

Annual Performance Report Methodology 2017–18

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Introduction

This document sets out the methodology adopted by Southern Water Services for the production of the operating cost, revenue and fixed asset disclosure within the Annual Performance Report (APR), as required under RAG 3.10.

Background to the business

Southern Water is proud to supply drinking water to 2.5 million people and safely recycle the wastewater of more than 4.6 million people in Sussex, Kent, Hampshire and the Isle of Wight.

The organisational structure of the company for 2017–18 is shown in the diagram below.

Water operations

The water function is responsible for the abstraction, treatment and distribution of water to customers. The water network consists of 83 water treatment works and approximately 13,900 kilometres of distribution pipes.

Wastewater operations

The wastewater function is responsible for the collection of wastewater from customers and the highway and its transportation to wastewater treatment works (WTWs) and sludge treatment centres (STCs). Here the waste is removed and the water is then returned to the environment. The wastewater network consists of 365 WTWs, 16 STCs and approximately 39,700 kilometres of sewers.

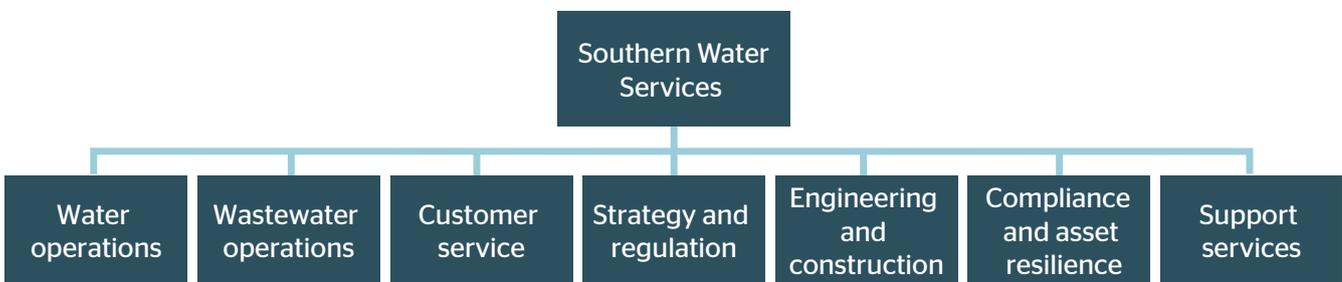
Operations support

Within operations, a number of activities have been outsourced to onshore contractors. These include any significant plant repair activity, new distribution mains and network repairs as well as all sewer repair and maintenance work.

Within our scientific services team sample testing continues to be provided by contractors, with sample collection completed in house.

All tankering, skip and waste disposal activities involving transportation are carried out by a contractor as are a number of service contracts for instruments and equipment maintenance. Property and ground maintenance activities are also managed in this way.

Organisational structure 2017–18



Customer service

The customer service team is responsible for handling any customer contact and all aspects of billing and cash collection. The function consists of a service centre (who aim to resolve customers' issues quickly and effectively), billing services (who ensure bills issued are accurate and on time), field services (who install and read meters as well as other face-to-face activities) as well as support and strategic teams looking to improve the customer experience.

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

During the year we transferred billing and collection activities for a number of our waste only customers to South East Water in a joint billing arrangement. Collection activities are now undertaken by them on our behalf. The bad debt risk associated with this activity is not transferred to the third party.

Capita continue to operate our call handling activities.

Strategy and regulation

The strategy and regulation department develops our capital investment strategy, and has spent much of 2017–18 in preparation for PR19 submissions in September 2018.

Engineering and construction

The engineering and construction department undertakes the design and delivery of our capital investment programme. It also provides connection services to developers.

Compliance and asset resilience

This is a new directorate set up during 2017–18, which will improve our risk management, reporting processes and data integrity, as well as overseeing a programme of works to address issues arising from Drinking Water Inspectorate and Environment Agency investigations.

Support services

The support services of the business ensure that the other directorates can function successfully. These are explained 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, while the IT and HR helpdesks, purchase ledger and some finance activities, as well as numerous service contracts, are carried out offshore.

Movements from 2016–17

Details of the significant changes in costs from 2016–17 are described below:

Water

Operating expenditure for the water service increased by £17.0 million to £94.7 million (2017: £77.7 million).

During 2017–18 prolonged periods of dry weather meant we had to prepare for possible drought, with increased pumping costs to refill Bewl Water reservoir of £1.6 million as well as increased leak detection and drought management expenditure of £1.2 million. As part of these drought precautions we incurred £0.6 million of customer side leak costs. These have been classified as wholesale costs this year as they were incurred to meet a wholesale Outcome Delivery Incentive. Last year these were classified as retail costs. This is the only allocation change made this year.

In order to continue to provide a resilient water supply we invested in a variety of projects in 2017–18. In the South Hampshire area we designed a plan to improve the environmental resilience of the Rivers Test and Itchen for periods of severe drought to help protect the river's ecology. This project has resulted in increased environmental costs of £2.9 million.

In addition, during February and March 2018 we experienced some extremely cold weather followed by a rapid thaw, resulting in additional costs of £1.5 million. As a result, we experienced an increase in the number of bursts on our own network and on customer's pipes, generating additional overtime and pipe repair costs. We also provided emergency water and compensation for customers affected.

