

Cost Allocation Manual

**For the allocation of costs to the Declared Services:
*Bondi, Malabar and North Head Sewerage Reticulation Networks***

November 2008



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Version History

Version No.	Date of Revision	Authorised By	Details of Amendment
1.0	November 2008	Alan Ramsey	Version 1.0

This Manual is produced by the Finance & Regulatory division of Sydney Water Corporation. Any enquiries regarding this Manual should be addressed to General Manager, Finance & Regulatory Division.

1 Purpose and Scope of Cost Allocation Manual

1.1 Legislative Context

The Water Industry Competition Act 2006 (WICA) was passed by the NSW Parliament in November 2006 and commenced on 8 August 2008. Under Section 42 of the Act:

- (1) Within 3 months after an infrastructure service becomes the subject of a coverage declaration, the service provider:*
 - (a) must keep separate accounts for such of its infrastructure services as are the subject of the declaration, and*
 - (b) must submit a cost allocation manual to IPART in relation to that infrastructure.*
- (2) A cost allocation manual must be in the form of a document that, in accordance with any rules under subsection (3), sets out the basis on which the service provider proposes to establish and maintain accounts for those of its infrastructure services as are the subject of a coverage declaration.*

1.2 Declared Services

The declared services at the commencement of WICA were the transportation and interconnection services provided by Sydney Water's North Head, Bondi and Malabar sewerage reticulation networks, namely:

- a) A service for the transportation of sewage provided by means of the North Head Reticulation Network, from a customer's boundary trap to points of interconnection.
- b) A service for the connection of new sewers to the North Head Reticulation Network at points of interconnection.
- c) A service for the transportation of sewage provided by means of the Bondi Reticulation Network, from a customer's boundary trap to points of interconnection.
- d) A service for connection of new sewers to the Bondi Reticulation Network at points of interconnection.
- e) A service for the transportation of sewage provided by means of the Malabar Reticulation Network, from a customer's boundary trap to points of interconnection.
- f) A service for connection of new sewers to the Malabar Reticulation Network at points of interconnection.

This Manual addresses the infrastructure services related to items (a), (c) and (e). The costs of interconnection services will depend on the specifics of an access proposal and are not covered in this document.

1.3 Purpose

This Manual sets out Sydney Water's method of allocating costs to its regulated wastewater services including the declared services. The objective of the manual is to:

- Provide transparency in the allocation of direct and indirect costs to declared services and other services;
- Provide information to potential access seekers on the declared services and component costs of the services;
- Assist access seekers in their negotiations with Sydney Water;
- Explain the method by which Sydney Water will ensure that the costs of the declared services reflect efficient, attributable costs;
- Demonstrate that there is no cross-subsidisation between the declared services and Sydney Water's contestable services;
- Assist IPART if it is called upon to arbitrate a dispute as to terms of access to the declared services; and
- Comply with IPART's *Draft Cost Allocation Guide – Water Industry Competition Act 2006*.

Appendix 1 to this Manual shows the method for calculating access prices for the declared services. This does not form part of the cost allocation method. It is included for information purposes because the cost focus of the manual is more readily understood in the context of the access pricing method established by the Australian Competition and Consumer Commission (ACCC)¹.

The Manual was reviewed by PriceWaterhouseCoopers who found it to be consistent with IPART's Draft Cost Allocation Guide.

1.4 Principles to be used in the Cost Allocation Process

In its draft Cost Allocation Guide, IPART has set out the principles to be used in the cost allocation process.

WICA's Pricing Principles

Sydney Water's cost allocation method for wastewater services is consistent with the approach used to set access prices established by the ACCC. The pricing principles in Part IIIA of the Trade Practices Act (1974) administered by the ACCC are the same as those in WICA.

¹ See Australian Competition and Consumer Commission, *Access dispute between Services Sydney Pty Limited and Sydney Water Corporation, Arbitration Report*, July 2007.

The Causality Principle in Allocating Costs

Sydney Water's sewage treatment systems are defined by geographic boundaries (Figure 1 and 2). They are discreet and do not interconnect. As a result, the majority of capital costs can be identified at a system level. In addition, a high proportion of operating costs can be traced directly to systems and services.

Sydney Water's systems and processes support identifying direct costs at a highly disaggregated level. The majority of costs (>80%) are therefore allocated on a directly causal basis.

Allocating Costs Where a Causal Relationship Cannot be Established

Only a small proportion of total costs comprise shared costs and overheads. This Manual sets out the method for allocating these indirect costs appropriately across sewerage systems and services using the most relevant cost allocator.

Total Costs to be Allocated

Sydney Water's cost allocation method ensures that the total costs of wastewater services equal the forward-looking efficient costs determined by IPART in the prevailing price determination.

A Cost Should Only be Allocated Once

Reconciliation of costs with IPART's determined costs ensures that costs are only allocated once. The method precludes double counting or over allocation.

Periodic Review of the Basis for Cost Allocation

The basis for review of the cost allocation method is addressed further on in this Manual.

