614.1	639.8	666.6	2,509.9
Hunter Water					
Allowance for return on assets	63.8	66.0	68.3	70.5	268.6
Allowance for depreciation	14.9	15.4	15.9	16.4	62.6
Total revenue requirement associated with capital investment	78.7	81.4	84.2	87.0	331.3

Note: These tables may not add due to rounding.

7.2 Rolling forward the RAB

The Tribunal determined the value of each agency's RAB by rolling forward the opening value of its RAB at the 2003 determination, to reflect its findings on prudent actual capital expenditure over the 2003 determination period (net of any capital contributions), and efficient forecast capital expenditure for 2004/05 to 2008/09 (less actual disposals for 2002/03 and 2003/04 and forecast disposals for 2004/05 and each year of the 2005 determination period, and less regulatory depreciation).

The next sections outline the Tribunal's draft findings on:

- the methodology used in rolling forward the RAB
- the level of capital contributions to be deducted when rolling forward the RAB
- the resulting values for each agency's RAB over the determination period.

7.2.1 Tribunal's draft findings on methodology used in rolling forward the RAB

The Tribunal's draft finding is that it will determine the value of each agency's opening regulatory asset base at 1 July 2005 by:

- rolling forward the 1 July 2002 RAB to 30 June 2004 on the basis of actual prudent capital expenditure over this period (as discussed in Chapter 6) (net of capital contributions)
- rolling forward the 30 June 2004 RAB to 30 June 2005 on the basis of the forecast efficient capital expenditure for this period (as discussed in Chapter 6) (net of capital contributions)⁴⁶
- deducting regulatory depreciation as allowed for in the 2003 determination
- deducting actual/forecast disposals
- indexing the annual closing regulatory asset base for actual /forecast inflation.

The Tribunal's draft finding is that it will roll forward each agency's RAB for each year from 1 July 2005 to 30 June 2009 by:

- adding the forecast efficient capital expenditure for that year (net of capital contributions) to the opening RAB. Half the capital expenditure is assumed to occur at the start of the year and is indexed by the movement in the CPI, the remaining half is assumed to occur at the end of the year and is not indexed
- deducting the regulatory depreciation for that year allowed by the Tribunal in the 2005 determination
- deducting forecast disposals for that year
- indexing the annual closing RAB for forecast inflation.

This methodology is largely the same as that used in rolling forward the RAB for the 2003 determination, except that regulatory rather than actual depreciation is deducted. For the 2003 determination, 'actual' depreciation was calculated using regulatory asset lives and actual capital expenditure. 'Regulatory' depreciation refers to the depreciation amounts allowed for in the 2003 determination (adjusted for inflation) and in the 2005 determination.

The Tribunal used regulatory depreciation in rolling forward the RAB for its 2004 electricity network determination and 2005 review of AGLGN's access arrangement. It considered that this approach was more appropriate, because it ensures that any benefit or loss to the agency as a result of under or over expenditure on capital compared with the forecast capital expenditure used to set prices in the previous determination is limited to the return it earns on this expenditure. This means that any over expenditure is rolled into the RAB at its undepreciated value, so the agency will be able to recoup the depreciation on the assets associated with this expenditure from future customers. However, if there is under expenditure on capital, the RAB will be depreciated by more than the actual level of

⁴⁶ Given that the actual expenditure for this year is not fully known at the time of the draft determination, the Tribunal has used the forecast expenditure for this year. This forecast has been assessed by the Tribunal as part of the review and adjusted where appropriate (see Chapter 6). At the next review, the RAB will be adjusted to reflect the difference between this forecast and actual expenditure for 2004/05.

depreciation, creating an incentive for agencies not to over estimate their forecast expenditure at price reviews.

7.2.2 Tribunal's draft findings on level of capital contributions to be deducted when rolling forward the RAB

As noted above, the Tribunal deducts the value of any capital contributions from the prudent actual and forecast capital expenditure it incorporates when rolling forward the RAB. For the water agencies, 'capital contributions' refers to the revenue they receive from developers in accordance with the Tribunal's Determination No.9, 2000, Developer Charges from 1 October 2000.

For the draft determination, the Tribunal found that Sydney Water's and Hunter Water's forecasts for developer capital contributions are appropriate. However, unless it is satisfied with the further supporting information provided by the agencies, it may need to adjust these forecasts in its final determination.

In making this finding, it considered the agencies' forecasts for developer contributions and the comments of its consultant, Atkins/Cardno on these forecasts. As discussed in Chapter 6, Atkins/Cardno noted that the agencies' proposed increases in growth-related capital expenditure is not matched by a similar increase in their forecasts of the revenue they will receive from developer charges. As a result, there appears to be an increasing gap between this revenue and the growth-related capital expenditure that is rolled into the RAB (and therefore funded by existing customers).

The Tribunal's analysis shows that the relationship between developer contributions and growth-related capital expenditure is highly variable, with no strong trend evident. In addition, there is no strong relationship between the historical data and the forecast data.

The Tribunal is concerned about the level of developer contributions and the apparently increasing gap between growth-related capital expenditure and developer charges. Sydney Water and Hunter Water have provided the Tribunal with further information to support their forecasts for these items, and the Tribunal will give further consideration to this matter prior to making its final determination.

In addition, the Tribunal is currently considering a review of the current Developer Charges Determination and, as part of that review, may reconsider the treatment of developer contributions within the regulatory framework. Any such review is likely to take place in 2006.

7.2.3 Resulting values for each agency's RAB

The Tribunal has applied the methodology set out in section 7.2.1, using the capital expenditure set out in Chapter 6 and the forecasts for developer contributions discussed in section 7.2.2. The resulting closing RAB value for each water agency over the 2005 determination period is shown in Table 7.2.

Table 7.2 Closing RAB value for 2005 determination period (\$2004/05, million)

Financial Year	2005/06	2006/07	2007/08	2008/09
Sydney Catchment Authority	1,048.0	1,144.1	1,252.0	1,320.4
Sydney Water	8,344.8	8,693.9	9,070.6	9,445.2
Hunter Water	1,102.7	1,138.4	1,179.4	1,215.0

7.3 Tribunal's draft finding on rate of return

There are several approaches for calculating the appropriate rate of return on the RAB. The Tribunal's preferred approach is to use the Weighted Average Cost of Capital (WACC) to determine an appropriate rate of return range. As with previous determinations, the Tribunal has used a real pre-tax WACC. The WACC is a weighted average of the cost of debt and equity. The Tribunal has used the Capital Asset Pricing Model to derive the cost of equity, and calculated the cost of debt as a margin over the risk free rate.

In making its draft finding on the rate of return, the Tribunal has exercised its judgement to determine the rate of return, taking into consideration the requirements of the IPART Act – particularly Sections 15(1)(b) dealing with the protection of consumers from abuses of monopoly power; 15(1)(c) dealing with an appropriate rate of return including payment of dividends; and 15(1)(k) dealing with the social impact of its determinations and recommendations. It investigated the implications of its chosen rate of return on the average bills paid by customers with differing characteristics, and on the financial viability of the businesses estimated by changes in key financial ratios.

The following sections outline the Tribunal's draft finding on the rate of return for each agency, and the agencies' proposals on the rate of return. The Tribunal's considerations on each of the parameters used to calculate the WACC range are set out in Appendix 3.

7.3.1 Summary of the Tribunal's draft findings on the rate of return

The Tribunal's draft finding is that for the purposes of calculating the allowance for a return on assets, a real pre-tax rate of return of 6.1 per cent will be applied. This finding reflects the Tribunal's view that the industry weighted average cost of capital is in the range of 5.4 to 6.9 per cent.

The parameters it used to calculate this WACC range are shown in Table 7.3.

Table 7.3 Metropolitan water industry draft weighted average cost of capital range

Parameter	Draft finding*
Nominal risk free rate	5.4%
Real risk free rate	2.6%
Inflation	2.7%
Market risk premium	5.5-6.5%
Debt margin and allowance for debt raising costs	1.13-1.22%
Debt to total assets	60%
Dividend imputation factor, or gamma	0.5-0.3
Tax rate	30%
Asset beta	0.26-0.37
Debt beta	0
Equity beta	0.65-0.90
Cost of equity (nominal post-tax)	9.1-11.3%
Cost of debt (nominal pre-tax)	6.5-6.6%
WACC (real pre-tax)	5.4-6.9%
WACC (real pre-tax) mid-point	6.1%

* Market parameters are calculated to 4 May 2005.

7.3.2 Summary of agencies' rate of return proposals

Hunter Water and the Sydney Catchment Authority have used the parameter values shown in Table 7.4 below as the basis for their proposals on the rate of return. Within this range, the Sydney Catchment Authority submitted that the midpoint of 6.5 per cent is appropriate for its pricing proposal. Hunter Water proposed a higher industry rate of return of 6.8 per cent, although given its current low rate of return it proposed that its prices be based on a rate of return of 5.6 per cent by 2008/09 with a transition towards the industry rate in 2013.

Table 7.4 Proposed parameters and weighted average cost of capital range by Hunter Water and the Sydney Catchment Authority

Parameter	Values proposed by Hunter Water and the Sydney Catchment Authority
Nominal risk free rate	5.5%
Real risk free rate	2.9%
Inflation	2.5%
Market Risk Premium	6.0%
Debt Margin	0.9 – 1.1%
Allowance for debt raising costs	0.125%
Debt to total assets	50%
Dividend imputation factor, or gamma	0.5 - 0.3
Tax rate	30%
Asset beta	0.35– 0.45
Debt beta	0.00 – 0.06
Equity Beta	0.63 – 0.89
WACC (real pre-tax)	6.1 – 7.5%

Sydney Water did not submit values for each WACC parameter. However, it assumed a real pre-tax rate of return of 6.5 per cent for the purposes of its pricing submission. It also argued that there should not be a material difference in the underlying rate of return provided for electricity and water infrastructure assets in NSW. (The Tribunal's decision on the 2004 electricity network determination and AGLGN's 2005 access agreement applied a real pre-tax rate of return of 7 per cent.) To support this argument, it noted that the ACT's Independent Competition and Regulatory Commission's recent decisions (2004) had applied a common rate of return of 7.0 per cent to both ACTEW AGL's electricity and water businesses.

The metropolitan water agencies submitted that their risk profile has changed since the 2003 determination, and that this should result in a higher rate of return. In particular, they argued that they are facing increases in risks associated with:

- uncertainty surrounding their water demand forecasts due to uncertainty associated with the likely length of the current droughts in Sydney, and
- uncertainty associated with the expected impact of demand management programs on water demand.

To manage this uncertainty, some of the water agencies sought a revenue volatility adjustment mechanism and a cost pass-through mechanism (as discussed in section 3.3).

7.4 Tribunal's draft findings on depreciation method and asset lives

The allowance for a return of capital, or depreciation, represents the revenue each agency requires to maintain the value of its assets. Depreciation represents around 7 to 10 per cent per cent of a water agency's total notional revenue requirement.

To determine this allowance, the Tribunal has made findings on the depreciation method and the asset lives to be applied. The following sections discuss each of these findings.

7.4.1 Depreciation method

The Tribunal's draft decision is that it will use the straight-line depreciation method to calculate the return of capital (depreciation) allowance for each water agency.

The Tribunal believes that this approach is superior to alternatives in terms of simplicity, consistency and transparency. It used a straight line depreciation profile in the 2003 determination. The water agencies support the continued use of this approach.

7.4.2 Asset lives to be applied

For this draft determination, the Tribunal has decided to calculate depreciation using the asset lives shown in Table 7.5. These asset lives are consistent with those proposed by the water agencies.

Table 7.5 Asset lives used in calculating depreciation allowance

Existing assets	New Assets
70 years	100 years

For Sydney Water and Hunter Water, these average assets lives are consistent with those used in the 2003 determinations. For the Sydney Catchment Authority, they are different because the 2003 mid term review incorrectly used asset lives of 100 and 190 years.

8 REVENUE REQUIRED FOR OPERATING EXPENDITURE AND WORKING CAPITAL

As Chapter 5 discussed, the Tribunal considers the amount of revenue each agency requires to recover these cost blocks by:

- assessing the level of efficient operating and maintenance costs the agency will incur in providing water, sewerage (and in some cases, stormwater drainage) services over the determination period
- assessing the amount of working capital it will require over the determination period, then multiplying this amount by the rate of return used in calculating the allowance for a return on assets (discussed in Chapter 7).

This chapter explains the Tribunal's draft findings on the agencies' required revenue for operating expenditure and working capital. Section 8.1 and 8.2 summarise its findings for each agency, and the approach it used to assess the agencies' efficient operating costs. Section 8.3 sets out the forecast operating expenditure proposed by each agency, the level of efficient operating costs recommended by the Tribunal's consultants, and the Tribunal's findings on the level of efficient operating costs. Sections 8.4 to 8.6 explain the Tribunal's considerations in making its findings for each agency. Section 8.7 discusses the Tribunal's considerations and findings in relation to working capital.

8.1 Summary of Tribunal's draft finding on operating expenditure and working capital

The Tribunal's draft finding is that the operating expenditures used to calculate the total notional revenue requirement for each agency will be those shown in Table 8.1. It considers that these operating expenditures represent the efficient level of operating and maintenance costs associated with the agencies providing regulated water and wastewater services over the 2005 determination period.

**Table 8.1 Required revenue for operating expenditure
(\$ million, 2004/05)**

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority	79.6	79.7	78.2	76.1	313.6
Sydney Water (excluding bulk water)	733.8	725.7	717.9	705.1	2,882.5
Hunter Water	68.8	68.7	69.2	69.1	275.8

The Tribunal's draft finding is that the allowances for the costs associated with working capital used to calculate the total notional revenue requirements for each agency will be those shown in Table 8.2.

**Table 8.2 Required revenue for working capital allowance
(\$ million, 2004/05)**

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority	(0.3)	0.2	0.2	0.6	0.7
Sydney Water	4.0	5.2	5.5	6.1	20.8
Hunter Water	0.7	0.8	0.8	0.9	3.2

8.2 Tribunal's approach to assessing efficient operating costs

As foreshadowed in the issues paper,⁴⁷ the Tribunal's approach to assessing each agency's level of efficient operating costs involved:

- obtaining proposals from the agencies on their forecast operating expenditure for the 2005 determination period and their potential to make future efficiency gains
- engaging a consultant to independently review these proposals
- considering the agencies' proposals, the consultants advice and other stakeholder submissions in relation to operating expenditure
- analysing other information, including the agencies' past operating expenditure.

The Tribunal engaged Atkins/Cardno to review the water agencies' proposals and:

- provide its opinion on the efficiency of each agency's proposed level of operating expenditure for each year between 2005/06 and 2009/10
- make recommendations (with supporting reasons) on the level of operating expenditure each agency requires for each of these years to efficiently undertake its regulated functions
- identify and analyse each agency's potential for cost reduction for each function, and make recommendations (with supporting reasons) on each agency's potential for efficiency gains
- where it assesses current expenditure in an area of operations as inadequate, specify and quantify the recommended additional expenditure required.⁴⁸

Atkins/Cardno assessed the agencies' forecast operating expenditure by service area, and considered the agencies' management structures, the processes they used to manage operating costs, and specific issues affecting their operating costs. It also assessed each agency's potential for additional operating efficiency gains, using a similar approach to the one it used to assess their potential for capital efficiency gains (see Chapter 6). This approach

⁴⁷ Refer p 12, Discussion paper DP75, *Review of Metropolitan Water Agency Prices*, July 2004.

⁴⁸ Atkins/Cardno, *IPART Capex, Asset Management and Opex Reviews, Overview Report, Final*, February 2005, p 4.

considered the concepts of continuing efficiency and catch-up efficiency.⁴⁹ Full details of Atkins/Cardno approach and analysis can be found in its final report, which is available on the IPART website.⁵⁰

8.3 Overview of agency forecasts, expert findings and Tribunal's draft findings on operating expenditure

Table 8.3 sets out the forecast operating expenditure proposed by the agencies, efficient operating costs recommended by Atkins/Cardno (incorporating potential efficiencies), and the Tribunal's draft findings on the operating expenditure to be used in calculating each agency's notional revenue requirements and setting prices for the 2005 determination period.

Table 8.3 Agencies' forecast compared with Tribunal's finding on operating expenditure (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority					
Agency forecast	79.7	81.1	81.3	80.2	322.3
Atkins/Cardno recommendation	80.1	80.5	79.0	76.9	316.5
Tribunal's draft finding	79.6	79.7	78.2	76.1	313.6
Sydney Water⁵¹					
Agency forecast	744.6	733.3	723.0	715.6	2,916.5
Atkins/Cardno recommendation	733.8	725.7	717.9	705.1	2,882.5
Tribunal's draft finding	733.8	725.7	717.9	705.1	2,882.5
Hunter Water					
Agency forecast	68.9	69.5	70.5	71.5	280.3
Atkins/Cardno recommendation	68.8	68.7	69.2	69.1	275.8
Tribunal's draft finding	68.8	68.7	69.2	69.1	275.8

8.4 Tribunal's findings in relation to the Sydney Catchment Authority

The Sydney Catchment Authority proposed annual operating expenditure for the 2005 determination period that ranged from \$79.7 million for 2005/06 to \$81.3 million for 2007/08. This forecast expenditure is lower than the forecast annual expenditure it submitted for the 2003 mid-term review of its current determination, and is similar to its actual and projected expenditure for 2003/04 and 2004/05 (Table 8.4).

⁴⁹ Atkins/Cardno defined continuing efficiency as the scope for top performing or frontier companies (agencies) to continue to improve their efficiency, and catch-up efficiency as the scope for all other utilities to reach the performance of a frontier utility.

⁵⁰ IPART *Capex, Asset Management and Opex Review, Overview Report, Final*, February 2005, Atkins in association with Cardno. Available on www.ipart.gov.nsw.au.

⁵¹ Excluding bulk water costs.

**Table 8.4 Operating expenditure over the 2003 determination period
(\$ million, 2004/05)**

	2002/03	2003/04	2004/05	Total
Sydney Catchment Authority				
Agency forecast 2003 (2003 mid term review)	85.5	87.6	89.1	262.2
Tribunal mid term review 2003	79.2	79.9	79.4	238.5
Actual (2002/03 and 2003/04)/projected (2004/05) expenditure	84.1	78.2	79.2	241.5

Since 2003, the Sydney Catchment Authority has made significant progress in ensuring a reliable bulk water supply and adhering to the catchment management requirements of its licence. Although the agency's actual operating expenditure over this period was less than it forecast, Atkins/Cardno commented it has developed processes and programs that will allow it to undertake its core business activities. Atkins/Cardno also commented that the Sydney Catchment Authority is at the forefront of implementing scientifically based catchment management activities aimed at optimising the quality of surface water harvested for drinking water purposes. While the Tribunal accepts Atkins/Cardo's comments, it notes that the operating licence auditor has previously raised some concerns about the transparency and reporting of Sydney Catchment Authority's catchment management activities⁵².

Since the 2003 mid-term review, the Sydney Catchment Authority's performance has met the requirements of its water management licence and operating licence. It has met or exceeded water quality compliance standards and provided an uninterrupted supply of water to customers over the period. In addition, it has:

- developed a Drought Response Plan
- developed an adaptive long-term demand and supply strategy for consideration by the Minister for Environment
- developed new programs for water quality monitoring and asset improvement and reliability
- addressed catchment management through a number of initiatives, including establishing a five-year Accelerated Sewerage Scheme to fast-track upgrades to sewage treatment plants in the catchment, developing the Healthy Catchments program as the umbrella program for catchment protection, and contributing funds to DEC to purchase private lands within the Warragamba Special Area.

For the 2005 determination period, the Sydney Catchment Authority proposed that its operating expenditure be capped at \$315.6 million (\$2004/05) in real terms. Most of its proposed expenditure relates to its core operating activities, including maintenance of the assets responsible for providing bulk water supply and protection of the catchment environs. The Sydney Catchment Authority also highlighted additional expenditure needed to

⁵² IPART, *Sydney Catchment Authority's Operational Audit*, 2003/04.

maintain equipment for accessing deep storages of dams⁵³ and to measure environmental improvements from increased environmental flows, and for additional pumping from the Shoalhaven system.⁵⁴

The Sydney Catchment Authority's proposal to increase water pumping from the Shoalhaven was a major concern of some submissions to the Tribunal.⁵⁵ Some of these submissions argued that increased water pumping from the Shoalhaven will simply have the effect of transferring some of the environmental impact of Sydney's unsustainable water use to other catchments. Others commented that the extra costs associated with this pumping (and other proposed supply augmentation options) are a reflection of the failure of previous pricing arrangements to adequately reflect true environmental costs.

Based on its review, Atkins/Cardno was concerned about two components of the Sydney Catchment Authority's forecast operating expenditure – the expenditure associated with catchment yield management and with accessing deep storages. It also identified the potential for the agency to make additional efficiency gains. The Tribunal's considerations and findings on each of these matters are discussed below.

8.4.1 Catchment yield management

Atkins/Cardno recommended that additional operating expenditure of \$1 million in 2005/06 and \$2 million per annum in subsequent years be provided for increased activity to enhance catchment yield management processes, including the operation of telemetry systems currently carried out by Sydney Water.

After considering this recommendation, the Tribunal's draft finding is not to provide for the recommended increased expenditure. The Sydney Catchment Authority has not provided it with a business case to support the additional expenditure. In addition, the arrangements for transferring the operation of telemetry systems from Sydney Water to the Sydney Catchment Authority have not yet been made.

8.4.2 Accessing deep storages

Atkins/Cardno recommended that the Sydney Catchment Authority's fixed operating cost estimates for the deep storage scheme be reduced from \$0.8 million per annum to \$0.5 million per annum, given the preliminary nature of the estimates. In addition, it recommended that the agency's operating cost estimate for environmental flows be reduced from \$0.7 million in 2005/06 and \$1.4 million in subsequent years, to a more 'realistic' \$0.5 million per annum.

The Tribunal's draft finding is to adopt the Sydney Catchment Authority's operating cost estimates for the deep storage scheme for the purposes of the 2005 price review, as these estimates are consistent with the Metropolitan Water Plan.

⁵³ The expenditure proposed for deep storage access relates to general maintenance of the equipment needed to access the deep water. It does not include associated pumping costs because these costs will only be incurred if storage levels fall below 10 per cent.

⁵⁴ The Sydney Catchment Authority included updated estimates of the potential frequency of this pumping in its forecast expenditure. It is intended that there will be less pumping during low flow periods and more during periods of high flows.

⁵⁵ The Total Environment Centre, submission to IPART, January 2005 and the Nature Conservation Council of NSW, submission to IPART, February 2005.

8.4.3 Potential for additional operating efficiency gains

Atkins/Cardno found that the Sydney Catchment Authority could achieve higher operating efficiencies than those the agency had factored into its forecast expenditures. It considered that the Sydney Catchment Authority could achieve additional continuing efficiencies of 0.8 per cent per annum over the determination period, and additional catch-up efficiencies of 1 per cent per annum from 2006/07. It therefore recommended that additional efficiency gains ranging from 0.8 per cent in 2005/06 to 5.3 per cent in 2008/09 be applied to the agency's operating expenditure forecasts (Table 8.5).

Table 8.5 Atkins/Cardno's recommended additional operating efficiencies for Sydney Catchment Authority (per cent)

Financial Year	2005/06	2006/07	2007/08	2008/09
Net efficiency (cumulative)	0.8	2.6	4.0	5.3

The Tribunal's draft finding is that the additional operating efficiencies recommended by Atkins/Cardno for the Sydney Catchment Authority are appropriate, and should be incorporated.