We began 2017–18 with enforcement orders in place from the Drinking Water Inspectorate and investigations under way from the Environment Agency (EA) and Ofwat. In response we have established a new Compliance and Asset Resilience directorate and implemented a significant programme of work to address the issues raised, investing £3.9 million in total, of which £1.3 million has been allocated to water. These changes will improve our risk management and ensure our reporting processes have greater oversight, better maintaining the integrity of our data.

Abstraction licences and Cumulo rates rose substantially in 2017–18, although these were offset by a rebate on Cumulo costs relating to previous years.

In addition to inflation of £2.9 million, we invested in our support functions, with £0.8 million IT improvements, and £1.0 million managing our defined benefit pension scheme.

Wastewater

Operating expenditure for the wastewater service increased by £14.6 million to £158.5 million (2016: £143.9 million).

As described above, there are currently ongoing investigations by the Environment Agency and Ofwat. Legal costs relating to these investigations into our compliance reporting totalled £3.3 million. In addition, £2.6 million of additional cost relating to the establishment of the new Compliance and Asset Resilience directorate has been allocated to wastewater.

Savings made on contractors (particularly jetting and sewer repairs) were replaced by employee costs, with all three counties now having fully operational workshops.

On top of £5.4 million inflation, investment in support functions led to increases in IT (£2.1 million) and pension management (£2.0 million). Any savings made from 2016–17 market reform preparation expenditure was replaced with spend on PR19.

Retail

Operating expenditure for the retail service reduced by £14.9 million to £71.9 million (2016: £86.8 million).

On 1 April 2017 we exited the non-household retail business and our customers transferred to a specialist retail company, Business Stream. As a result, our non-household operating costs reduced by £5.9 million.

Household retail operating expenditure has decreased by £9.0 million, which is principally

the result of initiatives to improve our bad debt performance. Overall these process changes, which included litigation, have reduced the regulatory bad debt charge by £13.9 million, which is partially offset by increased debt management cost by £3.6 million.

The remaining £1.3 million increase in costs is largely due to the introduction of a joint billing arrangement with South East Water and transformation activities started in 2016–17 to in order to deliver future operational efficiencies.

Allocation process

Systems and information

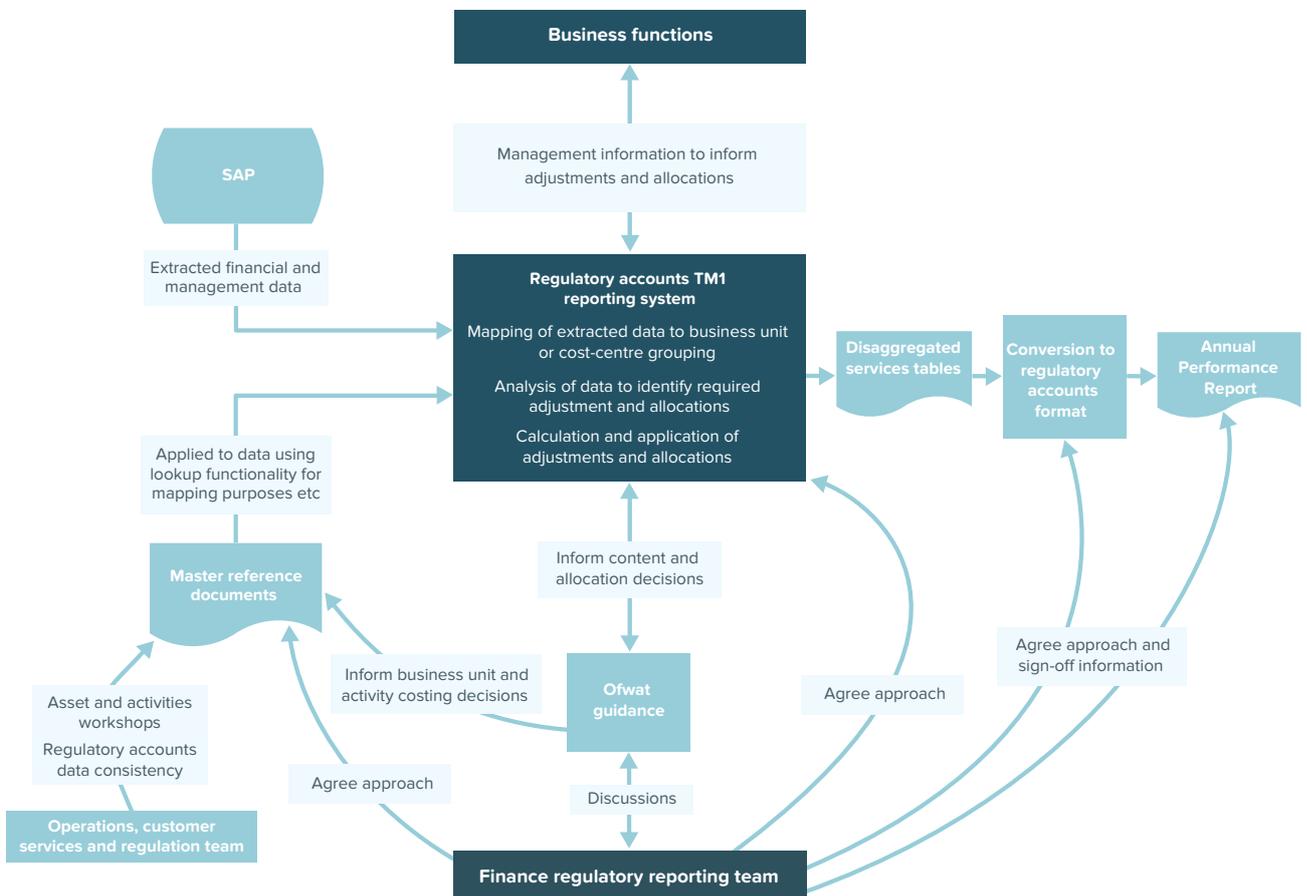
Financial and management information is extracted from the finance system, SAP. Operating costs are exported into our TM1 reporting system, which has been built to undertake the allocation in order to produce the accounting separation tables. Capital expenditure data is transferred into spreadsheets and an access database for the regulatory fixed asset analysis (described on page 18).