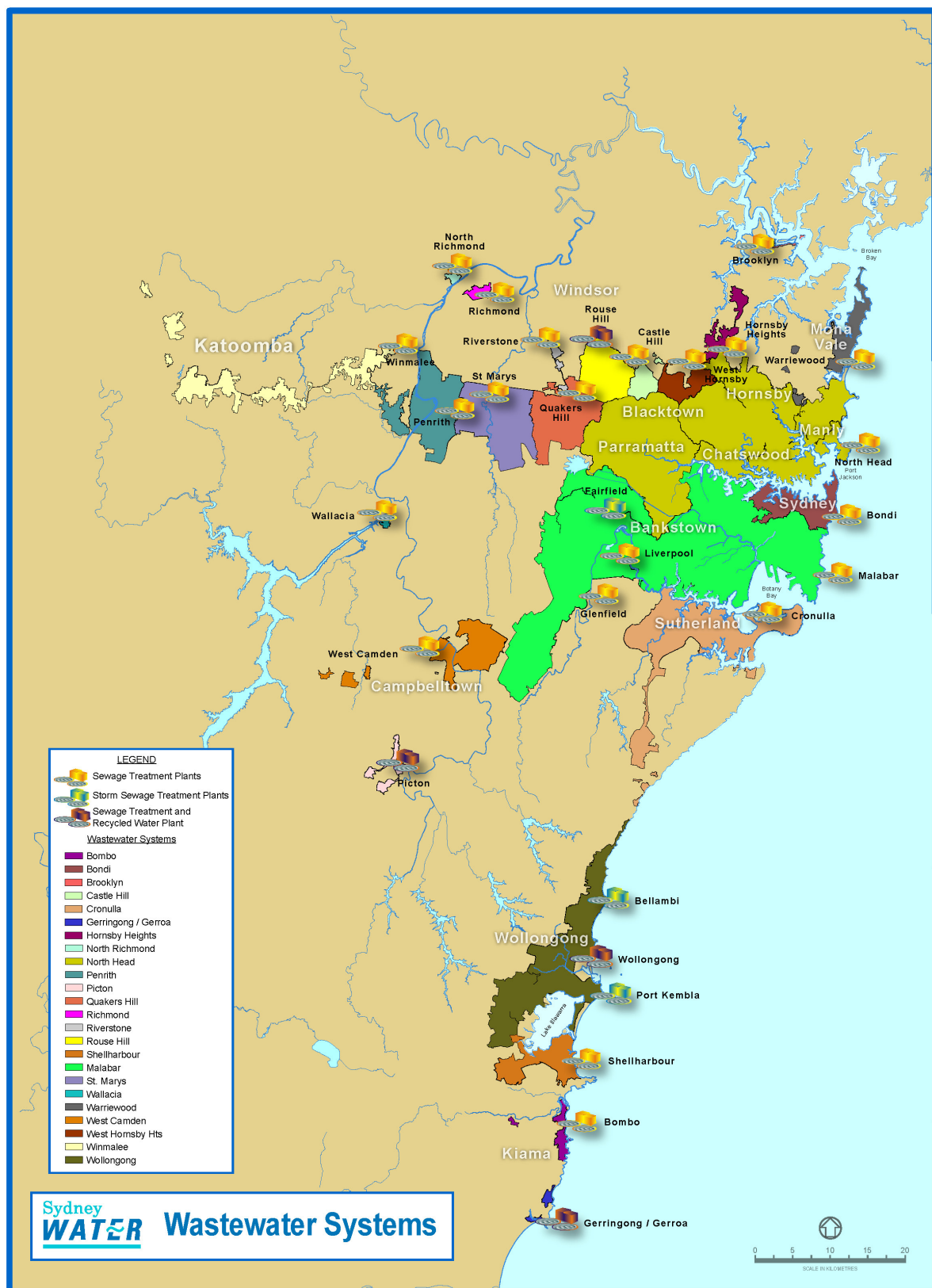


Figure 1: Map of Sydney Water's Sewage Treatment Systems

1.5 Accountabilities and Responsibilities

The Regulatory and Reform Subcommittee of the Board of Sydney Water is responsible for overseeing the maintenance and implementation of this manual. A directors' statement is at appendix 2.

The Sydney Water's Finance and Regulatory division is responsible for:

- Maintaining and updating the Manual
- Monitoring the correctness and reasonableness of cost allocations to services
- Determining the appropriate causal drivers
- For allocating indirect costs, and
- For reporting on the application of the Manual.

Upon IPART's approval of the Manual, Finance and Regulatory division will ensure that costs are allocated between the sewerage systems and services in accordance with the Manual. These records, and the systems used to allocate costs as described in this Manual, will be available for audit at Sydney Water's head office.

1.6 Duration and Review of Costing Manual

Following approval by IPART, this cost allocation manual is current at the date signed by Sydney Water's directors on behalf of the full board. The Manual remains current until it is periodically re-issued.

The Manual will be reviewed at the beginning of each regulatory pricing period. A review of the Manual may also occur in the event of major changes to Sydney Water's businesses that could impact the provision of services or the capture and recording of costs. This may include declaration of additional wastewater services. Proposed changes to the cost allocation manual will be submitted to IPART for approval in accordance with published guidelines².

1.7 Compliance with IPART's Cost Allocation Guide

IPART Required Content	Location in this Manual
A version history and date of issue for the document	p3
A statement of the nature, scope and purpose of the document and the way in which it is to be used by the service provider	p5
Details of accountabilities within the service provider for the document in order to set out clearly: <ul style="list-style-type: none">– the service provider's commitment to implementing	p8 Appendix 1

² See IPART *Draft Cost Allocation Guide – Water Industry Competition Act 2006*

IPART Required Content	Location in this Manual
<p>the cost allocation manual, and</p> <ul style="list-style-type: none"> responsibilities within the service provider for updating, maintaining and applying the cost allocation manual and for internally monitoring and reporting on its application. 	
A description of the service provider's operational structure, including its water and wastewater systems, the services within these systems and non-financial data that can inform cost allocation (including, the example, water and/or wastewater flows per system, connections per system and key assets per system).	p10-12 Appendix 3
The service provider's cost allocation methodology, which includes the detailed principles and policies to be used for attributing costs directly to, or allocating costs between, its systems and services.	p14-21
A description of how and where the service provider will maintain records of the attribution or allocation of costs to its infrastructure services, in order to enable such contribution or allocation to be audited or otherwise verified by a third party, including IPART, if required.	p8
A description of how the service provider will monitor its compliance with the cost allocation methodology specified in its cost allocation manual.	p8
A description of how a service provider will review and, if necessary, update its cost allocation manual.	p8
Contact details for stakeholders who have questions related to the cost allocation manual.	p3
A statement signed and dated by no less than two directors of the service provider, which states whether in the directors' opinion, the information contained in the cost allocation manual is accurate and which confirms the service provider's intention to comply with the cost allocation methodology	Appendix 2

2 The Declared Services

Sydney Water provides drinking water, recycled water, wastewater services and some stormwater services to residences and businesses in Sydney, Illawarra and the Blue Mountains. A description of Sydney Water's operations is at appendix 3.

Sydney Water has 24 geographic sewage treatment systems (STS) defined by geographic boundaries. Each STS comprises a reticulation network and one or more sewage treatment plants (STP).

The declared services are the sewerage reticulation networks that form part of the Bondi, Malabar and North Head sewage treatment systems. These networks are physically separate and drain to geographically distinct areas. The STPs at Bondi, Malabar and North Head that service each network treat about 75 per cent in total of Sydney's wastewater are not included as declared services. Third party users would need to organise alternate treatment services located near the three reticulation networks. The Bondi, Malabar and North Head STPs treat wastewater to a high rate primary level before being discharged from deep ocean outfalls that extend up to 3.7 km from the coastline. Figure 2 shows a map of these systems.

