Accounting Separation and Upstream Services Methodology 2014-15

Southern Water

Contents

Introduction

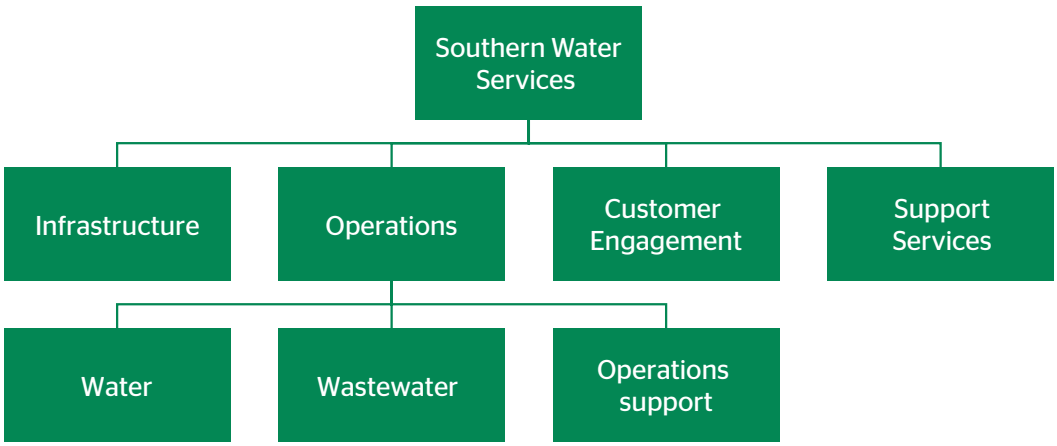
This document sets out the methodology adopted by Southern Water Services for the production, as required under RAG 3.07, of the operating cost and fixed asset analysis within the regulatory accounts (pro formas A7 to A10) and the supplementary accounting separation (AS) statement on upstream services.

Cost information has been prepared based on the new AS guidance issued by Ofwat in IN 15/02. The information has been produced at that supplementary business unit level and this has then been aggregated to produce the format required for the regulatory accounts.

Background to the business

Southern Water supplies drinking water to 2.5 million people and safely recycles the wastewater of 4.6 million people in Sussex, Kent, Hampshire and the Isle of Wight.

The organisational structure of the company for 2014-15 is shown in the diagram below.



Infrastructure

The infrastructure team monitors the operational and environmental performance of our water and wastewater assets. This information is then used, along with our regulatory and environmental obligations, to develop our capital investment strategy. The infrastructure team also includes our capital delivery function which undertakes and manages the resulting capital investment programme.

A number of activities have been outsourced, with the administration of services to developers and data management and reporting being carried out offshore, with the new connections for developers and engineering design being contracted out onshore.

Operations

The operations team is the largest part of the business and consists of three distinct elements:

Water

The water function is responsible for the abstraction, treatment and distribution of water to customers. The water network consists of 89 water treatment works and approximately 13,800 kilometres of distribution pipes.

Wastewater

The wastewater function is responsible for the collection of wastewater from customers and the highway, its transportation to treatment works and sludge treatment centres, where the waste is removed and the water returned to the

environment. The wastewater network consists of 365 wastewater treatment works, 17 sludge treatment centres and approximately 39,600 kilometres of sewers.

Operations support

A number of teams serve both the water and wastewater functions such as the energy team, dispatchers, contract management, security and transport.

Within operations, a number of activities have been outsourced to onshore contractors. These include (via our Multi Services Framework) any significant plant repair activity, new distribution mains and network repairs and all sewer repair and maintenance work.

Scientific services have also been outsourced, with all sampling provided by a contractor, as have numerous service contracts for instruments and equipment, and property and ground maintenance activities.

All tankering, skip and waste disposal activities involving transportation are also carried out by a contractor.

Customer engagement

The customer engagement team is responsible for handling customer enquiries and all aspects of billing and cash collection. The function consists of a service centre (solving customers' issues quickly and to their satisfaction), billing services (ensuring accurate bills on time), field services (installing and reading meters as well as other face-to-face activities) and continuous improvement, insight and strategy teams.

Metering installation and reading (onshore) and supporting customer written enquiries (offshore) are undertaken by external contractors.

We do not outsource billing activities and where collection activities are undertaken on our behalf, the bad debt risk associated with this activity is not transferred to the third party.

Where evidence exists that a property is occupied but the company has been unable to source named occupier details, bills are issued in the name of 'The Occupier' to try to generate confirmation of occupancy. Billing issued in the name of 'The Occupier' is not recognised as turnover.

Our provisioning policy is also described in our regulatory accounts. When a customer has vacated a property leaving amounts unpaid, these are provided for based on their age and the stage that they are in our debt collection or tracing process. Credit notes are not issued to cancel these unpaid amounts.

Support services

The support services of the business ensure that the teams within operations, customer engagement and infrastructure can function successfully. These are detailed in the general and support allocation section later in this document.

A number of activities within support services are undertaken by external contractors. Property and grounds maintenance is carried out onshore, with the IT and HR helpdesks, purchase ledger and some finance activities as well as numerous service contracts, carried out offshore.

Commentary

Systems and information

Financial and management information is extracted from the finance system, SAP, using a number of reports. This information is saved as spreadsheets for analysis and reporting for the operating cost analysis (described further below) and transferred into an access database for the current cost fixed asset analysis (described on page 19). All subsequent steps in the regulatory accounts production process are carried out off line using spreadsheet and database functionality.