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

Any changes made to the allocation methodology during this year are explained in the allocation method section on page 9 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 (SMEs) from the business and the regulation team. These allocations are agreed in accordance with the principles issued by our regulator, Ofwat, and reviewed annually to identify any changes or improvements that can be made. The final tables are reviewed and signed off by senior management before publication. An overview of the process is shown in the diagram below.



Cost allocation principles

Costs have been allocated following the six principles found in RAG 4.07 (detailed below):

Transparency – the attribution methods applied 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 should also be clearly explained to establish if they are fit for purpose.

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.

No cross subsidy between price controls – there should be no transfer of costs between the price control units, in the setting of prices and preparing the accounts. This will ensure all revenue and related costs are aligned to the appropriate price control unit. As such, any transfer prices between price control units will be at market value, unless it relates to internal services, in which case cost will be used.

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 reporting process. Each of these is separately identifiable within the spreadsheets and databases used to produce the Annual Performance Report information required.

Wherever possible, costs relating to a specific business unit have been coded or subsequently directly attributed. Where the costs relate to activities that straddle business units, such as in the case of mobile teams 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 methods section below.

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 with the prior year. Any changes to the allocation methods used 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, operations and customer service 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 they are reasonable and comply with the Ofwat guidance and principles.

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. There has been only one change to last year's methodology. Cost that had previously been in customer side leaks within the retail table, has now been taken to treated water distribution. This is because it is part of our leakage strategy to reduce the possibility of drought conditions.

Many of the allocations use Southern Waters' Full Time Equivalent staff numbers (FTE) in order to get a sufficient level of granularity when allocating to price control units and business units. This FTE has been based on the year-end headcount. Given timesheets are not widely available, FTE has been regarded as the most appropriate. This allocations approach differs from that used in previous years where the proportion of direct costs was used for the majority of these allocations.

The table below shows the business units, and the principal costs directly attributable and allocated to them.

Business unit	Primary direct costs	Primary allocations
Abstraction licence	The licence from the Environment Agency	Other business activities
Raw water abstraction	The costs of surface water and underground sources and transporting the raw water to the water supply works	Mobile operators Other business activities Support services Water power split
Raw water transport	N/A	Other business activities
Raw water storage	The costs related to Eccles Lake	Other business activities
Water treatment	The costs of water supply works. These include chemicals, materials, contractors and power	Control centre Mobile operators Power (primarily carbon reduction commitment) Scientific services Support services Water power split
Treated water distribution	Water booster stations and water service reservoirs as well as labour and contractor expenses involving inspection, co-ordination and management, as well as repair and maintenance of the network	Highway liaison Insurance Mobile operators Scientific services Support services Water power split
Sewage collection	All sewer and pumping station costs, as well as discharge consents. These include all contractor costs to repair and maintain the network, chemicals and power	Developer services Mobile operators Power (primarily carbon reduction commitment) Property and grounds maintenance Support services
Sewage treatment (foul, surface water and highway drainage)	The costs of all pre-thickening WTWs are directly coded ahead of the sewage/sludge split (see page 12). These include discharge consents, chemicals, materials, contractors and power	Control centre Liquor treatment Mobile operators Operational contracts Property and grounds maintenance Scientific services Sewage/sludge split Support services
Liquor treatment	N/A	Liquor treatment
Sludge treatment	Sludge treatment centre costs such as chemicals, materials, contractors maintenance and repair	Insurance Mobile operators Operational contracts Power (primarily carbon reduction commitment) Sewage/sludge split for shared costs at co-located works Support services
Sludge transport	Tankering of costs from pre-thickening sites to those with sludge treatment capabilities	Other business activities
Sludge disposal	Transport of cake and granules to farm or landfill	Other business activities

A more detailed description of each allocation method is provided below.

Mobile operational teams

Description

Certain operational and maintenance activities are carried out by employees who are not site-based, but instead form mobile teams. These mobile teams generally work specifically on water or wastewater assets and so are directly coded to the relevant price control. They do, however, work on a variety of different asset types, covering different business units across multiple locations in a geographical area. Therefore, their costs require allocation for business unit reporting.