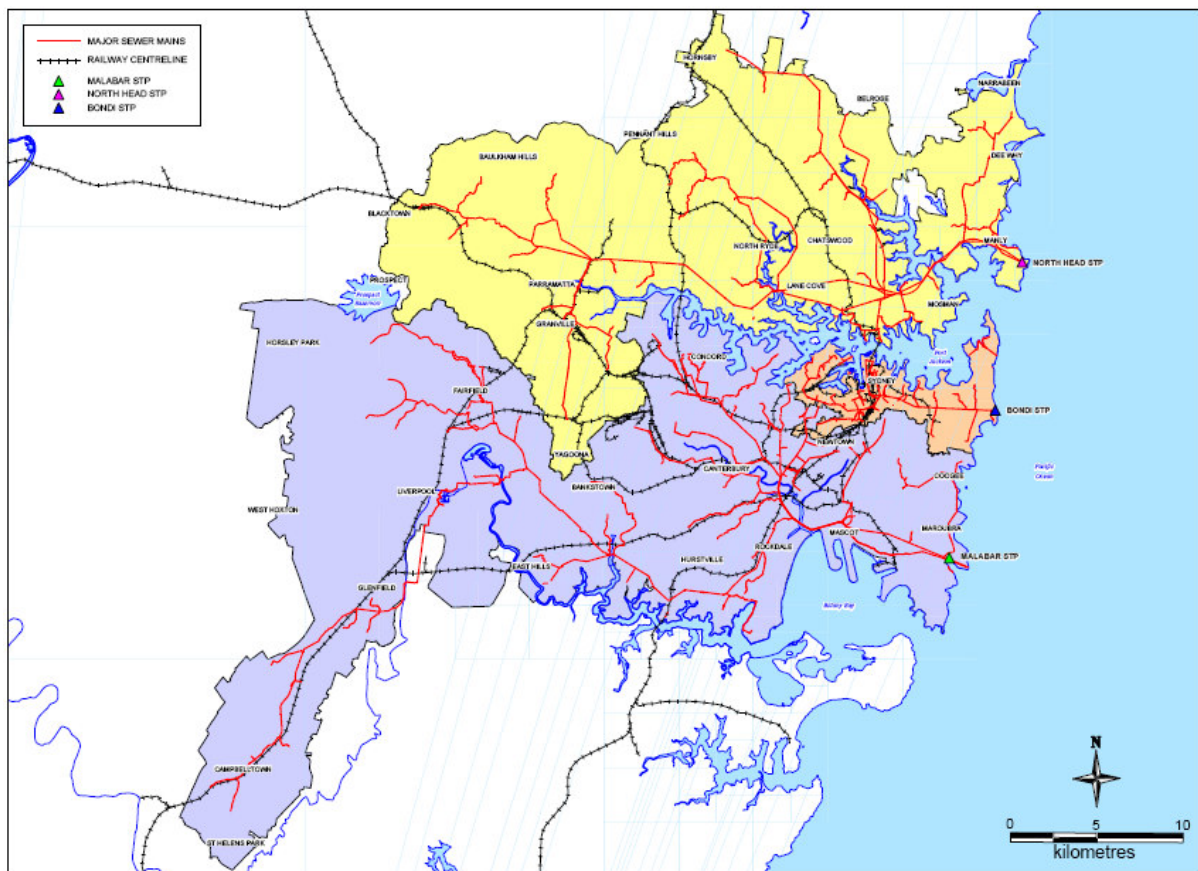


Figure 2: Malabar, North Head and Bondi Sewage Treatment Systems

2.1 Malabar Sewerage Reticulation Network

The Malabar sewerage reticulation network covers about 500 square kilometres generally south of the Parramatta River to Botany Bay, west to Liverpool then south to Campbelltown. It services a population of close to 1.5 million people. The network comprises about 6,800 kilometres of reticulation and about 158 pumping stations. The combined sewage flow is conveyed to the Malabar STP by two trunk main sewers, known as South and Western Suburbs Ocean Outfall Sewer (SWSOOS) Trunk Main Sewer 1 and SWOOS Trunk Main Sewer 2.

Liverpool, Glenfield and Fairfield STPs are included in the Malabar STS licence issued by the Department of Environment and Climate Change. During wet weather, the Malabar reticulation network has insufficient capacity and the three inland plants operate as wet weather overflow abatement measures. Discharge from these plants to the Georges River is permitted under limited wet weather conditions. In dry weather, the Liverpool and Glenfield plants discharge effluent to the Malabar reticulation system. As biological plants, the treatment processes at Liverpool and Glenfield require the plants to be operated continually. Fairfield only operates in wet weather.

The three plants are treated as part of the Malabar transport system for the purposes of allocating costs.

2.2 North Head Sewerage Reticulation Network

The catchment area of the North Head network has an area of about 416 square kilometres covering the northern suburbs, extending to Manly and Narrabeen in the east and to Blacktown in the west. It includes suburbs south and west of the Parramatta River and parts of the Hornsby Shire and Ku-ring-gai Municipality. The sewerage network services a population of over 1.1 million people.

The approximate length of the North Head sewerage reticulation network is 5,500 kilometres. Eighty-seven pumping stations discharge into these sewers, which drain into the trunk main sewer called the Northern Suburbs Ocean Outfall Sewer (NSOOS) which in turn leads to the North Head STP.

2.3 Bondi Sewerage Reticulation Network

The Bondi reticulation network services a residential population of over 245,000 and an employment population exceeding 335,000. The catchment has an area of approximately 3,800 hectares lying generally to the immediate south of Port Jackson and extending westward from the coast to Balmain as well as to the central business district of Sydney.

The approximate length of the Bondi sewerage reticulation network is 772 kilometres and there are 35 sewage pumping stations. The network drains into the trunk main sewer called the Bondi Ocean Outfall Sewer (BOOS) that conveys flows to the Bondi STP.

3 IPART's determination of efficient costs

IPART's guidelines³ state that section 41(3) of the WICA:

Recognises the importance of ensuring consistency between retail prices and access prices. For example, some access pricing methodologies may be inconsistent with the maintenance of postage stamp retail pricing, where applicable, as they facilitate inefficient 'cherry picking'.

The prices of Sydney Water's retail water supply and sewerage services are set by IPART. IPART typically sets prices for a four-year period — the current IPART Price Determination commenced in July 2008 and will run to June 2012.

Sydney Water's prices are set to recover its costs, including a return on its assets. IPART uses the building block approach to establish an efficient cost base for Sydney Water. Under this approach costs comprise:

- Operating and maintenance costs;
- A return on assets, being the Weighted Average Cost of Capital set by IPART (7.5% pre-tax real until June 2012);
- A return of assets – that is, depreciation which is based on the asset lives by asset class set out in the Current IPART Determination. Assets are valued at a regulatory asset base which is significantly less than the written replacement cost; and
- A return on working capital.