8.4.4 Overall effect of Tribunal's draft findings on forecast operating expenditure

The net effect of the Tribunal's draft findings is that the level of efficient forecast operating expenditure used in calculating the Sydney Catchment Authority's notional revenue requirement for the 2005 determination period is \$313.6 million. This amount is \$8.7 million or 2.7 per cent less than the agency's proposed forecast capital expenditure (see Table 8.6).

Table 8.6 Sydney Catchment Authority's forecast compared with Tribunal's finding on efficient operating expenditure (\$ million, 2004/05)

	2005/06	2006/07	2007/08	2008/09	Total
Sydney Catchment Authority forecast	79.7	81.1	81.3	80.2	322.3
Atkins/Cardno recommendation	80.1	80.5	79.0	76.9	316.5
Tribunal finding	79.6	79.7	78.2	76.1	313.6

8.5 Tribunal's findings in relation to Sydney Water

Sydney Water proposed annual operating expenditures (excluding bulk water purchases) which ranged from \$745 million for 2005/06 to \$716 million for 2008/09. The forecast expenditure for 2005/06 is higher than its projected expenditure for 2004/05 of \$725 million (excluding bulk water purchases) (Table 8.7).

**Table 8.7 Operating expenditure* over the current determination period
(\$ million, 2004/05)**

Financial Year	2002/03	2003/04	2004/05	Total
Sydney Water Corporation				
Agency forecast 2003	697.1	690.1	683.7	2,070.9
Tribunal determination 2003	697.1	685.9	674.2	2,057.2
Actual (2002/03 and 2003/04)/projected (2004/05) expenditure	822.0	631.8	725.1**	2,178.9

* Excludes bulk water costs.

** Increase of \$93 million or 14.8 per cent in projected 2004/05 compared to actual 2003/04 primarily due to increased employee provisions of \$60 million, labour costs of \$8 million, and hire and contract service costs of \$13 million.

Sydney Water's proposed operating expenditures also include a pass-through cost of \$30 million per annum as its contribution to the Water Savings Fund. It noted in its proposal that it expects the fund will finance around \$15 million of its demand management activities undertaken each year.

In its review of these proposed expenditures, Atkins/Cardno noted some significant variations in the forecast operating expenditure for the 2005 determination period and actual expenditure over the current determination period, including :

- ongoing reduction in employee provisions and labour costs
- reduction in other costs
- increased expenditure on demand and drought management issues
- increased expenditure on energy, Build, Own and Operate (BOO), and hire and contract services.

Atkins/Cardno also found that Sydney Water's capitalisation policy materially impacts its future operating costs. The current capitalisation policy assumes a low threshold (\$5,000), but in practice the capitalisation criteria depend on the level at which assets are recorded on the fixed asset register. Sydney Water could influence the operating and capital expenditure balance by using a more detailed asset register.

In addition, it made specific recommendations related to re-phasing Sydney Water's operational project expenditure, and identified the potential for the agency to make additional operational efficiency gains. These recommendations are discussed below.

8.5.1 Re-phasing expenditure on operational projects

Atkins/Cardno noted that Sydney Water had provided significant justification for its forecast operational project expenditure. However, it was not confident that the forecast levels of expenditure for 2005/06 and 2006/07 were efficient, or that Sydney Water would be able to deliver the projects planned for these years within the allowed timeframe. It therefore recommended that Sydney Water's expenditure on operational projects over 2005/06 and 2006/07 be re-phased (see Table 8.8).

In response to these findings, Sydney Water stated that it has a report that confirms the business need for and deliverability of the planned operational projects, but did not provide the report to the Tribunal as further evidence. However, the Tribunal understands that the agency did provide significant information to Atkins/Cardno in relation to project delivery.

While Atkins/Cardno accepted the need for the operational projects, it remained unconvinced that the projects planned for 2005/06 and 2006/07 represented efficient levels of expenditure and were achievable in the planned timeframe. The Tribunal therefore found Atkins/Cardno's recommendation to re-phase expenditure on these projects to be appropriate.

Table 8.8 Atkins/Cardno's recommendations on re-phasing operation projects (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09
Sydney Water's proposal	29.1	28.2	28.2	28.3
Atkins/Cardno recommendation	20.4	24.0	28.2	28.3
Difference	(8.7)	(4.2)	-	-

8.5.2 Potential for additional efficiency gains

Atkins/Cardno found that Sydney Water had not applied a consistent methodology for deriving operating expenditure driven by new capital expenditure. It considered that the accuracy of Sydney Water's forecast operating expenditure would be improved by implementing activity based costing.⁵⁶ In the interim, it recommended that the additional efficiency factors it recommended be applied to Sydney Water's forecast capital expenditure also be applied to the portion of the agency's forecast operating expenditure that is driven by this capital expenditure (Table 8.9).

Table 8.9 Atkins/Cardno's recommended additional efficiencies for Sydney Water's operating expenditure driven by capital expenditure (percentage)

Financial Year	2005/06	2006/07	2007/08	2008/09
Net efficiency (cumulative)	3.5	5.0	7.5	9.0

On balance, the Tribunal found that Atkins/Cardno's recommendation to apply the proposed capital expenditure efficiencies to forecast operating expenditure that is driven by capital expenditure to be appropriate.

In relation to the forecast operating expenditure that is *not* driven by capital expenditure, Atkins/Cardno found that there is potential for Sydney Water to achieve relatively small 'catch up' and 'continuing' efficiency gains in addition to the efficiencies the agency proposed (see Table 8.10). Atkins/Cardno recommended that these additional efficiencies be applied only to forecast operating expenditure associated with controllable costs only – that is, it recommended that it not be applied to expenditure associated with bulk water costs and Sydney Water's contribution to the Water Savings Fund.

⁵⁶ Atkins/Cardno noted that although Sydney Water is moving to an activity based costing system, it found no evidence of this in the sample of projects that it reviewed.

The Tribunal's draft finding is that Atkins/Cardno's recommended additional operating efficiencies in relation to forecast operating expenditure not driven by capital expenditure are appropriate.

Table 8.10 Atkins/Cardno's recommended additional efficiencies for Sydney Water's forecast operating expenditure that is not driven by capital expenditure (% cumulative)

Financial Year	2005/06	2006/07	2007/08	2008/09
Water	0.0	0.0	0.1	0.6
Wastewater	0.0	0.0	0.1	0.7
Stormwater drainage	0.0	0.0	0.0	0.0
Corporate	0.0	0.0	0.0	0.0

8.5.3 Overall effect of Tribunal's findings on forecast operating expenditure

The net effect of the Tribunal's draft findings is that the level of efficient forecast operating expenditure used in calculating Sydney Water's notional revenue requirement is \$2,882.5 million. This amount is \$34.1 million or 1.2 per cent less than Sydney Water's proposed forecast operating expenditure (see Table 8.11).

Table 8.11 Sydney Water's forecast compared with Tribunal's finding on efficient operating expenditure* (\$ million, real 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Sydney Water 's proposal					
Water	307.0	303.5	299.4	294.9	1,204.6
Wastewater	285.3	286.2	285.6	286.7	1,143.8
Stormwater drainage	7.6	7.9	7.8	7.8	31.1
Corporate	144.8	135.9	130.1	126.3	537.1
Total agency proposed	744.6	733.3	723.0	715.6	2,916.6
Atkins/Cardno recommendation					
Water	302.1	299.6	296.4	288.7	1,186.8
Wastewater	279.4	282.4	283.6	282.3	1,127.7
Stormwater drainage	7.5	7.8	7.8	7.8	30.9
Corporate	144.8	135.9	130.1	126.3	537.1
Total	733.8	725.7	717.9	705.1	2,882.5
Tribunal's finding					
Water	302.1	299.6	296.4	288.7	1,186.8
Wastewater	279.4	282.4	283.6	282.3	1,127.7
Stormwater drainage	7.5	7.8	7.8	7.8	30.9
Corporate	144.8	135.9	130.1	126.3	537.1
Total	733.8	725.7	717.9	705.1	2,882.5

* Excluding bulk water costs.

8.6 Tribunal's findings in relation to Hunter Water

Hunter Water proposed annual operating expenditure that ranged from \$68.9 million for 2005/06 to \$71.5 million for 2008/09. The forecast expenditure for 2005/06 is similar to its projected expenditure for 2004/05 of \$68 million (Table 8.12).

**Table 8.12 Operating expenditure over the current determination period
(\$ million, 2004/05)**

Financial Year	2002/03	2003/04	2004/05	Total
Hunter Water Corporation				
Agency forecast 2003	63.4	62.1	60.9	186.4
Tribunal determination 2003	na	60.3	58.7	Na
Actual (2002/03 and 2003/04)/projected (2004/05) expenditure	65.6	64.7	68.0	198.3

In its submission, Hunter Water mentioned that it has made improvements in operating efficiency of 45 per cent since 1991, during a time when there had also been a 15 to 20 per cent increase in costs required to meet higher regulatory standards, particularly in the areas of wastewater and drinking water quality. Hunter Water identified a small net reduction in operating costs per property over the 2005 determination period.

Hunter Water also identified a number of factors contributing to increased costs over the 2005 determination period. These include the need to meet the customer standards obligations in its operating licence, and higher energy costs of \$0.9 million per annum from 2007/08, when its existing energy contracts are due to be renewed. It also identified an increase of around \$1 million per annum related to the application of International Accounting Standards, which will reduce the extent of costs that can be capitalised.

In its review, Atkins/Cardno noted that Hunter Water has high levels of water main breaks and sewer chokes and breaks compared to other agencies, and that its ratio of reactive to planned maintenance was also very high. It suggested that Hunter Water develop a business case for optimising maintenance expenditure with a view to improving customer service standards.

Atkins/Cardno recommended that the Tribunal accept Hunter Water's proposed operating costs, but that efficiency gains in addition to those proposed by Hunter Water be incorporated. The Tribunal's considerations and findings in relation to this recommendation is discussed below.

8.6.1 Potential for additional efficiency gains

Atkins/Cardno identified opportunities for Hunter Water to make additional efficiency gains ranging from 0.2 per cent in 2005/06 to 3.4 per cent in 2008/09. These opportunities included developing activity based costing systems, improving the allocation of labour and hire costs, consolidating operational activities that are currently split between divisions into a single unit, and optimising maintenance expenditure to reduce the risk of supply interruptions (see Table 8.13).

Atkins/Cardno noted that a proportion of Hunter Water's forecast operating expenditure is associated with uncontrollable costs (55 per cent of water service and 75 per cent of wastewater services expenditure). It recommended that its additional efficiency gains not be applied to this expenditure.

Table 8.13 Atkins/Cardno's recommended additional operating efficiencies for Hunter Water (per cent per annum cumulative)

Financial Year	2005/06	2006/07	2007/08	2008/09
Water	0.4	1.4	2.2	3.3
Wastewater	0.0	0.0	0.5	1.8
Stormwater drainage	0.0	0.0	0.0	0.0
Corporate	0.3	2.4	3.7	5.9

The Tribunal's draft finding is to adopt the Atkins/Cardno recommended operating efficiencies for Hunter Water for the 2005 price review.

8.6.2 Overall effect of Tribunal's draft findings on forecast operating expenditure

The net effect of the Tribunal's draft finding is that the level of efficient forecast operating expenditure used in calculating Hunter Water's notional revenue requirement is \$275.8 million. This amount is \$4.5 million or 1.6 per cent less than the agency's proposed forecast operating expenditure (see Table 8.14).

Table 8.14 Hunter Water's forecast compared with Tribunal's finding on efficient operating expenditure (\$ million, 2004/05)

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Hunter Water's proposal					
Water	25.4	25.6	26.0	26.4	103.4
Wastewater	25.5	25.7	26.1	26.4	103.7
Stormwater drainage	1.0	1.0	1.0	1.0	4.0
Corporate	17.1	17.2	17.4	17.6	69.3
Total agency proposed	69.0	69.5	70.5	71.5	280.4
Atkins/Cardno recommendation					
Water	25.3	25.3	25.5	25.5	101.6
Wastewater	25.5	25.7	25.9	26.0	103.1
Stormwater drainage	1.0	1.0	1.0	1.0	3.9
Corporate	17.1	16.8	16.8	16.6	67.3
Total	68.9	68.8	69.2	69.1	276.0
Tribunal's finding					
Water	25.3	25.3	25.5	25.5	101.6
Wastewater	25.5	25.7	25.9	26.0	103.1
Stormwater drainage	1.0	1.0	1.0	1.0	4.0
Corporate	17.1	16.8	16.8	16.6	67.3
Total	68.9	68.8	69.2	69.1	276.0

8.7 Tribunal's considerations and findings in relation to allowance for working capital

The Tribunal believes that each agency's total notional revenue requirement should include an allowance for the cost of maintaining an investment in working capital. This is additional to the allowances for a return on assets and depreciation.

The Tribunal's draft findings on this allowance and the factors considered in arriving at this finding are summarised below.

8.7.1 Summary of draft finding on allowance for working capital

Table 8.15 sets out the Tribunal's draft findings on the costs associated with working capital to be used in calculating the agencies' notional revenue requirement and setting prices for the 2005 determination period. The Sydney Catchment Authority and Hunter Water did not propose an allowance for working capital, and Sydney Water's proposed allowance was included in its proposed return on capital allowance.

Table 8.15 Tribunal's draft finding on costs associated with working capital (\$ million, 2004/05)

Financial Year	2006	2007	2008	2009	Total
Sydney Catchment Authority	(0.3)	0.2	0.2	0.6	0.7
Sydney Water	4.0	5.2	5.5	6.1	20.8
Hunter Water	0.7	0.8	0.8	0.8	3.2

8.7.2 Tribunal's considerations in relation to costs associated with working capital

The Tribunal's draft findings are based on a simplified payment cycle approach to calculating the costs associated with working capital. This approach makes assumptions about the number of days that payments by the agency and to the agency are outstanding. The calculation also adds in the value of inventory.

The working capital allowance has been calculated as follows:

- Receivables @ 45 days of sales revenue depending on billing cycles less
- Payables @ actual 2004 days of operating costs + capital expenditure (30 days) plus
- Inventory @ actual 2004 days of operating costs + capital expenditure (0.2 days).

No allowance has been made for pre-payments.

9 TRIBUNAL'S PRICING DECISIONS FOR INDIVIDUAL SERVICES

As previous chapters have explained, the Tribunal sets water prices by first making decisions on each agency's total notional revenue requirement, forecast metered water sales and forecast customer numbers for the determination period. It then determines the maximum prices for individual monopoly services, taking into account its decisions on the revenue requirement and forecast sales, plus the matters it must consider under Section 15 of the IPART Act, and the contextual matters discussed in Chapter 2.

This chapter explains the Tribunal's draft decisions on the maximum prices to be charged by the Sydney Catchment Authority, Sydney Water and Hunter Water for water, wastewater and stormwater drainage services for the 2005 determination period. Section 9.1 provides an overview of the Tribunal's pricing decisions for each agency. Section 9.2 explains the Tribunal's approach in setting prices. Sections 9.3 to 9.5 explain the Tribunal's draft decisions on individual services for each agency.

9.1 Summary of pricing decisions

The Tribunal's draft decision is to increase the Sydney Catchment Authority's prices by an average of CPI+12% in the first year of the determination period, and by CPI+4.5% in each of the remaining years.

In making its pricing decisions for the Sydney Catchment Authority, the Tribunal has:

- set the same water usage charge for bulk water supplied to Sydney Water, Wingecarribee Council and Shoalhaven Council:
 - for the Sydney Water charges, the Tribunal has targeted an increase over the 2005 determination period resulting in an approximate 2:1 ratio of volumetric revenue to fixed revenue from its determined prices by 2008/09, although this will depend on the actual water consumption
 - for Wingecarribee and Shoalhaven Councils, the Tribunal has continued with the policy to only charge on a volumetric basis and set the usage charges at the same level as those set for Sydney Water
- set zero fixed water charges for Wingecarribee and Shoalhaven Councils
- set a zero fixed water charge for raw water customers
- set the fixed water charge for unfiltered water customers at the 2004/05 level, and not provided for any inflation adjustment during the 2005 determination period
- maintained the current water usage charges for raw and unfiltered water, and provided for these charges to be adjusted for inflation only over the 2005 determination period.

The Tribunal's draft decision is to increase prices for Sydney Water on average by CPI+5% in the first year of the determination period and CPI+1.1% in each of the remaining years.

In making its pricing decisions for Sydney Water, the Tribunal has:

- introduced a two-tier inclining block tariff for variable water usage charges, with the Tier 1 charge set to approximate the lower bound of the estimated range for the long run marginal cost of supply over the 2005 determination period, and the Tier 2 charge set so that the difference between it and the Tier 1 charge increases over the determination period
- increased water usage charges overall, and decreased fixed water service charges so these fixed charges represent a smaller proportion of customers' water bills
- increased the wastewater service charge in each year of the 2005 determination period to reflect the underlying costs of providing wastewater services
- set the non-residential wastewater usage charge so it increases each year at the same rate as the wastewater service charge
- accepted Sydney Water's proposed stormwater drainage charges, so that these charges are more cost reflective by the end of the 2005 determination period
- accepted Sydney Water's proposed trade waste charges, so that most of these charges are adjusted for inflation only over the 2005 determination period
- set charges for recycled water and river management services within the Rouse Hill development area so these charges are adjusted for inflation only over the 2005 determination period
- set miscellaneous charges so these charges are adjusted for inflation only over the 2005 determination period
- set minor service extension charges based on the methodology set out in the 2003 determination
- accepted Sydney Water's proposal to restructure charges for Blue Mountains septic pump out customers and require customers who have access to the reticulated system to directly contract with the private pump out service providers. However, Sydney Water is to provide customers with two-years notice of this requirement. If customers have not connected to the reticulated system by the end of that time, they will be required to directly contract with the private pump out service provider.

The Tribunal's draft decision is to increase Hunter Water's prices by an average of CPI+6% in the first year of the determination period, and by CPI+1.8% in each of the remaining years.

In making its pricing decisions for Hunter Water, the Tribunal has:

- set water usage charges for residential and small non-residential customers to phase out the Tier 2 charge over the 2005 determination period. This will be achieved by increasing the Tier 2 charge at a greater rate than the Tier 1 charge until it equals the Tier 1 charge
- set Tier 3 water usage charges for large industrial customers so they increase at the same rate as the Tier 1 usage charge for residential and small non-residential customers
- set Tier 1 and Tier 2 water usage prices for the Dungog Shire Council at the same level as Tier 1 and Tier 2 usage prices for residential and small non-residential customers,

and set Tier 3 water usage charges so they increase at the same rate as the Tier 1 usage charge

- set water usage charges for raw water customers so they incorporate a minimum discount of 7 cents per kilolitre compared to water usage charges for other customers. The Tribunal will undertake further investigations into the level of the discount prior to making its final decision on these charges
- set water usage charges for sales to Gosford Council and Wyong Council at the same levels as Tier 1 and Tier 2 standard water usage charges for residential and small non-residential customers. The Tribunal will undertake further investigations into the price to confirm its cost reflectivity prior to making its decision on these charges
- maintained the current wastewater usage charge, and provided for it to be adjusted for inflation only over the 2005 determination period
- increased the wastewater service charge by CPI+6.9% in 2005/06 and CPI+2.3% in each of the following years to 2008/09
- increased the minimum wastewater service charge for flats and units by \$20 per annum in nominal terms so that this charge is approximately two-thirds of the service charge for single residential dwellings by 2008/09
- set the notional wastewater usage charge for sewer-only customers at \$20 per annum in 2005/06, and provided for this charge to be adjusted for inflation only over the 2005 determination period
- maintained the Sewer Service Access Charge and the Environment Improvement Charge at current levels, and provided for these charges to be adjusted for inflation only over the 2005 determination period
- restructured stormwater drainage charges to phase out charges based on property value by 2008/09 and replace them with charges based on property size
- maintained trade waste charges at their current levels, and provided for them to be adjusted for inflation only over the 2005 determination period
- accepted Hunter Water's proposed miscellaneous charges for 2005/06 with one amendment, and provided for these charges to be adjusted for inflation only over the 2005 determination period.

9.2 The Tribunal's approach to setting maximum prices

The Tribunal adopted a 'staged' approach when analysing and setting draft maximum prices, which allowed it to explicitly consider the information provided through submissions and independent reviews, and to take account of its own analysis and the factors in Section 15 of the IPART Act. This approach also recognised that, to make decisions about maximum prices, the Tribunal must first make decisions about how the notional revenue requirement is translated into prices over the determination period and about the structure of these prices.

The Tribunal's approach to setting the draft maximum prices involved the following four key steps:

1. Determine the agency's notional revenue requirement (based on its findings on the four cost building blocks) and its forecast metered water sales and customer numbers.
2. Identify the broad pricing approaches that could feasibly be applied for the agency to translate the revenue requirement into prices, and assess the overall average impact of each approach on customers and the agency. The approaches considered included:
 - **unsmoothed revenue requirement** – where prices (and X-factors) are set to match the profile of the notional revenue requirement
 - **smoothed revenue requirement** – where a single X-factor is set to ensure that an agency's targeted revenue equals its notional revenue requirement in NPV⁵⁷ terms throughout the determination period
 - **glide path** – where a single X-factor is set to ensure that prices change smoothly over the determination period in real terms, and that an agency's targeted revenue in the final year of the determination period equals its notional revenue requirement for that year
 - **P-nought adjustment and glide path** – where two X-factors are set. The first X-factor is set to deliver a P-nought⁵⁸ adjustment to prices in the first year of the determination period. The second X-factor is set so that average prices increase smoothly over the rest of the determination period and the expected revenue in the final year of the period is equal to the notional revenue requirement in that year.
3. Identify feasible pricing structures and calculate actual prices for all or a selection of the pricing options identified in Step 2, then assess the implications of these prices in the context of the Section 15 factors. Specifically, this included considering the impact of prices on customers and the agency's financial viability:
 - in considering customer impact, the Tribunal looked at the magnitude of real price increases in 2005/06 compared to 2004/05, and over the whole determination period; and the effect these increases on average bills, and relative bill size compared with other NSW agencies and other jurisdictions
 - in considering financial viability and sustainability, the Tribunal looked at the agency's forecast credit rating, taking into account its existing cash/debt levels and its ability to pay dividends; and the 'benchmark financial structure' consistent with the WACC parameter assumptions made by the Tribunal in this determination
 - in considering economic efficiency, the Tribunal looked at the signals sent to customers; cost reflectivity; consistency with LRMC; and the findings of its price structure review.
4. Decide on the pricing structure and level for the 2005 determination to take account of the interests of the agencies, customers and stakeholders, recognising that the balancing of these different interests could mean that the target revenue derived by the level of prices is less than the Tribunal's determined notional revenue requirement.

⁵⁷ Net Present Value.

⁵⁸ P-nought refers to an adjustment to prices in the first year of the determination period.

9.3 Draft decision on the prices to be charged by the Sydney Catchment Authority

The Tribunal's draft decision is to use a P-nought adjustment and glide path approach to set prices for the Sydney Catchment Authority for the 2005 determination period. This approach should result in prices that achieve an appropriate balance between the Section 15 factors. In particular, the P-nought adjustment in 2005/06 will allow prices (and therefore expected revenue) to increase more sharply in this year, to reflect the significant step up in the agency's revenue requirement. The glide path approach in the remaining years will allow average prices to increase in a stable and predictable way, and also result in final-year prices that are expected to generate actual revenue equal to the agency's notional revenue requirement for that year.