Allocation method

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

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

Local authority rates

Description

Local authority rates refer to the business rates charges for the buildings at each wastewater site and the cumulo rates charges in respect of the water function.

Allocation method

The costs have been split differently between the business units depending on which service they belong to.

Cumulo rates have been split based upon historic gross modern equivalent asset value (GMEAV) for the relevant water sites. Each site type has been aligned to a business unit and the total value has then been used to apportion the charge.

Wastewater sites receive individual charges based on their rateable value (RV). This enables the costs to be allocated to specific business units based on the activities at a site. In general this is sewage treatment with an element at some sites being subsequently allocated to liquor treatment, as described later in this document.

We have a number of co-located sewage and sludge treatment sites. The RV associated with the sludge treatment assets has been identified in order to split the costs between sewage and sludge treatment.

Management and mechanical, electrical, instrumentation, controls and automation admin (MEICA)

Description

There are a number of technical operational teams providing support to the wholesale service, such as delivery and investigation engineers, workshops, technical support teams and their management.

Allocation method

There are a number of allocation methods, dependent on the nature of the activities performed by the team.

The costs associated with the delivery engineers have been allocated based on the plant repair jobs undertaken by contractors. Previously, this has been allocated in proportion to the direct cost incurred in each business unit.

The certification team collects sewage data and so this cost has been fully allocated to the sewage treatment business unit.

The ICA technical support team is allocated using the mobile round method detailed above.

Management costs have been apportioned out to each of the teams based on their percentage of total cost.

Operational support and control centre

Description

Operational support relates to the provision of management support to both water and wastewater wholesale services, including the systems, reporting, central purchasing and change teams. The control centre includes the security, quantity surveyor, duty manager and other out-of-hours teams.

Allocation method

Costs have been split based on FTE.

Sewage/sludge split

Description

Sewage arriving at wastewater treatment works (WTW) is treated and the water element returned to a watercourse. The sludge element is then transported to a sludge treatment centre (STC) for treatment. All STCs are co-located with WTWs, so sewage and sludge costs have to be separated and allocated to the relevant business unit.

Allocation method

These co-located sites have been classified into the following types:

- *Indigenous cake*
- *Intermediate STC*
- *STC*

The STCs themselves have their own cost centre, separate from the WTW, and these provide a direct split for some site-specific costs that are not detailed below. Indigenous cake and Intermediate STC sites are allocated 10% to sludge treatment, based on an estimate of activities on-site. All other sites are classified as pre-thickening, and no allocation to sludge treatment made.

Any tankering from WTWs to sludge treatment sites has been directly coded to sludge transport.

The majority of chemical expenditure is allocated to the sewage treatment business unit with the exception of costs relating to polyelectrolyte, antifoam and lime, which are allocated to sludge treatment.

As there is only a single electricity meter at each co-located site, the power costs have been split using the power ratings of the sewage and sludge assets on site.

Any ROC sales produced by Combined Heat and Power (CHP) units are included in sludge treatment as income treated as negative expenditure.

Any sludge tankered in from water supply works (WSWs) and treated at an STC has been allocated to water treatment, based on a sludge treatment unit cost rate.

Sewage collection split

Description

For reporting purposes we are required to split sewage collection costs into three business units: foul, surface water drainage and highway drainage. The wastewater from all three of these sources is received into the treatment works through one sewer system.

Allocation method

In order to derive an allocation method for these costs a model has been generated by experts in the business based on historic wastewater volumes. The model compares the amount of treated water distributed, with the amount of water received at the WTW. The volume of water discharged to the sewer by customers is generally estimated at 92.5% of input. Using certification data (detailing the volume of water arriving at the inlet of the works) we can use this to derive the surface water and highway drainage element.

A sample analysis of road and roof areas that run off into our sewers has led us to believe the split between surface water and highway drainage volumes is circa 50:50.

Further adjustments have been made to take account of costs such as jet-washing, private sewers and surface water pumping stations, which can be directly allocated.

Other business activities/strategy

Description

Other business costs relate to the costs of complying with our regulators, including the regulation team and any licences required.

Allocation method

The allocation between business units follows RAG 2.07 guidance, in which retail attracts 1/9th of the total cost with the remaining 8/9ths being split evenly between water and wastewater.

The remaining costs have been split between wholesale with 1/9th being apportioned to each historical business unit.

Third party costs

Description

The third-party costs are apportioned from the other lines of the table, and are mainly associated with an Esso facility in Hampshire and bulk supply agreements with South East Water in Kent.

Allocation method

The costs of the relevant sites are calculated and an element is allocated to third party costs based on water volumes. Any fire hydrant costs and charges for repair of damage to our assets by another party are also classified as third party costs, as per Appendix 1 of RAG 4.07.

Power

Description

All power costs are coded to the relevant site, however there are a number of sites where activities straddle more than one business unit and an allocation is required. Wastewater has already been discussed under the sewage/sludge split above.

Allocation method

With water service sites there could be a single meter abstracting the water, treating it, and then pumping it into the distribution network. The abstraction cost is calculated using pumping head data (previously reported in Table 12 of the June Return). The remaining charge is split between water treatment and treated water distribution based on the power ratings of assets based on site, with all high lift pumps classified as treated water distribution.

