

# Annual Return 2003/04

## Overview for WIC

### DOCUMENT CONTROL

Version	Date	Status	Originated by	Checked by	Approved by
1	23 June 2004	Final	B McGrath	B Oldfield	D Milican

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## 1. Executive Summary

### 1.1 Vision and strategy

Scottish Water's vision remains to succeed as a sustainable, publicly owned water business in an increasingly demanding and competitive market. To realise this vision, our strategic goal is, by 2006, to deliver the efficiencies required by the Scottish Executive, and to progress towards being trusted by our customers through excellence in customer service and the increasingly effective use of our assets.

### 1.2 Performance in 2003/04

Following on from the successful transformation from three former water authorities during 2002/03, which saw one of the biggest merger ever undertaken in Scotland, Scottish Water has made significant progress in terms of efficiencies, systems rationalisation and, importantly, in improvements to customer service facilitated by new ways of working. Our key achievements in 2003/04 are highlighted below.

#### Service

- An increase in overall customer satisfaction levels across the year from 73% in Qtr 1 to 80% in Qtr 4 was achieved, with a peak of 83% in Qtr 3, as shown by the results from our quarterly Household OMNIBUS survey.
- Our performance against key levels of service indicators improved, for properties at risk of low water pressure, properties subject to sewer flooding incidents and written complaints responded to within 10 days.
- We maintained unconstrained supplies to all our customers during a period of exceptionally dry weather.
- The first phase of the Promise to Resolution initiative, which will improve the quality and speed of our responses to customer contacts, was successfully delivered.
- A single Customer Management Centre was created, which has enabled us to increase the volume of calls resolved at first point of contact from 57% (July 03) to 67.7% (April 04).
- A new corporate billing system was introduced during 2003/04, that provides a solid foundation for service enhancements in the future.
- By harmonising business customer charges, we moved towards the full implementation of the principle that business customers, regardless of where they lived in Scotland, should pay the same rate for water and waste water services. Household customer charges will be harmonised in 2004/05.

#### Value

- We successfully delivered our services within the available finances from customer revenue and borrowings from the Scottish Executive, and we met all the financial objectives set by Scottish Ministers.
- Further real operating efficiencies of £41 million were achieved in 2003/04. We are now saving more than £70m in real operating costs compared to those of the former water authorities for the benefit of Scottish customers. We now have firm plans and processes in place to achieve the targets set by Scottish Ministers for March 2006.
- We delivered an extensive capital programme in 2003/04 of £408.6 million. £389.3 million was invested in the delivery of the Quality and Standards II regulatory capital programme and £19.3 million was invested as part of the spend-to-save programme. Good progress was made with the agreed outputs, for example 1042km of water mains and 108km of sewers have been rehabilitated during 2002 - 2004.

- Scottish Water Solutions (SWS) a new integrated asset delivery vehicle was created. Robust processes are now in place to continue to ramp up the scale and speed of delivery of the capital programme to reflect the challenging timetable while also delivering the targeted level of efficiency.
- Capital procurement costs have reduced, and Scottish Water is now within the comparator group of English and Welsh water and sewerage companies.
- The average household bill in Scotland in 2003/04 was £264, which was lower than the average charge for 3 of the English and Welsh water and sewerage companies and equal to Wessex Water. For 2004/05 the average household charge is £272, which is lower than 4 of the 10 English and Welsh water and sewerage companies.

**Compliance**

- Overall compliance with drinking water quality standards improved to 99.44% in 2003 from 99.36% in 2002.
- Chloramination was extended across more water treatment works and has reduced THM failures and reduced taste complaints (a key source of complaints from customers).
- The Glasgow cryptosporidium action plan was completed, and monitoring systems and contingency plans have been developed across Scottish Water’s operational areas to reduce the risk to public health from cryptosporidium.
- The number of continuous discharges failing to meet consent standards was 67 (excluding PFI) at the financial year end.
- The best ever compliance results were achieved for Scotland’s 60 designated bathing waters in 2003, with only 1 bathing water failing to meet the required standards as a result of Scottish Water discharges.

**1.3 Governance**

The methodologies used for producing the detailed information in Scottish Water’s 2003/04 Annual Return to the Water Industry Commissioner (WIC) have been developed as a suite of Technical Approaches to ensure robust reporting of data and to clearly show data sources, calculations, assumptions and dependencies. This approach, along with the audits carried out by the Regulatory Reporters (appointed by the WIC), which Scottish Water welcomes and fully supports, has ensured that this submission is based on sound processes and is more robust than previous Returns. The governance of the production of this Return has also benefited from enhanced management and Board approval processes.

Signed.....Date.....

Jon Hargreaves, Chief Executive, Scottish Water

## 2. Introduction

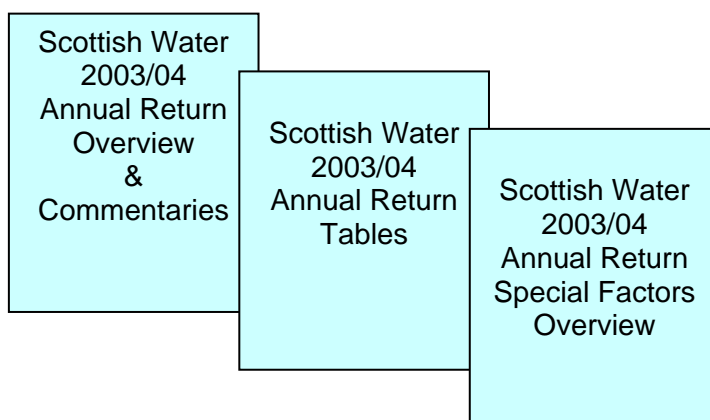
### 2003/04 Annual Return

Scottish Water is keen to continually improve its regulatory reporting and as such, significant improvements have been made this year to the processes and governance of the Annual Return.

Technical approaches have been developed by Scottish Water this year giving detailed methodologies as to how data is collected, analysed and reported.

In terms of governance, the Annual Return has been guided within Scottish Water by a Steering Group consisting of the General Managers from Finance, Customer Service and Assets, chaired by the General Manager Regulation & Strategy. This group has reported monthly to the Regulatory Management Group consisting of Finance, Customer Service and Assets Executive Directors since October 2003. The key messages set out in the Overview were reviewed by the Board on 16 June.