At each determination IPART conducts an efficiency review. This involves determining the efficiency of operating costs and whether capital expenditure over the past determination period was prudently incurred. It also approves a forward capital expenditure program, the cost of which is included in prices during the determination. The review process involves comparing Sydney Water's performance with international benchmarks and industry best practice.

³ See IPART *Draft Cost Allocation Guide – Water Industry Competition 2006*

4 Cost Allocation Method

IPART's cost allocation principles state that the annual sum of all Sydney Water's assumed efficient costs allocated across systems (including declared and non-declared systems) must reconcile with its IPART assumed total cost per annum at the prevailing price determination.

4.1 Definition of Wastewater Services

The structure of Sydney Water's wastewater services, hereafter referred to as '**the Services**', are defined for cost allocation purposes as follows:

- Transport Services for each sewage treatment system - entailing the collection and conveyance of wastewater through a reticulated network of pipes to a sewage treatment plant;
- Treatment and disposal services for each sewage treatment system - involving the separation of solids and liquids in wastewater with the removal of solids (sludge) for discharge or re-use (bio-solids) and the treatment of liquids (effluent) for discharge or re-use (recycled water);
- Retail services - involving billing, meter reading (for large industrial and commercial wastewater customers) and customer service contact;
- Tradewaste services - Sydney Water regulates and charges for trade waste that is discharged into a sewage treatment system;
- Ancillary services - which are miscellaneous customer services; and
- Other - miscellaneous minor expenditure and regulated services.

Retail and ancillary services are mainly common costs relating to water, wastewater and stormwater services. Together with corporate overheads, Sydney Water allocates a portion of these costs to the wastewater services.

Figure 3 presents the service definitions used in the cost allocation method to illustrate how the total wastewater services costs are estimated.

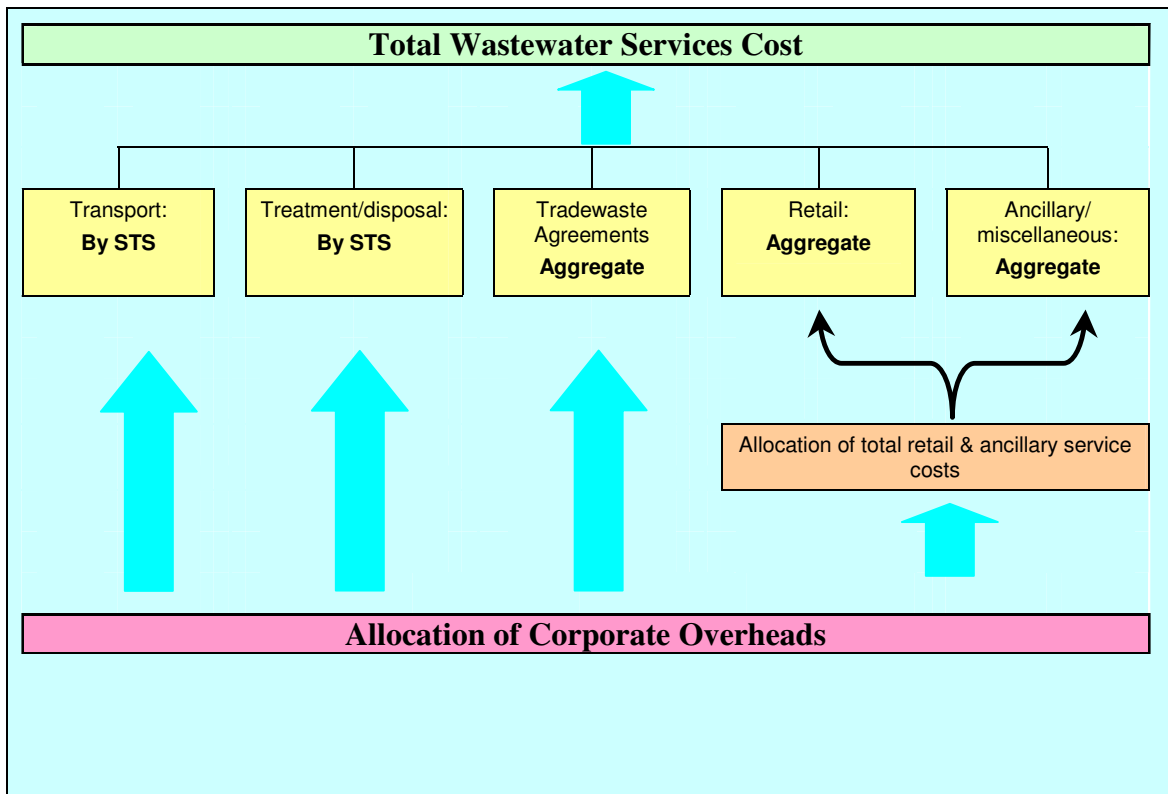


Figure 3: Service definition and allocation of overheads

4.2 Allocating Costs to Services

Consistent with IPART's regulation of wastewater revenue, costs are allocated to individual Services using a building block approach. The building block model used to calculate costs is consistent with generally accepted regulatory principles and its results reconcile with a similar model used by IPART.

The cost of each Service comprises:

- (a) Capital-related costs
 - Return on capital (against the regulatory asset base)
 - Return on working capital
 - Return of capital (depreciation)
- (b) Operating costs
 - Direct operating costs
 - Shared operating costs
 - Allocation of corporate overheads.

A schematic overview of the cost allocation process is shown in Figure 4.