The Tribunal's draft decision delivers average price increases that are lower than those implied in the Sydney Catchment Authority's submission. In aggregate, the cumulative effect of the Tribunal's draft decision is for average price increases of 29 per cent above the movement in the CPI (real increase), compared to average price increases of 39 per cent above the movement in the CPI (real increase) implied in the Sydney Catchment Authority's submission.

9.3.1 Maximum charges to Sydney Water

The Tribunal's draft decision is that the Sydney Catchment Authority can charge Sydney Water the maximum prices shown in Table 9.1.

**Table 9.1 Sydney Catchment Authority charges to Sydney Water Corporation
(Dollars of the day)**

Charge	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Fixed Availability Charge (\$ million per calendar month)	\$5.366	\$5.124	\$5.124 $\times (1+\Delta\text{CPI}_1)$	\$5.124 $\times (1+\Delta\text{CPI}_2)$	\$5.124 $\times (1+\Delta\text{CPI}_3)$
Volumetric Charge (per megalitre)	\$116.25	\$153.53	\$163.83 $\times (1+\Delta\text{CPI}_1)$	\$177.18 $\times (1+\Delta\text{CPI}_2)$	\$190.28 $\times (1+\Delta\text{CPI}_3)$

Where:

- $(1+\Delta\text{CPI}_1)$ Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_2)$ Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_3)$ Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

These charges reflect the Tribunal's draft decision not to change the structure of the wholesale water price, but to rebalance the fixed and variable components of this price so that the variable charge moves closer to the Sydney Catchment Authority's long run marginal cost of supply. The draft decision means that, by 2009, it is likely that

approximately one-third of the revenue the agency generates through charges to Sydney Water will come from the fixed charge and two-thirds will come from the variable charge.

The initial decrease in the fixed charge and the steady increase in the variable charge are consistent with the Sydney Catchment Authority's submission.

9.3.2 Maximum charges to other customers

The Sydney Catchment Authority supplies water to a number of customers other than Sydney Water. These customers consume approximately 0.7 per cent of the annual total water demand placed on the Sydney Catchment Authority, and include:

- Wingecarribee Shire Council and Shoalhaven City Council, who acquire bulk raw water for retailing to their own customers.
- Sixty smaller raw water and unfiltered water 'retail' customers who have direct off-takes from pipelines, canals and storages.

Water supply services to Wingecarribee Shire Council and Shoalhaven City Council

The Tribunal's draft decision is that the Sydney Catchment Authority can charge Wingecarribee Shire Council and Shoalhaven City Council the maximum prices shown in Table 9.2.

Table 9.2 Volumetric charges to Wingecarribee Shire Council and Shoalhaven City Council (Dollars of the day)

	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Volumetric Charge (\$ per ML)	\$105.08	\$153.53	\$163.83 $\times (1+\Delta\text{CPI}_1)$	\$177.18 $\times (1+\Delta\text{CPI}_2)$	\$190.28 $\times (1+\Delta\text{CPI}_3)$

Where:

- (1+ ΔCPI_1) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_2) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_3) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Wingecarribee Shire Council is forecast to draw an average of around 3,700ML of water per year from the Sydney Catchment Authority's Wingecarribee Reservoir for treatment and resale to its own customers.

Shoalhaven City Council purchases around 90ML per annum of bulk water from the Sydney Catchment Authority's Bendeela Pondage for regular supply to the township of Kangaroo Valley. During extreme drought periods, it also purchases bulk water released from the Sydney Catchment Authority's Tallowa Dam.

These charges reflect the Tribunal's draft decision that water usage charges to Wingecarribee Shire Council and Shoalhaven City Council should be consistent with the water usage charges to Sydney Water. This is in line with the Sydney Catchment Authority's proposal.

Charges to other raw water and unfiltered water customers

The Tribunal's draft decision is that the Sydney Catchment Authority can charge raw water and unfiltered water customers the maximum prices shown in Tables 9.3 and 9.4.

**Table 9.3 Annual unfiltered water service charges in 2005/06 to 2008/09
(Dollars of the day)**

Service connection (nominal diameter)	Service charge \$
20mm	75.00
25mm	117.20
30mm	168.75
32mm	192.00
40mm	300.00
50mm	468.75
80mm	1200.00
100mm	1875.00
150mm	4218.75
200mm	7500.00
>200mm	$(\text{nominal diameter})^2 \times 75/400$

Table 9.4 Unfiltered water and raw water usage charges (Dollars of the day)

Charge	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Unfiltered Water Volumetric Charge (\$ per kL)	0.75	0.77	$0.77 \times (1+\Delta\text{CPI}_1)$	$0.77 \times (1+\Delta\text{CPI}_2)$	$0.77 \times (1+\Delta\text{CPI}_3)$
Raw water charges - Volumetric Charge (\$ per kL)	0.44	0.45	$0.45 \times (1+\Delta\text{CPI}_1)$	$0.45 \times (1+\Delta\text{CPI}_2)$	$0.45 \times (1+\Delta\text{CPI}_3)$

Where:

- $(1+\Delta\text{CPI}_1)$ Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_2)$ Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_3)$ Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

The Tribunal's draft decision is not to realign the Sydney Catchment Authority's volumetric prices for unfiltered water with its charges to Sydney Water. Instead, it decided to maintain these volumetric prices in real terms, by allowing them to be adjusted for movement in the CPI only.

The Tribunal's draft decision is to maintain the fixed charge for unfiltered water in nominal terms, by not allowing the charge to be adjusted for movement in the CPI over the determination period. This decision is consistent with the 2003 determination, and with the Tribunal's draft decision to place a greater emphasis on the variable charge by rebalancing the fixed and variable components of prices.

Raw water customers will continue to pay a volumetric charge only. The Tribunal's draft decision is to maintain the volumetric charge in real terms, by allowing it to be adjusted for movements in the CPI only.

9.4 Draft decision on the prices to be charged by Sydney Water

The Tribunal's draft decision is to use a P-nought adjustment and glide path approach to set prices for the Sydney Water for the 2005 determination period. This approach should result in prices that achieve an appropriate balance between the Section 15 factors. In particular, the P-nought adjustment in 2005/06 will allow prices (and therefore expected revenue) to increase more sharply in that year, to reflect the significant step up in the agency's revenue requirement. The glide path approach in the remaining years will allow average prices to increase in a stable and predictable way, and also result in final-year prices that are expected to generate actual revenue equal to the agency's notional revenue requirement for that year.

The Tribunal's draft decision delivers average price increases that are lower than those implied in Sydney Water's submission. In aggregate, the cumulative effect of the Tribunal's draft decision is for average price increases of 8.3 per cent above the movement in the CPI (real increase), compared to average price increases of 18.4 per cent above the movement in the CPI (real increase) implied in the Sydney Water's submission.

9.4.1 Water charges

The Tribunal's draft decision is that Sydney Water can charge customers the maximum water charges shown on Table 9.5. These charges reflect the Tribunal's draft decision that Sydney Water is to adopt a two-tiered inclining block price structure for water usage charges, with the Tier 2 price being applied to consumption over 400kL per annum (to be expressed as a daily limit of approximately 1.1kL/day).

**Table 9.5 Sydney Water's current and Tribunal's draft determined water charges
(Dollars of the day)**

Charge	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Service charge (\$ per annum) ¹	77.62 ²	75.79 ²	62.66 x (1+ΔCPI ₁)	52.85 x (1+ΔCPI ₂)	43.87 x (1+ΔCPI ₃)
Tier 1 Usage Charge up to 1.1kL per day (\$ per kL)	1.01	1.13	1.19 x (1+ΔCPI ₁)	1.20 x (1+ΔCPI ₂)	1.23 x (1+ΔCPI ₃)
Tier 2 Usage charge greater than 1.1kL per day (\$ per kL)	1.01	1.44	1.56 x (1+ΔCPI ₁)	1.70 x (1+ΔCPI ₂)	1.84 x (1+ΔCPI ₃)

Where:

- (1+ΔCPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- (1+ΔCPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- (1+ΔCPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Notes:

- The water service charge is based on the size of the meter connection to the property. This charge is calculated for a 20mm connection. For Non Residential water availability charges the following formula is applied to determine the service availability charge: (Meter size)² x 20mm charge/400.
It should be noted that given the seasonality of water consumption, some consumers who consume less than 400kL over the year, or approximately 1.1kL/day, may exceed the daily limit.
- All of Sydney Water's service charges in this report represent an annual equivalent charge. Where service charges apply from 1 October 2005 three quarters of the charge shown will be billed from 1 October 2005 to 30 June 2006. The associated determination for Sydney Water sets out the service charges after this apportionment has been made.

In its submission to the Tribunal, Sydney Water proposed a number of pricing scenarios incorporating the following price structure options:

- introducing a two tier or inclining block tariff (IBT) structure for variable usage charges
- keeping the current price structure, but increasing the variable usage charge and decreasing the fixed service charge
- keeping the current price structure and increasing the variable usage charge and fixed service charge by the same rate.

In July 2004, the Tribunal set out the findings of its investigation into the potential for alternative price structures for Sydney Water to reduce the demand for water in the Sydney Basin. It found that an IBT with a two-tiered variable usage charge and a fixed service charge was likely to be the most appropriate price structure.⁵⁹ The Tribunal concluded that such a price structure:

- could send a strong signal about the need to conserve water, particularly to high water users
- has considerable potential to reduce demand
- is relatively easy to understand, implement and administer.

⁵⁹ See: IPART, *Investigation into Price Structures to Reduce the Demand for Water in the Sydney Basin – Final Report*, July 2004.

The Tribunal also recommended that under such a structure, the Tier 1 usage charge should be set at the long run marginal cost of supply (LRMC). Since its report on price structure was released, the Tribunal has estimated the LRMC to be between \$1.20 and \$1.50 per kL (\$2004/05).

The Tribunal gave further consideration to Sydney Water's water price structure as part of this price review. It reaffirmed its view that an IBT with a two tiered variable usage charge and a lower fixed access charge is the most appropriate price structure for Sydney Water in the current circumstances. It also considered Sydney Water's pricing proposal for such a structure. This proposal⁶⁰ is set out in Table 9.6.

Table 9.6 Sydney Water's proposed water charges (Dollars of the day)

	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Service charge (\$ per annum)	77.62	73.73	69.63 x (1+ Δ CPI ₁)	67.58 x (1+ Δ CPI ₂)	63.49 x (1+ Δ CPI ₃)
Tier 1 usage charge (\$ per kL)	1.013	1.111	1.213 x (1+ Δ CPI ₁)	1.300 x (1+ Δ CPI ₂)	1.408 x (1+ Δ CPI ₃)
Tier 2 usage charge (\$ per kL)	1.013	1.843	1.843 x (1+ Δ CPI ₁)	1.843 x (1+ Δ CPI ₂)	1.843 x (1+ Δ CPI ₃)

Where:

- (1+ Δ CPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005
- (1+ Δ CPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005
- (1+ Δ CPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Under this proposal, the difference between the Tier 1 and Tier 2 usage charges decreases over the determination period. The Tribunal believes that this reduces the incentive the Tier 2 charge creates for customers to reduce their consumption. For this reason, it has not accepted Sydney Water's proposal.

Rather, its draft decision is to set the two-tiered inclining block tariff so that the margin between the first and second tier increases over the 2005 determination period. This increases the incentive created by the Tier 2 price over the determination period, while protecting high-water-use customers from unacceptable price shocks and giving them time to modify their behaviour to mitigate the impact that the Tier 2 price will have on their water bills (See Chapter 10 for further discussion of customer and environmental impacts.)

In addition, the Tribunal's draft decision is to set the Tier 1 usage charge in 2005/06 so it is roughly in line with the lower bound of its estimated LRMC range of \$1.20 to \$1.50 per kL. The Tribunal recognises that although water usage charges should aim to reflect the LRMC of supply, the value of the LRMC for the 2005 determination period is uncertain given the current demand/supply imbalance and likely impact of the drought conditions. Therefore, the LRMC of supply is likely to change over time.

⁶⁰ Based on a 6.5 per cent real, pre-tax rate of return.

Further, the Tribunal's draft decision is to set the fixed water service charge so that it decreases over the 2005 determination period, and becomes a smaller proportion of total water charges. This decision reflects its view that higher variable usage charges provide a stronger signal to customers about the need for the water conservation.

The Tribunal's draft decision on price structure for Sydney Water is consistent with the views of a number of stakeholders as indicated in their submissions to the Tribunal and presentations at the Metropolitan Water hearing. These stakeholders believe that a step price tariff arrangement sends a strong conservation message to customers and better reflects the environmental cost. The Tribunal also notes that a number of submissions from individuals expressed concern over the new price structure, but that this was primarily due to concerns for large households. The Tribunal has considered the impacts of the step tariff arrangement on large low-income households in Chapter 10.

9.4.2 Wastewater charges

The Tribunal's draft decision is that Sydney Water can charge the maximum wastewater service charges shown in Table 9.7.

Table 9.7 Sydney Water's current and Tribunal's draft determined wastewater charges (Dollars of the day)

Charge	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Wastewater service charge – all customers (\$ per annum)*	346.66	368.64	373.69 x (1+ΔCPI ₁)	378.81 x (1+ΔCPI ₂)	384.00 x (1+ΔCPI ₃)
Wastewater usage charge - non-residential properties only (\$ per kL)	1.15	1.19	1.21 x (1+ΔCPI ₁)	1.22 x (1+ΔCPI ₂)	1.24 x (1+ΔCPI ₃)

Where:

- (1+ΔCPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005
- (1+ΔCPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005
- (1+ΔCPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

* Based on 20mm wastewater service connection and 100 per cent discharge. For non-residential water availability charges, the following formula is applied to determine the service availability charge: (meter size)² x 20mm charge/400. For non-residential properties a discharge factor is applied.

The Tribunal's draft wastewater service charge is less than the charge proposed by Sydney Water. This reflects the lower costs associated with wastewater services that the Tribunal allowed for in calculating Sydney Water's notional revenue requirement, as a result of its draft finding that Atkins/Cardno's recommendation to re-phase Sydney Water's forecast capital projects should be accepted. The Tribunal set the wastewater usage charge so that it increases at the same rate as the fixed charge over the determination period.

9.4.3 Stormwater drainage charges

The Tribunal's draft decision is that Sydney Water can charge the maximum stormwater drainage charges shown in Table 9.8.

**Table 9.8 Sydney Water's current and Tribunal's determined stormwater charges
(Dollars of the day)**

Charge	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Residential service charge (\$ per annum)	25.04	32.77	36.86 x (1+ Δ CPI ₁)	40.96 x (1+ Δ CPI ₂)	45.06 x (1+ Δ CPI ₃)
Non-residential service charge (\$ per annum)	70.64	81.92	94.21 x (1+ Δ CPI ₁)	106.50 x (1+ Δ CPI ₂)	114.69 x (1+ Δ CPI ₃)

Where:

- (1+ Δ CPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and 31 March 2005
 (1+ Δ CPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and 31 March 2005
 (1+ Δ CPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and 31 March 2005.

The Tribunal has previously noted that the current institutional arrangements for stormwater drainage services, where several organisations are responsible for providing these services within the Sydney region, have resulted in inconsistent pricing, quality of service and depth of investment. In addition, there have been suggestions that this responsibility should rest with one party, which has created uncertainty about Sydney Water's future responsibility for these services.

The Tribunal believes that this uncertainty potentially creates an incentive for Sydney Water to under invest in stormwater infrastructure compared with the level allowed for in this determination. However, as discussed in Chapter 6, it expects that the adoption of output measures will enable it to more accurately assess whether Sydney Water is meeting its service obligations under its stormwater capital program.

In addition, although the uncertainty surrounding the institutional arrangements for stormwater drainage services has previously led the Tribunal to defer changes to the pricing structure for stormwater drainage, it now believes that Sydney Water should further develop the area-based charge it has previously proposed for consideration at the 2009 price review.

In the interim, the Tribunal's draft decision for this determination is to accept Sydney Water's proposed increases in stormwater drainage charges, so that these charges will be more cost reflective by the end of the 2005 determination period.

9.4.4 Trade waste charges

The Tribunal's draft decision is to accept Sydney Water's proposal for trade waste charges as set out in schedule 5 of the determination.

In general, Sydney Water proposed to maintain its current trade waste charges in real terms over the determination period with some minor adjustments. It also proposed to introduce two more significant changes related to the charges associated with discharging total dissolved solids and pollutants not subject to a formal threat assessment.

Total dissolved solids

The reuse of sewage treatment plant effluent for irrigation and industrial/commercial use is increasing, but is often limited by high concentrations of total dissolved solids (TDS) in the effluent that are not removed by normal sewage treatment processes.

Sydney Water proposed that the current rates for discharging effluent with high concentrations of TDS be replaced by a uniform charging rate of \$0.005/kg for systems discharging to the ocean with no reuse or other limitations, and for systems discharging to inland or the ocean with discharge limitations. Penalty charges will apply for customers discharging effluent that exceeds the acceptance standards.

In systems where treatment to remove TDS is applied, Sydney Water proposed to charge a nominal rate of \$0.15 per kg of TDS treated. This charge reflects the typical treatment costs involved. The actual charge in each catchment will be calculated as:

$$\text{Actual Charging Rate} = \$0.15/\text{kg} \times \text{fraction of Average Dry Weather Flow treated}$$

The Tribunal's draft decision is to accept Sydney Water's proposal for TDS charges.

Pollutants not subject to a formal threat assessment

Sydney Water occasionally receives requests to discharge pollutants where there has been no formal assessment of the impacts associated with accepting these pollutants to the sewer system, or the costs involved in maintaining such agreements. These situations typically arise when the Department of Environment and Conservation determines that discharging pollutants in this manner is the most appropriate form of disposal.

Sydney Water proposed that application and agreement fees to discharge pollutants not currently in its *Trade Waste Policy* be directly negotiated with the applicant, and determined so that they cover the costs involved. This approach will mean that the fees reflect the higher costs involved in assessing and maintaining such agreements (including testing), and will ensure that they are not cross-subsidised by the general customer base.

The application fee would be calculated at a standard hourly rate of \$105 and charged in arrears (maximum not exceeding \$20,000). The agreement fee would be calculated using a standard hourly rate of \$105 plus analytical costs incurred. A quality charge for the substance would be determined by the acceptance standard and be negotiated with the customer.

The Tribunal's draft decision is to accept Sydney Water's proposal for fees and charges associated with discharging pollutants not subject to a formal threat assessment.

9.4.5 Charges for additional services in Rouse Hill

The Tribunal's draft decision is to set the maximum recycled water and river management charges for customers in the Rouse Hill development area shown in Table 9.9.

Table 9.9 Charges for additional services in Rouse Hill (Dollars of the day)

Charge	Current (1 July 2004 to 30 September 2005)	1 October 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Recycled Water usage per kL	0.286	0.293	$0.293 \times (1+\Delta\text{CPI}_1)$	$0.293 \times (1+\Delta\text{CPI}_2)$	$0.293 \times (1+\Delta\text{CPI}_3)$
River Management Charge (drainage) $\leq 1000\text{m}^2$ (annual)	105.35	107.88	$107.88 \times (1+\Delta\text{CPI}_1)$	$107.88 \times (1+\Delta\text{CPI}_2)$	$107.88 \times (1+\Delta\text{CPI}_3)$
River Management Charge (drainage) $\geq 1000\text{m}^2$ (annual)	$105.35 \times ((\text{land area m}^2)/1000)$	$107.88 \times ((\text{land area m}^2)/1000)$	$107.88 \times ((\text{land area m}^2)/1000) \times (1+\Delta\text{CPI}_1)$	$107.88 \times ((\text{land area m}^2)/1000) \times (1+\Delta\text{CPI}_2)$	$107.88 \times ((\text{land area m}^2)/1000) \times (1+\Delta\text{CPI}_3)$
Recycled Water Service Access Charge (based on meter size)					
20mm	24.70	25.29	$25.29 \times (1+\Delta\text{CPI}_1)$	$25.29 \times (1+\Delta\text{CPI}_2)$	$25.29 \times (1+\Delta\text{CPI}_3)$
For properties with meter size >20mm the formula to apply is	$(\text{nominal diameter})^2 \times (\text{charge for 20mm meter})/400$				

Where:

- (1+ ΔCPI_1) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_2) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_3) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Sydney Water customers in the Rouse Hill development area receive two additional services – access to recycled water and river management services. The benefits of access to recycled water have been highlighted in recent years when restrictions on using potable water have been in place. During this time these residents have been able to use recycled water without restriction.

The Tribunal's draft decision on charges for these additional services is that the charges will be adjusted for inflation over the determination period, in line with Sydney Water's proposal. Sydney Water also proposed to remove the area-based river management charge for drainage. However, the Tribunal decided not to do so, given that it intends to consider the introduction of area-based charging for stormwater drainage services in the 2009 determination period. This matter is discussed further in section 9.4.3.

9.4.6 Miscellaneous charges

The Tribunal's draft decision is to accept Sydney Water's proposed miscellaneous service charges with minor amendments and to maintain these charges in real terms over the 2005 determination period.

The Tribunal sets miscellaneous charges for the range of ancillary services the metropolitan water agencies provide, including special meter readings, statements of available pressure and flows, and applications for water service connection. These charges do not account for a large proportion of the total revenue earned by Sydney Water, but they can be significant for those customers who are required to pay them.

The Tribunal asked the water agencies to adopt the following formula to calculate the level of charges:

$$\text{Miscellaneous charge} = \text{base cost} + \text{direct material cost}$$

The Tribunal recognises that there may be significant cost justifications for the services being priced differently. For this reason, it hired a consultant (RSM Bird Cameron) to review the reasonableness of each agency's miscellaneous charges price proposal for the period commencing 1 July 2005.

RSM Bird Cameron concluded that each agency had applied a methodology that is supportable but is conservative in its application. It noted that in most cases, the proposed charges have been reduced by the use of 2004 labour rates and overheads (instead of the 2005 rates) and are therefore likely to be below cost for the 2005 determination period.

RSM Bird Cameron also noted that despite this the agencies have proposed some very significant price increases. These large price increases reflect the agencies' view that at the 2003 determination many charges were set below actual cost. Based on its findings, RSM Bird Cameron largely supported this view.

With this in mind, the Tribunal has, for the most part, accepted Sydney Water's list of proposed miscellaneous charges for 2005/06 to 2008/09. However, based on the advice of its consultant, it has made a number of minor changes to Sydney Water's proposed list of miscellaneous services:

- **Indexation.** In previous determinations for both water and electricity, the Tribunal has not allowed miscellaneous charges to be increased by the movement in the CPI during a determination. To avoid large price increases at the next determination, the Tribunal has decided to allow miscellaneous charges to be adjusted for the movement in the CPI during the 2005 determination period.
- **Workshop test of water meter.** Sydney Water's proposed fee for this service includes the cost of processing the application and performing the test, plus the cost of a new meter to replace the existing one. The Tribunal has previously not allowed Sydney Water to charge customers the replacement cost of a new water meter, as this meter remains the agency's property. Consistent with this approach, the Tribunal's draft decision is to exclude the replacement cost of a new meter from this charge, and set a meter test fee of \$165.50 for all meter sizes.
- **Water and sewer extension application.** RSM Bird Cameron identified a transcription error in the calculation of this charge. Sydney Water acknowledged this error and the Tribunal has recalculated the water and sewer extension charge at \$53.00 to account for the transcription error.
- **Late payment fee.** Sydney Water proposed a late payment fee of \$5.00 to cover costs associated with following up overdue accounts. The Tribunal was persuaded by RSM Bird Cameron's comments that the costs associated with following up overdue accounts were already recovered through overheads and therefore decided not to set a late payment fee for Sydney Water.