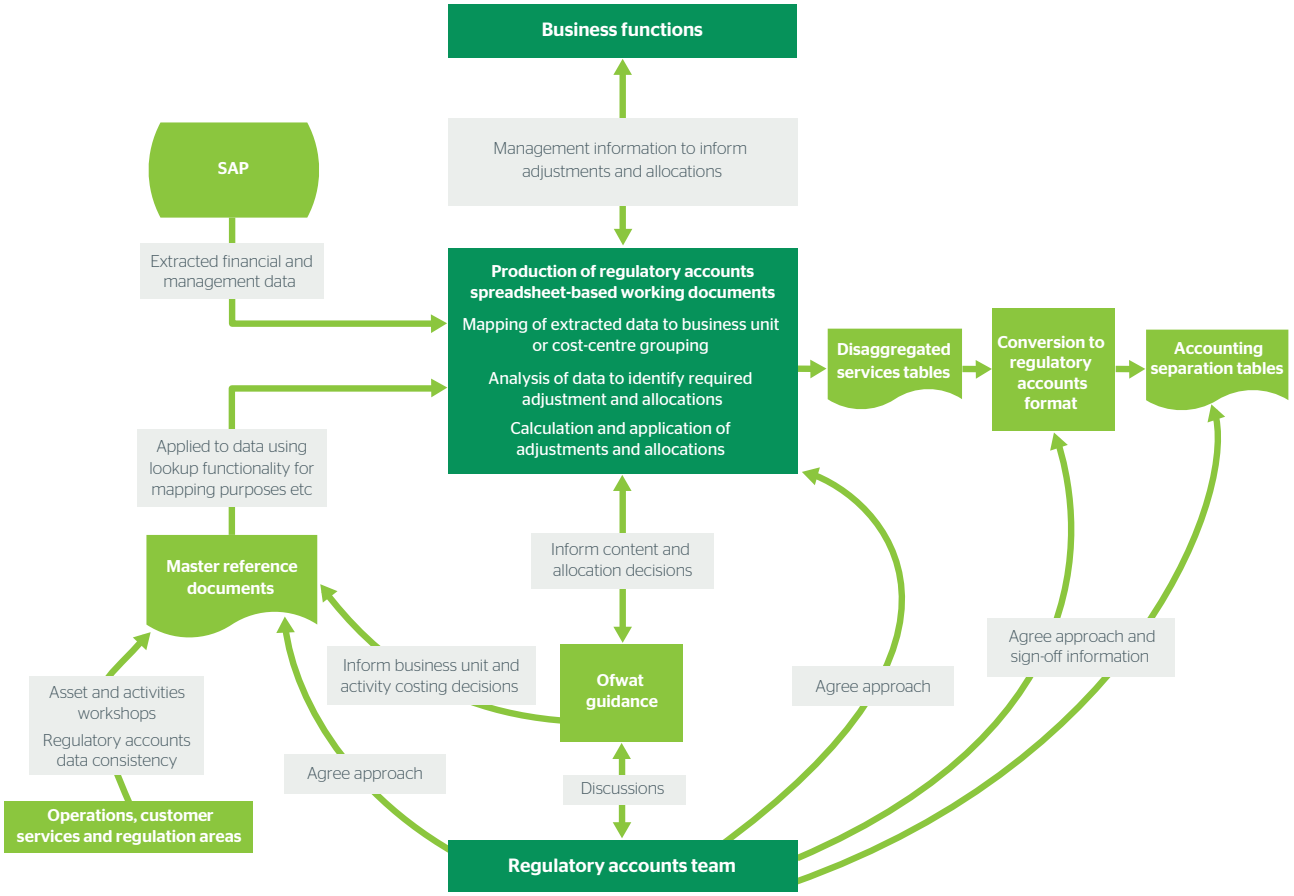
There were no changes to the underlying systems and sources of data in the year. The information relating to non-appointed business, including an allocation of overhead costs, was excluded in line with the Ofwat guidance.

Any changes made to the allocation methodology made this year are explained in the allocation method section on page 8 of this document.

Process and governance

The regulatory accounts are produced by the finance team. The overall process for agreeing cost drivers and how specific costs are allocated across the different business units involves subject matter experts from the business and the regulatory team. These allocations are agreed in accordance with the principles issued by Ofwat and reviewed annually to identify any changes or improvements that can be made. The final tables are reviewed by the finance management team and Chief Financial Officer (CFO) to obtain a sign-off before publication. An overview of the process is shown in the diagram below.

Regulatory accounts – activity costing analysis production process



Cost allocation principles

Costs have been allocated following the five principles found in RAG 4.04 (detailed below):

Transparency – the attribution methods applied within the AS system need to be transparent. This requires that the costs and revenues apportioned to each service and business unit should be clearly identifiable. The cost and revenue drivers used within the system should also be clearly explained to enable a review of their appropriateness.

Causality – cost causality requires that costs (and revenues) are allocated to those activities and services that cause the cost (or revenue) to be incurred. This requires that the attribution of costs and revenues to activities and services should be performed at as granular a level as possible.

Non-discrimination – the attribution of costs and revenues should not favour any business unit within the regulated company and it should be possible to demonstrate that internal transfer charges are consistent with the prices charged to external third parties.

Objectivity – the cost and revenue attribution criteria need to be objective and should not intend to benefit any business unit or service.

Consistency – the cost and revenue attribution criteria should be consistent from year to year to enable meaningful comparison of information over time. Changes to the attribution methodology from year to year should be clearly justified and documented.

Application of cost allocation principles

To ensure transparency, this methodology statement sets out the drivers and allocation methods used within our AS process. Each of these is separately identifiable within the spreadsheets and databases used to produce the AS information.

Wherever possible, costs relating to a specific business unit have been coded to that business unit or subsequently directly attributed to it. Where the costs relate to activities that straddle business units, such as in relation to mobile operatives who cover a particular geographic area or the costs of support functions, the relevant cost driver has been established and the most appropriate allocation method applied. These are described in the allocation method section below.

In order to ensure that costs have been appropriately, fairly and objectively allocated to each business unit, an analysis of all assets was carried out through a series of workshops with business representatives from water and wastewater operations, infrastructure, customer engagement, finance and regulation. The activities relating to each asset were reviewed, attributed to the appropriate business unit, and summarised into a master reference spreadsheet for data mapping purposes.

Additional management information was obtained from relevant business functions where this was required for adjustment or allocation purposes. More detail is provided when explaining the allocation methods used.

The allocation methods we have used are kept as consistent as possible and any changes to the allocation methods we have used from one year to the next are detailed in this document.

The production of the regulatory accounting activity costing information has been overseen by a small team of senior managers from the finance, regulation, infrastructure, operations and customer engagement areas. In addition to agreeing the overall process and key mapping documents, the team reviewed the options for all the main allocations and approved the final methods selected to ensure that they are reasonable and comply with the Ofwat guidance and principles.

Commentary on significant variances from prior year

The table below highlights the changes in operating costs in £million from 2013-14 to 2014-15 by Accounting Separation Business Unit.

Operating cost movements from 2013-14 to 2014-15		2013-14	Inflation	Exceptional (1)	Bad Debt (2)	Efficiencies (3)	Peacehaven (4)	PR14 costs (5)	Other (6)	2014-15
Service	**Business unit**									
Water	Resources	10.1	0.3	–	–	–	–	(0.1)	0.3	**10.6**
	Raw water distribution	1.1	0.1	–	–	–	–	–	–	**1.2**
	Water treatment	14.7	0.3	(0.4)	–	–	–	–	0.5	**15.1**
	Treated water distribution	28.4	1.0	(0.1)	0.1	(0.6)	–	(0.1)	0.1	**28.8**
Sewerage	Sewage collection	52.5	1.2	(15.1)	0.2	(4.6)	–	(0.1)	0.8	**34.9**
	Sewage treatment	54.1	1.6	(2.2)	0.3	(3.4)	0.5	(0.1)	1.2	**52.0**
	Sludge treatment	26.1	0.5	(0.7)	–	(1.8)	1.2	(0.1)	0.6	**25.8**
	Sludge disposal	5.4	0.1	–	–	(0.2)	–	–	0.1	**5.4**
Retail	Household	65.6	0.7	(0.3)	1.8	(0.8)	–	(1.2)	(2.0)	**63.8**
	Non-household	5.2	0.1	–	(0.2)	–	–	(0.1)	0.8	**5.8**
Total		**263.2**	**5.9**	**(18.8)**	**2.2**	**(11.4)**	**1.7**	**(1.8)**	**2.4**	**243.4**