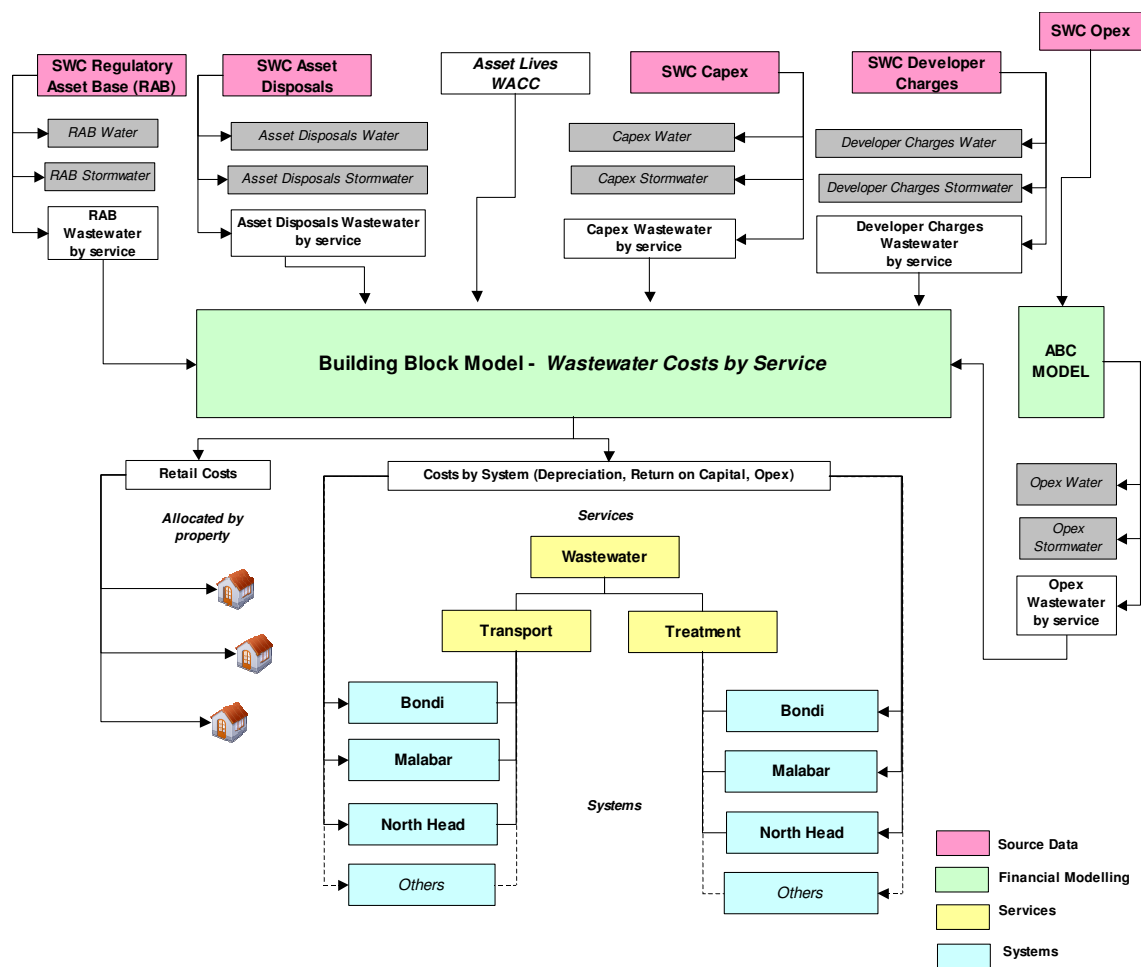


Figure 4: High level overview of cost allocation

4.2.1 Capital-Related Costs

Regulatory Asset Base

Sydney Water's return on assets depends on the regulatory asset base (**RAB**) established by IPART and the regulated rate of return (weighted average cost of capital) also established by IPART.

The RAB was established by IPART in 1999/00, with the value of the asset base aligned with Sydney Water's revenues for 1998/99. It was set at a level that was under half the depreciated replacement value of Sydney Water's assets. The RAB is rolled forward at the beginning of each subsequent regulatory period to include actual capital expenditure from the previous period as assessed by IPART to have been efficient.

The RAB is divided into water, wastewater and stormwater components. However, in determining the RAB, IPART does not disaggregate wastewater capital costs into Transport and other Services, or by geographic area. Sydney Water's cost allocation method therefore allocates capital costs to the Services, including to Transport and to

Treatment and Disposal Services by STS. In addition, individual assets are not separately identified in the RAB, it is a purely a financial construct. In July 2008 the written down modern engineering equivalent replacement (**MEERA**) value of Sydney Water's wastewater assets was \$16.1 billion, while the wastewater RAB was \$6.3 billion. The method to allocate the RAB is described below.

In Sydney Water's accounts assets are recorded at their MEERA value. Assumptions are necessary to give assets with MEERA values a corresponding RAB value. This is required to ensure that the return on assets does not exceed that in the prevailing IPART Determination.

The cost allocation method allocates values to individual assets in the following manner:

- STPs that serve the three sewerage reticulation networks used to provide the declared Transport Services have been valued in the RAB at their depreciated MEERA value.
- Transport assets are valued as a residual so as to equal the RAB for each system.

This approach attributes a greater proportion of the asset value to the Malabar, North Head and Bondi STPs and therefore increases the capital costs allocated to these contestable services. By comparison, capital costs of the declared services are reduced due to the lower asset values attributable to the Malabar, North Head and Bondi reticulation networks. The lower capital costs flow through to lower access prices for the declared Transport services. This approach is consistent with the access pricing method established by the ACCC.

Capital Expenditure

Capital expenditure is one input to the building block model to determine the capital costs for each Service. Sydney Water records details of capital costs in its financial system, Peoplesoft. Project costs are capitalised in the Fixed Asset Register upon commissioning of the assets. For infrastructure-related expenditure, information is recorded at a system level, including asset location, type and purpose and asset life. Sydney Water is subject to an annual financial audit by The NSW Audit Office, which includes a review of the systems and processes supporting the capturing and recording of capital expenditure.

At the beginning of each regulatory period, capital expenditure for the previous period enters the RAB at its actual cost from the Fixed Asset Register, but only if deemed by IPART to have been efficient expenditure. The cost allocation method uses the forward-looking program approved by IPART. This ensures that costs allocated to services, including the declared services, do not exceed those allowed by IPART as efficient costs.

Sydney Water has a detailed capital works program and in most cases, wastewater capital expenditure can be directly identified with an individual Service. Corporate capital expenditure is allocated to water, wastewater and stormwater services based on the percentages applied by IPART. Corporate capital costs are allocated to systems and services based on their relative proportion of direct costs.

The RAB also includes work in progress (**WIP**). The WIP can be identified directly with the Services and is therefore allocated directly. WIP is deducted from the RAB prior to the net RAB being allocated using the MEERA valuations.

Asset Disposals

Asset disposals reduce the RAB and the return on assets for individual Services. Most of Sydney Water's disposals are for market land and buildings and for land held for sale, which are categorised as Corporate assets. System-related asset disposals are relatively minor and are allocated wastewater systems as follows:

- Total disposals are divided between water and wastewater using the relative proportion of MEERA asset values.
- The wastewater portion is then allocated to the 4 major ocean sewage treatment systems based on their relative capital expenditure for the pricing period. The reason for this approach is that most system asset disposals are due to network renewals, which in turn occur mostly in the older, ocean systems.

Developer Charge Revenue

Sydney Water levies charges on new development that reflect the costs of growth. Charges are calculated separately for each sewerage reticulation network and for each STP.