A detailed list of the maximum prices Sydney Water can charge customers for miscellaneous services can be found in schedule 4 of the attached determination.

9.4.7 Minor service extension charges

The Tribunal's draft decision is to set minor service extension charges based on the methodology set out in the 2003 determination.

In the 2003 determination, the Tribunal approved an approach for the recovery of costs associated with minor service extensions. However, there was an inconsistency between the final report and the actual determination.

The final report approved a charging arrangement proposed by Sydney Water which divided the cost of the network extension by the number of equivalent domestic properties potentially served by it, then deducted the current value of future regular sewerage charges that will be paid by the connected customers. Customers were required to pay the resulting amount on connection (whenever this occurs). This charge was to be adjusted annually by the movement in the CPI. However, the actual determination reflected an approach more aligned with the developer charges methodology, which effectively increases the charge by adjusting the number of lots to reflect timing of connection.

Sydney Water has adopted the formula as stated in the actual determination. The Tribunal considers this is the more appropriate methodology for determining minor service extension charges. Therefore, its draft decision is that it continue to be used to set minor service extension charges during the 2005 determination period.

9.4.8 Tariff rationalisation

Sydney Water has proposed to simplify a number of its current tariffs to reduce administration costs and streamline the billing process. These changes relate to:

- meter-size-based service charges for residential properties
- exempt charges
- Blue Mountains Septic Pump out charges
- sewer service charges for customers required to pump effluent to the sewer for environmental reasons
- area-based river management charges for drainage services within Rouse Hill development area
- sewerage charges for unmetered non-residential properties based on equivalent water usage
- incentives for installing low pressure sewerage systems.

The Tribunal's draft decisions on these charges are discussed below.

Meter-size-based service charges for residential properties

The Tribunal's draft decision is not to approve Sydney Water's proposed change.

Water service charges for commercial, industrial and multiple dwelling buildings (units and flats) are based on the size of the water meter serving the property. However, houses are charged the water service charge for a standard 20mm meter, regardless of the size of the actual meter. Sydney Water estimates that around 2 per cent of houses (23,500 properties)

have meters larger than 20mm and has proposed to charge houses on the basis of meter size. Sydney Water has stated it will replace the meters to 20mm meters free of charge if customers do not want to pay the higher charges.

The Tribunal notes that its draft decisions in relation to the structure of water prices has placed more emphasis on volume-based water usage charges. Customers who use more water because of a larger meter will be charged more through the increased usage charges. Therefore, the Tribunal does not consider it appropriate to further increase these customers fixed charges.

Exempt charges

The Tribunal notes that its approval is not required to modify the charging arrangements for council and other park owners, as long as the proposed charges do not exceed the maximum prices set through the 2005 determination.

Exempt properties currently benefit from a discount for water and sewer services. They are granted exemptions through legislation. Sydney Water has proposed to modify the charging arrangements for council and other park owners. It is seeking amendment to the legislation to enable charges for metered parks to be brought in line with charges for State Government or privately owned parks.

Blue Mountain Septic pump out charges

The Tribunal's draft decision is to accept Sydney Water's proposal to restructure charges for Blue Mountains septic pump out customers, and to require such customers who have access to the reticulated system to directly contract with the private pump out service providers. However, Sydney Water is to provide these customers two-years notice of the new requirement to directly contract with the private pump out service provider.

Sydney Water currently provides septic pump out services for approximately 680 customers in the Blue Mountains. Around 90 of those customers have access to a reticulated sewage service but have not connected to it.

The cost of providing the pump out service is recovered through a subsidised charge regulated by the Tribunal. The charge includes a fixed annual charge of \$400.83 and a three-tiered usage charge based on how much effluent the customer generates:

- Tier 1 (0-80kL per annum): \$0/kL
- Tier 2 (81-100kL per annum): \$9.11/kL
- Tier 3 (more than 100kL per annum): \$18.22/kL.

The charge currently recovers approximately 33 per cent of the cost of the service provision. The balance is funded through a Government Community Service Order payment.

Sydney Water would like to reform the current charging arrangements to:

- make the CSO rebate more transparent
- encourage connection to infrastructure if it is available
- lessen the incentive for illegal discharge which has environmental impacts.

It proposed that customers who have access to reticulated services pay the economic price for pump out services by directly contracting with a private operator for the provision of this service. The intent is that this would provide a better signal for those customers to connect to the network and would be consistent with charges imposed by other councils.

For those customers who do not have access to a reticulated system, Sydney Water proposed to continue to charge them a subsidised charge, but to restructure that charge by:

- increasing the fixed charge to \$500.00 per annum
- removing the Tier 2 charge
- decreasing the Tier 3 charge from \$18.22 to \$12.00 per kL.

The Tribunal supports this proposal as it should lead to a better environmental outcome in the catchment area. However, it is conscious that the increase in charges for customers who are able to connect to the reticulated system is significant. Therefore, it has determined that Sydney Water must give these customers two-years notice of the new requirement to contract directly with the pump out service provider. This will give them time to connect to the system if they wish to avoid the additional cost that this will involve. The Tribunal also notes that customers who suffer from financial hardship and who may be impacted by this decision are eligible for assistance to finance the connection costs through Sydney Water's social programs.

Sewer service charges for customers required to pump effluent

The Tribunal notes that Sydney Water does not require its approval to reduce the subsidy for customers required to pump effluent, as the proposed sewer service charge for these customers is below the maximum prices set through the 2005 determination.

Prior to 1998, all customers who were required to pump effluent to the sewer for environmental reasons paid sewer service charges at a discounted rate of 50 per cent of normal charges. In 1998, Sydney Water implemented a policy whereby those customers who paid this discounted rate could continue to pay this rate until they were further advised or until the property was sold. Currently, 310 customers still pay the discounted rate, which is approximately \$170 per annum.

Sydney Water proposed to remove this discount over two years by reducing the subsidy to 25 per cent of the full sewer service charge in the first year, and removing it completely in the second year.

The Tribunal notes that the proposed changes will allow consistency in charges and reduce the administration cost to Sydney Water. However, it also notes that the resulting charges will not exceed the maximum sewer service charge it has determined for the 2005 determination period. Therefore, Sydney Water does not require the Tribunal's approval to make these changes.

Equivalent Water usage for unmetered non-residential properties

Approximately 4,500 of Sydney Water's business customers are unmetered. For the most part, these customers are small shops and offices. Although they pay a water service (fixed) charge equivalent to a 20mm meter, they do not pay for consumption. Sydney Water proposed to:

- undertake an inspection program to assess the viability of metering some additional unmetered business properties, and installing a meter free of charge if it is justified on financial grounds
- introduce an equivalent unmetered water usage charge similar to that for residential customers, but set at 120kL per annum. This is half the amount of the equivalent charge for residential customers and roughly equivalent to the water usage of a small office.

The Tribunal's draft decisions is to accept Sydney Water's proposal on the basis that it is consistent with the approach taken for residential properties and is also consistent with its intention to move towards more volume-based charging.

Low Pressure Sewerage Systems

The Tribunal notes that Sydney Water does not require its approval to implement its proposed approach to meet its responsibility under the Priority Sewerage Program.

As part of the Priority Sewerage Program, Sydney Water has implemented Low Pressure Sewerage Systems (LPSS) where topography, geology or environmental sensitivities make the provision of gravity-based systems uneconomical.

To encourage customers in these areas to connect to the system, Sydney Water proposes to pay for the costs of supplying and installing the LPSS equipment and pipework for up to two years after the reticulation system becomes available. After this time, Sydney Water will provide the equipment for the LPSS free of charge, but the customer will be required to pay for installation. Sydney Water will pay all ongoing operating and maintenance costs associated with the LPSS, other than the energy cost associated with the pump, estimated at approximately \$14.50 per annum. Customers will also be required to pay the standard connection fee and annual sewer service charge as determined by the Tribunal. In contrast, where gravity-based systems are installed, customers are required to pay all connection and infrastructure costs to connect their property to the network.

Sydney Water has sought the Tribunal's endorsement of the implementation of LPSS. The Tribunal considers that the LPSS approach and the costs associated with this approach are reasonable. However, it also notes that it is not its responsibility to endorse any particular approach that Sydney Water undertakes to meet its responsibility under the Priority Sewerage Program. The Tribunal considers it sufficient that the Sydney Water Operating Licence provides guidance for the agency by stating that it should incorporate the principle of least cost technology when meeting its requirements under this program.

9.5 Draft decision on prices to be charged by Hunter Water

The Tribunal's draft decision is to use a P-nought adjustment and glide path approach to set prices for Hunter Water for the 2005 determination period. It considers that this approach should result in prices that achieve an appropriate balance between the Section 15 factors. In particular, the P-nought adjustment in 2005/06 will allow prices (and therefore expected revenue) to increase more sharply in this year, to reflect the step up in Hunter Water's revenue requirement. The glide path approach over the remaining years will allow average prices to increase in a stable and predictable way, and also result in final-year prices that are expected to generate actual revenue equal to the agency's notional revenue requirement for that year.

The Tribunal's draft decision delivers average price increases that are lower than those proposed by Hunter Water. In aggregate, the cumulative effect of the Tribunal's draft decision is for an average increase of 11.8 per cent above the movement in the CPI (real increase), compared to the annual 3 per cent increase in all charges Hunter Water proposed, which translates to an average increase of 12.6 per cent above the movement in inflation (real increase).

9.5.1 Water charges

Hunter Water's residential and non-residential customers pay for their water services through two charges: a fixed service charge and a variable usage charge that depends on the volume of water they use. Currently Hunter Water has a declining block tariff structure, which means that the average price for water decreases as consumption increases above a certain threshold:

- residential and small non-residential customers who use less than 1,000kL per annum are charged the Tier 1 water usage charge
- residential and small non-residential customers who use more than 1,000kL per annum are charged a lower Tier 2 charge for consumption greater than this amount
- large industrial customers who use more than 50,000kL per annum are charged a location-based Tier 3 usage charge for consumption greater than this amount.⁶¹

Customers who receive untreated water are also charged a discounted water usage rate.

Water charges for residential customers and small non-residential customers

The Tribunal's draft decision is that Hunter Water can charge residential customers and small non-residential customers the maximum water service and usage charges shown in Table 9.10.

⁶¹ Location-based charges reflect the costs of servicing very large customers. Customers pay whichever charge is lower of the location-based charge and the usage charges for other customers.

Table 9.10 Hunter Water's water charges for residential and small non-residential customers (Dollars of the day)

	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Usage charge - Tier 1 (\$ per kL)	1.01	1.08	$1.10 \times (1+\Delta\text{CPI}_1)$	$1.11 \times (1+\Delta\text{CPI}_2)$	$1.13 \times (1+\Delta\text{CPI}_3)$
Usage charge - Tier 2 (\$ per kL)	0.93	1.02	$1.05 \times (1+\Delta\text{CPI}_1)$	$1.09 \times (1+\Delta\text{CPI}_2)$	$1.13 \times (1+\Delta\text{CPI}_3)$
Service charge (\$ per annum)	25.37 ¹	30.21 ¹	$31.12 \times (1+\Delta\text{CPI}_1)$	$32.04 \times (1+\Delta\text{CPI}_2)$	$32.98 \times (1+\Delta\text{CPI}_3)$

Where:

- (1+ ΔCPI_1) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_2) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_3) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Note:

1. All of Hunter Water's service charges in this report represent an annual equivalent charge. Where service charges apply from 1 November 2005 two thirds of the charges shown will be billed from 1 November 2005 to 30 June 2006. This associated determination for Hunter Water sets out the service charges after this apportionment has been made.

These charges reflect the Tribunal's draft decision to accept Hunter Water's proposal to phase out the lower Tier 2 usage charge over the determination period by increasing this charge at a greater rate than the Tier 1 usage charge. The detailed price movements have been determined to achieve an appropriate balance between the revenue recovered through water charges and customer impacts.

The Tribunal notes that Hunter Water set out a detailed pricing proposal in its submission. This proposal included increasing the Tier 1 usage charge by CPI+2.25% in each year of the determination period, and increasing the water service charge by an average of CPI+7% in each year. The Tribunal's draft decision involves a different pattern of increases. For the Tier 1 usage price, it involves an increase of CPI+4.5% in 2005/06, and an increase of CPI+1.4% in the remaining years. For the Tier 2 usage price, it involves an increase of CPI+6.8% in 2005/06, and an increase of CPI+3.5% in the remaining years. For the annual water service charge, it involves an increase of CPI+16% in 2005/06 and CPI+3.0% in the remaining years.

Water charges for large customers

The Tribunal's draft decision is that Hunter Water can charge Tier 3 customers the maximum water charges shown in Table 9.11.

Table 9.11 Hunter Water's current and Tribunal determined Tier 3 water usage charges (Dollars of the day)

	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Kooragang / Stockton (\$ per kL)	0.802	0.858	$0.870 \times (1+\Delta\text{CPI}_1)$	$0.882 \times (1+\Delta\text{CPI}_2)$	$0.894 \times (1+\Delta\text{CPI}_3)$
Tomago (\$ per kL)	0.839	0.898	$0.910 \times (1+\Delta\text{CPI}_1)$	$0.923 \times (1+\Delta\text{CPI}_2)$	$0.936 \times (1+\Delta\text{CPI}_3)$
South Wallsend (\$ per kL)	0.807	0.864	$0.876 \times (1+\Delta\text{CPI}_1)$	$0.888 \times (1+\Delta\text{CPI}_2)$	$0.900 \times (1+\Delta\text{CPI}_3)$
Warner's Bay/Valentine (\$ per kL)	0.839	0.898	$0.910 \times (1+\Delta\text{CPI}_1)$	$0.923 \times (1+\Delta\text{CPI}_2)$	$0.936 \times (1+\Delta\text{CPI}_3)$
Seaham Hexham (\$ per kL)	0.872	0.933	$0.946 \times (1+\Delta\text{CPI}_1)$	$0.959 \times (1+\Delta\text{CPI}_2)$	$0.972 \times (1+\Delta\text{CPI}_3)$
Newcastle Highfields (\$ per kL)	0.882	0.944	$0.957 \times (1+\Delta\text{CPI}_1)$	$0.970 \times (1+\Delta\text{CPI}_2)$	$0.984 \times (1+\Delta\text{CPI}_3)$
Raymond Terrace (\$ per kL)	0.896	0.959	$0.972 \times (1+\Delta\text{CPI}_1)$	$0.986 \times (1+\Delta\text{CPI}_2)$	$0.999 \times (1+\Delta\text{CPI}_3)$
Port Stephens (\$ per kL)	0.899	0.962	$0.975 \times (1+\Delta\text{CPI}_1)$	$0.989 \times (1+\Delta\text{CPI}_2)$	$1.002 \times (1+\Delta\text{CPI}_3)$
Kurri Cessnock (\$ per kL)	0.902	0.965	$0.978 \times (1+\Delta\text{CPI}_1)$	$0.992 \times (1+\Delta\text{CPI}_2)$	$1.005 \times (1+\Delta\text{CPI}_3)$
Lookout (\$ per kL)	0.901	0.964	$0.977 \times (1+\Delta\text{CPI}_1)$	$0.991 \times (1+\Delta\text{CPI}_2)$	$1.004 \times (1+\Delta\text{CPI}_3)$
Edgeworth West Wallsend (\$ per kL)	0.925	0.990	$1.004 \times (1+\Delta\text{CPI}_1)$	$1.018 \times (1+\Delta\text{CPI}_2)$	$1.032 \times (1+\Delta\text{CPI}_3)$
All other locations (Tier 2 price) (\$ per kL)	0.930	0.995	$1.009 \times (1+\Delta\text{CPI}_1)$	$1.023 \times (1+\Delta\text{CPI}_2)$	$1.037 \times (1+\Delta\text{CPI}_3)$

Where:

- (1+ ΔCPI_1) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_2) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- (1+ ΔCPI_3) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Tier 3 prices are location based water usage charges for industrial customers for their consumption above 50,000kL/year.

Industrial customers who consume more than 50,000kL per annum and who are located in specific 'zones' are charged Tier 3 water usage prices. Tier 3 prices are lower than Tier 1 and Tier 2 prices where the Tier 3 zones are located closer to the source of supply and therefore have lower supply costs. The Tier 3 prices are calculated using Hunter Water's model of supply assets in each zone.

The Tribunal's draft decision is to apply the same increases to Tier 3 prices as to Tier 1 usage charges, in line with Hunter Water's proposal. This should help to ensure that these prices remain cost reflective and the relative demand signal is maintained.

Water charges for Dungog Council

The Tribunal's draft decision is that Hunter Water can charge Dungog Council the maximum water charges shown in Table 9.12.

Table 9.12 Hunter Water's current and Tribunal determined water charges for Dungog Council (Dollars of the day)

	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Usage charge - Tier 1 (\$ per kL)	1.01	1.08	1.10 x (1+ Δ CPI ₁)	1.11 x (1+ Δ CPI ₂)	1.13 x (1+ Δ CPI ₃)
Usage charge - Tier 2 (\$ per kL)	0.93	1.02	1.05 x (1+ Δ CPI ₁)	1.09 x (1+ Δ CPI ₂)	1.13 x (1+ Δ CPI ₃)
Usage charge – Tier 3 (\$ per kL)	0.55	0.59	0.59 x (1+ Δ CPI ₁)	0.60 x (1+ Δ CPI ₂)	0.61x (1+ Δ CPI ₃)

Where:

- (1+ Δ CPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- (1+ Δ CPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- (1+ Δ CPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

* Dungog has 4 water connections: an 80mm, 2 x 100mm and a 200mm pipe diameter.

Hunter Water supplies Dungog Shire Council with bulk water. The supply arrangement includes Tier 1, Tier 2 and Tier 3 usage charges set on the same basis as for Hunter Water's other customers. Hunter Water proposed that the Tier 1 and Tier 2 water usage charges for Dungog Council should continue to be equal to the prices charged for other customers, and that Tier 3 usage charges be increased by 2.25 per cent per annum (real).

The Tribunal's draft decision is to set maximum Tier 1 and Tier 2 water usage prices for Dungog Council so they are equal to those prices for other customers (see water charges for residential customers and small non-residential customers, above). Its draft decision is to apply the same increases to Tier 3 water usage prices as it has to Tier 1 water usage charges, in line with its decision on Tier 3 prices for other customers (see water charges for large industrial customers, above). These decisions will maintain equity across all customers.

Raw water charges

The Tribunal's draft decision is to set water usage charges for raw water customers so they incorporate a minimum discount of 7 cents per kilolitre compared to water usage charges for other customers.

Hunter Water currently has around 60 raw water customers, most of whom are rural landowners who use raw water for domestic and livestock purposes. The Tribunal accepts that there is a lower cost of supplying untreated water and that this should be reflected in a lower price for the water. At the last determination, it set a discount of 7 cents per kilolitre (in dollars of the day) on the usage price for this water.

Hunter Water proposed that this discount be maintained at the current level, as there has been no significant change in the cost of treating water. The Tribunal's draft decision is to accept Hunter Water's proposal. However, the Tribunal will conduct further investigations prior to making its final price determination to assess whether this discount is cost reflective.

Water sales to Gosford Council and Wyong Council

The Tribunal's draft decision is that Hunter Water can charge Gosford Council and Wyong Council the maximum water charges shown in Table 9.10. However, the Tribunal intends to review this decision prior to making its final determination to satisfy itself that the charges are cost reflective.

Hunter Water has the capacity to transfer water to Gosford Council and Wyong Council to supplement their water supply if necessary. Since June 2004, Hunter Water has sold around 6,000 kilolitres per day to the Councils to ensure adequate water supplies on the Central Coast during the current drought. This water has been charged at the standard Tier 1 and Tier 2 usage charges.

Hunter Water proposed to continue to charge Gosford and Wyong Councils these prices for water during the 2005 determination period. It notes that although the volume of water supplied to the Councils is sufficient to qualify for a Tier 3 price, the Councils' location means this price would be higher than the Tier 1 or 2 price per kL. This is because the Councils are at the end of the water distribution system and the cost of transferring water to the Central Coast connection is high.

The review of operating and capital expenditure undertaken by Atkins/Cardno in 2004 concluded that purchasing water from Hunter Water was a cost-effective drought management measure for Gosford and Wyong Councils. It recommended that the Councils consider increasing water transfers from Hunter Water in preference to building a desalination plant.

In the absence of more information at this time, the Tribunal's draft decision is to set the price of water to Gosford Council and Wyong Council so it is equal to the Tier 1 and Tier 2 water usage price for other customers, in line with Hunter Water's proposal. However, it will conduct further investigations prior to making its final decision on this price to establish whether the price is cost reflective.

9.5.2 Wastewater charges

Residential and non-residential customers are charged for wastewater services on the basis of a fixed annual service charge and a variable usage charge that depends on the volume of water they use. A minimum wastewater service charge also applies to residential customers who live in flats or units. A separate wastewater usage charge applies to residential customers whose land is connected to the sewer but not to the water main.

In areas where Hunter Water provides a backlog sewer program, residential and non-residential customers are charged an Environment Improvement Charge. If they own vacant land in these areas and choose to develop this land, they are also charged a Sewer Service Access Charge upon connection.

Wastewater charges for residential and non-residential customers

The Tribunal's draft decision is that Hunter Water can apply the maximum wastewater usage and service charges shown in Table 9.13.

**Table 9.13 Hunter Water's current and Tribunal determined wastewater charges
(Dollars of the day)**

	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Residential wastewater service charge (\$/year)*	239.35	262.03	268.06 x (1+ Δ CPI ₁)	274.19 x (1+ Δ CPI ₂)	280.4 x (1+ Δ CPI ₃)
Non-residential wastewater service charge (\$/year)*	478.70	524.06	536.12 x (1+ Δ CPI ₁)	548.37 x (1+ Δ CPI ₂)	560.82 x (1+ Δ CPI ₃)
Wastewater usage charge (\$/kL)	0.42	0.43	0.43 x (1+ Δ CPI ₁)	0.43 x (1+ Δ CPI ₂)	0.43 x (1+ Δ CPI ₃)

Where:

(1+ Δ CPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.

(1+ Δ CPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.

(1+ Δ CPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

*Based on 20mm wastewater service connection. For all other residential customers a 50 per cent discharge factor is applied to the service and usage charges. For non-residential customers a variable discharge factor is applied to the service and usage charges, depending on the type of business.

Hunter Water currently charges residential and non-residential customers a fixed wastewater service charge and a variable wastewater usage charge based on their metered water usage. Hunter Water proposed to maintain the wastewater usage charge in real terms to continue to send a conservation signal while managing community concern about this charge. It proposed to increase the wastewater service charge to achieve the revenue requirement for this service.