The carbon reduction commitment charge is allocated out proportionately, based on electricity and gas usage within the relevant business units.

The power costs relating to the sludge pipeline from Slowhill Copse pre-thickening site to Millbrook STC have been allocated to sludge transport.

Non-appointed

Description

Non-appointed activities are those the company engages in which are not within the scope of the regulated activity.

The principal activities are: land search, Homeserve insurance, letting and tankering.

Allocation method

Each non-appointed revenue stream has its own cost centre, which is excluded from the regulatory accounting calculations. There are a small number of non-appointed direct employees, and so therefore receive an allocation of any support services (e.g. Finance, HR) using an FTE allocation.

Calculations for the commercial and cess cost of tankering waste have been performed by business experts and appropriately transferred out of sewage and sludge treatment.

Support services

The table below breaks down the 2017–18 charge by support service.

Support service	Wholesale allocation (£m)	Retail allocation (£m)
Communications	0.3	0.1
Directors	2.1	0.7
Finance	1.0	0.8
HR	3.2	1.4
IT	8.1	3.5
Legal	0.8	0.1
Procurement	0.8	0.1

Description

The departments listed above provide support and management across all business units.

Allocation method

Each director was split based on their directorate's allocation (e.g. the CFO cost is allocated based on the finance team split). The CEO and non-executive directors were allocated based on the subsequent average split after all other teams had been allocated.

For the other teams detailed in the table above a list of employees was extracted from the SAP system. This was then reviewed with key management to identify the FTE split between wholesale, retail or support activities for each individual. Where individuals could easily be identified as solely performing within a business unit this was taken into account. For example, in finance this could be determined by the team or role an individual held for some members of the function, while in procurement and communications this was driven by the projects worked on.

Once the allocation to the price control units was completed, the costs were then further apportioned to business units based on the total Southern Water FTE.

Wholesale assets

Description

This relates to a number of staff who monitor and report on asset performance.

Allocation method

Any asset team-related costs that cannot be directly allocated have been split based on FTE.

Developer services

Description

Developer services deal with the administration and site inspections relating to any application to develop land for construction or where buildings require further amendments to the water supply.

Allocation method

As per RAG 2.07, all costs relating to administration and information for the purpose of a new connection have been allocated to retail.

There are clear roles amongst the teams, therefore, allocation between wholesale and retail price control units has been based upon FTE, with each individual's costs being clearly identified and aligned.

Due to the nature of the wholesale activity, the majority of these costs have been capitalised. The remaining costs have been split between business units based upon the applications made to developer services through the year.

Dispatchers

Description

The dispatchers send the mobile operational team employees out to the various jobs at the sites required. Their work can be split in to three types: schedulers, controllers and planners.

Allocation method

While no timesheets are kept, the teams are split between four categories: wastewater above and below ground and water above and below ground. These teams are allocated to the business units based on FTE.

Facilities

Description

The facilities team primarily looks after the Durrington and Falmer offices, but is also involved with those at Otterbourne and Chatham, as well as some operational sites.

Allocation method

The sites Otterbourne, Chatham, Horsham and Hastings relate solely to wholesale activities and therefore will have all costs allocated accordingly.

The floor schematics for both the Durrington and Falmer sites have been analysed to determine how much space is used by different departments. The space has been used to determine a percentage split between retail, wholesale and support services.

With the costs allocated to the services detailed above, these have then been further broken down based on the Southern Water FTE.

Highway liaison

Description

The Highway Liaison team deals with road closures required to maintain the water and sewerage network.

Allocation method

The work management system is used to determine how many jobs are related to the distribution network and how many to sewage collection.

Insurance

Description

Insurance costs can be broken down into both premiums and claims/losses.

Allocation method

Insurance premiums are comprised of a number of different items, with the most relevant allocation method used for each:

- *Employee related (liability/motor/pension) – Allocated based on Southern Water FTE.*
- *Public, property and terrorism related – the asset values stated to determine the insurance charge. The assets are broken down by activity within the value schedule and so align to business units.*
- *Claims and losses – the claims history and the type of claim, whether it is due to works on the distribution network or flooding.*
- *Other (e.g. brokerage fees) – Pro-rated based on allocations detailed above.*

Liquor treatment

Description

Liquors are a by-product of the sludge treatment process which are then piped back to the inlet of the WTW for treatment.

Allocation method

A calculation has been performed involving the various sludge flows in a day. The concentration of the sludge in terms of biological and chemical oxygen demand (BOD/COD) milligrams per litre has been used to create a percentage for each site where liquor treatment occurs. This percentage is the higher of BOD and COD, although both come out at very similar values. This is then applied against the sewage treatment costs for that site to calculate the liquor treatment costs.

Operational contracts

Description

A number of asset service and maintenance contracts are held, principally for wastewater sites.

Allocation method

In order to allocate the monthly contract fee a breakdown of all contracts has been assessed with the budget owner. A split between water, sewage and sludge has been determined based on the level of activity each contract covers in each business unit. This split will then be applied to all costs identified arising from operational contracts in order to apportion all costs.

Property and grounds maintenance

Description

The maintenance of properties and grounds is managed by third parties. There are expected schedules of work available for these grounds.