Notes:

1. *Exceptional item – costs associated with the severe weather and flooding experienced over the winter of 2013-14.*
2. *Bad debt – increase in the annual bad debt charge. The change in methodology, allocating a charge against the wholesale services is also displayed here.*
3. *Efficiencies – these have been delivered through business process reviews, contract renegotiations and a focus on maintaining tight budgetary controls. They include initiatives to reduce power and chemical usage and the work issued to external contractors through more efficient use of our own internal resources.*
4. *Peacehaven – these are the additional operating costs incurred in 2014-15 following the completion of our £300 million scheme at Peacehaven in 2013-14.*
5. *PR14 costs – one-off costs associated with the Business Plan submission.*
6. *Other – includes the impact of the allocation of project-related costs across the business.*

Allocation methods

The following are the main methods used to allocate water and sewerage service costs that were not able to be coded or directly attributed to a specific business unit.

Mobile rounds

Certain operational and maintenance activities are carried out by employees who are not site based, but instead form mobile teams that work on numerous asset types, covering different business units and services across different locations within a geographical area.

Time spent on activities is electronically recorded by these mobile employees using hand-held devices and uploaded via the works management system to SAP. The time spent by each team on activities related to each business unit is collated and the costs of each team allocated accordingly.

These costs primarily relate to employment costs, but also include vehicles, tools, protective clothing and mobile phones.

Operational management teams

The responsibilities of individual management teams can, in many cases, be attributed to specific business units. In cases where teams manage activities that straddle business units, their costs are allocated based on employment costs in each business unit for the teams they support.

Where there is no allocation data available (such as that for the employment cost of raw water transport), a management estimate of time spent on each business unit has been prepared.

Power costs

As sub-meters are not available to record the consumption of individual pieces of equipment or processes, power costs recorded at sites frequently relate to activities that straddle business units.

Water service

Pumping head data, previously reported in Table 12 of the June Return, has been used to calculate power consumed for each set of assets covered by a single meter. This information was then used to allocate costs to water resources. The cost attributed to water treatment was estimated using a combination of historical data and the type of treatment employed on site (e.g. whether ultra-violet treatment is employed on site). The remaining power cost is therefore the high-lift pumps taking the treated water into the network which is allocated to treated water distribution.

Sewerage service

The power recorded against wastewater treatment works will straddle the sewage treatment and sludge treatment business units. Every works has been put into one of five categories, shown in the table below, representing different levels of sludge treatment undertaken.

The power ratings for the equipment installed at each of these categories of works has been assessed and allocated to business units, based on a sample of sites in each category. The results for each category were averaged to produce percentages that were applied to all works in that classification.

Wastewater treatment works categories	Sludge power allocation	Other operating expenditure allocation
Digested cake production with liquid imports	8%	20%
Raw cake production with liquid imports	31%	25%
Raw cake production with no imports	35%	20%
Raw liquid production with picket fence thickening or other mechanical thickening	7%	30%
Raw liquid production with no mechanical thickening	0%	10%

Any Combined Heat and Power (CHP) income (principally Renewables Obligation Credits) is included in sludge treatment on the 'Income treated as negative expenditure' line.

The Carbon Reduction Commitment charge is allocated out proportionately, based on electricity and gas usage within the relevant business units.

Service charges

Water service

These relate to the cost of the abstraction licence, which sits solely within water resources.

Sewerage service

The Environment Agency charges for discharge consents are attributable to individual sites. Each site is then mapped to the corresponding business unit (e.g. pumping stations to sewage collection, wastewater treatment works to sewage treatment etc) to enable the costs to be allocated to the correct business unit.

Bulk supply imports

This is solely the cost of the Portsmouth Water to Hardham link, which is only required in drought conditions, and is included within treated water distribution.

Other operating expenditure

The main items are detailed below.

Sewage sludge split

With regards to chemicals, all polyelectrolyte, antifoam and lime have been classified as sludge treatment related, with all other costs included within sewage treatment.

As with power, an element of certain other costs recorded against the wastewater treatment works will relate to the sludge treatment business unit.

The majority of the remaining site costs relate to employment and contractors and therefore, for each of the sludge categories mentioned in the table above, a management estimate of the time spent on sludge treatment activities was produced.

For each site in the category, the estimated percentage was applied to the other operating expenditure incurred at the works. These percentage estimates can be seen in the table on page 8.

Insurance

Insurance losses are allocated based on historical claims.

The drivers for the various elements of the insurance premium were analysed and allocated across business units as follows:

Insurance premium	Allocation method
Property damage, business interruption and terrorism	Insured Modern Equivalent Asset (MEA) value
Employer's liability, pension and motor based	Ratio of employment costs
Professional indemnity and public and products liability	Claims history data

Insurance costs have been included within other direct costs (see table on the next page), with all other overhead expenditure allocated within the general and support allocation detailed on page 10.

General and support

The table below breaks down the 2014-15 charge by support service, detailing allocation principles used:

Support service	Wholesale / Retail split based on	Wholesale allocation (£m)	Retail allocation (£m)	Wholesale business unit split based on
Change	Value of projects	0.1	0.1	Total direct cost
Communications	Management estimate	0.4	0.4	Total direct cost
Directors	Total direct cost	3.0	0.8	Total direct cost
Estates	Number of office desks	0.5	1.3	Employment direct cost
Finance	Total direct cost	1.3	0.4	Total direct cost
HR	Employment direct cost	1.0	0.5	Employment direct cost
Infrastructure	Management estimate	0.7	0.0	Total direct cost
IT	Value of support contracts	5.2	1.9	Employment direct cost
Legal	Total direct cost	0.2	0.1	Total direct cost
PR14	Split of work	0.1	0.3	Total direct cost
Procurement	Hired and contracted plus material and consumable direct cost	0.6	0.1	Hired and contracted plus material and consumable direct cost
Projects	Various, dependent on project	0.1	0.2	Direct cost, dependent on project

Scientific services

The costs of the scientific services department have been allocated based on the number of samples taken that relate to each business unit.

Other business activities

The costs of regulation are split evenly across each business unit.