It is the Tribunal's view that a two-part tariff for wastewater is not the most effective demand management tool. Although it is a de facto water usage charge, it is not clear whether this is well understood by customers.⁶² However, the Tribunal also recognises the importance of maintaining the signal to customers about the need to conserve water at this time. Therefore, its draft decision is to hold the wastewater usage charge steady in real terms to maintain the conservation signal, in line with Hunter Water's proposal. Its draft decision in relation to the wastewater service charge is to increase this charge by CPI+6.9% in 2005/06, and CPI+2.3% in each of the remaining years to ensure that Hunter Water recovers its required revenue for wastewater services.

Minimum service charge for residential customers living in flats and units

The Tribunal's draft decision is to increase the minimum wastewater service charge for flats and units by \$20 per annum in nominal terms, so that this charge is approximately two-thirds of the wastewater service charge for single residential dwellings by 2008/09, as set out in Table 9.14.

Table 9.14 Hunter Water's current and Tribunal determined minimum service charge for flats and units for wastewater services (Dollars of the day)

	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Minimum service charge for flats and units (\$/year)	120.00	140.00	155.79 x (1+ΔCPI ₁)	170.66 x (1+ΔCPI ₂)	184.64 x (1+ΔCPI ₃)

Where:

- (1+ΔCPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- (1+ΔCPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- (1+ΔCPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Hunter Water currently charges residential customers in flats and units a minimum wastewater service charge. This charge was introduced in the 2000 determination,⁶³ to ensure greater equity in wastewater charges between customers in single dwelling properties and residents in flats and units.⁶⁴ Therefore, if a premises' proportionate share of the service charge applying to the multi-premises property is less than the minimum charge, the owners of the premises would be required to pay the minimum charge.⁶⁵

⁶² Although Hunter Water's bills do specify both the water usage and wastewater usage charges, this is outlined in the 'fine print' on the bill.

⁶³ Customers in flats and units pay the wastewater usage charge in addition to the minimum wastewater service charge.

⁶⁴ Residents in units and flats pay a lower wastewater service charge compared to single dwelling properties, even though they place a similar load on the sewer system. This is because their service charge is generally calculated as a proportionate share of the single service charge applying to the block.

⁶⁵ For strata units, the proportionate share is calculated based on the service charge applied to the water connection for the entire multi-dwelling property, divided by the number of units in the property.

In the last determination, the Tribunal increased the minimum wastewater service charge by \$20 per annum in each year, in line with Hunter Water's proposal.⁶⁶ In its submission to the current price review, Hunter Water proposed that the minimum service charge continue to increase by \$20 each year until it is equivalent to two-thirds of the wastewater service charge that applies to separate residential dwellings.

The Tribunal considers that this proposal, and the objective of achieving a charge that is equivalent to two-thirds of the residential wastewater service charge for single dwelling properties, is reasonable. Its draft decision is therefore to accept Hunter Water's proposal and to increase the minimum wastewater service charge for residential customers living in flats or units by \$20 (nominal) in each year of the determination period. Taking account of the Tribunal's draft decision on the residential wastewater service charge for other customers, this will result in a minimum wastewater service charge of around \$200 in 2008/09.

Wastewater usage charge for customers with no water connections

The Tribunal's draft decision is to maintain the notional wastewater usage charge for sewer only customers at \$20 per annum, resulting in the total wastewater service charge shown in Table 9.15.

Table 9.15 Hunter Water's current and Tribunal determined wastewater service charge for sewer only residential customers (Dollars of the day)

	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Wastewater service charge for houses (\$ per annum)	259.35	282.51	$288.54 \times (1+\Delta\text{CPI}_1)$	$294.67 \times (1+\Delta\text{CPI}_2)$	$300.89 \times (1+\Delta\text{CPI}_3)$

Where:

- $(1+\Delta\text{CPI}_1)$ Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_2)$ Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_3)$ Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

Based on 20mm wastewater service connection.

Hunter Water provides sewerage-only services to around 50 customers. These customers receive water from alternative sources such as rainwater tanks. They do not receive a wastewater usage bill as there is no metered water usage on which to base the wastewater usage charge.

In its submission to the last price review, Hunter Water proposed to charge these customers a new 'sewer only' fixed service charge based on the normal residential fixed wastewater service charge plus a notional usage amount equivalent to the sewer usage bill that would be paid by a typical household using 210 kilolitres of water per year.

⁶⁶ Hunter Water also proposes that the total sewer service charge for each unit and flat must not increase by more than \$20 each year (in nominal dollars).

In its last determination, the Tribunal determined that in the absence of specific evidence to support the assumption that sewer-only customers would use the same amount of water as typical customers, the notional usage charge should be limited to \$20 per year. The Tribunal was concerned that households who rely on tank water may use considerably less than households connected to a water main. The Tribunal intended to consider these charges when setting prices for the 2005 determination period if further evidence was provided by Hunter Water of the load placed on the sewer system by these customers.

Hunter Water's submission to the current price review claimed that it is not cost effective to collect the evidence sought by the Tribunal for the small number of customers involved. Hunter Water therefore proposed to continue the \$20 per year notional usage component for the 2005 determination period.

The Tribunal's draft decision is to accept Hunter Water's proposal and to maintain the notional sewer usage charge for sewer-only customers at \$20 per year. While this may be conservative, in the absence of more detailed analysis, there is no evidence upon which to increase the charge. The Tribunal accepts Hunter Water's argument that undertaking metering for this number of customers would not be cost-effective.

Backlog sewer program

The Tribunal's draft decision is to increase the Sewer Service Access Charge and the Environment Improvement Charge in line with the consumer price index as shown in Table 9.16.

Table 9.16 Hunter Water's current and Tribunal determined Environment Improvement Charge and Sewer Service Access Charge (Dollars of the day)

	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Environment Improvement Charge (\$ per annum)	48.95	50.12	$50.12 \times (1+\Delta\text{CPI}_1)$	$50.12 \times (1+\Delta\text{CPI}_2)$	$50.12 \times (1+\Delta\text{CPI}_3)$
Sewer Service Access Charge (\$ per annum) *	\$3,107.00	3,181.57	$3,181.57 \times (1+\Delta\text{CPI}_1)$	$3,181.57 \times (1+\Delta\text{CPI}_2)$	$3,181.57 \times (1+\Delta\text{CPI}_3)$

Where:

- $(1+\Delta\text{CPI}_1)$ Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_2)$ Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.
- $(1+\Delta\text{CPI}_3)$ Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

* The SSAC only applies to backlog sewerage areas defined under the Hunter Sewerage Project.

Hunter Water provides a backlog sewer program (known as the Hunter Sewerage Program) to fringe areas in its area of operations. Under this program, the capital costs are shared between the State Government, the owners of the unsewered property in the relevant area (who pay a Sewer Service Access Charge upon connection) and the community in this area (through an annual Environmental Improvement Charge). The Environmental Improvement Charge is currently \$48.95 per year and the Sewer Service Access Charge is currently \$3,107.

Hunter Water proposed that both these charges be maintained in real terms for each year of the determination period. It noted that this would allow a return on the project of 4 per cent as deemed appropriate by the Tribunal in previous determinations.

The Environmental Improvement Charge is scheduled to continue until 2009 for most customers (the 20-year period of the charge will extend beyond 2009 for a small number of areas that were added to the approved Hunter Sewerage Program service area after 1989).

Hunter Water notes that from 2009 new arrangements will be introduced in keeping with the Government's August 2003 decisions on funding for the most recent projects included in the Priority Sewerage Program. These projects are to provide backlog sewer services to the small towns of Kitchener, Ellalong, Millfield and Lochinvar. Funding arrangements for these projects entail extending the Environmental Improvement Charge to 2018/19 at a rate of \$24 (in 2003 \$ terms). However, these new Priority Sewerage Program funding arrangements do not include provision for Fern Bay, because work to provide sewer services in this area is already underway and funding for this work is included in the existing Environmental Improvement Charge (a \$4 increase was approved by the Tribunal in the last price determination).

The Tribunal's draft decision is to accept Hunter Water's proposals in relation to the Environmental Improvement Charge and Sewer Service Access Charge. These charges represent a simple and transparent way of sharing the costs of backlog projects and signalling that local communities must bear some financial responsibility for service improvement and environmental initiatives.

However, the Tribunal notes that if the Environmental Improvement Charge is discontinued in 2009 as planned, there may be difficulties in funding projects during the next determination period, if additional backlog sewer projects are included under the Priority Sewerage Program. If this occurs, it will consider the best options for recovering the costs of additional sewer projects during the 2009 price review, taking into account the transparency benefits of continuing to use the Environmental Improvement Charge and the potential customer impacts of doing so. One option is to include the capital costs of the projects in the Regulatory Asset Base and recover these costs over the life of the asset (generally 20 to 30 years) through the general water and sewerage charges. This would help spread the costs over a longer period of time and reduce the impact on customers' bills.

9.5.3 Stormwater drainage charges

The Tribunal's draft decision is to restructure stormwater drainage charges to phase out charges based on the property value by 2008/09, and introduce stormwater drainage service charges based on property size as set out in Table 9.17.

Table 9.17 Hunter Water's current and Tribunal determined stormwater drainage charges (Dollars of the day)

\$ per annum	Factor	Current (1 July 2004 to 31 October 2005)	1 November 2005 to 30 June 2006	1 July 2006 to 30 June 2007	1 July 2007 to 30 June 2008	1 July 2008 to 30 June 2009
Base charge*	1	42.31	46.74	50.41 x (1+ Δ CPI ₁)	54.38 x (1+ Δ CPI ₂)	58.66 x (1+ Δ CPI ₃)
Medium non-residential (1,001 to 10,000 m ²)	2	n/a	93.48	100.82 x (1+ Δ CPI ₁)	108.76 x (1+ Δ CPI ₂)	117.32 x (1+ Δ CPI ₃)
Large non-residential (10,001 to 45,000 m ²)	14	n/a	654.36	705.74 x (1+ Δ CPI ₁)	761.32 x (1+ Δ CPI ₂)	821.24 x (1+ Δ CPI ₃)
Very large non-residential (>45,000 m ²)	45	n/a	2,103.30	2,268.45 x (1+ Δ CPI ₁)	2,447.10 x (1+ Δ CPI ₂)	2,639.70 x (1+ Δ CPI ₃)
Property value based charge (\$/\$AAV)		1.25	0.96	0.64 x (1+ Δ CPI ₁)	0.32 x (1+ Δ CPI ₂)	-

Where:

(1+ Δ CPI₁) Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005.

(1+ Δ CPI₂) Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005.

(1+ Δ CPI₃) Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005.

* This category applies to residential properties, non-residential properties < 1,000m² and minimum charge properties.

Hunter Water levies stormwater drainage charges where it owns and operates stormwater drains. Residential and non-residential customers are currently charged a fixed service charge. Some non-residential customers are also charged an additional tariff based on the value of their property.

Currently, property-value-based charges are levied on non-residential stormwater customers whose properties were developed before March 1991, and are calculated based on the assessed annual value (AAV) of the property. This has resulted in some anomalies, with non-residential stormwater customers with similar characteristics paying significantly different amounts, depending on whether they joined the system before or after 1991.

In line with the water pricing principles agreed to by the Coalition of Australian Governments (COAG), the Tribunal has been reducing property-value-based charges within the Hunter Water region since 1996. Its draft decision is to phase out these charges completely over the 2005 determination period, and to introduce a new pricing structure for stormwater drainage charges that compensates Hunter Water for lost revenue due to the removal of property-value-based charges and better reflects its costs in providing stormwater drainage services.

Under the new pricing structure, stormwater drainage charges are linked to property size (as a proxy for stormwater runoff) using a factor that is a multiple of the base charge. The factor was established using the median of actual property sizes in each category. The Tribunal believes that this new pricing structure will result in more equitable and cost-reflective prices that are consistent with COAG's pricing principles.

A mechanism to protect customers from price shocks by moderating the rate of increase in bills will be introduced during the transition to the new price structure.

9.5.4 Trade waste charges

The Tribunal's draft decision is to accept Hunter Water's proposed trade waste charges for 2005/06 and to adjust for movement in the CPI over the 2005 determination period.

In its submission, Hunter Water proposed changes to its trade waste charging arrangements and price levels. It argued that these changes reflect changes in the costs associated with treating trade waste as well as a repackaging of the way administrative costs are recovered to better reflect service delivery.

For the current determination, the Tribunal engaged GHD Ltd to review water agencies' trade waste submissions and advise the Tribunal on their reasonableness. Overall, the consultant concluded that "the policy and charges regime for tradewaste proposed by Hunter Water is reasonable and of the right order of magnitude".⁶⁷ It noted that Hunter Water has substantiated its proposed increases by providing a detailed explanation of current and forecast wastewater treatment costs. In addition, it noted that Hunter Water has demonstrated a high level of analysis to justify the differences in charges between the treatment plants. The Tribunal accepted the views of GHD and decided to adopt the approach to trade waste charges proposed by Hunter Water.

For the 2005 determination, Hunter Water does not propose any changes to the charging methodology, but has reviewed the costs associated with treating and disposing of trade waste. Hunter Water's revised charges are estimated to yield a 4 per cent reduction from current trade waste revenue. However, there will be both increases and decreases in components of charges. Hunter Water noted in its submission that these variations represent changes in the costs associated with individual wastewater treatment plants.

Hunter Water also reviewed the administration component of trade waste charges, the purpose of which is to recover the administration costs of managing trade waste customers, establishing contracts and invoicing. Hunter Water advised the Tribunal that the costs reflected in these charges have not been assessed in detail since trade waste charges were introduced. In its review of these charges, Hunter Water conducted an assessment of the resources devoted to each activity. The proposed charges reflect the latest information on the actual costs of service delivery.

The Tribunal considers that the repackaging of the administration component of the trade waste charges will result in a more cost-reflective charging structure. Introducing establishment and renewal fees for major customers will ensure that the higher costs of these activities are not subsidised via annual permit fees. The proposed changes to inspection fees will also improve cost-reflectivity as they are based on actual average times for inspections.

A detailed list of Hunter Water's maximum trade waste charges can be found in schedule 4 of the Hunter Water determination.

⁶⁷ GHD, *Review of trade waste pricing proposals by Sydney Water Corporation, Hunter Water Corporation, Gosford Council and Wyong Council*, March 2003, p 25.

9.5.5 Miscellaneous charges

The Tribunal's draft decision is to accept Hunter Water's proposed miscellaneous charges for 2005/06 with one amendment, and to adjust for movement in the CPI over the 2005 determination period.

In setting these charges, the Tribunal has used the approach described in section 9.4.6 above. It has, for the most part, accepted Hunter Water's list of proposed miscellaneous charges for the 2005 determination period. However, upon the advice of RSM Bird Cameron, the Tribunal has made a number of minor changes to Hunter Water's proposed list of miscellaneous services:

- **Indexation.** In previous determinations for both water and electricity, the Tribunal has not allowed miscellaneous charges to be increased by CPI during a determination. To avoid a large price increase at the next determination, the Tribunal has decided to allow miscellaneous charges to be adjusted by the movement in the CPI during the 2005 determination period.
- **Quoted cost of works.** For a number of miscellaneous services, the agencies did not propose a maximum charge in their submissions. Rather, they specified charges as 'quoted cost' or 'quoted cost of works'. To maintain consistency with the previous determination, the Tribunal decided to maintain the status quo by not setting charges based on 'quoted cost'.

A detailed list of Hunter Water's maximum miscellaneous charges can be found in schedule 6 of the attached determination.

10 EXPECTED OUTCOMES OF PRICING DECISIONS

Before finalising its draft decisions, the Tribunal considered the impact of its maximum prices on the agencies (as owners, operators and managers of the assets), on their customers and on the environment. Importantly, it also considered the balance between these competing interests, because a favourable outcome for one stakeholder is often at the expense of an unfavourable outcome for another stakeholder.

This chapter explains the Tribunal's assessment of the expected implications of its 2005 draft pricing determination for each agency. Section 10.1 discusses the Tribunal's approach to assessing outcomes of its pricing decisions. Sections 10.2 to 10.4 discuss the implications of the draft pricing decisions for each agency's customers, service standards and financial position, and for the environment.

10.1 Overall assessment of outcomes

In assessing the expected implications of its draft pricing decisions for each agency, the Tribunal placed equal weight on all factors in Section 15 of the IPART Act. It is satisfied that the implications of its findings for customers, service quality and the environment are appropriately balanced against the financial outcomes for each agency, given the Tribunal's view that each agency has further potential to achieve efficiency gains.

10.2 Sydney Catchment Authority

10.2.1 Implications for customers

In reaching its draft decisions on the prices the Sydney Catchment Authority can charge its customers, the Tribunal explicitly considered the likely impact on Sydney Water, Wingecarribee Shire Council, Shoalhaven City Council and small retail customers in line with Section 15 of the IPART Act. The Tribunal considers that its final prices provide an appropriate balance between customer impacts and the other matters it is required to consider under Section 15.

The Sydney Catchment Authority undertakes a limited range of social programs designed to assist vulnerable customers. These programs are a continuation of those that Sydney Water used to undertake prior to the transfer of bulk water supply responsibilities to the Sydney Catchment Authority. The Sydney Catchment Authority has advised that, in total, these programs represent less than \$3,000 per annum. The programs include:

- Pensioner rebates – these apply to three unfiltered water customers who receive a pensioner rebate equal to the Water Service Charge.
- Exempt properties – these apply to five properties supplied with unfiltered water that were not charged a service charge by Sydney Water because they were exempt from such charges under the terms of the *Sydney Water Act 1994*.

The Tribunal believes these arrangements are appropriate and should continue.

10.2.2 Implications for service standards

In considering the impact of its pricing decisions on the Sydney Catchment Authority's service quality, the Tribunal sought to ensure that its draft decisions do not adversely affect the standards of service for bulk water, catchment management and water supply. It sets prices in the expectation that current service levels will be maintained, and that cost reductions and efficiency savings will not be obtained at the expense of service standards.

These service standards are set out in the Sydney Catchment Authority's operating licence, and in other regulatory instruments such as the Water Management Licence issued by DIPNR. Standards for bulk water quality, which are set by the NSW Department of Health, are also set out in the operating licence. The results of the Tribunal's annual audits of this operating licence show that the Sydney Catchment Authority has substantively met all its service standards during the current determination period.

The Sydney Catchment Authority also has a Bulk Water Supply Agreement with Sydney Water that specifies water quality and other standards. It has attained over 94 per cent compliance with this agreement during the current determination period.

In addition, the Sydney Catchment Authority must comply with Dams Safety Committee requirements and Australian National Council of Large Dams (ANCOLD) guidelines. It has complied with these requirements and guidelines, and there have been no bulk water supply interruptions during the current determination period.

The Tribunal believes that the prices set out in its draft determination will allow the Sydney Catchment Authority to continue to meet all these service standards and other requirements and guidelines during the 2005 determination period.

In addition, as Chapter 6 discussed, the Tribunal has determined that the agencies will report against output measures over the 2005 determination period to link expenditure with deliverables. A list of output measures for the Sydney Catchment Authority is contained in Appendix 2. These output measures include:

- (i) Substantial completion of the Deep Storage scheme by July 2006.
- (ii) Substantial completion of the Prospect Pumping Station by March 2007.
- (iii) Substantial completion of the Warragamba Spillway and associated works by June 2007.
- (iv) Completion of phase 1 of the Shoalhaven scheme and provision of an additional 50GL per annum resource yield by July 2010.
- (v) Completion of works to allow the release of environmental flows into the Upper Nepean River by July 2010.

10.2.3 Expected business and shareholder outcomes

Overall, the Tribunal believes that its draft pricing decisions will not adversely affect the ability of the Sydney Catchment Authority to operate, maintain, renew and develop the assets involved in delivering the regulated services over the 2005 determination period. In addition, the Tribunal believes that the Sydney Catchment Authority's financial position will remain sufficiently strong for it to meet relevant borrowing, capital and dividend requirements over this period.

Impact on rates of return

The Tribunal's analysis shows that the real pre-tax rate of return on the Sydney Catchment Authority's regulatory asset base (RAB) is expected to be around 6.1 per cent for 2005/06, and to decrease to 5.9 per cent in 2006/07, but increase back to 6.1 per cent in 2008/09. This calculation is based on the assumptions used in the Tribunal's modelling of the financial impacts of its draft pricing decisions and depends on the SCA achieving the efficiency targets the Tribunal has set. The expected rates of return for each year of the determination period are set out in Table 10.1.

Table 10.1 Expected rates of return for the Sydney Catchment Authority (per cent)

	2006	2007	2008	2009
Rate of return	6.1	5.9	6.0	6.1

Overall financial strength as assessed by investment category ratings

The Tribunal analysed a range of financial indicators that are commonly used by credit rating agencies to assess an entity's financial capacity and ability to service and repay debt. The State Government believes that a BBB rating is the minimum target rating to ensure financial viability. In completing its analysis of financial indicators, the Tribunal has assumed a dividend payout ratio of 75 per cent profit after tax.

The Tribunal's analysis and financial modelling indicate that the maximum prices set in the draft determination will enable the Sydney Catchment Authority to attain a minimum investment grade rating of BBB in the first two years of the 2005 determination period (see Table 10.2), but that the rating will fall to BB+ in 2007/08 and 2008/09. The Tribunal believes that these lower ratings have been influenced by the lumpiness of the investment cycle for the Sydney Catchment Authority, particularly the impact of the Shoalhaven Transfer Scheme Project. This expenditure is required to assist in meeting the objectives of the State Government's Metropolitan Water Plan.

Table 10.2 Financial indicators and credit ratings for the Sydney Catchment Authority

Financial year	2005/06	2006/07	2007/08	2008/09
Ability to service debt				
1. EBITDA interest cover	4.67	3.34	2.99	2.73
NSW Treasury ratings (2002)	AAA	A+	BBB+	BBB+
2. Funds from operations interest coverage	4.15	2.59	2.58	2.26
Standard and Poors US ratings (1995)	AA	A	A	BBB
3. Pre-tax interest coverage	3.87	2.74	2.45	2.24
Standard and Poors US ratings (1995)	AA	A	A	BBB
Ability to repay debt				
4. Funds flow net debt payback	8.39	10.59	11.99	12.54
NSW Treasury ratings (2002)	BB+	BB	BB	B+
5. Funds from operations/total debt (%)	13%	8%	9%	7%
Standard and Poors US ratings (1995)	BBB	BB	BB	BB
6. Debt gearing (regulatory value)	34%	39%	42%	44%
NSW Treasury ratings (2002)	AA+	AA+	AA	A+
Standard and Poors US ratings (1995)	AA	AA	AA	AA
Ability to finance investment from internal sources				
7. Internal financing ratio	13%	19%	18%	28%
NSW Treasury ratings (2002)	B	B	B	B
8. Net cash flow/capital expenditure (%)	16%	14%	19%	24%
Standard and Poors US ratings (1995)	<BB	<BB	<BB	BB
NSW Treasury overall score and rating				
NSW Treasury total score (0 –10)	5.50	4.50	3.75	3.25
Overall rating	BBB+	BBB	BB+	BB+
9. Net debt (\$m of the day)	366	465	572	643

Payment of dividends

The Tribunal's modelling⁶⁸ indicates that if outcomes are achieved, the Sydney Catchment Authority will be able to pay a level of dividends consistent with past dividend performance.

If the Sydney Catchment Authority increases prices to the maximum level allowed under the 2005 draft determination, its revenue is expected to increase in real terms in each year of the determination period compared with 2004/05 levels. Section 16 of the IPART Act requires the Tribunal to report on the likely impact on the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, then the level of dividends paid to the Consolidated Fund will fall. The extent of this fall will depend on Treasury's application of its financial distribution policy and how the change affects after-tax profit.