For purposes of rolling forward the RAB, developer charges are considered as 'negative capital expenditure'. That is, the revenue received is deducted from the RAB, thereby offsetting the capital expenditure for the relevant Services.

Rate of Return on Capital

The rate of return applied by Sydney Water to calculate return on capital is the Weighted Average Cost of Capital (**WACC**) determined by IPART in the prevailing determination. The WACC is currently 7.5% real pre-tax.

Depreciation

Depreciation is a capital cost. Consistent with IPART's approach, Sydney Water calculates depreciation on a straight-line basis according to the values allocated to assets for each system. In the 2008 pricing determination⁴ IPART specified the remaining asset lives by asset class for existing assets in the RAB at 1 July 2008. IPART also set the asset lives by asset class to be used for all future capital expenditure.

4.2.2 Operating Costs

Activity Based Costing System

Operating costs are allocated to all Services, including the declared services, using an Activity-Based Costing (ABC) system. The ABC system is constructed in *Prodacapo*, a dedicated proprietary software. The system was developed in 2002 to enhance the organisation's capability to model process costs and is maintained by Finance and Regulatory division. Minor modifications to the system have been made over time to reflect organisational changes. A major review of the system and underlying allocation assumptions is planned. The ABC system supports Sydney Water's annual reporting to IPART and pricing submissions.

In common with ABC systems in general, Sydney Water's ABC system assigns costs to organisational activities and processes linked to the products and services provided. The cost allocation process in the ABC system is described in Figure 5.

Allocation of Direct and Indirect Costs

There are three levels of cost allocation in the ABC system. Costs are allocated on the basis of:

- A directly traceable cause and effect relationship with the provision of service; or
- A verifiable relationship between the cost and the output of the individual service; or
- A direct causal relationship associated with a pool of common costs and allocation of that pool using a relevant, reliable and verifiable factor such share of direct costs.

Direct costs come from source data in Sydney Water's MAXIMO/Works and Asset Management System (WAMS). These direct costs include direct labour (maintenance hours), electricity usage and chemicals. As noted, these costs comprise the majority of operating costs.

For the second category, costs are allocated to Services based on a comprehensive survey of the Sydney Water's activities and processes at general ledger account level when the ABC

⁴ IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services, Final Determination and Report, June 2008*

system was established. For example, a system planner's costs will be allocated to a particular system depending on proportion of time spent working on that system

Common costs such as IT, HR and executive costs are allocated to all assets proportionate to their respective direct costs.

The ABC system - allocation of costs

The ABC system contains a chart of accounts that mirrors that in Sydney Water's financial system. Operating costs input to the ABC system are captured separately under Sydney Water's 310 business units against general ledger accounts.

Many business units are dedicated to a particular service and therefore the majority of costs can be directly allocated based on causality. Some business units may be linked to multiple products or services, such as corporate costs. These indirect costs are allocated to services using an appropriate driver such as proportion of direct costs, staff numbers or property numbers.

The ABC system allocates each cost item to a one of some 250 defined Sydney Water activities or processes eg. Develop Sewerage Catchment Plans, Pump Wastewater, Manage Tradewaste Policy. These activity costs are then allocated to defined assets or services on the basis of relevant cost drivers such as maintenance hours, electricity usage kWh and management time. For instance, an asset failure generates an activity of "perform breakdown maintenance". The cost driver is the total number of hours of maintenance required to repair the asset and return it to service.

The values of the two main cost driver categories, being maintenance and electricity, are updated annually. The maintenance data are captured in the Sydney Water's job costing systems (MAXIMO/WAMS) whereas electricity consumption data are recorded in the energy management system (Enterprise).

The ABC system assigns costs to over 5,000 infrastructure assets that roll up to Sydney Water's core products (ie water, wastewater and stormwater) and geographic systems. The ABC system allows a drill-back from any asset or service to the cost drivers, activities and general ledger accounts. The costs of each service are fully traceable and auditable. For instance, the ABC system groups all the direct costs for Malabar Transport Service and then allocates corporate overheads based on that network's proportion of total wastewater direct costs.