Other operating expenditure

The split of wholesale other operating expenditure by £million is detailed in the table below:

	Water resources	Raw water distribution	Water treatment	Treated water distribution	Sewage collection	Sewage treatment	Sludge treatment	Sludge disposal	Wholesale total
Employment costs	0.4	0.1	2.8	0.6	5.4	8.1	4.1	–	**21.5**
Hired and contracted services	0.1	–	1.3	0.9	9.9	6.2	10.8	4.7	**33.9**
Materials and consumables	–	–	3.3	0.3	2.0	6.3	3.6	–	**15.5**
Other direct costs	0.1	0.1	0.4	1.6	2.2	0.3	0.3	–	**4.9**
Doubtful debts	–	–	–	0.1	0.2	0.3	–	–	**0.6**
General and support expenditure	0.8	0.1	2.4	1.2	2.9	3.8	2.0	0.3	**13.5**
Scientific services	–	–	1.9	1.9	0.1	0.9	0.5	–	**5.3**
Other business activities	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	**3.2**
Total	**1.8**	**0.7**	**12.5**	**7.0**	**23.0**	**26.3**	**21.7**	**5.4**	98.4

Other direct costs

Most direct costs are easily allocated against power/employment/hired and contracted expenditure, however some costs do fall into other direct costs. Those items falling into this category are insurance (detailed above) as well as telecom-related expenditure (mobile phones, telemetry lines etc) and, to a lesser degree, pollution fines, compensation payments and other office expenses (e.g. subscriptions).

There are two areas where direct operational costs are initially taken to wholesale and then reclassified to the retail service. One is emergency bottled water supplies and the other is any water-efficiency costs incurred. In both cases the total direct operational cost is lifted from its wholesale business unit and transferred to retail.

Local authority rates

Water service

The cumulo rate charge has been allocated out over the water area on the basis of the gross MEA value of assets assigned to each business unit, as reported in the fixed assets table.

Sewerage service

Uniform business rates are site-specific based on the rateable value of the site in question, with wastewater treatment works fed through the sewage sludge split detailed previously to allocate the costs between sewage treatment and sludge treatment.

Business rates are also payable for office accommodation and these have been allocated as part of the general and support charge detailed above based on numbers of desks. The element allocated to retail is included within other operating expenses.

Third-party services

The third-party service costs are apportioned from the other lines of the table, and are mainly associated with an Esso factory in Hampshire and bulk supply agreements with South East Water. In each case, the costs of the relevant sites are calculated and the relevant volume figure used to create a proportional charge. New connection costs have also been included within these costs.

Retail services

Adherence to RAGS

The retail regulatory accounts have been completed in accordance to RAG 4.04 with the exception of the following changes as advised in the Ofwat Accounting Separation guidance clarifications:

Network Calls – Line A8.1 includes the costs associated with network enquiries and complaints. This includes costs associated with scheduling jobs triggered by a customer call, customer visits to investigate problems where it is found not to be a network issue and internal calls to the contact centre to enable the query to be resolved.

Scientific Services – Costs associated with scientific services costs are now allocated to wholesale.

Regulation Costs – Regulations costs have been split across retail (1/9th) and wholesale (8/9ths).

Total retail costs

Total retail costs for the year are £69.6 million compared to £70.8 million in the prior year. The main causes of the overall decrease year on year are summarised in the table below.

Retail cost movements	£m
Total retail costs 2013-14	70.8
Inflation	0.8
Exceptional costs (flooding in 2013-14)	(0.3)
Increased bad debt charge	1.6
Metering cost savings	(0.5)
Reduced debt management support	(0.3)
Costs associated with PR14 Business Plan	(1.3)
Rates – increase from higher allocation to retail projects	0.1
Lower general and support costs due to impact of projects	(0.5)
Other	(0.8)
Total retail costs 2014-15	**69.6**

Allocations to retail cost lines

Costs relating to a specific retail cost category have been allocated directly to that category where possible. Where the costs relate to activities that cannot be directly attributable to a specific category, a relevant cost driver has been established upon which the costs have then been allocated.

A summary of how costs have been allocated to specific lines in Table A8 can be seen in the table on page 13, together with details of changes made to allocation methods.

Household and non-household allocations

Once costs have been allocated to the retail cost lines they are then allocated between household (HH) and non-household (NHH). The method of allocation is consistent with those used in 2013-14 where possible and is summarised below and in the table on page 14.

Year-on-year HH and NHH allocation comparisons

There have been some minor movements to the overall proportion of charges allocated to HH and NHH in the year. These result from changes to the mix of bills raised, debt written off and numbers of meters read which are used as the bases for the allocation of certain costs. These changes have resulted in a higher proportion of costs allocated to HH in the year compared to 2013-14 and the percentages allocated to HH customers are shown in the table below.

Cost type	Allocation method	2014-15	2013-14
Billing	Number of bills issued	95%	94%
Doubtful debt	Debt write off	95%	94%
Meter reading	Number of meter reads	91%	90%

Billing

The number of bills issued year on year has increased. This is mainly due to customers switching from unmetered bills to metered bills as a result of the UMP (Universal Metering Programme). A metered customer receives a bill every six months, whereas unmetered customers may only receive an annual bill. This has increased the underlying bill volumes year-on-year. As UMP is affecting only HH customers, this is driving the change from 94 per cent of billing costs hitting HH in 2013-14 compared to 95 per cent in 2014-15. UMP has also affected the split on meter-read volumes across HH and NHH.

Doubtful debt

The split between HH and NHH is based on the actual debt written off in the year for each category. In 2014-15, 95 per cent of debt written off related to HH customers, an increase from 94 per cent in 2013-14.

Customer Engagement Costs		
Cost area	**Summary of allocation to cost line**	**Method of allocation**
Customer resolution (excluding GSS)	Customer services 100%	Nature of work undertaken
Contact centre		
Customer correspondence		
Contact centre support		
Governance		
Commercial collections	Debt management 100%	
Domestic collections		
Charitable trust donations	Customer services 100%	Nature of cost
Vulnerable customer schemes		Nature of work undertaken
Court payments	Debt management 100%	
Customer data records	Customer services 100%	
Billing production		
Postage and printing	Debt management 5% Customer services 95%	
Customer insight	Customer services 100%	
Customer strategy		
Meter reading (excluding disconnections)	Meter reading 100%	
Water company costs	Billing 42% Meter reading 58%	
Continuous improvement	Customer services 66% Debt management 15% Meter reading 17% Other 2%	Resources cover all areas of customer engagement and have been allocated to all cost lines
Revenue support		
Analytics		
Doubtful debt	Doubtful debt 100%	Nature of cost
GSS payments	Other operating expenditure 100%	

Changes to allocation methods

There have been some changes to allocation methods this year in relation to continuous improvement, revenue support and analytics. These reflect the fact that these teams provide support all retail areas and specific activity analysis is not available for them. The allocation percentages applied are based on the direct costs of customer services, debt management, meter reading and other activities.