⁶⁸ Based on the Tribunal's assumptions of the financial impacts of its pricing draft decisions and on the Sydney Catchment Authority achieving the efficiency targets the Tribunal has set.

The Tribunal's financial modelling projects dividend payments at 75 per cent of after-tax profit. A one dollar decline in after-tax profit would result in a loss of revenue to the consolidated fund of 75 cents.

10.2.4 Implications for the environment

The Sydney Catchment Authority's main objectives are to manage and protect Sydney Water's catchments to supply Sydney with reliable bulk raw water. Therefore, management of the catchment's environments are fundamental to its operations.

The volume of water extracted from the environment also has a direct link to the eventual health of that environment. While achievement of the State Government's demand management objectives will be more influenced by changes to prices for Sydney Water's retail customers, the Tribunal believes that implementing larger increases in the usage price of bulk water compared to the fixed charge of bulk water to Sydney Water will also help to meet those objectives.

Catchment management

At its 2003 mid-term review of the Sydney Catchment Authority,⁶⁹ the Tribunal indicated that it would seek information on the efficiency and effectiveness of the agency's catchment management activities. Since that review, the Sydney Catchment Authority has made significant progress in developing processes and programs to measure the effectiveness of expenditure on catchment protection.

The Sydney Catchment Authority manages the catchments of four major river systems for raw drinking water quality outcomes. It uses a multiple barrier approach to predict, monitor and control changes in the catchments in order to avoid or minimise any impact on water supply. It has a number of strategies to achieve this, ranging from managing human activities in the catchments to improving water quality during specific events such as heavy rainfall. The Tribunal's consultants, Atkins/Cardno, commented⁷⁰ that it believes that the Sydney Catchment Authority is at the forefront of implementing scientifically based catchment activities aimed at optimising the quality of surface water harvested for drinking water purposes. While the Tribunal accepts Atkins/Cardno's comments, it notes that the operating licence auditor raised some concerns about the transparency and reporting of Sydney Catchment Authority's catchment management activities.⁷¹

As part of this price review, the Tribunal considered the development of the Sydney Catchment Authority's catchment management functions. It believes that the prices determined will enable the Sydney Catchment Authority to generate the appropriate level of revenue needed to support these activities in an efficient and effective manner.

⁶⁹ IPART, *Sydney Catchment Authority - Prices of water supply services*, May 2003.

⁷⁰ Atkins/Cardno, *Capex, Asset Management and Opex Review*, February 2005.

⁷¹ IPART, *Sydney Catchment Authority Operational Audit*, 2003/04.

Demand management

The Tribunal's report on its investigation into the potential of alternative water price structures to reduce demand concluded that a step price structure for the wholesale usage charge levied by the Sydney Catchment Authority on Sydney Water was not the most appropriate way to remove the financial incentive on Sydney Water to sell more water. The Tribunal believes that the next step towards wholesale water price reform is to set the usage charge with reference to the Sydney Catchment Authority's long run marginal cost.

For the 2005 determination period, the Tribunal has changed the balance of the fixed and usage components of the Sydney Catchment Authority's charges to Sydney Water by increasing the relative size of the usage charge compared to the fixed charge. It believes that this will help achieve the objective of setting charges with reference to Sydney Catchment Authority's long run marginal cost. It also believes it will send a pricing signal to Sydney Water that will help to achieve the State Government's demand management objectives. Generally speaking, environmental impacts are lessened with lower levels of extraction.

10.3 Sydney Water

10.3.1 Implications for customers

In reaching its draft decisions, the Tribunal explicitly considered the likely impact on Sydney Water's residential, commercial and industrial customers, in line with Section 15 of the IPART Act. In particular, it considered impacts on the affordability of water services for high and low water users, and on the quality of the services customers receive. It believes that these impacts are well balanced with the other matters it is required to consider under Section 15.

The Tribunal is conscious of the economic importance of water, and the longer term implications for customers of less certain and sustainable water, wastewater and stormwater services. It is also conscious that Sydney Water serves a large number of customers, and that the household incomes of these customers, and therefore the affordability of water for them, varies considerably.

The Tribunal's analysis indicates that most customers will see increases in the cost of water, wastewater and stormwater drainage services as a result of its draft decisions on prices for Sydney Water, with the largest increases being in 2005/06. In the case of high water use customers, the increase in water usage bills could be significant. However, it believes these increases are warranted to ensure customers have access to a sustainable water supply of appropriate quality and service.

One of the key changes for Sydney Water's customers is that usage charges will make up a larger proportion of their bills than in previous years. This is because usage charges will increase by a greater percentage than the fixed charges. In addition, customers residing in single dwellings who consume more the 400kL of water per year, or approximately 1.1kL per day, will be charged a higher rate for the portion of their consumption over this amount. These changes are intended to provide customers with a water conservation signal and to encourage them to make expenditure decisions that take account of the costs to society of a sustainable water supply.

Another key change for all Sydney Water customers is that the wastewater fixed charge will increase to reflect the greater investment in wastewater infrastructure required over the determination period. Wastewater fixed charges will increase by 6 per cent in 2005/06, and a further 4 per cent in each of the following years to 2008/09. (These increases include the effect of inflation⁷² of 2.4 per cent in the first year and 2.7 percent per annum thereafter.)

Overall, the key implications for customers are as follows:

- For residential customers, the draft determination will increase the bill of a household that uses 250kL of water per year by 7 per cent in 2005/06, and by a further 4 per cent in 2006/07, 2 per cent in 2007/08 and 3 per cent in 2008/09. For a household that uses 500kL of water per year, it will increase the bill by 12 per cent in 2005/06, and by a further 5 per cent in 2006/07, 4 per cent in 2007/08 and 5 per cent in 2008/09. These increases include the effect of inflation as described above.
- For commercial and industrial customers, the draft determination will also increase their bills.

Each of these implications, and the social programs Sydney Water has in place to assist vulnerable customers, are discussed below.

Residential customers

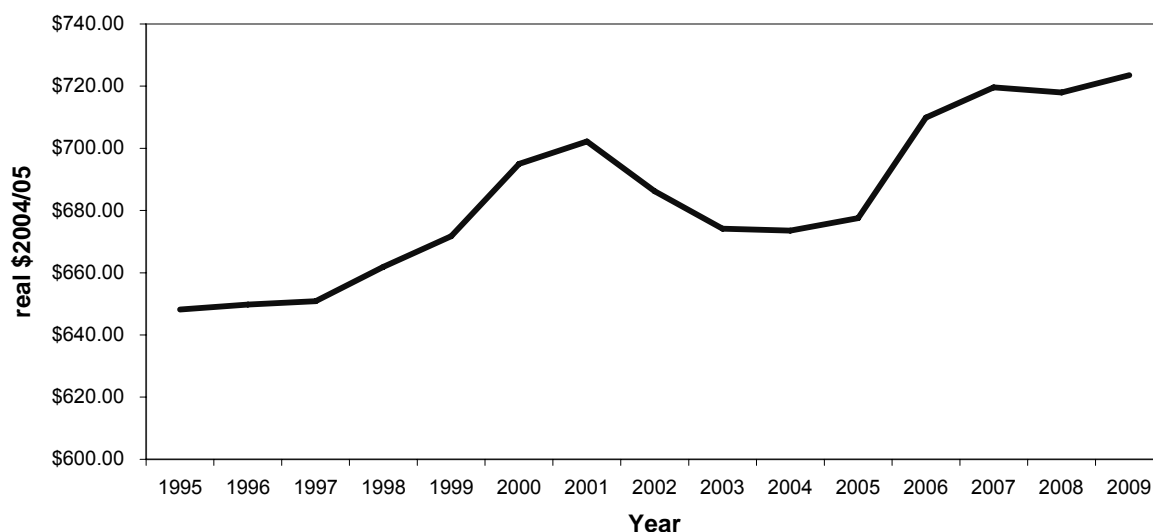
The Tribunal's analysis of the impact of its draft determination on Sydney Water's residential customers concentrated on the overall effect on these customers' total bills. It looked at how the increased bills compare with the past costs of these services, and how the size of bill increases vary with water usage.

The Tribunal notes that Sydney Water's residential customers with average water consumption (250kL per year) will pay more for water and wastewater services in the 2005 determination period than they have in the past (Figure 10.1).

⁷² In setting maximum prices, the Tribunal defines inflation as the movement in the consumer price index between the four quarters ending in March of the year in which the prices will take effect and the immediately preceding four quarters. Therefore, the inflation adjustment lags the actual movement in the consumer price index.

Figure 10.1 Total water, wastewater and stormwater bill customers with average water consumption – Sydney Water (\$2004/05)

**SWC Total Water, Wastewater and Stormwater Bill
(250kL customer real \$2004/05)**



Increases in residential customers' annual bills will vary according to their total water usage, and will range from approximately \$55 over the determination period (for customers that use less than 100kL per year) to more than \$1,240 (for those who use 1,500kL or more per year) (Table 10.3). The total increase in the water bill of a customer with average water consumption will be around \$125 over the entire determination period.

Table 10.3 Impact of prices on annual residential water and wastewater bills by water usage level – Sydney Water* (Dollars of the day)

		2004/05		2005/06		2006/07		2007/08		2008/09	
% of residential customers											
Water use		Actual	Increase	Actual	Increase	Actual	Increase	Actual	Increase	Actual	Increase
<100	23	475	501	26	511	10	519	8	530	11	
100-150	21	551	586	35	602	16	613	11	629	16	
150-200	16	602	642	41	663	21	676	13	696	19	
200-250	12	652	699	46	724	25	739	15	762	23	
250-300	9	703	755	52	785	30	802	17	829	26	
300-400	11	779	840	61	877	37	897	20	929	32	
400-500	5	880	968	88	1,018	49	1,049	32	1,095	45	
500-1000	4	1,184	1,400	216	1,498	97	1,586	89	1,692	105	
1000<	-	1,944	2,480	537	2,698	217	2,929	231	3,184	255	

Note: Figures under increase represent absolute increases or decreases relative to the previous year.

Actual bill is calculated to include water and wastewater charges only.

The impact was calculated using the mid-point of water usage, 1,500kL was used for >1,000kL and 50kL was used for <100kL.

Inflation rates used to calculate nominal dollars were 2.4 per cent in 2005/06 and 2.7 per cent in each of the following years.

* Those customers provided with stormwater drainage services by Sydney Water will face a slightly higher bill.

However, some customers – those who use low levels of water – will see a reduction in the water component of their bills (the overall increase in the bills of these customers is attributable to the increased wastewater charge). Many customers will have the ability to mitigate some or all of the increase in their bills by reducing their water consumption. An average customer could avoid any real increase in their water and sewerage bill by reducing their consumption by 11.7 per cent (which is slightly less than the reduction in total consumption of 12.1 per cent achieved between October 2003 and early June 2005 in response to water restrictions).

Other customers – those who consume more than 400kL per year (or more than 1.1kL per day) – could face a significant increase in their bill. This is the level of consumption at which the higher Tier 2 water usage charge will apply. However, the Tribunal is confident that it has set this level so that most households will be able to meet their non-discretionary water needs with consumption below this amount. This view is supported by the Tribunal's 2003 Water Household Survey, which found that the average annual consumption for households of 5 or more people was 398kL per annum – and with recent efforts in demand management, this average consumption may well have fallen.

Nevertheless, the Tribunal is sensitive to the impact the increase in bills may have on vulnerable customers. It believes Sydney Water should extend its existing social programs to assist those customers who can least afford the increase in their bills (see below).

Commercial and industrial customers

As with residential customers, the impact of the Tribunal's draft decision to restructure water and wastewater prices on commercial and industrial customers will vary depending on their level of water usage. Higher water users will experience higher increases in their quarterly water bills than lower water users. Because commercial and industrial customers are more diverse in terms of their water usage patterns than residential customers, it is difficult to draw general conclusions about the impact of this decision on customers. However, Sydney Water's Every Drop Counts program targets high non-residential water users, and works with industry to identify ways in which consumption can be reduced.

The Tribunal's draft decision on the new trade waste charges related to Total Dissolved Solids will have an impact on some non-residential customers, particularly in the Illawarra area. However, the Tribunal is satisfied that Sydney Water has discussed its proposal in relation to these charges with representative customers, and the charges have general acceptance.

Social programs

The Tribunal believes it is important that the potential to mitigate the impact of the increases on customers is fully understood. It believes customer-impact mitigation is primarily the responsibility of the State Government, as part of its broader social policy. However, it is concerned to ensure that Sydney Water also has appropriate measures in place to assist financially disadvantaged customers who may have difficulty in paying their bills.

Sydney Water's current social program includes a range of measures to assist vulnerable customers, including:⁷³

- free residential retrofits
- pensioner rebates
- extended payment arrangements
- the Payment Assistance Scheme.

Sydney Water has proposed to extend these existing measures to ease the pressure of increased bills on vulnerable customers. However, the Tribunal is not convinced that the measures outlined in Sydney Water's submission are sufficient to address the impact on vulnerable customers of the new two-tiered variable usage charge (the inclining block tariff). In particular, it is concerned about the potential impact of this charge on large families (household with 6 or more people) with relatively low incomes.

The Tribunal has considered a number of additional options to address this issue, including:

- Requiring Sydney Water to provide a direct rebate on vulnerable customers' bills. This would have a high cost to Sydney Water to implement and it would be difficult for it to adequately monitor.
- Widening the scope of the Payment Assistance Scheme (PAS) by providing guidelines to specifically address large households that hold a health care card. This would require guidelines to be developed specifically to target vulnerable customers impacted by the step water price.

The Tribunal prefers the second of these options, and requires Sydney Water to develop guidelines for welfare agencies delivering the PAS so the scheme can specifically target households who are likely to be particularly affected by the two-tiered water usage charge. It believes that to be eligible for a rebate under this scheme, these households should:

- include one member who holds a Commonwealth Health Care Card
- contain six or more people
- have participated in the free retrofit where they are able.

In addition, the Tribunal believes the rebate should be for the difference in charges between the first and second tier for consumption less than 80kL per capita. For ease of calculation, the Tribunal intends to develop a rebate calculator for use by the welfare agencies.

It is important to note that these would be guidelines only. Ultimately, the welfare agency would have the discretion to decide who receives the rebate. The Tribunal considers that this approach provides a good balance between meeting customer needs and providing a simple cost-effective process. Under these guidelines the consumption of large low-income households in receipt of a health care card would be effectively charged on a per capita basis, so that they will not be disadvantaged by the introduction of the two-tiered water usage charge.

⁷³ For more detail on Sydney Water's social program, see Sydney Water submission to the *Independent Pricing and Regulatory Tribunal Review of Metropolitan Water Agencies*.

10.3.2 Implications for service standards

In considering the impact of its pricing decisions on service quality, the Tribunal sought to ensure that its decisions will not adversely affect the standards of service Sydney Water delivers to its customers. It sets prices in the expectation that current service levels will be maintained and that cost reductions and efficiency savings will not be obtained at the expense of service standards.

Sydney Water is licensed under the Sydney Water Act. The Act requires Sydney Water to hold an operating licence issued by the Minister and reviewed annually by the Tribunal. The licence itself contains a number of standards that Sydney Water must meet or risk penalties associated with a breach of licence conditions. Sydney Water's expenditure submission must identify expenditure associated with its regulatory requirements to ensure that adequate funding is made available for it to meet its obligations under both its operating and environmental licences.

At the 2003 determination, the Tribunal indicated that it would initiate a process to improve the quality and breadth of information on service quality available to it. As a first step in this process, it established a working group in 2003 with members from the Tribunal Secretariat and the four retail water agencies to develop a series of performance indicators. These indicators have now been incorporated into Sydney Water's operating licence, and are reviewed as part of the annual audit process.

In addition, as Chapter 6 discussed, the Tribunal has determined that the agencies will report against output measures over the 2005 determination period to link expenditure with deliverables. These in turn will assist the Tribunal in identifying how expenditure proposals will enable Sydney Water to meet its regulatory requirements. A list of output measures for Sydney Water are contained in Appendix 2.

10.3.3 Implications for the agency's financial position

Overall, the Tribunal believes that its draft decision will not adversely affect the ability of Sydney Water to operate, maintain, renew and develop the assets required to deliver the regulated services. In addition, the Tribunal believes that the agency's financial position will remain sufficiently strong for it to meet relevant borrowing, capital and dividend requirements.

Impact on rate of return

The Tribunal's analysis shows that the real pre-tax rate of return on Sydney Water's regulatory asset base (RAB) is expected to be around 5.8 per cent for 2005/06, increasing to 6.1 per cent in 2008/09. This calculation is based on the assumptions used in the Tribunal's modelling of the financial impacts of its pricing draft decisions and depends on Sydney Water achieving the efficiency targets the Tribunal has set. The expected rates of return for each year of the determination period are set out in Table 10.4.

Table 10.4 Expected rates of return for Sydney Water (per cent)

Financial year	2005/06	2006/07	2007/08	2008/09
Rate of return	5.8	6.0	6.1	6.1

Overall financial strength as assessed by investment category ratings

The Tribunal analysed a range of financial indicators that are commonly used by credit rating agencies to assess an entity's financial capacity and ability to service and repay debt. The State Government believes that a BBB rating is the minimum target rating to ensure financial viability. In completing its analysis of financial indicators, the Tribunal has assumed a dividend payout ratio of 75 per cent profit after tax.

The Tribunal's analysis and financial modelling indicate that the maximum prices set in the draft determination will enable Sydney Water to maintain its current investment category rating of BBB or better overall⁷⁴ over the determination period (see Table 10.5).

Table 10.5 Financial indicators and credit ratings for Sydney Water

Financial year	2005/06	2006/07	2007/08	2008/09
Ability to service debt				
1. EBITDA interest cover	3.16	3.11	3.08	3.05
NSW Treasury ratings (2002)	A	A	A	A
2. Funds from operations interest coverage	2.75	2.90	2.77	2.56
Standard and Poors US ratings (1995)	A	A	A	A
3. Pre-tax interest coverage	2.04	2.04	2.03	2.03
Standard and Poors US ratings (1995)	BBB	BBB	BBB	BBB
Ability to repay debt				
4. Funds flow net debt payback	5.99	6.55	6.86	7.14
NSW Treasury ratings (2002)	A	BBB+	BBB+	BBB
5. Funds from operations/total debt (%)	10%	11%	11%	10%
Standard and Poors US ratings (1995)	BBB	BBB	BBB	BB
6. Debt gearing (regulatory value)	37%	37%	38%	38%
NSW Treasury ratings (2002)	AA+	AA+	AA+	AA+
Standard and Poors US ratings (1995)	AA	AA	AA	AA
Ability to finance investment from internal sources				
7. Internal financing ratio	26%	31%	36%	46%
NSW Treasury ratings (2002)	B	B	B	BB
8. Net cash flow/capital expenditure (%)	38%	48%	48%	49%
Standard and Poors US ratings (1995)	BBB	BBB	BBB	BBB
NSW Treasury overall score and rating				
NSW Treasury total score (0 -10)	5.00	5.00	5.00	5.25
Overall rating	BBB+	BBB+	BBB+	BBB+
9. Net debt (\$m)	3,155	3,438	3,736	4,016

Payment of dividends

The Tribunal's modelling⁷⁵ indicates that the Sydney Water will be able to pay a level of dividends consistent with past performance if the outcomes and targets set out in this report are achieved.

⁷⁴ Investment category is defined as a rating of BBB or better, meaning that the business has adequate or better capacity to meet its financial commitments.

⁷⁵ Based on the Tribunal's assumptions of the financial impacts of its draft pricing decisions and on Sydney Water achieving the efficiency targets the Tribunal has set.

If Sydney Water increases prices to the maximum level allowed under the 2005 draft determination, its revenue is expected to increase in real terms in each year of the determination period compared with 2004/05 levels. Section 16 of the IPART Act requires the Tribunal to report on the likely impact to the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, then the level of dividends paid to the Consolidated Fund will fall. The extent of this fall will depend on Treasury's application of its financial distribution policy and how the change affects after-tax profit. The Tribunal's financial modelling is consistent with dividend payments at 75 per cent of after-tax profit. A one dollar decline in after-tax profit would result in a loss of revenue to the consolidated fund of 75 cents.

10.3.4 Implications for the environment

Sydney Water faces significant environmental challenges over the 2005 determination period and beyond, many of which are due to the high forecast population growth in its area of operations. Its forecast capital expenditure on environmental related projects is set out in Table 10.6.

**Table 10.6 Sydney Water's proposed capital program for environmental projects
(\$ million, 2004/05)**

Financial Year	2005/06	2006/07	2007/08	2008/09	Total
Blue Mountains Sewerage	7.3	31.5	32.3	7.3	78.4
Brooklyn Dangar Island Sewerage Scheme	17.0	16.3	0.0	0.0	33.3
Mulgoa Wallacia Silverdale Sewerage Scheme	42.0	4.2	0.2	0.0	46.4
Menangle / Menangle Park Sewerage Scheme	1.0	3.2	0.0	0.0	4.2
Priority Sewerage Program (Other)	7.4	8.2	2.0	3.0	20.6
Overflow Abatement	49.4	53.0	68.0	83.0	253.4
Upgrade Illawarra Sewage Treatment Plants	4.0	0.5	0.0	0.0	4.5
Upgrade Hawkesbury/Nepean Sewage Treatment Plants	46.0	44.5	42.0	7.0	139.5
Bondi STP RIAMP	25.4	6.6	0.0	0.0	32.0
Upgrade Warriewood Sewage Treatment Plant	3.0	3.5	0.0	0.0	6.5
North Head STP Performance and Reliability	24.5	30.8	26.6	16.0	97.9
Richmond STP Upgrade	0.4	0.0	0.0	0.0	0.4
Upgrade reliability of sewage treatment plants	20.7	26.8	17.3	23.1	87.9
Sewer Network Reliability Upgrades	76.0	82.0	95.0	106.0	359.0
South Western Sydney Sewerage	24.5	35.0	48.5	5.0	113.0
Improve Stormwater Systems	12.9	6.2	6.2	6.2	31.5
Total	361.5	352.3	338.1	256.6	1308.5

Of highest concern is Sydney Water's need to achieve and maintain a balance between supply and demand for water in both the long and short term. In addition, it needs to continue to address sewer overflows during the 2005 determination period.

Supply demand balance

The Tribunal has approved funding for supply augmentation through the Sydney Catchment Authority. Sydney Water needs to manage demand. Therefore the Tribunal has allowed funding, primarily through the Water Savings Fund, to effectively tackle excess consumption.

The Water Savings Fund is being introduced as part of the Metropolitan Water Plan. This plan requires Sydney Water to collect on behalf of the Government \$30 million per year to finance the fund. The expectation is that half of this amount will be returned to Sydney Water to finance its demand management programs, including educational programs, retrofits and rainwater tank rebates. The balance will go towards water conservation projects being implemented by other businesses and councils. In total, Sydney Water's demand management program is expected to save 226GL over the 2005 determination period. This is almost half a year's supply of water for Sydney Water's customers.

The Tribunal has further supported the efforts to manage demand through increasing the water usage charge (and decreasing the service availability charge) and introducing a two tier tariff structure for residential customers. Both measures help send a signal to customers about the scarcity of water.