For 2003/04 Scottish Water's Annual Return consists of:



The Annual Return is summarised by this Overview for WIC comprising a summary of outputs delivered, progress on the investment programme, financial and customer service performance, high-level details on changes to the asset stock, and Scottish Water's assessment of its efficiency position.

In the commentaries to the tables, Scottish Water has explained movements in data and results when compared to previous returns and to explained assumptions made and methodologies used.

The Annual Return consists of 73 Tables (spreadsheets) populated with Scottish Water data (more than 200,000 cells with confidence grades attached), along with 73 commentary tables with a one line comment for any data item where the confidence grade is below the WIC's minimum requirements. Scottish Water has provided detailed commentaries for all of the data in the Annual Return, along with other relevant information such as details of flooding, and customer contacts.

The Annual Return is also accompanied by a separate document outlining an overview of the special factors that apply in Scotland that result in higher operating costs than are predicted by the WIC econometric models. A detailed submission of Special Factors will be presented with the draft Regulatory Business Plan on 29 October 2004.

**Brief description of the Table contents:**

A Tables: Base Information	<ul style="list-style-type: none"> <li>• Populations</li> <li>• Properties</li> <li>• Leakage</li> <li>• Metered/unmetered customers, etc</li> </ul>
B Tables: Outputs to Customers	<ul style="list-style-type: none"> <li>• Resources</li> <li>• Pressure/interruptions</li> <li>• Flooding</li> <li>• Levels of service to customers</li> </ul>
C Tables: Quality and Environmental Outputs	<ul style="list-style-type: none"> <li>• Compliance</li> <li>• Asset performance/outputs</li> </ul>
D Tables: Asset Information	<ul style="list-style-type: none"> <li>• Changes during the year (fed from other tables)</li> </ul>
E Tables: Operating Costs & Efficiency	<ul style="list-style-type: none"> <li>• Activity Based Costing – water/wastewater</li> <li>• PFI</li> <li>• Resources &amp; treatment</li> <li>• Treatment works, water mains, sewers, etc by size, by type etc.</li> <li>• Employee numbers</li> </ul>
F Tables: Statutory Accounts	<ul style="list-style-type: none"> <li>• Income/expenditure</li> <li>• Balance sheet</li> <li>• Analysis of debtors/creditors</li> <li>• Cashflow</li> <li>• Analysis of income</li> </ul>
G Tables: Investment Plan (Actual & Forecast)	<ul style="list-style-type: none"> <li>• Water/wastewater etc for Base, Quality, Growth</li> <li>• Expenditure by project, by driver</li> </ul>
H Tables: Asset Inventory & Asset Performance	<ul style="list-style-type: none"> <li>• Current &amp; future asset stock, condition, performance, etc</li> <li>• Water/wastewater, infrastructure/non-infrastructure</li> <li>• Support services</li> </ul>
J Tables: Cost Base	<ul style="list-style-type: none"> <li>• Procurement costs</li> <li>• Water/wastewater</li> <li>• Infrastructure/non-infrastructure</li> <li>• Predicted future expenditure types</li> </ul>

**Role of Reporter**

The WIC has recently appointed a Regulatory Reporter to audit Scottish Water's regulatory reporting including this year's return. This is similar to the Reporters used in England & Wales that are employed by the plcs but report to Ofwat. The Reporter's team is used to audit the robustness of processes and methodologies, but not the actual data.

The Annual Return is the single biggest audit for the Reporter and his team. The arrival of the Reporter this year has introduced a layer of beneficial challenge into the data collection and information production process.

The technical approaches were audited in April 2004 allowing early feedback on our approach to information production and corrective action was taken if necessary.

Detailed information and system audits are now ongoing and will be complete in late June. The Reporter expects to report on our Annual Return by 2 July 2004.

### **3. Outputs Achieved for Customers and the Environment**

#### **3.1 Levels of service to customers**

##### **3.1.1 Customer service satisfaction**

Scottish Water closely monitors the needs, expectations and experiences of its customers.

The Household OMNIBUS survey, which independently measures customer satisfaction for household customers shows that in 2003/04, the results from customers that were 'satisfied' or 'very satisfied' with their service rose from 73% in Qtr 1 to 80% in Qtr 4 and reached a peak of 83% during Qtr 3. 'Perceived value for money' for the services provided to our customers and their perceptions of our 'service levels compared to their electricity suppliers' have also shown improvements during the year.

##### **3.1.2 Levels of service indicators**

Scottish Water's performance against the key levels of service indicators has improved given the context of operating conditions in 2003/04 as shown in Table 1. Despite one of the lowest rainfall periods in recorded history, Scottish Water maintained unconstrained supplies to all of our customers in 2003/04. 2003 was the warmest and sunniest year in Scotland since national records were collated in 1961. It was also the third driest year in that period.

By installing overland pipelines to Lochinvar in Dumfries and Galloway, and applying for drought orders in Glendevon (supply for west Fife) and Backwater / Lintrathen (supply for Dundee & Angus). Scottish Water protected supplies to customers. In other areas re-zoning was undertaken to transfer demand from sources that were starting to run low to sources that had been less affected by the dry weather. In many cases this involved additional operating costs. For some smaller sources, tankering was undertaken to supplement the resource, and in other cases pumping was required to overcome hydraulic constraints which occur at low water levels.

##### **DG2 Properties at risk of low pressure**

In 2003/04, the number of properties receiving low pressure was reduced from 14,942 to 12,988 or 0.52% of connected properties. This improvement was achieved despite 3,300 new properties being added to the records as a result of better information.

##### **DG3 Supply interruptions**

The number of properties subject to unplanned interruptions to supply of 12 hours or more affecting non-trunk mains has increased from 2,942 in 2002/03 to 6202 or 0.25% of connected properties in 2003/04.

##### **DG5 Flooding from sewers**

The total number of properties at risk of flooding from sewers increased slightly from 1,014 in 2002/03 to 1105 or 0.046% of connected properties in 2003/04. However, the number of properties subject to sewer flooding incidents was reduced from 710 in 2002/03 to 349 in 2003/04. These reductions were achieved through investment in our sewerage infrastructure and improved operational practices. Lack of high intensity rainfall experienced in 2002/03 may also have contributed to the reductions.