Customer Engagement Costs		
Cost area	**Table 8A Categories**	**HH/NHH Allocation Method**
Customer resolution (excluding GSS)	Customer services 100%	Number of bills issued (as contact is a result of issued bills)
Contact centre		
Customer correspondence		
Contact centre support		Customer numbers
Governance		
Commercial collections	Debt management 100%	100% NHH
Domestic collections		100% HH
Charitable trust donations	Customer services 100%	100% HH
Vulnerable customer schemes		
Court payments	Debt management 100%	Amount of debt
Customer data records	Customer services 100%	100% NHH
Billing production		Billed customers
Postage and printing	Debt management 5% Customer services 95%	
Customer insight	Customer services 100%	74% HH 26% NHH based on average survey numbers
Customer strategy		100% NHH
Meter reading (excluding disconnections)	Meter reading 100%	Number of meter reads
Water company costs	Billing 42% Meter reading 58%	Waste only customer numbers
Continuous improvement	Customer services 66% Debt management 15% Meter reading 17% Other 2%	Customer numbers Amount of debt Number of meter reads Customer numbers
Revenue support		
Analytics		
Doubtful debt	Doubtful debt 100%	Debt written off
Disconnections	Other operating expenses	100% NHH
Demand side water efficiency initiatives		Split based on initiatives undertaken
Services to developers	Services to developers	100% NHH
Customer side leaks	Other operating expenses	100% HH
Other direct costs		Number of customers
General and support expenditure		
Other business activities		
Local authority rates	Local authority rates	
GSS payments	Other operating expenditure 100%	Analysis of payments made

Changes to allocation methods

The allocation proportion for the customer insight team has changed during the year reflecting the introduction of default tariffs and is based on average survey numbers for household and non-household customers. In addition the collections team costs have been captured directly for HH and NHH, removing the need for an allocation this year.

Upstream services

Since 2012–13, all water and sewerage companies have been trialling the upstream services table. Wholesale costs are collected at this level using the methodology detailed previously and then consolidated for the Regulatory Accounts AS figures as per the table below:

Upstream service	AS business unit
Abstraction licence	Water resources
Raw water abstraction	
Raw water transport	Raw water distribution
Raw water storage	
Water treatment	Water treatment
Trunk treated water distribution	Treated water distribution
Local treated water distribution	
Foul sewage collection	Sewage collection
Surface water drainage	
Highway drainage	
Sewage treatment and disposal	Sewage treatment
Sludge transport	Sludge treatment
Sludge treatment	
Liquor treatment	
Sludge disposal	Sludge disposal

Abstraction licence – is purely the cost of the licence from the Environment Agency. A management estimate of employee time is then added, together with general and support costs, the cost of regulation and third-party services allocations detailed above. These overhead allocations apply to all upstream services.

Raw water abstraction – is the costs of surface water and underground sources and getting the raw water to the water supply works, with costs primarily power and labour-related.

Raw water storage and transport – a number of surface water reservoir and bankside storage sites have been identified as being used for raw water storage. All costs for these are extracted, with the power charge classed as being transport related. A management estimate has been used for the employee cost of raw water transport.

Water treatment – is the costs of the water supply works, receiving the raw water and treating it. Most direct costs are labour-related, with a small power charge dictated by whether or not there is ultra-violet treatment on site.

Trunk treated water distribution – we have included the costs of the high lift pumps that place the treated water in the trunk network within this charge, as well as the costs following the flow of the water all the way along the trunk main to the water service reservoir, including any booster stations in between.

Local treated water distribution – once the treated water has left the service reservoir we classify it as local treated distribution. Most of the costs are labour associated with the district metered areas. There are also some power costs where booster stations are required to take the water to the customer.

Sewage collection – foul – these are the costs of all pumping stations and sewer-associated activities. Pumping station costs have been split between foul and non-foul using an analysis of power consumption and rainfall data over the same period, after adjusting for the costs of surface water pumping stations. Public sewer costs have been split using sewer length, with all foul and combined sewers accounting for 75.6 per cent of the network, while private sewer costs are based on an analysis of repairs. All sewer-jetting activity has been classified as being foul related.

Sewage collection – surface water and highway drainage – the non-foul elements identified above are then split based on a sample analysis of road and roof areas.

Sewage treatment and disposal – the costs of treating sewage at wastewater treatment works and disposing of it to either a watercourse or sludge-treatment plant.

Sludge treatment – the cost of treating sludge at wastewater treatment works (see sewage sludge split detailed earlier) and at sludge treatment centres, including all cake movement costs.

Sludge transport – the cost of tankering between works and its associated administration and management. The company also operates a sludge pipeline between Slowhill Copse Wastewater Treatment Works and Millbrook Sludge Treatment Centre, and the relevant pumping costs are included as sludge transport.

Liquor treatment – has been calculated by taking the higher of the biological and chemical oxygen demand percentage for the relevant sites and applying it against the sewage treatment cost calculated for those sites as part of the sewage/sludge split process detailed above.

Sludge disposal – costs associated with taking treated cake and granules to farm or landfill.

Unit costing

From 2013–14, Ofwat has asked all companies to provide unit costs for each of the upstream services in the supplementary table published outside the regulatory accounts. In preparation for this, Ofwat held discussions through the Regulatory Accounts Working Group and proposed some cost drivers for use. In general, we have adopted one of the drivers proposed by Ofwat as our basis for calculating the unit costs.

Details of the cost drivers selected are given below.

Service	Cost driver	Discussion
Abstraction licence	Volume of water licenced to abstract (Ml)	Given that sites are licensed for differing volumes, this was felt to be the most appropriate cost driver.
Raw water abstraction	Volume of water abstracted (Ml)	We have chosen to use the daily 'raw water abstracted' multiplied by 365 from 'Table 10b (i) Environmental Agency data'. As this figure is produced annually and is subject to governance procedures, this will ensure not only consistency but also save considerable time in the collection of data in the future.
Raw water transport	Length of main (km)	We have selected length of main as the most appropriate measure and this was calculated using map data. An alternative would be to use kilowatt hour data, however, we do not have enough sub-meters employed on site in order to be able to accurately record this.
Raw water storage	Site capacity (Ml)	The capacity data from previous regulatory returns was analysed for the relevant sites to calculate the number of megalitres. The only other alternative would be number of sites, but as there are significant variances in site capacity the information produced has again been deemed to be less useful.
Water treatment	Volume of potable water produced (Ml)	We have chosen to use the volume of potable water produced in megalitres from 'Table 10b (i) Environmental Agency data' using the same process as that for raw water abstraction. Other unit-costing methods could involve either number of sites or site capacity, although it's again believed the quality of information provided would be lower.
Trunk and local treated water distribution	Length of main (km)	We are using length of main from 'Table 11 Mains Lengths'. A trunk proportional estimate of 13.9 per cent based on historical records has then been applied to this to ascertain the length of the trunk main, with the remaining length presumed to be Local Distribution. Again, kilowatt hour data could also be used, but due to a deficit in the number of sub-meters required to accurately record this, length of main has been utilised.