The Tribunal notes that there are considerable uncertainties for Sydney Water over the 2005 determination period that will have a significant impact on the environment. These include:

- the continuation of the current drought conditions, and the possible construction of a desalination plant
- the current application before the Australian Competition Tribunal to allow Services Sydney access to Sydney Water's network for large scale recycling
- the potential need to increase environmental flows particularly in the Hawkesbury-Nepean river system.

Sewer overflow abatement

Sydney Water is regulated through licences issued by DEC for Sewer Overflow abatement. The Tribunal has approved funding for all capital projects to meet environmental protection licence requirements. This includes funding for new mandatory standards relating to reducing dry weather overflows in the Bondi, Cronulla, Malabar and North Head catchments.

10.4 Hunter Water

10.4.1 Implications for customers

In reaching its draft decisions, the Tribunal explicitly considered the likely impact on Hunter Water's residential, commercial and industrial customers, in line with Section 15 of the IPART Act. In particular, it considered impacts on the affordability of water services for high and low water users, and on the quality of the services customers receive. It believes that these impacts are well balanced with the other matters it is required to consider under Section 15.

The Tribunal is conscious that Hunter Water's residential customers have lower household incomes, on average, than Sydney Water's customers. In addition, average household consumption in Hunter Water's area of operations is low compared to other metropolitan water agencies (except when restrictions are imposed). However, the Tribunal must weigh this against the need to meet the costs of maintaining Hunter Water's water, wastewater and stormwater systems.

Hunter Water's area of operations is characterised by ribbon development with Newcastle at the centre and other local centres distributed along the coast and inland. This means that some outlying communities are relatively expensive to service. It can also mean that critical trunk water main failures cause disruption to a large number of customers.

The Tribunal recognises that its pricing decisions mean that most Hunter Water customers will face increases in the cost of water, wastewater and stormwater services. In the case of high-water-use customers, the increase in water usage bills will be more significant. However, it believes these increases are necessary to balance the long-term interests of customers and ensure they continue to have access to a sustainable water supply of appropriate quality and service.

It is important that the potential to mitigate the impact of the increases is fully understood. The Tribunal believes customer-impact mitigation is primarily the responsibility of the State Government, as part of its broader social policy. However, the Tribunal is concerned to ensure that Hunter Water also has appropriate measures in place to assist financially disadvantaged customers who may have difficulty in paying their bills. Such measures may include special payment arrangements and financial assistance for the purchase and installation of water saving devices.

The Tribunal's analysis indicates that its draft decisions will result in an increase in customers' bills, with the greatest increase occurring in 2005/06. For customers with higher than average water consumption, the increase could be significant. The key implications for customers are as follows:

- For residential customers, the bills of households with average consumption⁷⁶ will increase by 7.8 per cent in 2005/06 and by 4.4 per cent in each of the following years including the effect of inflation (nominal increases).
- For commercial and industrial customers, bills will also increase. Customers using more than 1,000 kilolitres per year will experience a higher increase, given that the Tier 2 water price will be phased out over the 2005 determination period.

⁷⁶ The average consumption for a single dwelling property was 206 kilolitres in 2004.

- For trade waste customers, changes to the trade waste pricing arrangements will result in reductions in most existing customers' trade waste bills.

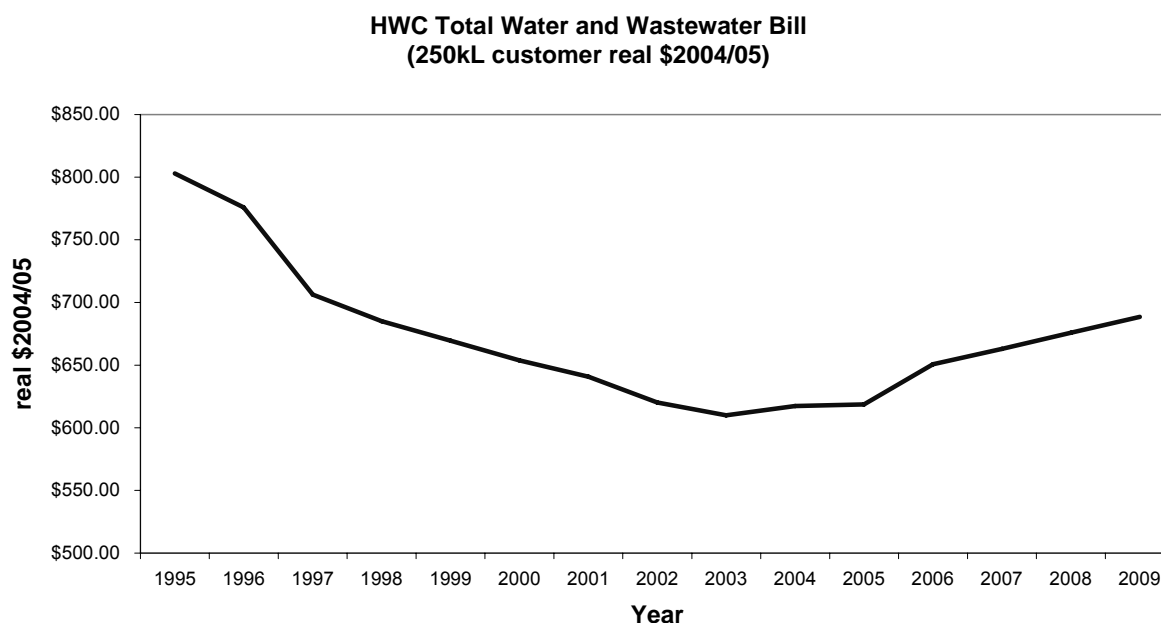
Each of these implications is discussed in more detail below.

Residential customers

The Tribunal's analysis of the expected financial impacts concentrated on the effect on customers' total bills over the determination period. It looked at how the increased bills compare with the past costs of these services. It also looked at how the size of bill varies with water usage, and what changes to behaviour are required to mitigate the expected increase.

The Tribunal notes that notwithstanding its draft decision to increase water charges, by the end of the determination period most Hunter Water customers will be paying substantially less in real terms for water and sewerage services than they have in the past (see Figure 10.2).

Figure 10.2 Total water and wastewater bill for 250kL customers – Hunter Water (\$ 2004/05)



The Tribunal's analysis shows that the impact of the determination on annual residential bills for Hunter Water's customers will vary according to the customer's total water usage. In 2005/06, the increase in water and wastewater bills will range from approximately \$33 per year (for customers who use less than 100kL per year) to more than \$150 (for the very small number of residential customers who use 1,500kL or more per year). Increases in the following years of the 2005 determination period will range from \$20 per year to \$106 per year.⁷⁷

⁷⁷ This assumes that consumption remains fixed at the same level in all four years of the price path.

The water and wastewater bill for a residential property with average water consumption of 206kL per year will increase by around \$44 in 2005/06 and \$28 in each of the following years of the 2005 determination period. For approximately 80 per cent of customers, the total increase in their annual water bill for 2005/06 will be under \$50, or less than \$1 per week (Table 10.7).

Table 10.7 Impact of prices on annual residential water and wastewater bills by water usage level - Hunter Water (Dollars of the day)

Water use	% of residential customers	2004/05	2005/06		2006/07		2007/08		2008/09	
			Actual	Increase	Actual	Increase	Actual	Increase	Actual	Increase
<100	24	375	407	32	426	19	446	20	466	21
100-150	17	466	504	38	527	23	551	24	575	25
150-200	16	527	569	42	594	25	621	26	648	27
200-250	13	588	634	46	662	28	691	29	721	30
250-300	10	649	699	50	729	30	761	32	793	33
300-400	12	741	796	55	830	34	866	36	902	37
400-500	5	863	926	63	964	39	1,005	41	1,048	42
500-1000	3	1,229	1,314	86	1,368	54	1,425	57	1,484	58
1000<	-	2,104	2,254	151	2,355	101	2,462	107	2,573	111

Notes: Figures under increase represent absolute increases or decreases relative to the previous year.

Actual bill is calculated to include water and wastewater charges (including the environmental impact charge).

The impact was calculated using the mid-point of water usage, 1,500kL was used for >1,000kL and 50kL was used for <100kL.

Inflation rates used to calculate nominal dollars were: 2.4 per cent in 2005/06 and 2.7 per cent in each of the following years.

Many customers have the ability to reduce their water consumption and therefore mitigate some or all of the expected bill increases.

Commercial and industrial customers

Because commercial and industrial customers are much more diverse in terms of their water usage patterns than residential customers, it is difficult to draw general conclusions about the impact of the Tribunal's draft decision to restructure water and wastewater prices on these customers. The impact will vary depending on customers' level of water usage. Higher water users (those who use between 1,001kL and 50,000kL per annum) will experience greater proportionate increases in their annual water bills than other customers, due to the phasing out of the Tier 2 water usage charge. The Tribunal believes this will send a stronger pricing signal to these customers. Those who use 1,000kL per annum or less (and so pay the Tier 1 usage charge) and those who use more than 50,000kL per annum (and so pay the Tier 3 location-based usage charge) will experience price increases of the same proportion.

As for residential customers, the Tribunal believes that rising water prices will encourage commercial and industrial water customers to review consumption and to encourage efficient water use in this sector.

Trade waste customers

The Tribunal accepted Hunter Water's proposed changes to the trade waste pricing arrangements, including restructuring the administration component of the charge and increasing existing treatment and disposal related charges. While some customers will experience an increase in their trade waste bills, most existing customers will see a reduction in these bills. The Tribunal believes the draft decision is appropriate as the trade waste pricing structure reflects the costs of treating and disposing of trade waste and administering permits.

10.4.2 Implications for service standards

In considering the impact of its pricing decisions on service quality, the Tribunal sought to ensure that its draft decisions do not adversely affect the standards of service Hunter Water delivers to its customers. It sets prices in the expectation that current service levels will be maintained, and that cost reductions and efficiency savings will not be obtained at the expense of service standards.

Hunter Water's service standards are set out in its operating licence and other regulatory instruments such as Environment Protection Licences regulated by the Department of Environment and Conservation. Water quality guidelines, which are set by the National Health and Medical Research Council (NHMRC) and the NSW Department of Health are also included in its operating licence.

At the 2003 determination, the Tribunal indicated that it would initiate a process to improve the quality and breadth of information on service quality available to it. As a first step in this process, it established a working group with members from the Tribunal's Secretariat and the four retail water agencies to develop a series of performance indicators.

The water agencies completed returns on these performance indicators for the first time in 2004. The Tribunal recognises that the agencies will need some time to establish systems to capture the necessary information in a consistent manner. However, once these systems are in place, the resulting data will better inform the Tribunal on the quality of services provided to customers and the performance of the agencies' assets. The data will also help the Tribunal to fulfil its obligations under Section 15(1b) of the IPART Act, which relates to the protection of consumers from abuses of monopoly power in terms of standard of services.

In assessing Hunter Water's service standards for this price review, the Tribunal considered Hunter Water's own monitoring of its customer service performance and its compliance with the terms of its operating licence. It found that Hunter Water has performed reasonably well compared with other similar water businesses within Australia in recent years. Performance against most indicators has improved in 2004/05 compared to the previous year.

However, Hunter Water failed to meet the condition in its operating licence that relates to interruption to supply in 2004, largely due to the failure of a major trunk main. The 2004 Operational Audit recommended a number of operational improvements and investments that should assist the agency in meeting this condition in the future. Hunter Water has begun to implement these measures, which include a program of condition assessments on large trunk mains to better understand the risk of failure. The Tribunal has reviewed these and agree that the response is appropriate.

The Tribunal believes that this draft determination should not adversely affect Hunter Water's ability to meet its service standards, and expects that the standards will be maintained during the 2005 determination period. It will monitor the agency's performance against these standards, through its annual information return process and its review of the operating licence to commence in 2006.

Atkins/Cardno also recommended a range of output measures that agencies should be required to report against during the 2005 determination period. These measures are contained in Appendix 2. These measures include:

Water

- Length of critical water mains renewed
- New watermains laid
- Water pumping stations renewed
- Water meters replaced

Wastewater

- Collapsed sewers repaired
- Critical sewers replaced
- Compliance with DEC effluent standards
- Wastewater Treatment Works refurbished

Stormwater

- Length of channel naturalised
- Length of channel renewed/rehabilitated

These measures are less well developed for Hunter Water than other agencies. The Tribunal will be working with Hunter Water to refine these output measures prior to finalising its determination.

10.4.3 Implications for the agency's financial position

Overall, the Tribunal believes that its pricing draft decisions will not adversely affect the ability of Hunter Water to operate, maintain, renew and develop the assets involved in delivering the regulated services. In addition, it believes that Hunter Water's financial position will remain sufficiently strong for it to meet the borrowing, capital and dividend requirements related to these services.

Impact on rate of return

The Tribunal's analysis shows that the real pre-tax rate of return on Hunter Water's regulatory asset base (RAB) is expected to be around 5.8 per cent for 2005/06, increasing to 6.1 per cent in 2008/09. This calculation is based on the assumptions used in the Tribunal's modelling of the financial impacts of its pricing draft decisions and depends on Hunter Water achieving the efficiency targets the Tribunal has set. The expected rate of return in each year of the determination period is set out in Table 10.8.

Table 10.8 Expected rates of return for Hunter Water (per cent)

Financial year	2005/06	2006/07	2007/08	2008/09
Rate of return	5.8	5.9	6.0	6.1

These rates of return are within the commercial range for the WACC determined by the Tribunal for metropolitan water agencies. The Tribunal has also assessed these returns in the context of the other factors in Section 15 of the IPART Act. It considers that, on balance, the expected rates of return are reasonable. It notes that they are above the rates of return proposed by Hunter Water. It considers that to ensure the longer term sustainability of the regulated services, Hunter Water's prices need to better reflect a commercial return on the underlying assets.

Overall financial strength as assessed by investment category ratings

The Tribunal analysed a range of financial indicators that are commonly used by credit rating agencies to assess an entity's financial capacity and ability to service and repay debt. The State Government believes that a BBB rating is the minimum target rating to ensure financial viability. In completing its analysis of financial indicators, the Tribunal has assumed a dividend payout ratio of 75 per cent profit after tax.

The Tribunal's analysis and financial modelling indicate that the maximum prices set in the draft determination will enable Hunter Water to attain an overall Treasury rating of at least an A over the 2005 determination period (see Table 10.9).

Table 10.9 Financial indicators and credit ratings for Hunter Water

Financial year	2005/06	2006/07	2007/08	2008/09
Ability to service debt				
1. EBITDA interest cover	5.90	5.06	4.56	4.15
NSW Treasury ratings (2002)	AAA	AAA	AAA	AA+
2. Funds from operations interest coverage	4.64	3.82	3.53	3.19
Standard and Poors US ratings (1995)	AA	AA	AA	AA
3. Pre-tax interest coverage	3.03	2.70	2.51	2.36
Standard and Poors US ratings (1995)	AA	A	A	A
Ability to repay debt				
4. Funds flow net debt payback	3.00	3.42	3.88	4.07
NSW Treasury ratings (2002)	AA+	AA+	AA	AA
5. Funds from operations/total debt (%)	18%	15%	14%	13%
Standard and Poors US ratings (1995)	A	A	BBB	BBB
6. Debt gearing (regulatory value)	22%	25%	28%	29%
NSW Treasury ratings (2002)	AA+	AA+	AA+	AA+
Standard and Poors US ratings (1995)	AA	AA	AA	AA
Ability to finance investment from internal sources				
7. Internal financing ratio	3%	7%	5%	36%
NSW Treasury ratings (2002)	B	B	B	B
8. Net cash flow/capital expenditure (%)	9%	9%	9%	38%
Standard and Poors US ratings (1995)	<BB	<BB	<BB	BBB
NSW Treasury overall score and rating				
NSW Treasury total score (0 -10)	7.00	7.00	6.75	6.50
Overall rating	A+	A+	A	A
9. Net debt (\$m)	252	301	357	393

Notes:

- (i) The Tribunal particularly relies on indicators based on cash flows because these are not as subjective as indicators that use components derived from estimates (eg asset value and depreciation).
- (ii) An acceptable range of financial ratios for each credit rating will differ from time to time according to the unique characteristics of the business. There may not be a perfect match between the ratios and the indicator rating; the ratios represent midpoints of ranges, and vary during an investment cycle, particularly the internal financing ratio. In addition, Standard and Poors credit ratings are prospective, with ratings reflective of a company's expected financial profile. For this reason, the ratings indicated by the ratios for each of the regulated businesses based on one year's financial results may not be the same as the actual rating given by Standard and Poors.

Payment of dividends

The Tribunal's modelling⁷⁸ indicates that Hunter Water will be able to pay a level of dividends consistent with past performance if the outcomes and targets set out in this report are achieved.

⁷⁸ Based on the Tribunal's assumptions of the financial impacts of its pricing draft decisions and on Hunter Water achieving the efficiency targets the Tribunal has set.

If Hunter Water increases prices to the maximum level allowed under the 2005 draft determination, its revenue is expected to increase in real terms in each year of the determination period compared with 2004/05 levels. Section 16 of the IPART Act requires the Tribunal to report on the likely impact to the Consolidated Fund if prices are not increased to the maximum levels permitted. If this is the case, then the level of dividends paid to the Consolidated Fund will fall. The extent of this fall will depend on Treasury's application of its financial distribution policy and how the change affects after-tax profit. The Tribunal's financial modelling projects dividend payments at 75 per cent of after-tax profit. A one dollar decline in after-tax profit would result in a loss of revenue to the consolidated fund of 75 cents.

10.4.4 Implications for the environment

The key environmental issue currently facing Hunter Water is the need to improve wastewater services to reduce effluent overflows and cope with population growth. Expenditure on wastewater systems in the Hunter regions during the 2005 determination period is expected to deliver the following outcomes:

- reduced wet weather customer and environmental impacts in Belmont, Dora Creek, Raymond Terrace, Boulder Bay, Lake Macquarie and Newcastle wastewater treatment and transport systems
- the ability to meet the higher effluent quality standards required by DEC for the inland treatment plants, including Cessnock, Branxton and Farley
- the provision of sewerage services to backlog areas at Fern Bay, Kitchener, Lochinvar, Millfield and Ellalong under the State Government's Priority Sewerage Program.

The Tribunal has allowed most of the environment-related capital spending proposed by Hunter Water where this was in line with priorities set by the Department of Environment and Conservation. This will reduce overflows from the sewerage system waterways and the ocean in wet and dry weather.

However, it has accepted Atkins/Cardno's recommendation to re-phase some capital expenditure to reflect uncertainties in the scope of works needed to meet environment protection licence requirements in the latter years of the 2005 determination period. The Tribunal notes that the Newcastle and Belmont wastewater transport system upgrades must be completed by 1 July 2007 to meet licence requirements.

The Tribunal has restructured water prices by increasing Tier 1 usage charges and phasing out Tier 2 usage charges over the 2005 determination period. It believes this will send a better conservation signal to large water users.

GLOSSARY OF TERMS

<i>Term</i>	<i>Meaning/Definition</i>
2000 determination period	The determination period from 1 July 2000 to 30 June 2003
2003 determinations	The determinations made by the Tribunal in 2003, including the mid term review for the Sydney Catchment Authority
2003 determination period	The determination period from 1 July 2003 to 30 June 2005
2005 determination period	For the Sydney Catchment Authority and Sydney Water - from 1 October 2005 to 30 June 2006 For Hunter Water – from 1 November 2005 to 30 June 2006
2005 determinations	The determinations subject to this report that are to be made by the Tribunal in 2005
AGSM	Australian Graduate School of Management
(1+ΔCPI₁)	Is the movement in the CPI between the four quarters ending 31 March 2006 and the four quarters ending 31 March 2005
(1+ΔCPI₂)	Is the movement in the CPI between the four quarters ending 31 March 2007 and the four quarters ending 31 March 2005
(1+ΔCPI₃)	Is the movement in the CPI between the four quarters ending 31 March 2008 and the four quarters ending 31 March 2005
AIR	Annual Information Return
Atkins/Cardno	Consultancy firms WS Atkins International Ltd and Cardno MBK
Capex	capital expenditure
CAPM	Capital Asset Pricing Model
CPI	Consumer Price Index
CSO	Community Service Obligations
DEC	Department of Environment and Conservation
Determination	The price limits set by a regulator
DEUS	Department of Energy, Utilities and Sustainability
DIPNR	Department of Infrastructure, Planning, and Natural Resources
Financial Year	The financial year commencing on 1 July and ending 30 June.
Gosford Council	Gosford City Council
Halcrow	Halcrow Management Sciences Limited
Hunter Water	Hunter Water Corporation
Inclining-block tariff (IBT)	Price structure where consumption up to a set quantity (the step quantity) is charged at an initial price (the tier 1 price) and consumption above the step quantity is charged at a higher price (the tier 2 price)
IPART	Independent Pricing and Regulatory Tribunal

<i>Term</i>	<i>Meaning/Definition</i>
IPART Act	The Independent Pricing and Regulatory Tribunal Act 1992
Issues Paper	Independent Pricing and Regulatory Tribunal of NSW, Review of Metropolitan Water Agency Prices – Issues Paper, July 2004
McLennan Magasanik	McLennan Magasanik Associates
MRP	Market risk premium
NHMRC	National Health and Medical Research Council
NSW	New South Wales
Opex	operating expenditure
Price path review	The review of price limits for the 2005 determination period
Price structure	The mix of fixed charges, usage charges and price steps
RAB	Regulatory asset base
Determination period	The period over which price limits are determined
Review	2005 Metropolitan Water Agency's price path review
SIR	Special Information Return
Sydney Water	Sydney Water Corporation
T-Corp	Treasury Corporation
Tribunal	The Independent Pricing and Regulatory Tribunal of NSW
UK	United Kingdom
WACC	Weighted average cost of capital
Water usage charge	Charge applied per kL of water consumed
Wyong Council	Wyong Shire Council

Throughout this report, all capital and operating expenditure is reported by financial year ending 30 June for each year. For example expenditure in year 2005/06 refers to the financial year commencing on 1 July 2005 and ending 30 June 2006.

There may be slight errors in the tables due to rounding.

APPENDIX 1 MATTERS TO BE CONSIDERED BY THE TRIBUNAL UNDER SECTION 15 OF IPART ACT

The Tribunal's decisions have been made in accordance with the requirements set out in the IPART Act, including the factors contained in Section 15 of the Act. This section, which is reproduced in full in Box A1, specifies the matters the Tribunal must consider when making a determination. The Tribunal is satisfied that its determination achieves a reasonable balance between these matters.

Box 1.2 Matters to be considered by Tribunal under Section 15 of the IPART Act

(1) In making determinations and recommendations under this Act, the Tribunal is to have regard to the following matters (in addition to any other matters the Tribunal considers relevant):

- (a) the cost of providing the services concerned,*
- (b) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services,*
- (c) the appropriate rate of return on public sector assets, including appropriate payment of dividends to the Government for the benefit of the people of New South Wales,*
- (d) the effect on general price inflation over the medium term,*
- (e) the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers,*
- (f) the need to maintain ecologically sustainable development (within the meaning of section 6 of the Protection of the Environment Administration Act 1991) by appropriate pricing policies that take account of all the feasible options available to protect the environment,*
- (g) the impact on pricing policies of borrowing, capital and dividend requirements of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets,*
- (h) the impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body,*
- (i) the need to promote competition in the supply of the services concerned,*
- (j) considerations of demand management (including levels of demand) and least cost planning,*
- (k) the social impact of the determinations and recommendations,*
- (l) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).*

(2) In any report of a determination or recommendation made by the Tribunal under this Act, the Tribunal must indicate what regard it has had to the matters set out in subsection (1) in reaching that determination or recommendation.