### DG6 Billing contacts

In 2003-04 Scottish Water received 301,580 billing contacts of which 282,664 or 93.7% were responded to within 10 days. This was only a 1% decrease in performance despite a 30% increase in billing contacts during 2003/04. The implementation of a new contact system and the merger of our three contact centres into a single Customer Management Centre had a minor impact on our performance during its implementation. The increase in billing contacts was mainly as a result of the harmonisation processes carried out in 2003/04.

### DG7 Written complaints

The number of written complaints received in 2003/04 was 9,520 which was an increase of 1,389 over the number received in 2002/03. However, despite the increase in complaints, the number answered within 10 working days improved by 2%.

### DG9 Ease of telephone contact

In 2003-04, Scottish Water received 936,701 calls in office hours of which 791,273 or 84.5% were answered within 30 seconds. Scottish Water received over 8,000 more calls last year and this, combined with the temporary disruption caused by the merger of the three contact centres and installation of the new contact system, resulted in answering performance falling.

**Table 1: Levels of service indicators**

Indicator	2001-02 %	2002-03 %	2003-04 %
DG2: Properties at risk of low pressure	0.32	0.62	0.52
DG3: Properties subject to unplanned interruptions of 12 hours or more	0.17	0.12	0.25
DG5 Properties subject to sewer flooding incidents	0.015*	0.032	0.015
DG5 Properties at risk of sewer flooding once in 10 years	0.012*	0.023	0.02
DG5 Properties at risk of sewer flooding twice in 10 years	0.028*	0.023	0.026
DG6 Billing contacts responded to within 10 days	91.1	94.8	93.7
DG7 Written complaints responded to within 10 days	99.2	97.8	99.8
DG9 Telephone calls answered within 30 seconds	83.6	90.1	84.5

\* For 2001-02 North of Scotland Water were unable provide data for the number of properties at risk of flooding or the number of sewer flooding incidents due to overloaded sewers.

### 3.1.3 Key customer service initiatives

#### Promise to Resolution

Scottish Water's aim is to deliver promises, right first time to improve the customer experience and drive out the major costs of rework and repeat contacts. 'Promise to Resolution' (P2R) underpins this aim and during 2003/04 the first phase of P2R has been completed and has successfully delivered:

- a new customer centred process for asset reactive work;
- a new customer contact system, 'Promise'; and
- implementation of task scheduling and workflow tools.

#### Customer contact model



The move to a new customer contact model was accelerated in 2003/04. So far, three inherited contact and billing centres have been merged and consolidated on to one site to create a single Customer Management Centre, and a new Field Customer Operations team has been created.

Scottish Water is now delivering a more personalised service to its customers with increasing efficiency, consistency and empathy at its single Customer Management Centre. The volume of calls resolved at first point of contact has increased from 57% (July 03) to 67.7% (April 04).

A new corporate billing system was introduced during 2003/04 and this provides a solid foundation for service enhancements in the future. In addition it will:

- allow introduction and development of more flexible customer billing solutions;
- enhance processes that will allow better debt management; and
- allow the ability to further enhance and cleanse data.

### **Incident management**

Emergency Plans and security procedures have been implemented to ensure the effective management of incidents. This has been achieved by introducing:

- customer focused Incident Management Plans;
- a Waterborne Hazard Plan for Scotland agreed with external stakeholders;
- introduction of a new Business Alert system to provide early warning of potential incidents;
- improvements to the operational logistical response (e.g. leaflets and posters); and
- multi-agency exercise workshops across Scotland.

### **Key Account Management**

Scottish Water has continued to improve service to its 389 key customers through the use of Key Account Managers.

Scottish Water undertook Key Account Loyalty (KAL) research in November/December 2003, supported by Lorien Customer Focus. The KAL assessment is designed to measure, analyse and enhance the quality of individual account relationships. The semi-structured format is a rigorous, analytical approach that generates incisive feedback.

104 interviews were carried out and headline findings detail that 47% of Key customers were "delighted" and 41% of Key customers were "contented" – based on Lorien's analysis.

This is an excellent result, as few organisations achieve more than 33% "delighted" results.

### **Charges**

Business customer charges were harmonised in 2003/04, and household customer charges have been harmonised for 2004/05.

## **3.2 Maintaining water quality and environmental compliance**

### **3.2.1 Water quality compliance**

During our first year for Scottish Water a number of lessons were learnt which have been incorporated in to operational procedures. In particular following the Glasgow Cryptosporidium incident, Scottish Water has undertaken work in a number of areas to reduce the risk to public health from cryptosporidium. These measures together with the ongoing programme of investment have contributed to the continuing improvement in water quality to Scottish Water's customers.

As part of the improvement programme to contribute to a reduction of THMs, Scottish Water has extended the coverage of chloramination across a further three water treatment works during 2003/04, bringing the total to 17 in the Q&SII period. The remaining fourteen sites will be completed by December 2006. As a bi product of introducing chloramination, customer complaints about taste have significantly reduced.

Compliance with the water quality regulations is measured as a percentage of samples passing against the number of samples taken. This removes the possibility that one failing sample in a zone results in a failing zone and gives a truer measure of overall performance.

With the ongoing rationalisation of Scottish Water assets the number of water regulation zones has been reduced from 489 to 471.

#### **Overall water quality compliance**

Overall regulatory compliance for 2003 was 99.44%, which compares favourably with 2002, when 99.36% compliance was achieved.

#### **Microbiological sampling**

Overall compliance with microbiological standards in 2003 was 99.71%. This is an improvement on 2002, when overall compliance was 99.59%.

Compliance with the Coliform standard showed the biggest improvement, rising from 99.35% in 2002 to 99.55% in 2003.

Compliance with the Ecoli standard showed marginal improvement, rising from 99.83% in 2002 to 99.88% in 2003.

Samples taken at treatment works, service reservoirs and customer taps, all showed improved levels of compliance. The biggest improvements were in coliform compliance at service reservoirs and customer taps.