Service	Cost driver	Discussion
Sewage collection (foul)	Length of sewer (km)	We are using length of sewers, mirroring the approach taken with the distribution network. Another governance table 'Table 16 New, abandoned and replaced sewers' has been used to provide the total length of the public sewer network. Historical records have again been used to ascertain the foul element of the network, with 75.6 per cent estimated to be foul or combined. The estimate of 17,500km of private sewers made on adoption has been added to this (on the assumption that all private sewers are foul) to calculate the total length of foul sewers. Other approaches to unit costing this service would be using flow or kilowatt hour data, however we do not currently record this accurately enough to have sufficient confidence in any numbers produced
Sewage collection (surface / highway)	Length of sewer (km)	The approach detailed in foul sewage collection was used with governance data used to obtain the sewer length. Of the total length, 24.4 per cent is estimated to be non-foul or combined sewers. This number has then been split 50:50 based on road and roof data analysed.
Sewage treatment and disposal	Population served	We have chosen to use population as the best metric for calculating unit costs in this area. The data has been taken from the governance table 'Table 15 Sewerage loads' on the 'equivalent population served (resident)' row. The only other alternative would be to use volumetric data. Population served is not only more accurately recorded but will also be more comparable against other sewerage companies.
Sludge treatment	Tonnes of dried solids	Tonnes of dried solids from 'Table 15 Sludge treatment and disposal', on the 'Total sewage sludge produced/disposed (theoretical p.e. calculation)' row, has been selected as the most appropriate unit to use. The other alternative would be to use population data to be consistent with sewage treatment data, however due to the tankering of sludge to large treatment centres outside its initial catchment area this data would not be as meaningful.
Sludge transport	Volume (m^3)	This volume is recorded in a monthly internal management information report on waste movements and does not currently include any units to reflect the one sludge pipeline we operate. There are no realistic alternatives to this cost driver with current data available.
Liquor treatment	Population served	Population served has been selected as the best unit measure as the treatment of the liquor itself is essentially carried out on sewage treatment assets. Attempts were made at unit costing via ammonia consents, however due to the number of assumptions required, the accuracy of any information produced was brought into question.
Sludge disposal	Tonnes of dried solids	To ensure consistency with sludge treatment, we are using the same unit measure here. An alternative considered was the volumetric measure above, however this was felt to be a less robust measure.

Fixed assets

Process overview – fixed assets

The principal data sources for the fixed assets tables are the PR09 Asset Inventory and associated MEA revaluation working papers and information from our capital expenditure regulatory reporting database. These information sources provide sufficient information to directly allocate most costs to the AS business units.

The regulatory reporting and AS database analyses capital expenditure movements in the year and sorts them into asset groups. These asset groups define the business unit, the asset type and life (e.g. there are asset groups for river intake pumps or boreholes). For the purposes of completing the Regulatory Accounts, they also identify whether the assets are 'infrastructure' or 'non-infrastructure' and separately categorise 'retail assets'.

- **Infrastructure assets (IFA)** include the following: underground systems of mains and sewers, impounding and pumped raw storage reservoirs, dams, sludge pipelines and sea outfalls. Information about infrastructure assets (general mapping and updating of networks records) is also regarded as an infrastructure asset. Note that it would be unusual to have infrastructure fixed assets within the retail service.
- **Operational assets (OPA)** include the following: intake works, pumping stations, treatment works, boreholes, operational land, offices, depots, workshops, residential properties directly connected with water and sewerage services and land held for the purpose of protecting the wholesomeness of water supplies. Land which is not currently in operational use but is expected to come into use in the foreseeable future is included, as is plant, machinery and telemetry inherent in the nature of the works. Also included are non-operational plant, non-operational machinery, vehicles, non-specialised IT, surplus land and all other assets not previously listed.
- **Retail operational assets (RTA & MTA)** include the following: buildings and offices, fixtures and fittings, IT systems and other operational assets directly involved in providing the retail service.

Each classification in the AS database has a unique Business Unit Category (BUCategory).

The bulk of the asset value for current cost accounting purposes sits in the opening balance which is uplifted by RPI at the beginning of the process. These balances have been brought forward from the 2013–14 regulatory accounts which are available on our website. For details relating to the initial allocation of asset values to the business units for JR 2009–10 see Appendix A.

Capital expenditure incurred during the year, disposal details and information on fully depreciated assets is extracted from the company's SAP accounting system. The additions and disposals data is therefore consistent with that reported in the statutory accounts. Data is imported to the database where it is analysed as follows.

Expenditure, disposals, assets under construction and new nil book value assets are recorded at a scheme level in the AS database and are allocated to business units based on an analysis of the scheme design where possible or historic classification in the case of disposals and nil book value assets. This is the same principle for allocation of capital expenditure to business units that has been used for the preceding five years.

The aim has been to map as much of this information by one-to-one relationships, minimising the amount of subjective allocation. To achieve this, we have created separate asset types within each business unit for the different assets used. As an example, there is a separate asset group for pumps in water resources, water treatment, water distribution, sewage treatment, sludge treatment etc and these categories all have the same asset life associated with them. On the assumption that QBEG (Quality, Base, Enhancement and Growth) analysis continues to be a requirement, the asset categories are further extended to allow for the four possible descriptions of asset purpose.

For our AS system, the above translates to an assets classification list which comprises four pieces of data. These are:

Purpose – Base, enhanced service levels, supply demand, quality

Classification – Infrastructure or non-infrastructure

Asset class – For example, reservoirs and lakes, dams, control room, valves and sluices

Asset life – Number of years or in perpetuity.

The database queries use the information contained in the classification code to sort and group the year-end data sets for expenditure, disposals, assets under construction and nil book value assets. This allows grouping by business unit and QBEG classification as necessary.

Some 94 per cent of expenditure in the year was suitable for this one-to-one classification method.

The remaining six per cent is for items of IT and management and general cost that cannot be directly allocated to a specific business unit. This expenditure has been proportionally allocated using the net book amount at 31 March 2014. Four stylised models have been used:

IT management and general expenditure	Allocation method
Sewerage operations only	Percentage net book amount at 31 March 2014 by business unit sewerage
Water operations only	Percentage net book amount at 31 March 2014 by business unit water
General operations	Percentage net book amount at 31 March 2014 by business unit excluding retail
No specific area	Percentage net book amount at 31 March 2014 by business unit including retail

Assets are categorised according to the RAGs and guidance from Ofwat.

The 2014–15 Regulatory Accounts have an addendum pilot for the analysis of fixed asset expanding the number of business units. This requires further analysis of some of the units included in the main accounts to which the following comments are relevant.

The model which populates tables A9 and A10 has been expanded into the new business units. An AS project group, led by finance, was set up to agree a process to disaggregate the opening balances utilising support and technical knowledge from asset experts within the business. The key assumptions were agreed and signed off by the business. These are discussed in full later in this document.

For the majority of schemes, a set of assumptions was followed to apportion the scheme and allocate it to a business unit requiring disaggregation.

Where necessary, advice was sought from technical experts, predominantly in our infrastructure function, to allocate the expenditure appropriately.

The assumptions, issues and recommendations for each business unit are discussed on pages 22 to 23.