Figure 5: Summary of ABC System cost allocation process

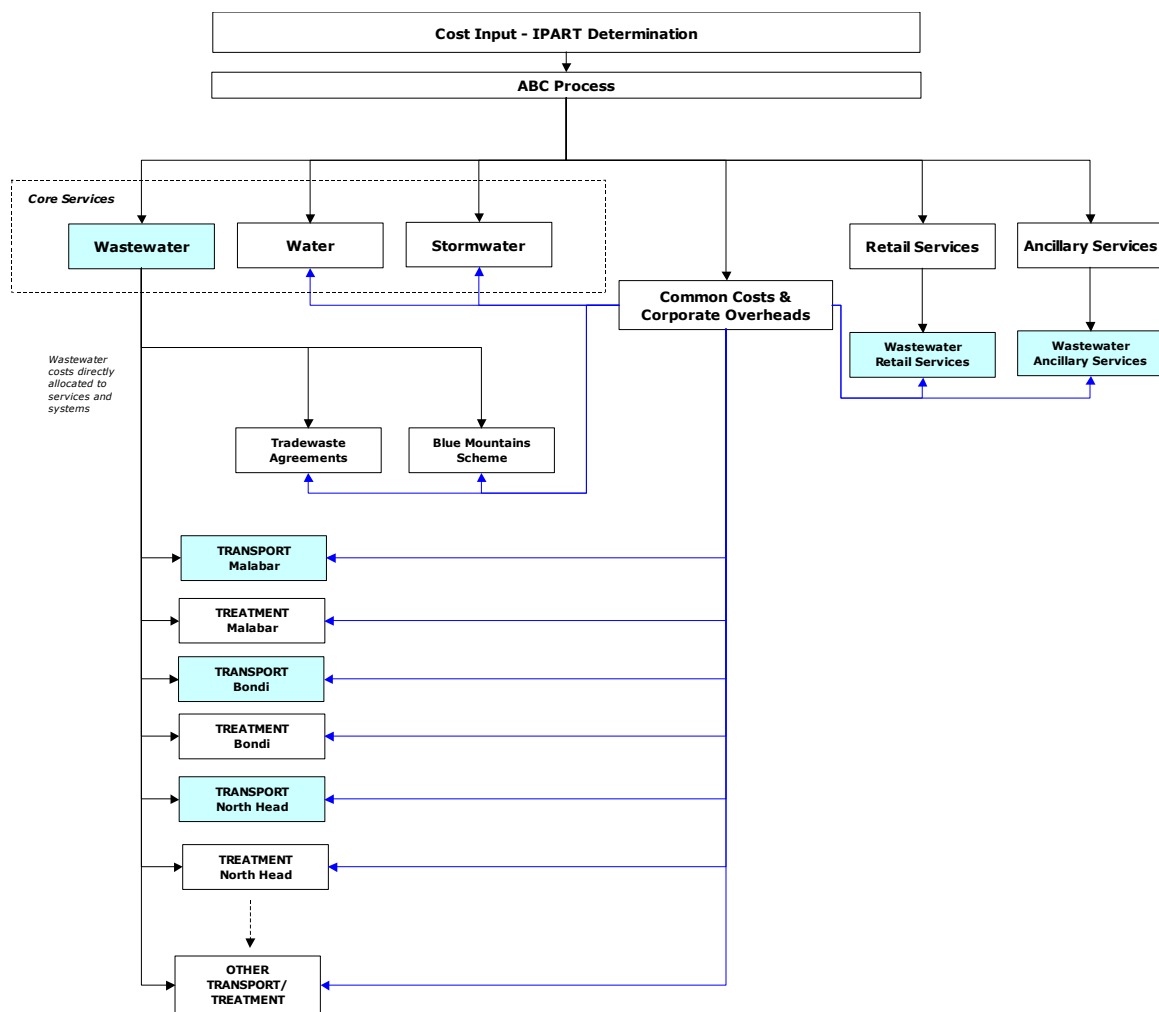


Figure 6: ABC Allocation of Operating Expenditure

4.3 Allocation of Costs to Customer Categories

There are two customer categories in each wastewater system – residential and non-residential (eg commercial/industrial). Retail prices are set differently for each category. As a result it is necessary to allocated service costs in each system between each customer group. For example, Transport Service costs in the Malabar system need to be split between residential and non-residential customers.

The most appropriate method of cost allocation is based on dry weather flows generated by each customer group. This driver is used because wastewater systems are designed on dry weather flows. This approach has also been set by the ACCC for allocating costs between customer groups.

4.4 Allocation of Costs to Individual Customers

The following approach has been taken in calculating costs according to property type for each system:

- Residential property – an average cost per residential property (assumes an average flow per property), and
- Non-Residential property – cost per kilolitre discharged.

Accordingly, a cost per residential property for each system is derived by dividing that proportion of costs attributable to residential property by the number of properties. For non-residential property, a cost per kilolitre is derived. Therefore the cost per individual non-residential property is a function of kilolitres discharged.

Appendix 1: Application of Cost Allocations to Access Pricing

The following outline of access pricing does not form part of the Cost Allocation Manual required by WICA. It is provided to clarify Sydney Water's position regarding the application of the costing allocation methodology described in the Manual to the setting of access prices.

A2.1 Pricing Method

Sydney Water uses a 'retail-minus' method in setting access prices. This is calculated as the regulated service property charge less the costs associated with Treatment & Disposal and less Retail costs. This approach avoids 'cherry-picking' and is consistent with Postage Stamp Pricing.

Retail-minus is the method approved by the ACCC determination as follows⁵.

"The retail-minus methodology for determining the per customer access charge is to be Sydney Water's retail price for sewage/wastewater services relevant to each customer as determined (from time to time) by the Independent Pricing and Regulatory Tribunal, minus the avoidable costs for Sydney Water as a result of supplying the declared sewage transportation services...."

A2.2 Postage Stamp Retail Pricing

In setting prices for sewage services IPART adopts postage stamp pricing. Under the Current IPART Determination, the maximum price that may be levied by Sydney Water for the provision of sewerage services to a residential property is a fixed price that applies uniformly to Sydney Water's residential customers, irrespective of where they are located on its sewerage reticulation networks.

While the maximum charge that Sydney Water may levy for the provision of sewerage services to non-residential customers varies according to a discharge factor, it does not take into account the customer's location.

Sydney Water's customers are divided into categories or classes for the purpose of IPART Determinations. The principal customer classes are residential and non-residential.⁶ The majority of customers connected to Sydney Water's systems are residential customers.

Residential customers throughout Sydney Water's area of operations pay a flat fee for sewerage services per property.

⁵ See Australian Competition and Consumer Commission, *Access dispute between Services Sydney Pty Limited and Sydney Water, Arbitration Report July 2007*

⁶ See Current IPART Determination, Schedule 2

Non-residential customers pay a combination of fixed and volumetric charges, depending on the wastewater capacity required and the volume of wastewater discharged. These charges are regulated by IPART.⁷ Charges can vary widely among larger non-residential users. The combination of fixed charges, usage charges and discharge factors complicates the calculation of access charges for non-residential customers.

A2.3 Calculation of Access Prices

The access price for residential property is a uniform access price for Transport Services.

The calculation of non-residential property access prices is more complex. Wastewater charges set by IPART for non-residential property comprise a fixed and volumetric charge. Charges can vary widely among larger non-residential users. The access price is therefore a function of flow for each individual property.

Residential Access Price Method

$\text{Access Price} = \text{Retail Price} - (\text{AC}_{\text{Treat}} + \text{AC}_{\text{Retail}}) + \text{Facilitation Costs}^8$		
Where	$\text{AC}_{\text{Treat}} =$	average cost of treatment per property
	$\text{AC}_{\text{Retail}} =$	average wastewater retail cost per property
$\text{AC}_{\text{Treat}} =$	$\frac{\text{Treatment operating costs} + \text{Treatment capital costs}^a + \text{allocation of overheads}}{\text{Number of residential properties}}$	
$\text{AC}_{\text{Retail}} =$	$\frac{\text{Retail operating costs} + \text{Retail capital costs}^a + \text{allocation of overheads}}{\text{Number of residential properties}}$	
^a Capital costs comprise depreciation and return on investment		

Figure A1: Residential access price method

⁷ See Current IPART Determination, Schedule 2 and Schedule 5.

⁸ Sydney Water's method provides for facilitation costs to be included in the access price. These costs include costs of interconnection, as well as other costs to Sydney Water to provide access.

Non-Residential Access Price Method

Access price	=	Retail Charge
	(-)	Average Treatment cost/kL x wastewater discharge for the property
	(-)	Average Retail cost
	(+)	Facilitation cost

Figure A2: Non-residential access price method

Appendix 2: Directors' Statement


On behalf of the Board of Sydney Water Corporation, we confirm that:

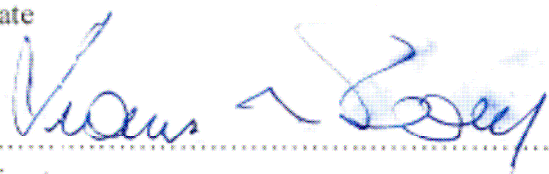
- This document "Cost Allocation Manual for the allocation of costs to Declared Services: Bondi, Malabar and North Head Sewerage Reticulation Networks" dated November 2008 sets out Sydney Water's cost allocation method in accordance with Section 42 of the Water Industry Competition Act (2006); and
- Sydney Water intends to comply with the cost allocation method set out in this Manual.