Allocation method

The detailed plans for all planned and reactive maintenance jobs have been analysed on a site-by-site basis to determine where the work is operational or capital in nature. The costs for each activity performed on site have then been aligned to the relevant business unit on a similar basis to all other allocations (i.e. WTWs taken to sewage treatment).

The reactive work is extracted from SAP (where it has been directly coded) and attributed to the relevant business units.

Scientific services

Description

Scientific services involves the testing of water and wastewater from samples collected. The sampling is performed on various operational sites, developer sites and customer houses.

Allocation method

The allocation has been based on the total samples tested during the year. Each of the sampling activities has been allocated to a business unit. The total costs for scientific services have then been split based on this business unit analysis.

Transformation

Description

The transformation team co-ordinates and manages the change programme within the business.

Allocation method

The allocation between price control units wholesale or retail has been based upon the type of projects coded to transformation cost centres. Where identification of a specific price control unit is not possible a management estimate has been provided based on the nature of the work undertaken.

Customer service has a transformation team coded directly to Retail, so these costs are wholesale only. The allocation has then been based on the wholesale FTE, given that transformation cuts across the water and wastewater service.

Transport

Description

Transport is the costs of all vehicles in Southern Water. These costs are held within the individual budget in each department and as such are already directly allocated. However, the transport management team requires allocation.

Allocation method

The transport management team is allocated based on vehicle cost across the company.

Water efficiency

Description

Water efficiency is a team within strategy focused on helping households and schools to use less water by increasing water efficiency.

Allocation method

A split between the price control units retail and wholesale has been established for each of the teams' FTE based on a management estimate.

The activities conducted by the team have been systematically allocated based on management knowledge and judgement. Many can be directly attributed to the wholesale or retail functions (such as fitting households with water-saving products, which is a retail activity). If it is not possible to allocate the costs directly, for example school partnerships, a split based on a management estimate has been made between the services.

Wholesale costs have been split equally between raw water abstraction, treatment and distribution, with any efficiencies primarily impacting these business units.

Retail services

Allocations to retail cost lines

Costs relating to a specific retail cost types have been allocated directly to that category where possible. Where the costs span a number of different activities, a relevant cost driver has been established upon which the costs have then been allocated.

Household and non-household allocations and customer type allocations

Once costs have been allocated to the retail cost lines they are then allocated between

household (HH) and non-household (NHH). Where costs cannot be directly attributed they have been allocated in accordance with RAG 2.07 as far as possible. The allocation methods used are summarised in the table below. Where the RAG 2.07 cost driver was not available customer numbers have been used. Customer numbers are Ofwat weighted customer numbers, whereby dual service customers are multiplied by 1.3.

The method of allocation of different cost categories across the customer type is also shown in the table on page 17.

Customer engagement costs		
Cost area	Summary of allocation to cost line	Method of allocation
Affordability	Customer services 100%	Nature of cost
Billing Services	Customer services 92% Debt management 6% Meter reading 2%	Nature of work undertaken
Brand Transformation	Customer services 57% Debt management 32% Meter reading 11%	Nature of work undertaken
Strategy		
Quality Assurance		
Planning and continuous improvement		
Information and insight		
Home Move	Customer services 100%	Nature of work undertaken
Livechat		
Customer correspondence		
Proactive contact		
Service partner		
Household collections and recovery	Customer services 10% Debt management 90%	Nature of work undertaken
Litigation	Debt management 100%	Nature of cost
Metering	Meter reading 100%	Nature of work undertaken

Line item	Cost	Method of allocation to Household/Non-household	Method of allocation to customer type
Customer services	Billing	Number of bills raised	Number of bills raised
	Payment handling, remittance and cash handling	Number of payments received	Number of payments received
	Charitable trust donations	All household	Customer numbers
	Vulnerable customer schemes		Number of customers in vulnerable customer schemes
	Non-network customer enquires and complaints	Volume of non-network customer enquires and complaints	Volume of non-network customer enquires and complaints
	Network customer enquiries and complaints		Customer numbers
	Investigatory visits/first visit to the customer	N/A	N/A
	Other customer services		
Debt management	Debt management	Directly attributed	By debt outstanding for more than 30 days
Doubtful debts	Doubtful debts	Directly attributed	HH debt split between six customer types based on same percentage as revenue split
Meter reading	Meter reading	Number of meter reads	Number of meter reads
Services to developers	Services to developers	All non-household	All non-household
Other operating expenditure	Disconnection and reconnections	All non-household/Not applicable	All non-household/ Not applicable
	Demand-side water efficiency initiatives	Customer numbers	Customer numbers
	Customer side leaks	All household	Split into measured and unmeasured from business data, allocated further into service type by customer numbers
	Other direct costs	Customer numbers	Customer numbers
	General and support – IT		
	General and support – motor vehicles		
	General and support – finance, HR, payroll, general management		
	Executive directors' remuneration		
	Non-executive directors' remuneration		
	General and support – facilities, building/grounds maintenance		
	General and support – insurance		
	Other general and support costs		
Other business activities (regulation costs)			
Local Authority rates and cumulo rates			
Third party services	Third party services		
Depreciation	Depreciation	All household	Customer numbers

Fixed assets

Process overview – fixed assets

In order to produce the regulatory fixed asset and capital expenditure information, financial and management information is extracted from the finance system, SAP, using a number of system reports. This information is saved as spreadsheets for analysis and reporting and is also imported into an access database for the regulatory fixed asset analysis.