Water service

Abstraction licence

The water quality and resources policy manager (infrastructure) confirmed that all costs associated with the negotiation and agreement of abstraction licences are treated as operational.

Raw water abstraction

All Southern Water's impounding reservoirs have abstraction licences associated with them and are recorded here. Bank-side storage is allocated to raw water storage. Expenditure incurred during the year on assets associated with river intakes, borehole sources and impounding reservoirs is allocated to this business unit.

The impounding reservoirs and bankside storage included in raw water abstraction are:

Reservoir	Volume (Ml)
Bewl Water	31,000
Darwell	4,730
Powdermill	1,060
Weir Wood	5,600
Eccles Lake	1
Testwood Lakes	400
Sandown	1
River Arun	75

Also included here is the raw water transfer main between the impounding reservoirs Bewl and Darwell.

Abstraction point	Discharge	Length (km)
Bewl (twin main)	Darwell	2 x 16.8

Raw water transport and raw water storage

Raw water transport assets are mains to the reservoirs and pumps and mains from a reservoir to a treatment facility. This business unit includes the following significant assets:

Abstraction point	Discharge	Length (km)
Smallbridge	Bewl	6.4
Yalding	Bewl	25.0
Robertsbridge	Darwell	3.6
Brede	Powdermill	2.1
Medina	Eastern Yar	4.0

Water treatment

This business unit remains unchanged. Issues arise around the classification of borehole pumps. The business unit of principal use is abstraction but the pump can also be the main pump that pushes the water through the treatment process and in some cases on from there into the trunk treated system. Values are not expected to be significant in capital terms and no allocation has been attempted. To be clear, borehole pumps are treated as abstraction assets.

Trunk treated water distribution and local treated water distribution

The basic approach for the network is to treat all pipework and pumping assets from the treatment works to the service reservoir and from the service reservoir to the district meter as trunk treated. Assets downstream of the district meter are deemed local.

We considered using a principle that trunk main assets would be larger diameter pipes and that it was not likely that the local network would have pipe diameters greater than 300 millimetres. Discussions with the network team suggested that there are many assets less than 300 millimetres that are part of the trunk system. In addition, expenditure is not organised by diameter size. This approach was therefore discounted.

We have established, for the purposes of this pilot, that some 1,800 kilometres of our 13,000 kilometre water mains are defined as trunk using the upstream of district meter distinction point. We have also assumed that the trunk main on average has a MEAV twice that (per metre) of the local and therefore at this stage estimate that the split for the historic value is 28 per cent trunk, 72 per cent local. Other assets included in this category are the service reservoirs (trunk), boosters (trunk 57 per cent, local 43 per cent). All assets combined result in a weighted average total split for distribution assets as 33 per cent trunk and 67 per cent local.

Expenditure incurred in the year is allocated based upon specifics of schemes.

Sewerage service

Sewage collection

The most appropriate way to split the opening balance and additions for sewer collection between foul, surface and highway has proved to be the most problematic area for consideration. We have reviewed and assessed the following possible drivers, capacity, length and work. For this pilot, we have decided that length is the most appropriate measure to apportion historic values.

Calculations from 2007-08 show that the split by length of sewer is as follows:

Sewer type	Percentage
Foul	74%
Surface	17%
Highway	9%

Expenditure for the year has been allocated based on scheme specific information.

Sewage treatment and disposal

This business unit remains unchanged apart from a minor re-classification for the liquor treatment and re-classification of sludge-holding facilities. An adjustment is made for sites where sludge treatment takes place producing liquor that is fed back into the start of the sewage treatment process. For each site, we have identified the capacity of the works required to deal with the liquor based upon its biological oxygen demand. These assets are reported in sewage treatment and a charge for the use in the form of depreciation has been assessed and transferred to sludge treatment.

After careful consideration, we have made the following decisions:

- As sludge-holding tanks at treatment works are used to store sludge for transportation, we have transferred these assets to the sludge-transport business unit

- Assets at treatment works that thicken sludge are deemed by us to be treating sludge and these assets have been identified and transferred to sludge treatment.

Sludge treatment

Sludge treatment centres and their associated assets are included in full. Assets for sludge thickening at sewage treatment works have been identified and are treated as being part of the sludge-treatment process. Values have been re-allocated from sewage treatment to sludge treatment.

Liquor treatment

Applying the principle of assets being recorded in the business unit of principal use, most of the assets applicable to this business unit are recorded under sewage treatment. To reflect the usage of the sewage-treatment asset there is a transfer of £3.8 million of the depreciation charge from sewage treatment to liquor treatment. This is based upon individual sites being assessed for the impact of liquor on the usage and capacity of the wastewater asset. In addition, there are some liquor treatment only specific assets recorded here but they are minor when compared to the sewage treatment assets used.

Sludge transport

Assets for sludge storage at sewage treatment works have been identified and the values transferred to sludge transport where the storage facility does no more than hold sludge until the tanker collects and transfers to the sludge treatment centre.

Sludge disposal

This business unit remains unchanged.

Management and general

For 2014-15, the management and general cost to be apportioned amounted to £20.1 million out of a total of £259 million current cost asset additions. These have been apportioned to schemes largely on the basis of value. See above for the different models used according to asset type.

Retail

Retail assets largely consist of major IT systems and the telephony system together with an allocation of office equipment, space and hardware. The split between household and non-household is consistent with previous years according to an assessment of physical effort required for each sub-division. This basis is used to allocate between household and non-household for each line of the retail tables. In common with all the other AS business units, there is no specific

unit to hold the administrative assets and so these assets are shared across all business units based on the net book value at 31 March 2013.

An analysis of the assets allocated to the retail table (ignoring the household non-household separation) is shown below.

Retail assets	Net book value (£m)	Current cost depreciation charge (£m)
Billing	21.4	9.3
Other specific assets	3.5	1.5
Land and buildings allocated	12.0	2.3
Other shared assets allocated	4.3	1.9
Total	**41.2**	**15.0**

Other than the recharge of depreciation from sewage treatment to liquor treatment of £2.7 million, there are no other recharges between business units for the use of fixed assets.

Asset records

Detailed information about the company's physical assets is held in two major corporate systems. One keeps details of our above-ground assets and the other about our below-ground assets. These systems are used primarily to schedule maintenance or replacement. Neither system holds information about the cost or value of each described asset.

Historic cost information and depreciation calculations for statutory accounting purposes are held in the company finance system (SAP). This system holds information about schemes completed in the past and collects current expenditure information. Schemes are not to be confused with physical assets and any one scheme can affect more than one asset or only a part of an asset. Historic depreciation is calculated in the system on a straight line basis.

Current cost asset information and depreciation are calculated using the separate asset database as described in this document.

There is no formal linkage between the costs held in the historic and current cost registers. Each year the additions made in the year are reconciled between each register, together with nil book assets and disposals. The bulk of the values held in the current cost database are based on the MEAV exercise that was undertaken in 2008-09 and there is not a specific scheme or asset listing held. The business unit information was originally produced using the approach described in Appendix A and there is no business unit information held within the historic cost fixed asset register.