The following summary table highlights performance improvements in water quality for microbiological quality from 2002 to 2003 based on regulation samples:

**Table 3.1: Microbiological quality of water**

		<b>2002 Fails</b>	<b>2002 Compliance</b>	<b>2003 Fails</b>	<b>2003 Compliance</b>
Treatment works	Coliforms	131	99.67	108	99.69
	E coli	75	99.81	59	99.83
Service reservoirs	Coliforms	403	99.31	244	99.57
	E coli	94	99.84	47	99.92
Customer taps	Coliforms	204	98.75	135	99.14
	E coli	29	99.82	24	99.85

### Chemical sampling

Compliance with physical and chemical standards in 2003 was at a similar level to that achieved in 2002. Overall compliance with these standards was 98.8% in 2003, which compares with 98.9% compliance in 2002.

The following summary table highlights performance changes in water quality for key chemical parameters from 2002 to 2003 based on regulation samples:

**Table 3.2: Chemical quality of water**

	<b>2002</b>		<b>2003</b>	
	<b>Failures</b>	<b>Compliance</b>	<b>Failures</b>	<b>Compliance</b>
THM total	575	82.90	478	85.54
Iron	261	96.03	233	94.64
Colour	151	95.63	121	96.20
Manganese	36	99.06	53	98.49
Aluminium	35	99.18	39	98.82

### 3.2.2 Environmental compliance

#### Wastewater Treatment

SEPA authorise discharges to the aquatic environment by means of consents issued under the Control of Pollution Act (COPA) and report compliance with WWTW consent conditions based on the audit monitoring that they carry out.

The level of compliance over the financial year 2003/04 was 67(excluding PFI) works exceeding their consent. This continues to show an improvement over Scottish Water's opening position of 80 in March 02. The level of compliance at the end of financial year 2002/03 was 60 failing works. Although the 2003/04 number has risen Scottish Water believes that the underlying trend is one of improved compliance and that over the period we will continue to show an improvement in our starting position.

Given that Scottish Water is routinely compared with the English and Welsh companies on all aspects of performance, it is important to recognise that there are significant differences between the SEPA regime and that of the Environment Agency in England and Wales in terms of the tighter standards and the methodology of determining compliance.

In 2003/04 Scottish Water would have circa 45 lower tier failures if compliance was measured on a consistent basis with the approach undertaken in England & Wales.

The primary differences are summarised below:

EA in England and Wales	SEPA Regime
<p>Only a minority of WWTW less than 250 pe are sampled. Majority have descriptive consents.</p> <p>All WWTW between 250 and 20,000 pe need 12 samples a year.</p> <p>For any 12 samples, 2 exceedances are allowed (for the same parameter) for the discharge to be deemed non compliant</p>	<p>Many of WWTW less than 250pe have numerical consents. Only a minority have descriptive consents.</p> <p>The number of samples based on an environmental risk assessment-tends to result in fewer samples. Many works between 250 pe and 15,000 pe have less than 8 samples taken.</p> <p>When less than 8 samples taken, only 1 exceedance is allowed, else non compliant.</p> <p>All UWWTD qualifying discharges (&gt;15,000 pe) have 12 or more samples taken as in E&amp;W.</p>
<p>Upper Tier (UT) failure rules apply as in Scotland, but relatively few consents have UT limits compared to Scotland.</p>	<p>An UT failure means the discharge is deemed to be failing for the following twelve months regardless of the number of samples taken, and regardless of any intervention to improve performance.</p>

Scottish Water is currently working closely with SEPA to improve compliance reporting. SEPA are moving to monthly rolling compliance and will be reporting lower tier compliance and overall compliance. This will allow Scottish Water to better report compliance in a manner similar to England and Wales.

Scottish Water is currently assessing future investment requirements for works with strict upper tiers and discussing the application of such standards with SEPA. To comply with strict upper tiers may require additional stage of treatment leading to higher opex as well as substantial capital investment.

Despite the difficulties being experienced with the monitoring regime, every effort is being made to improve WWTW compliance as noted below:

**Understanding Asset Capability**

A considerable amount of work has been carried out to improve Scottish Water's knowledge of the capacity and capability of WWTWs.

Reviews of 677 consented works have been completed. While previously held records of condition and performance indicated that 25% of WWTWs assets were in condition or performance grades 4 and 5 ("poor" or "very poor") more recent surveys indicate that 43% (292 out of 677) are, in some way or other, not fit for purpose i.e. risk of failure is high due to lack of hydraulic or load capacity or there is an additional stage of treatment required to ensure compliance. These works all require capital investment and/or additional operational intervention to ensure compliance. During this review 102 of the works were identified as being at high risk of failure in particular failure of the upper tier.

## **Managing Risk and Performance**

All WWTWs have been categorised in terms of their risk of failing compliance. This risk profile is used to prioritise capital maintenance expenditure and to determine the level of operational input to each works.

Task scheduling has been developed and implemented at all works to ensure that essential operations are carried out. A risk based maintenance strategy has been developed, based on the criticality of each works. This is designed to ensure an appropriate level of maintenance activity is planned and completed.

All failures of WWTWs are thoroughly investigated by a cross-functional compliance team to determine the root cause of failure. The risk profile of works is continuously updated in the light of performance reports.

The compliance team drive continuous improvement through action plans that combine operational, maintenance and investment actions.

### **Process Audits**

Proactive on-site monitoring and testing is carried out by operators and an escalation procedure is triggered when action is needed. Process audits are conducted at works, particularly those at high risk of failure, to identify improvement opportunities.

### **Operator Training**

Operator training needs are identified through the performance and development planning process. Upskilling of all operators, to include first line E&M maintenance is being addressed as part of a Transformation project.

### **Secondary Treatment**

The proportion of works receiving an improved level of treatment continues to rise with the population receiving secondary treatment rising from 92.72% to 93.02% (Q&S2 target: 93.3%).

### **Bathing Waters**

The bathing season of 2003 saw Scotland's 60 designated bathing waters achieve their best ever compliance results. Only 1 failure occurred as a result of Scottish Water's discharges. This success resulted from a combination of delivery of capital investment projects in waste water treatment and collecting systems next to bathing waters increased vigilance and improved operating and monitoring procedures by Scottish Water asset management staff and favourable weather in 2003/04.

## **3.3 Progress on delivery of quality programmes**

### **3.3.1 Water quality programme**

Scottish Water's investment programme was phased to deliver a number of projects by the end of 2003 to align with the full implementation of the Water Supply (Water Quality) (Scotland) Regulations 2001.