All subsequent steps in the production of the regulatory tables are carried out offline using spreadsheet and database functionality. These information sources provide sufficient information to directly allocate costs to the business units and price controls within the regulatory tables. Assets are sorted by asset groups which define both the business unit and expenditure purpose in order to complete the regulatory tables.

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, disposals and net book data are therefore consistent with those reported in the statutory accounts.

Process for producing table 2D (Historic cost analysis of fixed assets)

The base data for this table is consistent with the statutory accounts fixed assets valuations and depreciation charge. As required by RAG 1.08, interest, capitalised in the statutory accounts, is excluded from the extract from SAP for regulatory reporting. In addition to this we have separately identified intangible assets and removed the value of these to comply with the requirement of table 2D to only report tangible fixed asset information.

The majority of assets can be assigned directly to a specific price control. Where an asset is shared, for example a corporate asset, it is assigned to the price control of principal use. We have used our largest price control, wholesale wastewater, as our default for assigning corporate assets and retail household for any retail-only assets.

The full list of assets is extracted from SAP into a spreadsheet. This data includes all the historic information together with the movements in the year along with business unit information. Spreadsheet functionality is then used to produce the statutory and regulatory fixed asset information to ensure that there is consistency between the reporting.

Process for producing capital elements of table 2A (Segmental income statement)

The depreciation included within operating costs contains the depreciation charge analysed by price control from table 2D as described above. Recharges are then required for the shared assets allocated to the price control of principal use.

The costs which cannot be allocated to a single service are split into those that relate to wholesale only (not specifically water or wastewater), those that relate to retail only (not specifically household or non-household) and those of benefit to wholesale and retail.

The depreciation charge in the year attributable to wholesale-only assets is allocated between wholesale business units based on the wholesale headcount. This allocation uses the same data as that for allocating operating expenditure.

The depreciation charge in the year attributable to retail-only assets is allocated between household and non-household based on customer numbers and headcount.

The depreciation charge in the year attributable to wholesale and retail is made using headcount percentage that includes wholesale and retail staff. The resultant calculated recharge for retail is split into household and non-household based on customer numbers and headcount.

Process for producing capital elements of table 4D and 4E (Wholesale totex analysis)

The base data for additions is the same as that for the Statutory Accounts. Expenditure, including accruals, is extracted from SAP and listed by historic asset or scheme.

As part of our capital expenditure approval process, we maintain a database in which we assign the Quality, Base, Enhanced service levels and Growth (QBEG) purpose allocation for each scheme. When combined with the expenditure this provides the information required to complete tables 4D and 4E.

The allocation to QBEG is based on definitions provided in RAG 2.07 and RAG 4.07 and an analysis of the design of each scheme. From this the percentage, by category, is assigned to each scheme and stored in the database for application to the expenditure when it is incurred.

When a scheme is approved it is also analysed and assigned to the appropriate business unit(s). These business units are held against each scheme in SAP when the scheme is created. We have facility for a primary business unit and secondary units where a scheme has elements that fall into more than one business unit. Further details of some of the specific assets in each business unit, and any changes made in the year, are given in the sections below.

The same process applies to the disposals.

Details of the nature of the assets in each business unit as well as some of the specific assets in each business unit are given below.

Process for producing capital elements of table 4D and 4E (Wholesale totex analysis)

The current year values for these tables employ the same source data as that used for table 4D and 4E (costs where third party contributions apply are net of the contribution) lines 14,15,16. Reference number identifiers are added to the enhancement expenditure according to data definitions in Rag 4.07 and take into account the 2016–17 accounting separation submission. Scheme costs are grouped by purpose and business unit in order to populate the current year section of the table.

The analysis produced for the current year section of the tables is combined with the previous year data containing costs on assets under construction not previously reported in the cumulative purpose tables. A scheme by scheme review is undertaken to determine those schemes substantively complete and those still under construction. Substantively complete schemes are reported in the cumulative section of the table and those still to complete are carried forward for future year reporting.

Water service

Abstraction licence

The water strategy manager confirmed that all costs associated with the negotiation and agreement of abstraction licences are treated as operational. There are no assets in this business unit and it remains unchanged from the previous year.

Raw water abstraction

All Southern Water's impounding reservoirs with abstraction licences associated with them are recorded as raw water abstraction. Bank-side storage assets are 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 business unit remains unchanged from the previous year.

The impounding reservoirs included in raw water abstraction are:

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

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

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

Raw water transport and raw water storage

Raw water storage assets are bankside storage. Eccles Lake has been classified as raw water storage on the grounds that no direct abstraction licence applies.

Bankside Storage	Volume (Ml)
Eccles Lake	545

Raw water transport assets are mains from a reservoir to a treatment facility.

Water treatment

This business unit contains our water treatment works and remains unchanged from the previous year. Assets included are as per RAG 4.07 guidelines.

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

Treated water distribution

This business unit essentially remains unchanged.