Appendix A

Methodology used for business unit allocation of existing asset base JR 2009–10.

Information was extracted from the PR09 MEAV working papers by asset group. These asset groups were then mapped to the Ofwat business units.

For some asset groups, it was possible to allocate all assets to a single business unit. For example, the service reservoirs asset group is allocated 100 per cent to treated water distribution. In other cases, it was possible to allocate to two or more business units by using the allocation to asset inventory category from the PR09 Business Plan. For example, the split between sewage treatment and sludge treatment within the wastewater treatment works asset group. Finally, in a number of cases it was necessary to either look at a further level of disaggregation within the MEAV analysis – for example to allocate some specific assets to raw water distribution assets – or to use additional cost driver information. The table below shows how the PR09 MEAV (in 2007–08 prices) is split between these allocation types. (The breakdown is shown with and without mains and sewers, whose value represents almost three quarters of the total MEAV.)

What is clear from the table is that the vast majority of value could be allocated in a straightforward way using existing information.

Once the PR09 asset values had been mapped to business units, the values were rolled forward for RPI, capital expenditure and disposals, using the same relative proportions, to give the opening gross MEA. Depreciation to date was similarly apportioned between business units using the gross values and rolled forward to give the opening value.

To provide the AMP adjustment value, the original values by asset group were apportioned between business units and the difference calculated. Similarly, capital expenditure and depreciation in the year was associated with business units using the same allocation rules and proportion as for the gross values.

The allocation between households and non-households within the retail business unit was based on the number of bills issued reflecting the fact that the most significant asset is the billing and associated IT systems.

Allocation	Value incl. mains/ sewers (£m)	% by value	Value excl. mains/ sewers (£m)	% by value
To a single business unit	21,137.3	83%	2,637.1	38%
To two or more business units using Asset Inventory	3,693.1	15%	3,693.1	53%
Using external cost driver information	604.0	2%	604.0	9%
Total	**25,434.4**		**6,934.2**	

Allocation of assets which are not service-specific, such as office buildings or staff houses, has been generally made using the number of FTEs, consistent with the operating cost analysis. Exceptions are:

(i) IT assets, where a specific allocation to retail based on the AMP4 spend profile has been made to reflect the significant customer service systems (the remaining generic assets have been allocated using FTEs) (£144 million, in 2007–08 prices).

(ii) Radio equipment, which represents the hand-held field devices used by operational staff and staff houses, which have been allocated using operational staff FTE numbers (£17 million).

(iii) Investment analysis associated with the capitalised element of periodic review business plans, which are allocated on the basis of the AMP5 capital programme (£12 million).

(iv) A small number of telemetry assets and investment analysis which has not been coded to a specific service, which have been allocated in the same proportions as the directly coded assets of the same type (£4 million).

(v) Laboratory equipment which has been allocated using the same sample analysis used for the opex tables (our main laboratories were sold and outsourced during AMP4) (less than £1 million).

The analysis was reviewed and approved by the finance and regulation directors.

Commentary on each business unit, including the principal assets within the business unit and any allocations used, is included below.

Water resources

The principal assets in the water resources business unit are impounding reservoirs, source and intake pumping stations. In a number of locations, we operate water transfer assets, for example as part of river augmentation schemes where we abstract water for discharge to rivers, to facilitate abstraction upstream. Following discussion with Ofwat, we have included these assets within the water resources business unit, providing that the final point of abstraction has a separate licence. This recognises the fact that the principal purpose of the transfers is to facilitate abstraction at a remote location.

Raw water distribution

The vast majority of our water supply works comprise a borehole(s) with co-located treatment facilities. In these cases there are no raw water transfers. We have identified six specific locations where raw water is transferred over significant distances. We have sought to identify the specific pumping assets employed at these sites from our MEA revaluation analysis.

We have not included any water mains within this business unit, because we have been unable to identify a readily available means of ascribing a specific value to these assets. We recognise that this will in principle undervalue this business unit and, if this business unit is to be retained, we will review this further for JR11. However, given the very limited number of sites identified we do not expect it to be material in the context of the analysis as a whole.

The only other assets included in this business unit is a small allocation of the value of system meters, based on a management estimate of the split between the four water business units.

Given both the limited size of the assets and costs within the raw water distribution business unit, we believe it would be more appropriate to include these assets within the water resources business unit. This would not in our view have any impact on the prospects for facilitating new entry / competition through the transfer of raw water but would ensure that the regulatory burden was not disproportionate.

Water treatment

The principal assets included within the water treatment business unit are water supply works (excluding on site abstraction etc) which represent 87 per cent of the gross value, land and water quality scheme and investigations. Also included is an allocation of system meters and telemetry (both based on a management estimate).

Treated water distribution

The principal assets within the water treatment business unit are the water mains network (comprising 94 per cent of the gross value), service reservoir and water towers and booster stations. Also included is an allocation of system meters and telemetry (both based on a management estimate).

Sewage collection

The principal assets included within the sewage collection business unit are the sewer network (comprising 93 per cent of the gross value), pumping stations (six per cent), sewer surveys and investigations. Also included is an allocation of telemetry (based on a management estimate).

Sewage treatment

The principal assets included within the sewage treatment business unit are wastewater treatment works (WTWs), sea outfalls and pumping assets.

Sludge treatment and disposal assets are included within the WTW asset group in our fixed asset system, but were separately identified/allocated for the PR09 Asset Inventory and these same allocations have been used here.

Sludge treatment

The sludge treatment business unit comprises the sludge elements of our WTWs, based on the analysis for the PR09 Asset Inventory. Also included is an allocation of the associated land value and an allocation of telemetry.

Sludge disposal

As appears to be envisaged by the Ofwat guidance, we have not identified any significant assets associated exclusively with sludge disposal. The values included here represent an allocation of non service-specific assets based on numbers of FTEs involved in sludge-disposal activities.

Given the lack of any readily identifiable assets and the very small element of opex (and the degree of allocation required to produce this value) we are extremely sceptical about the value of trying to report sludge disposal as a separate business unit. Unless a significant proportion of costs or assets can be directly identified with a business unit, we do not believe that the information is of any real value and may even act to inhibit entry into this activity if the allocation rules applied do not accurately reflect the cost structure that a new entrant would face.

Retail

The retail business comprises principally customer meters (21 per cent of the gross value) and IT assets (55 per cent of the gross value) along with significant allocations of office space and other generic assets which have been allocated using numbers of FTEs.

As described above, a specific allocation of IT assets to the retail business unit has been made by looking at the proportion of the AMP4 IT spend that was customer services-related. As part of our Customer Services Transformation Project, a large number of new customer-service systems were introduced during AMP4 including a new billing system. This is reflected in the very high allocation of IT assets to the retail business unit (62 per cent).