Scottish Water Solutions (SWS), is now fully operational and consequently a number of projects are now being delivered to improve water quality further. As a result the

number of THM undertakings has been reduced from 150 to 125 (table C3.10) and the number of undertakings from other parameters reduced from 42 to 32 (table C3.13)

During the report year further work has been carried out to achieve compliance with the interim lead standard of 25µg/l by December 2003. As a result the number of supply zones that have undertakings to meet the 25µg/l standard has reduced from 149 in 2002 to 53 in 2003.

Highlights during the report year include:

- C5 link main to Balmore WTW providing fully treated water for up to 100,000 customers in the East end of Glasgow
- Invercarnie WTW upgrading (c£12m) to include new membrane plant to provide protection against cryptosporidium
- Chloramination now operational for Grampian and Edinburgh areas
- Formal contract award and start date agreed for Katrine Water project.

### 3.3.2 Environmental quality programme

The majority of the Scottish Water investment programme for environmental quality is to meet the requirements of the Urban Waste Water Treatment (Scotland) Regulations 1984. The compliance date for these Regulations is 31 December 2005. Investment required to meet the requirements of the Bathing Water Directive has already been prioritised and is already showing benefit.

The tables below report the actual and forecast agreed WIC 18 outputs delivery performance in relation to the Environmental legislative Compliance dates.

**Table 3.3: Environmental Compliance Performance – Wastewater Treatment**

Investment Driver	Total No.	Delivered on time	Up to 3 months late	Up to 6 months late	Up to 12 months late	Up to 24 months late	> 24 months late
UWWTD	613	604	2	2	2	3	0
Cum. %		98%	98%	99%	99%	100%	
Bathing Waters	27	26	1	0	0	0	0
Cum. %		96%	100%				

**Table 3.4: Environmental Compliance Performance – CSOs**

Investment Driver	Total No.	Delivered on time	Up to 3 months late	Up to 6 months late	Up to 12 months late	Up to 24 months late	> 24 months late
UWWTD	383	294	2	37	41	1	8
Cum %		76%	77%	86%	99%	99%	100%
Bathing Waters	56	49	7	0	0	0	0
Cum %		88%	100%				

Highlights during the report year include:

- upgrading of Cruden Bay WWTW and CSO, Peterhead CSO and Balmedie WWTW to protect Bathing Water compliance;
- completion of Longniddry, Aberlady & Gullane Waste Water Improvement Scheme to meet the requirements of the UWWTD and to protect two Bathing Waters; and
- Upgrading of Wick WWTW for UWWTD compliance.

#### 4 Progress on four year investment programme

In the first two years (2002 - 2004) of the four-year capital programme, Scottish Water chose to invest £743m in capital projects rather than the WIC target of £847m. This was to ensure that only projects that were legally committed or had legislative drivers proceeded and that all other asset related projects could gain maximum efficiencies by being delivered by Scottish Water Solutions (SWS).

SWS commenced effective operation on 1 July 2003 as the delivery vehicle for the Q&S II capital programme to deliver the agreed Q&S II outputs (see Table 4) and is now delivering efficient investment for Scottish Water and its customers. Robust processes are in place to continue to ramp up the scale and speed of delivery to reflect the challenging timescale while also still delivering the targeted level of efficiency.

Good progress is being made with the delivery of the agreed outputs from the capital investment programme by 2006, as shown in Table 4.

However, first time provision of sewerage collection to properties is behind target mainly because of the application of reasonable cost. Scottish Water is only funded to provide comments if customers will connect and if the connection can be made at reasonable cost. Many of the schemes fail on both counts but in particular the application of reasonable cost.

Also, removal of unsatisfactory CSO's is behind target mainly because of the need to carry out extensive investigations DAP's and because each CSO requires a consent. The list of CSO's is still to be agreed with SEPA.

**Table 4: Progress with delivery of capital programme outputs**

Output/benefit	Outputs Total to Date	Target for 2006*
Improvement in pressure to customers' properties	116	1391
First time provision of drinking water to properties	55	408
Length of water mains rehabilitated to reduce interruptions to supply, improve water quality and reduce instances of dirty tap water	1042km	3051km
Improvements to treated water supplies to meet legislative requirements	333	631
Improvements to sewage treatment processes to meet environmental legislative requirements	331	640
Removal of risk of internal flooding to customers' properties	222	829
First time provision of sewerage collection to properties	126	1222
Length of sewer rehabilitated to reduce risk of collapse and associated pollution and health & safety consequences	108km	410km
Improvements to environment through removal of unsatisfactory intermittent discharges to watercourses	73	439

\* Target for 2006 agreed for WIC 18

In 2003/04 Scottish Water invested £389million on improvements.

- £75 million was spent on delivering better quality drinking water. This included major investment to upgrade the existing Invercarnie and Mannofield water treatment works, which serve Aberdeen. New water treatment works were also completed at Glengap and Penwhirn in the South West. Many small rural communities benefited from improvements to their water supply, including the 40 residents of Achnasheen and our 70 customers on Outer Skerries, in the Shetland Islands.
- In 2003/04 Scottish Water also invested £88million on improvements to waste water treatment works. These delivered huge benefits to the environment. First time treatment was provided at Wick and upgraded works were completed at Bonnybridge and Ellon. Improvements at coastal areas include Balmedie, Carradale and Ganavan.
- Scottish Water invested £60 million on replacing over 592kms of water mains. This work will reduce interruptions for customers and allow 116 properties to be removed from the poor pressure risk register. A further £14million was spent replacing 47kms of sewers.
- In addition Scottish Water invested £14M to remove the risk of internal flooding to customers properties. Major schemes included those at Bishopbriggs and Larkhall.

As well as investing to improve drinking water quality and enhance the environment a large part of our investment £110M was to maintain existing asset performance to prevent detriment to the environment and ensure continued high quality drinking water standards.

A number of projects were also committed during 2003/04, which will deliver outputs during future years. Examples include, Aviemore WWTW, and Glasgow Leakage, and other highlights are:

#### **Waste Water, Collection & Environmental Water Quality Committed 03/04**

- Philipshill STW
- Millport STW
- Largs Sewerage Scheme
- Stranraer STW Reconstruction
- Various CSO projects

#### **Water Treatment, distribution & Drinking Water Quality Committed 03/04**

- Roseberry WTW
- DMA establishment SW wide
- Service reservoir Security programme
- Various Mains rehabilitation projects

The main risks to delivery of the capital investment programme within the remaining two years (2004 - 2006) of the current regulatory period are the ability to secure planning permissions, environmental impact assessments, purchases of the land required for construction of new assets and consent applications. Accordingly some of the programme (currently estimated at around £100 million) will not be completed until after 2005/06. Scottish Water recognises that whilst annual spend has important political implications, it is determined to ensure customers get best value for money by ensuring that efficient use of capital remains the priority.