Table A3.1 indicates where the matters have been considered throughout the report by the Tribunal in making this determination.

Table A3.1 Consideration of Section 15 matters by Tribunal for Sydney Catchment Authority, Sydney Water and Hunter Water draft determinations

Section 15(1)	Report reference
(a) cost of providing the service	Sections 6.4, and 8.4 to 8.7
(b) protection of consumers from abuse of monopoly power	Sections 10.2.1, 10.2.2, 10.3.1, 10.3.2, 10.4.1 and 10.4.2
(c) appropriate rate of return and dividends	Sections 7.3, 10.2.3, 10.3.3 and 10.4.3
(d) affect on general price inflation	Sections 10.2.1, 10.3.1 and 10.4.1
(e) improved efficiency in supply of services	Chapters 6 and 8 generally
(f) ecologically sustainable development	Sections 10.2.4, 10.3.4 and 10.4.4
(g) impact on borrowing, capital and dividend requirements	Sections 10.2.3, 10.3.3 and 10.4.3
(h) additional pricing policies	Not applicable
(i) need to promote competition	Section 2.1, chapters 9 and 10 generally
(j) considerations of demand management	Sections 2.3.3, 4.3.2, 7.3.3, 8.5, 9.5.2, 10.2.4, 10.3.1 and 10.3.4
(k) the social impact on customers	Sections 1.3, 10.2.1, 10.3.1 and 10.4.1
(l) standards of quality, reliability and safety of the services	Sections 10.2.2, 10.3.2 and 10.4.2

APPENDIX 2 OUTPUT MEASURES

The output measures recommended by Atkins/Cardno which the agencies are to report against during the 2005 determination period are set out below.

A2.1 Proposed output measures for Sydney Water

A2.1.1 Outputs for Water services

Output (or activity) Measure	Value
Renewal of critical water mains	41km
Renewal of distribution mains	320km
New mains laid by SWC	274km
New recycled mains laid by SWC	51km
Pressure control areas established	165
Bulk water meters: - refurbished	85
- new	50
Average leakage for the year 2009	105ML/d
Pumping Station Substantial Renewals :	40
Renewal of customer water meters	406,000
Service Reservoirs Substantial Renewals	
- roof refurbishments	14
- reservoir relining	30

A2.1.2 Outputs for Wastewater services

Output (or activity) Measure	Value
Repair collapsed sewers	24 km
Renew critical mains	41 km
Meet spill frequency of dry & wet weather overflows at sewage pumping stations	All SPSs
Comply with DEC effluent standards	All WWTWs
Install chemical dosing plants for sewerage systems	8 No by 05/06
Rehabilitate sewers at properties subject to repeat overflows	320 km
Rehabilitate rising mains	0.7 km plus 4.5 km for tidal ingress
Refurbish WWTWs	Bondi, North Head, Richmond
Replace Biosolids Plant	North Head
Install/amplify sewers to serve new development	Includes 24 km for Liverpool to Ashfield
Increase capacity at WWTWs	Wollongong, West Camden, Warragamba, Winmalee, Liverpool, North Head, Richmond, Riverstone, Rouse Hill, Shellharbour, Warriewood
Rehabilitate catchments in Blue mountains and other hotspots. Build mathematical models	100 models and meet licence conditions
Decommission WWTWs	Warragamba, Glenbrook, Bellambi, Blackheath, Mt Victoria
Renew old telemetry at WWTW	200 No.
Upgrade Biosolids Plant	West Camden, Winmalee, Penrith

A2.1.3 Outputs for Stormwater Services

Output (or activity) Measure - Stormwater	Value
Complete SEIP projects	21 sites
Install gross pollutant traps	21 sites
Complete Alexandria Canal Improvements to satisfaction of DIPNR by 2009	-
Pipe and Channel renewal and rehabilitation by 2009	4km

A2.1.4 Outputs for Corporate

Output (or activity) Measure - Corporate	Value
Complete IT Infrastructure Security Project	-
Complete Field Resource Management project	380 computers
Complete IT renewals	-
Complete rationalisation of depots and offices	27 sites reduced to 13

A2.2 Proposed output measures for the Sydney Catchment Authority

1. Substantial completion of the Deep Storage scheme and provision of an additional 30GL per annum resource yield by July 2006.
2. Substantial completion of the Prospect Pumping Station and associated Dam remedial works by March 2007.
3. Substantial completion of the Warragamba Spillway and associated works by June 2007.
4. Completion of phase 1 of the Shoalhaven scheme and provision of an additional 50GL per annum resource yield by July 2010.
5. Completion of works to allow the release of environmental flows into the Upper Nepean River by July 2010."

A2.3 Proposed Output measures for Hunter Water**A2.3.1 Outputs for Water Services**

Output (or activity) Measure	Value
Renewal of critical water mains	11 km
Renewal of distribution mains	45km
New mains laid by HWC	km
Pumping Station Substantial Renewals	Location
Renewal of customer water meters	No
Service Reservoirs Substantial Renewals	No

A2.3.2 Outputs for Wastewater Services

Output (or activity) Measure	Unit
Repair collapsed sewers	km
Renew critical sewers	km
Meet spill frequency of dry & wet weather overflows at sewage pumping stations	All SPSs
Comply with DEC effluent standards	All WWTWs
Refurbish WWTWs	Number/ name

A2.3.3 Outputs for Stormwater Services

Output (or activity) Measure	Unit
Length of channel naturalised Winding Creek System Newcastle Stormwater System Cessnock Stormwater System	km
Length of channel renewed/rehabilitated	km

A2.3.4 Outputs for Corporate

Output (or activity) Measure	Unit
Substantial completion of new Head Office	End of FY 2006
Domestic meters replaced	No.
Bulk meters replaced	No.
IT Complete MIMs platform change Complete SCADA upgrade Complete IP Telephony project	End of FY 2006

APPENDIX 3 WACC

A3.1 Calculating the WACC

The Tribunal has calculated the Weighted Average Cost of Capital (WACC) as a pre-tax real WACC. The methodology was to first calculate the Cost of Equity using the Capital Asset Pricing Model CAPM

$$R_e = R_f + \beta_e \times (R_m - R_f)$$

where:

R_f = the *nominal* risk free rate

R_m = the *nominal* weighted expected return of the whole market. This leads to the calculation of the market risk premium over the risk-free rate as $R_m - R_f$

Beta (β_e) = a measure of the risk of the asset relative to the market index

The cost of equity is then feed into the pre-tax real WACC formula thus

$$WACC_{pretax \quad real} = \frac{\left(1 + \left\{ \frac{R_e}{[1 - t \times (1 - \gamma)]} \times \left(\frac{E}{D + E} \right) + R_d \times \frac{D}{D + E} \right\} \right)}{(1 + i)} - 1$$

where:

R_e = the nominal cost of equity

R_d = the nominal cost of debt

t = the statutory tax rate

Gamma (γ) = the value attributed to imputation tax credits

E = the amount of equity in the capital structure

D = the amount of debt in the capital structure

$E/(D + E)$ is the proportion of equity funding

$D/(E + D)$ is the proportion of debt funding

i = inflation rate

The individual parameters used in the calculation of the WACC are set out below

A3.2 The Tribunal's considerations in relation to nominal and real risk free rates and inflation

The Tribunal's draft finding is to base the WACC calculation on a nominal risk free rate of 5.5 per cent and a real risk free rate of 2.7 per cent. The implied inflation is 2.7 per cent.

In line with the proposals received from some of the water agencies, the Tribunal has used the nominal and real risk free rates (calculated as the 20-day averages of the ten-year Commonwealth Government Bonds and Treasury indexed bonds with similar maturity) to derive inflation for the WACC calculation (using the Fisher equation⁷⁹). The 20-day averages for the nominal and real risk free rate and implied inflation at 4 May 2005 are shown in Table A3.1 below.

Table A3.1 Interest rates and implied inflation calculated on 4 May 2005

	Value (%)*
Nominal risk free rate	5.4%
Real risk free rate	2.6%
Implied inflation	2.7%

* Calculated as the 20 day average of the ten year Commonwealth Government Bond indicator rate as prepared by Lewis Securities Ltd and published daily in the Australian Financial Review and the 20 day average of yields of the 2015 Treasury indexed bond, to 4 May 2005.

The Tribunal will update these values when considering its final determination.

A3.3 The Tribunal's considerations in relation to market risk premium

The Tribunal's draft finding is to calculate WACC using a market risk premium in the range of 5.5 to 6.5 per cent.

The market risk premium (MRP) represents the additional return over the risk free rate of return that an investor requires for the risk of investing in a diversified equity portfolio. For past water price determinations, the Tribunal has used a range for the MRP of 5.0 to 6.0 per cent, in acknowledgement of the uncertainty associated with historical studies of the MRP.

The Tribunal's draft finding is to increase the range of the MRP to 5.5 to 6.5 per cent. It has maintained the use of a range for the MRP due to the large variability in observed MRP, for example, as estimated by the Centre for Research in Finance at the Australian Graduate School of Management (AGSM).⁸⁰

⁷⁹ The Fisher equation is $(1 + r_{\text{nominal}}) = (1 + r_{\text{real}}) \times (1 + i)$

⁸⁰ Centre for Research in Finance, AGSM, (2004), *Risk Premium Estimates for Investors in Fully Paid Australian Listed Equity – January 1974 to December 2003*, Report prepared for IPART.

The Sydney Catchment Authority and Hunter Water submitted that a MRP of 6 per cent would be appropriate. Other regulators such as the ACCC and the Victorian Essential Services Commission have assumed a value of 6 per cent in their WACC calculations.

In arriving at its draft finding, the Tribunal had regard to the agencies' submissions and the values of MRP adopted by other Australian regulators. Importantly, it also considered evidence from long-term historical MRP studies. Table A3.2 provides a summary of the MRP studies it considered. The MRP estimates in this table depend considerably on the underlying methodology used and the time periods chosen for study. Of these studies, the lowest estimate is 5.8 per cent and the highest is 7.9 per cent, resulting in a mid-point of 6.9 per cent. However, the most recent study conducted by the AGSM indicates that the Australian market risk premium as measured by an arithmetic average including October 1987 is 5.8 per cent.

Table A3.2 Market Risk Premium Studies

Source	Methodology	Period	MRP
AGSM	Arithmetic average, incl. Oct 1987	1974-2003	5.8%
	Arithmetic average, excl. Oct 1987	1974-2003	7.1%
Officer	Arithmetic mean ⁸¹	1882-1987	7.9%
	Arithmetic mean ⁸²	1882-2001	7.2%
	Arithmetic mean ⁸³	1946-1991	6.0-6.5%
Hathaway ⁸⁴	Arithmetic mean	1882-1991	7.7%
	Arithmetic mean	1947-1991	6.6%
Dimson, Marsh & Staunton ⁸⁵	Arithmetic mean	1900-2000	7.6%
Gray ⁸⁶	Arithmetic mean	1883-2000	7.3%

⁸¹ Officer, R. "Rates of return to shares, bond yields and inflation rates: An historical perspective", in *Share Markets and Portfolio Theory; Readings and Australian Evidence*, 2ed, University of Queensland Press, 1992.

⁸² Provided by Professor Officer to the Essential Services Commission (Review of Gas Access Arrangements, Final Decision, October 2001). Original information published in Officer, R. "Rates of return to shares, bond yields and inflation rates: An historical perspective", in *Share Markets and Portfolio Theory; Readings and Australian Evidence*, 2ed, University of Queensland Press, 1992.

⁸³ Officer, R. "Rates of return to shares, bond yields and inflation rates: An historical perspective", in *Share Markets and Portfolio Theory; Readings and Australian Evidence*, 2ed, University of Queensland Press, 1992.

⁸⁴ Hathaway, N. *unpublished manuscript*. "Australian Equity Risk Premium" in *Valuation and the Cost of Capital Under an Imputation Tax System*, Cost of Capital Seminar, Melbourne Business School, University of Melbourne, August 1996.

⁸⁵ Cited in: E. Dimson, P. Marsh and M. Staunton, *Triumph of the Optimist: 101 years of Global Investment Returns*, Princeton University Press, 2002.

⁸⁶ Gray, S. "Issues in Cost of Capital Estimation", UQ Business Schools, University of Queensland, 19 October 2001.

A3.4 The Tribunal's considerations in relation to debt margin (including debt raising costs)

The Tribunal's draft finding is that the appropriate level of debt margin is in the range of 1.13 to 1.22 per cent, including an allowance of 0.125 per cent for debt raising costs.

The debt margin represents the cost of debt a company has to pay above the nominal risk free rate. The debt margin is related to current market interest rates on corporate bonds, the maturity of debt, the assumed capital structure and the credit rating. The Tribunal has determined the debt margin by:

- Assuming BBB+ to BBB rated corporate debt with a 10-year maturity (to best reflect the expected life over which these assets are expected to generate cash flows).
- Using a 20-day average of yields obtained from CBASpectrum⁸⁷.

Hunter Water and the Sydney Catchment Authority support an approach that benchmarks the debt margin against capital markets, based on an investment grade credit rating, 10-year maturity with a 50 per cent gearing assumptions (see below for discussion on gearing levels). The 20-day average for BBB+ to BBB rated debt as at 4 May 2005 was 100.7 to 109.6 basis points.

In its 2004 electricity network determination and its 2005 decision on AGLGN's Access Arrangement, the Tribunal included an allowance for debt raising costs based on reasonable estimates by consultants. This decision reflects market evidence that suggests that long-term investments (other than project finance) of more than five years may be difficult to obtain in the Australian market. This implies that businesses frequently have to refinance their debt and incur costs in doing so.

Allowances for debt raising costs suggested in previous consultancy reports by ABNAMro and Westpac ranged from 12.5 to 25 basis points.

A3.5 The Tribunal's considerations in relation to gearing level

The Tribunal's draft finding is that the appropriate level of gearing is 60 per cent.

When determining the level of gearing used to calculate WACC, the Tribunal adopts a benchmark capital structure, rather than the actual financing structure, to ensure that customers will not bear the cost associated with an inefficient financing structure.

The Sydney Catchment Authority and Hunter Water proposed a gearing ratio of 50 per cent, on the basis that overseas businesses (especially UK water businesses) have a lower gearing ratio than 60 per cent. After reviewing the gearing ratios of UK water businesses (see Table A3.3), the Tribunal believes that the Sydney Catchment Authority's and Hunter Water's claims are unsubstantiated.

⁸⁷ CBASpectrum is a database service from the Commonwealth Bank of Australia. The database estimates fair yield curves for Australian corporate debt.

Table A3.3 UK water businesses – gearing (book value of equity)

Business⁸⁸	Gearing (per cent)	
	1990/91	February 2005
Anglican Water Group	13.5	80
Bristol Water	57.5	59
Northumbrian Water	12.9	69
Kelda Group	2.4	52
Severn Trent	0	53

Source: London Stock Exchange. Gearing numbers for 1990/91 from Annual Reports.
Gearing numbers for February 2005 from London Stock Exchange.

UK water authorities were privatised in November 1989 and Table 7.7 presents a snapshot of the change in gearing ratios for the largest UK businesses providing water service only since privatisation. In September 2004, the gearing ratios ranged from 52 to 80 per cent with an average of 62 per cent.

The Tribunal believes that there is no new evidence suggesting that gearing ratios for water businesses have decreased since the 2003 determination.

A3.6 The Tribunal's considerations in relation to dividend imputation factor (gamma)

The Tribunal's draft finding is to use a gamma range of 0.3 to 0.5.

Under the Australian dividend imputation system, investors receive a tax credit (franking credit) for the company tax they have paid. This ensures the investor is not taxed twice on their investment returns (ie, once at the company level and once on the personal tax level).

The value of imputation tax credits is represented in the capital asset pricing model (CAPM) by 'gamma'. The rationale behind this, including the value of gamma in the CAPM, is that if investors are receiving a tax credit from their investment, they would accept an investment with a lower return than if there were no tax credits attached to this investment. The gamma is an important input in the CAPM, as a high value (for example one) would reduce the cost of capital considerably.

The Tribunal's draft finding is to continue using a gamma range of 0.3 to 0.5 as in previous water price determinations. This is consistent with Hunter Water's and the Sydney Catchment Authority's proposals. The debate in Australia about what value to assign to gamma has centred on the assumptions that capital markets are either fully globally integrated or fully segregated within local markets. The use of a domestic CAPM, with a domestic MRP and betas, should imply that capital markets are fully segregated and that the marginal investor is domestic.

⁸⁸ The Tribunal has limited its analysis to companies that mainly are water businesses and have a market capitalisation in excess of 100 million British pounds. The Tribunal has ignored diversified water businesses, as these would not give correct guidance on the appropriate gearing level for a "pure" water business.

In arriving at its finding, the Tribunal had regard to a number of studies where gamma has been estimated.⁸⁹ These studies indicate that the gamma value is anywhere between zero and one. The Tribunal's view is that assuming the marginal investor in Australian equities is domestic, under the *New Business Tax System (Miscellaneous) Act (No. 1) 2000* imputation tax credits should have a value greater than zero. The Tribunal has decided to maintain its previous approach of assigning some value to gamma by using a range of 0.3 to 0.5. It believes that this range reflects both the uncertainty surrounding the value investors attach to imputation tax credits, as well as the different franking credit distribution rates of companies.

A3.7 The Tribunal's considerations in relation to tax rate

The Tribunal's draft finding is to use the statutory tax rate of 30 per cent.

This finding is consistent with the 2003 determinations, and with findings made by the Tribunal in other industries.

A3.8 The Tribunal's considerations in relation to equity beta

The Tribunal's draft finding on the range of an equity beta range is 0.65 to 0.90.

The equity beta is a relative measure of a security's sensitivity to the risk of the market (systematic risk). Businesses with an equity beta greater than the market average of one would be expected to compensate investors for greater risk through higher returns. Conversely, an equity beta of less than one will compensate investors for less risk, through lower returns.

Estimating betas empirically requires information on the economic returns to a particular entity. This information is available only for entities that are listed on the stock exchange.

Hunter Water and the Sydney Catchment Authority argued that the equity beta used for metropolitan water agencies should be the same as that used for electricity distribution businesses. Consequently, they proposed an asset beta of 0.35 to 0.45,⁹⁰ which results in an equity beta range of 0.63 to 0.89⁹¹.

In the absence of Australian market estimates for the equity beta applicable to a metropolitan water business, the Tribunal has considered estimates of equity betas for the privatised UK water businesses. While it recognises that there are potential problems with using international comparisons of equity betas,⁹² such comparisons can be useful as a relative measure of the risks faced by the water sector.

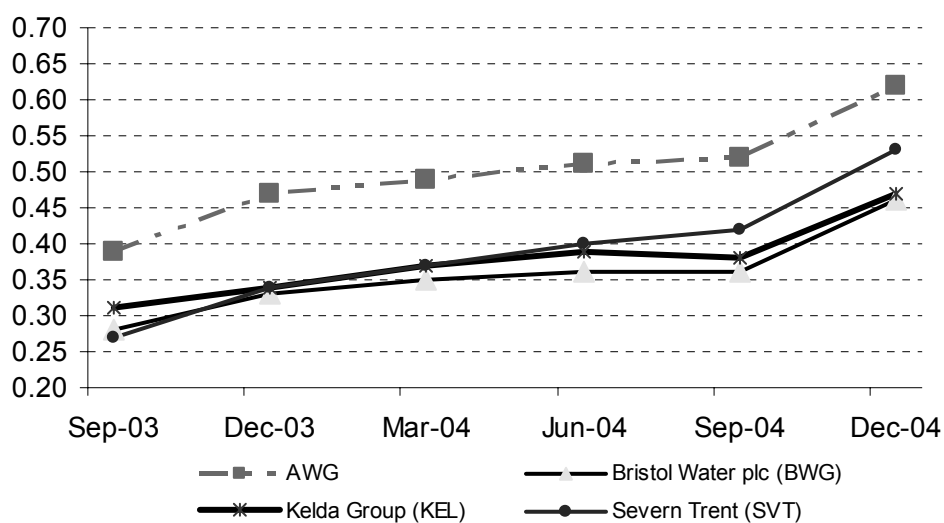
The estimates for the UK water infrastructure businesses are summarised in Figure A3.1

⁸⁹ See for example, Cannavan, Finn & Gray, 2004, *The value of dividend imputation tax credits in Australia*, Journal of Financial Economics 73,1,pp 167-197; Bellamy, D and S. Gray, 2004. *Using Stock Price Changes to Estimate the Value of Dividend Franking Credits*. Working Paper University of Queensland, Business School; Chu, H., Partington G. *The market value of dividends: evidence from a new method*, working paper, UTS, 2001.

⁹⁰ This is the asset beta range used in the Tribunal's 2004 final decision for NSW electricity distribution.

⁹¹ Note that the equity beta estimate derived from an asset beta changes as the input parameters, cost of debt, debt beta and gamma change.

⁹² For example international differences in risk premiums.

Figure A3.1 UK water businesses – equity beta trend⁹³

This figure shows that the equity betas for the four largest (by market capitalisation) non-diversified UK water businesses have predominantly been under 0.6 over the last six quarters.

To consider the implications of different gearing levels, the Tribunal has de-levered and re-levered these equity beta estimates using the Monkhouse formula to reflect the capital structure and tax assumptions of the NSW metropolitan water businesses. The results of this analysis indicate that re-levered equity betas for UK water businesses range from 0.32 to 0.74.

Table A3.4 Re-levered equity betas⁹⁴

<i>gamma</i> = 0.4	Gearing	Equity beta	Asset beta	Equity beta
<i>cost of debt</i> = 6.5%	Feb-05	Dec-04	Debt beta=0	Debt beta=0
AWG	80%	0.62	0.13	0.32
Bristol Water plc (BWG)	59%	0.46	0.19	0.48
Northumbrian water (NWG)	69%	0.97	0.30	0.74
Kelda Group (KEL)	52%	0.47	0.23	0.56
Severn Trent (SVT)	53%	0.53	0.25	0.62

Based on the UK evidence and the submissions received, the Tribunal believes that maintaining the equity beta in the range used at the 2003 determination of 0.65 to 0.90 is appropriate, given the systematic risks faced by the businesses. The implied asset beta using a debt beta of zero and the other parameter assumptions is 0.26 to 0.37.

⁹³ Source: London Business School, "Risk Management Service".

⁹⁴ Equity betas are based on the December 2004 quarter.

A3.9 The Tribunal's considerations in relation to debt beta

The Tribunal's draft finding is that the appropriate value for debt beta is zero.

The debt beta reflects the risk of a debt security and how it correlates with the market. The debt beta mainly reflects the default risk of debt securities. The relative riskiness of an individual security is reflected in the issuing company's credit rating. In practice, the debt beta is unobservable and unmeasurable, and is solely used in the equity beta conversion formula.

In the 2003 determination, the Tribunal used a debt beta range of 0.06 to 0.14. For the 2005 determination, the Tribunal's draft finding to use a debt beta assumption of zero, consistent with its 2005 decision on AGLGN's access arrangement and evidence of market practice contained in independent expert reports.⁹⁵

⁹⁵ See for example, Grant Samuel, KPMG, Price Waterhouse Coopers, from 2003 to 2005.