Sewerage service

Sewage collection

In order to split the sewage collection costs and assets between foul, surface water drainage and highway drainage we have undertaken some analysis, described below, of the volumes of wastewater received at treatment works.

A model has been generated by business subject matter experts, using historic wastewater volumes, in order to compare the amount of treated water distributed, against the amount of water taken in as sewage. In general the percentage of treated water returning to the sewer is estimated to be 92.5% of the volume supplied. Therefore, 92.5% of the water distributed has been deducted from the amount of wastewater received into sewage treatment

works. This, as well as other adjustments for occurrences such as leakage and pipe filtration, is then used to derive the volume of surface water and highway drainage. The model has then been applied to this year's costs in order to get the current year split and the historic fair value of our sewerage network.

The sewerage network is allocated to the contributing components for both historic assets and additions in the year as shown in the table below:

Sewer type	Percentage
Foul	70%
Surface	15%
Highway	15%

The sewerage network consists of approximately 23,000 kilometres of gravity sewers, rising mains and tunnels; their approximate lengths are shown in the table below:

Description	Length (km)
Gravity sewers	21,500
Rising main	1,500
Tunnels	48

The business unit includes the following significant tunnel assets:

Description	Volume (Ml)
Fort Cumberland Road Eastney	40
Coombs Hastings	52
Portobello Brighton	147

Sewage treatment and disposal

This business unit contains our wastewater treatment works and remains unchanged from the previous year. Expenditure for the year has been allocated based on scheme-specific information.

This business unit includes sludge holding bays and thickening plant on sites not co-located with STCs.

Sludge treatment

This business unit contains our sludge treatment centres and remains unchanged from the previous year. Expenditure incurred in the year is allocated based upon specifics of schemes.

Sludge holding bays and thickening plant at co-located sites are recorded in this business unit.

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.

Sludge transport

This business unit contains a small number of sludge pipeline assets and remains unchanged from the previous year. Any expenditure for the year has been allocated based on scheme-specific information.

Sludge disposal

There are no assets in this business unit.

Management and general

For 2017–18, the management and general cost with shared benefit amounted to £22.7 million out of a total of £423.8 million asset additions. These have been assigned to the wastewater treatment business unit as the unit of principal use. Recharges for the use of these assets by other business units are reflected in Table 2A of the Annual Performance Report.

Retail

Retail assets largely consist of major IT systems for billing and telephony. The split between household and non-household is consistent with previous years based on historic customer numbers and headcount. This basis is used to allocate between household and non-household for the relevant tables.

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's 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. This data is used as the basis for the fixed asset information shown in the Annual Performance Report.

Revenue reporting

Unmeasured revenue

Unmeasured household and non-household revenue comprises customers on both rateable value charges and assessed charges. This revenue has been split into the relevant customer groups and price controls. For the majority of household revenue this has been taken directly from our SAP ISU billing system, but for customers in the South East Water region this has been generated based off of reports provided by South East Water. Post market reform non-household billing information is no longer held in SAP ISU and therefore this information is sourced from CMOS.

The majority of data used in the production of revenues is at a level which allows for the identification of revenue type (retail, wholesale water and wholesale wastewater) and service type (water-only, wastewater-only or water and wastewater) to be determined directly. Where this is not possible, revenue has been allocated based on the proportions of the directly attributed revenues.

Measured revenue

Measured revenue has been split into the relevant customer groups and price controls based, where possible, on the rate categories of actual billing from our SAP ISU billing system for household customers and CMOS for non-household customers. Where this is not possible assumptions have been made as described above for our unmeasured customers.

In addition, measured revenue contains an estimate for unbilled revenue which is generated from the billing system but includes management adjustments. The unbilled revenue is analysed using the following information:

1. The unbilled revenue report from the system details revenue split by customer group and price control, on the same basis as the billing system, and so this is split in the same way as our billing. South East Water provide an accrual for customers in the South East Water region, this is added to the Southern Water accrual. Similarly, non-household revenue is accrued from data in CMOS and added to the Southern Water and South East Water accrual to form total accrued revenues.

2. Where the value of an accrual adjustment has not been sourced directly from the billing system, the allocation of price controls has been based on the same ratio as actual billing in 2017–18.

Other revenue

All other revenue is sourced directly from our SAP BAS billing system and maps directly to a price control unit based on its coding. Those revenue types with a separate retail element are identified directly from this billing system and have been allocated appropriately, as per reporting requirements in RAG 4.07. These include trade effluent and developer services administration fees.

Changes in 2017–18

In 2017–18 two notable methodological changes have taken place:

1. Some elements of unmeasured revenues relating to customers on assessed and fixed licenses tariffs were historically reported as wholesale revenue. Upon investigation it became apparent that there is a retail element to these tariffs. A percentage assumption has now been applied to them in order to split this revenue between retail and wholesale (see allocation assumption above).
2. Measured revenue reductions relating to customer on our 'WaterSure' affordability tariff were historically allocated to wholesale revenues. The WaterSure bill discount is funded via retail charges and therefore this revenue reduction should be allocated to retail.

The net impact of the above is that wholesale revenues were understated by £0.9 million in 2015–16 and £1.5 million in 2016–17 with a corresponding overstatement in retail revenues.