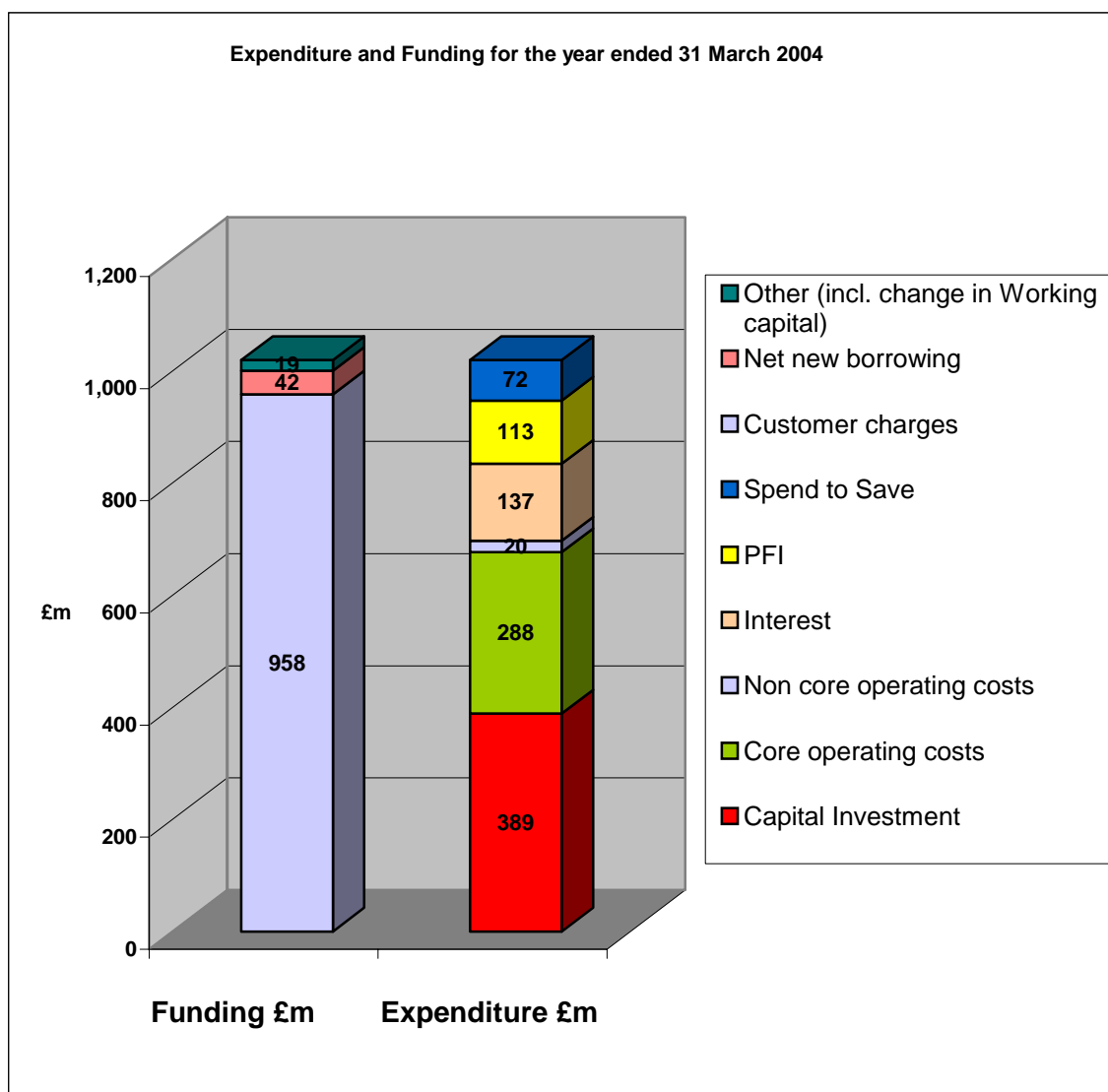
## 5. Financial Performance

### Financial and Business Review

#### Financial Framework

Scottish Water operates within a regulated environment where a cap is set on the amount of revenue that can be raised from customer charges. The revenue cap for the years 2002-06 was set by Scottish Ministers on the advice of the Water Industry Commissioner for Scotland.

The revenue cap was set so that when taken together with net new loans they will finance the totality of Scottish Water's operations and capital investment programme over the 2002-06 period.



#### Financial results

The graph above highlights the key sources of funding and how these were applied to Scottish Water's activities. All of the revenue raised from customers, together with the £42.0 million of net new loans, was used to finance Scottish Water's operational activities and capital investment programme. The surplus before tax of £87.8 million

was fully reinvested in the business to enable the delivery of the capital investment programme.

**Turnover**

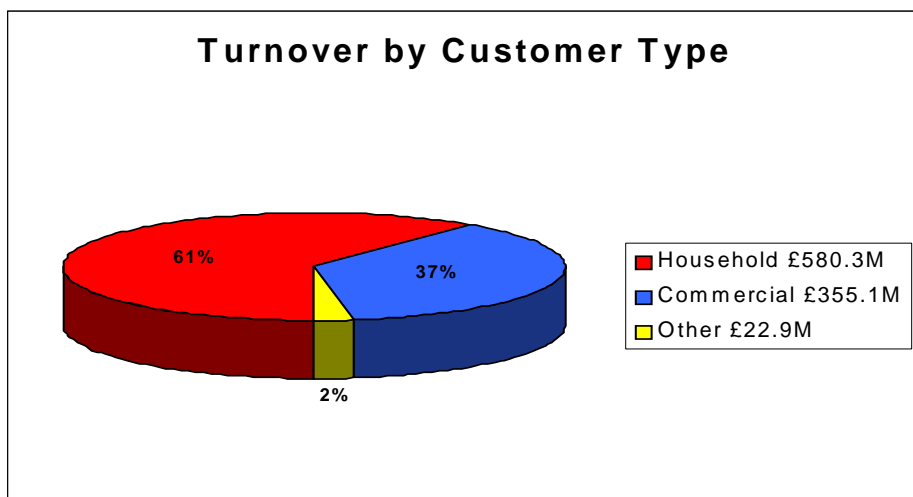
Total turnover for the year increased by 7% to £958.3 million. Turnover from core water and wastewater services supplied to household customers increased by 7.7% to £580.3 million while turnover from services supplied to business customers increased by 5.7% to £355.1 million. The increase in core business turnover arose principally from the increase in regulated tariffs introduced in April 2003.