Section 3 of IPART's Draft Cost Allocation Guide – Water Industry Competition Act 2006 requires two directors of Sydney Water to confirm that the information contained in the cost allocation manual is accurate. Sydney Water's Board confirms that the method is appropriate but that it is not in general terms feasible to give an opinion on whether a method is accurate in advance of its application to future submissions. Sydney Water confirms its intention to implement the method set out in this Manual and review and update the Manual as appropriate.

For and on behalf of the board of Sydney Water Corporation


.....
Kerry Schott, Managing Director


.....
Date


.....
Director


.....
Date

Appendix 3: Sydney Water's Operations

Sydney Water provides drinking water, recycled water, wastewater services and some stormwater services to residences and businesses in Sydney, Illawarra and the Blue Mountains.

A3.1 Water

Sydney Water supplies more than 1.4 billion litres of water to more than 1.6 million homes and businesses each day.

Untreated water is purchased from the Sydney Catchment Authority (SCA), the organisation responsible for bulk water supply in the Greater Sydney Region. About 80 per cent of Sydney's supply comes from the Warragamba Dam.

This water is treated at one of nine water filtration plants in accordance with the Australian Drinking Water Guidelines, developed by the National Health and Medical Research Council in collaboration with the Natural Resource Management Ministerial Council. Organic matter, sediment and minerals such as iron and manganese are removed and the water is disinfected. The largest plant at Prospect treats more than 80 per cent of Sydney's water. The Prospect, Woronora, Illawarra and Macarthur water filtration plants are owned and operated by the private sector.

Treated water is then distributed via Sydney Water's network of 259 service reservoirs, 151 pumping stations and nearly 21,000 kilometres of water mains.

A3.2 Recycled Water

Sydney Water recycles over 60 million litres of wastewater a day. A number of wastewater recycling schemes are in place that help reduce demand for water and discharges of treated wastewater to the environment. These schemes include Australia's largest industrial recycling scheme, supplying recycled water to Bluescope Steel at Wollongong, and Australia's largest residential recycling scheme, at Rouse Hill in Sydney's northwest.

Use of recycled water in Sydney Water's area of operations has increased from 6.2 billion litres a year in 1995 to approximately 22 billion litres a year in 2008. It will increase to 70 billion litres a year by 2015. Major projects underway in 2008 include:

- The Western Sydney Replacement Flows project that will produce 50 million litres of highly treated recycled water each day to supplement the water in the Hawkesbury-Nepean River. This water will replace flows from Warragamba Dam saving up to 18 billion litres of water currently released from the dam each year.

- The Camellia Recycled Water project where major industrial customers in south-western Sydney, including the Shell oil refinery, will use recycled water instead of potable water.
- Supplying recycled water to the Port Kembla Coal Terminal and a range of other industrial customers in the area.

A3.3 Wastewater

Sydney Water's wastewater network services around 1.6 million homes and businesses in the Greater Sydney region. It consists of about 23,500 km of wastewater mains in 24 separate wastewater systems with 29 sewage treatment plants (**STP**). Sydney Water collects, treats and disposes of more than 1.2 billion litres of wastewater from homes and businesses each day. Other than the Gerringong Gerroa STP, a network that is operated by the private sector under a contract with Sydney Water, all STPs are owned and operated by Sydney Water.

Each sewerage system includes a reticulation network that transports wastewater to an STP. Wastewater collected in the sewerage system flows to an STP where it is treated before being reused or discharged to rivers or oceans in accordance with licence conditions issued by the Department of Environment and Climate Change. All captured bio-solids are used for agricultural or horticultural purposes.

Around 75 per cent of Sydney's wastewater is processed by the three biggest STPs at Malabar, North Head and Bondi. These plants treat wastewater to a high rate primary level before being discharged from deep ocean outfalls that extend up to 3.7 km from the coastline.

There are 18 inland plants that discharge into the Hawkesbury-Nepean, South Creek, Berowra Creek and Cattai Creek catchments. These plants are required to treat wastewater to much higher levels, known as tertiary treatment.

In addition, Sydney Water regulates and charges for the trade waste that is discharged into the wastewater system. Trade waste regulation is necessary to protect the wastewater assets from corrosion, ensure wastewater treatment services are not affected by substances in trade waste and to protect people working around wastewater. Sydney Water charges for the cost of accepting, transporting and treating trade waste in accordance with the Current IPART Determination. Agreements on discharge levels and concentrations are negotiated with each trade waste customer.

Glossary

ABC System	Activity-based costing system for allocating operating costs to assets or services
ACCC	Australian Competition and Consumer Commission
Building Block Method	A method of estimating the costs of delivering a service incorporating return on assets, return of assets depreciation), and operating expenditure.
Common Costs	Costs that can be directly allocated to two or more identifiable causes such as activities or cost objects.
Current Price Determination	IPART determination setting prices for Sydney Water Corporation's water, sewerage, stormwater and other services. Final Determination No. 1, June 2008 sets prices from 1 July 2008 to 30 June 2012
Declared Services	The transport services provided by Bondi, North Head and Malabar sewerage reticulation networks
Direct Cost	A cost where there is a traceable cause and effect relationship with the provision of an individual service or the output of that service
Indirect Cost	Costs where there is no direct causal relationship to the service provided, for instances corporate overhead
IPART	The Independent Pricing and Regulatory Tribunal
Postage Stamp Pricing	The principle that all customers will pay the same price for Sydney Water's services, irrespective of where in Sydney Water's area of operations their property is located
RAB	Regulatory Asset Base, being the opening asset value of Sydney Water's assets at the beginning of each regulatory period, as determined by IPART.
Sewage	Waste products transported within a sewage treatment system.
Sewerage Reticulation Network	The system of pipes and pumping stations in a geographic area that transports sewage from a customer's premises to the STP.
STP	Sewage Treatment Plant.
STS	Sewage Treatment System comprising a reticulation network and one or more sewage treatment plants

Transport Service	The service of using a reticulation (sewage) network to move wastewater from customers' premises to an STP
Treatment and Disposal Service	Process of treating raw sewage, extraction of biosolids and discharge of treated effluent to the environment
WACC	Weighted Average Cost of Capital
WICA	Water Industry Competition Act (2006)