The proportion of core business turnover derived from household customers has now increased to 61% in the year ended 31 March 2004 compared to 58% in the year ended 31 March 2002, the final year of the former Water Authorities.

Turnover from the provision of those non-core services, that were traditionally provided by the former Water Authorities, declined by 21.3% to £15.5 million. This reduction has been made as part of the efficiency target agreed with Ministers. The only way to reduce non-core costs is to cease the activity.

Scottish Water’s new trading activities relate primarily to the sale of contracting services to Scottish Water Solutions and the provision of services to major business customers. Turnover from those activities increased from £1.1 million in 2002/03 to £7.4 million in 2003/04. £4.0 million of this increase relates to mains rehabilitation and other capital investment activities carried out on a commercial basis by Scottish Water's contracting division for Scottish Water Solutions Limited. Prior to this, the costs for such activities were previously charged directly to the capital investment programme. Scottish Water Solutions Limited has been accounted for under FRS9 *Associates and Joint Ventures* as a JANE (Joint Arrangement Non Entity) and not as a subsidiary (see below and note 1 to the financial statements). Consequently, this trading income for sales to Scottish Water Solutions Limited is included in turnover and associated costs as a cost of sales.

An analysis of turnover by customer type is summarised below:



### Operating costs

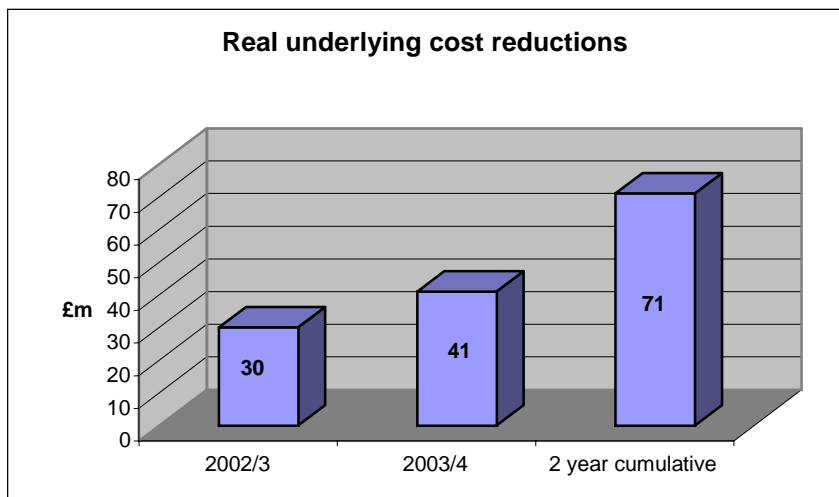
Total reported costs reduced by £0.7 million to £681.0 million (£560.8 million cost of sales and £120.2 million administration costs) but this is after absorbing increased PFI (£7.6 million), depreciation charges (£16.9 million) and costs of new trading activities of £5.5 million.

All 9 PFI schemes covering 21 sites were operational for the full year. The cost of PFI schemes in the year was £113 million. The full year impact of operations, partially offset by favourable weather conditions, increased costs by £7.6 million from 2002/03.

Depreciation, including infrastructure maintenance charges, increased by £16.9 million to £262.0 million reflecting the increased investment in infrastructure and non-infrastructure assets. These costs will continue to rise in the future as a consequence of Scottish Water's significant capital investment programme to improve the quality, reliability and efficiency of service provision.

From a Regulatory perspective, nominal operating costs (i.e. excluding depreciation, PFI charges and costs associated with new trading activities) reduced £28.5 million to £300.6 million (£288.1 million for core services and £12.5 million for traditional non-core services) compared to £329.1 million in 2002/03. Continued focus on improving operating efficiency through the major business transformation programme has driven this reduction in nominal operating costs.

Real underlying operating costs, when compared to the similar costs of the three former water authorities in 2001/02 (i.e. excluding new operating costs associated with newly commissioned plant), have reduced by £71 million or 20% since the creation of Scottish Water - £30 million in 2002/03 and £41 million in 2003/04, as depicted in the following graph.



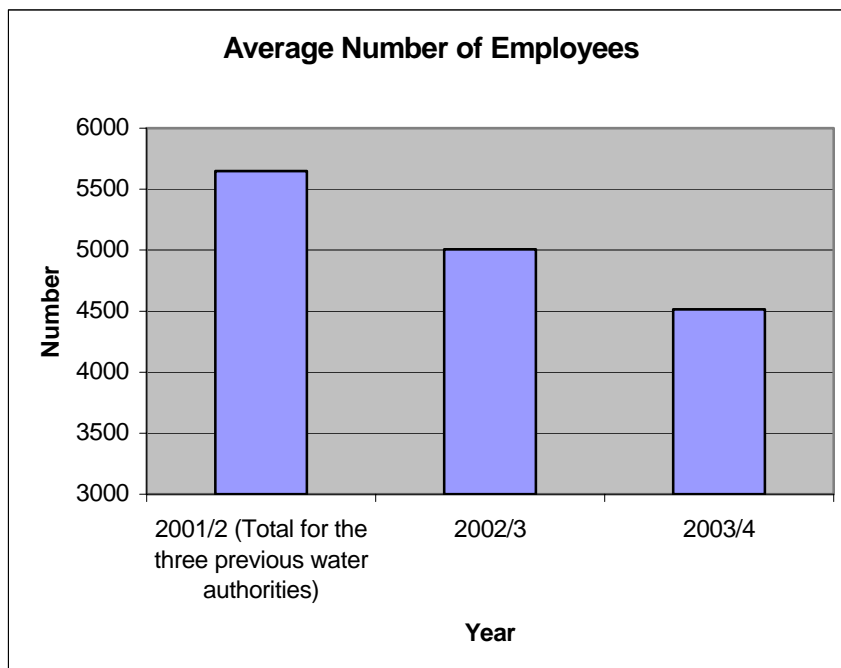
### Exceptional costs

Exceptional costs charged in the year totalled £52.8 million and related to restructuring and transformation costs undertaken as part of the £200 million ‘Spend to Save’ programme allowed for by the Water Industry Commissioner for Scotland in his Strategic Review of Charges. This programme is for a discrete category of expenditure up to 2005-06, allowed by the WIC, to cover one-off transformation and restructuring costs that will reduce future annual operating costs.

An analysis of the total cumulative “spend to save” expenditure over 2002/03 and 2003/04 is set out in the table below. Exceptional costs charged to the income and expenditure account are summarised in note 4 to the financial statements.

<b>Analysis of “spend to save” expenditure to March 2004</b>	<b>2002/3 £m</b>	<b>2003/4 £m</b>	<b>Cumulative total £m</b>
Business transformation projects	15.3	18.7	34.0
Staff severance costs	9.3	34.1	43.4
<b>Total charged to income and expenditure account</b>	<b>24.6</b>	<b>52.8</b>	<b>77.4</b>
New capital investment to improve efficiency	16.9	19.3	36.2
<b>Total</b>	<b>41.5</b>	<b>72.1</b>	<b>113.6</b>

By effective use of the employee voluntary severance scheme, the average number of employees during the year reduced by 491 or 10% to 4,516. Compared with the average level employed by the former water authorities in 2001/2 this equates to a reduction of 1,132 or 20% in the first two years of Scottish Water. The number of people employed at the end of the year, after taking account of 166 leavers on 31 March, reduced to 4,179. The table below shows the average number of employees compared with the final year of the three former water authorities.



## Finance costs

During the year net debt increased by £33.1 million to £2,182.2 million. The increase was driven by £102.4 million of new long-term loans at a weighted average interest cost of 4.26%, and a £40.0 million net increase in short-term loans, partially offset by £100.4 million repayment of long-term loans and an £8.9 million increase in cash balances.

At 31 March 2004 the weighted average interest cost of the £2,192.8 million outstanding debt was 6.34% (2003- 6.45%). Net interest payable during the year was £136.7 million, £0.9 million lower than 2002/3. Interest cover, based on operating cashflow before capital expenditure, increased from 2.2 to 2.5 times in 2003/4.

## Capital expenditure

In September 2003, Scottish Water announced details of its £1.8 billion capital programme covering the period from April 2002 to March 2006. Just over £1 billion of this programme will be delivered by Scottish Water Solutions, a joint venture company, involving two consortium partners, in which Scottish Water has a 51% shareholding. This approach is a first for the public and private sector and is being keenly observed across the water industry as a potential new way of delivering the best value for money in major capital investment programmes.

The nature of the contracted agreement between Scottish Water and the other shareholders in SWS Ltd is such that the parties are engaged in joint activities that do not constitute an entity carrying on a trade or business in its own right. Consequently, SWS Ltd has been accounted for under FRS9 Associates & Joint Ventures as a JANE (Joint Arrangement Non Equity). On this basis Scottish Water accounts directly for its own gross assets, liabilities and cashflows in the joint arrangement thus dispensing with the need for Group Accounts.

Capital expenditure in the year was £408.6 million. £389.3 million was invested in the delivery of the Quality and Standards regulatory capital programme and £19.3 million relating to capital expenditure incurred as part of the "spend-to-save" programme. Of the £389.3 million regulatory capital investment programme, £71.3 million was delivered through the programme allocated to Scottish Water Solutions Limited. This £71.3 million included the £4.0 million of turnover generated by Scottish Water Contracting referred to above. 10.3% of total capital expenditure was financed through £42 million net new loans with 89.7% being financed from operating cash flow.

## Pensions

Although the full implementation of Financial Reporting Standard No.17 "Retirement Benefits" has been deferred by the Accounting Standards Board, pending the introduction of International Accounting Standards, certain disclosures are required. The disclosure information required is included in note 19 to the financial statements. Under the standard a snapshot is taken of pension fund assets and liabilities at a specific point in time. Movements in equity markets and discount rates create volatility in the calculation of scheme assets and liabilities. At 31 March 2004, after taking account of deferred taxation, there was a shortfall of assets over respective liabilities of £131.1 million. This is an improvement of £14.4 million from 2002/3 and is mainly due to increases in actuarial gains of £20.7 million, reflecting the upturn in equity markets and changes to discount rates on increased pension liabilities.

The employer contribution rates, set by the funds' actuaries, will increase Scottish Water's average contribution, as a percentage of salary, from 15.0% in 2003/4 to 16.6% by 2005/06. However, in light of the uncertainty of future financial conditions, the financial position of pension funds will be monitored, if required by means of interim funding reviews, in the period up to the next triennial valuation in 2005.

There is a shortfall of assets over pension liabilities of £131.1m (post tax). In light of uncertainty of future financial conditions, the financial position of pension funds will be monitored and may require a review of funding within the next strategic review of charges.

## **Compliance with Government Financial Targets**

### **Sufficiency of revenue**

Scottish Water is required to cover costs with revenue one year with another. Scottish Water reported a surplus before tax of £87.8 million for the year. The surplus before tax consisted of a surplus on trading of £140.6 million before charging exceptional costs of £52.8 million.

### **External Finance Limit**

For 2003/4 Scottish Ministers set Scottish Water's maximum net new borrowing limit at £164.7 million. Actual net new borrowings were £42.0 million.

## 6. Efficiency

### 6.1 Operating Efficiency

Scottish Water has made further progress towards the efficiency targets in the financial year 2003/04. The following sections present Scottish Water's own analysis of the efficiency gains and explanation of the key movements.

#### **Econometric Modelling Results 2003/04**

The efficiency position for the financial year 2003/04 has been assessed using both the WIC SR02 and the Ofwat 2003 Econometric Models with data from the 2003/04 Annual Return.

In the assessment of Scottish Water's efficiency position, we have undertaken the following analysis:

- a comparison of actual and predicted operating costs and residuals; and
- an assessment of efficiency gains/losses;

Table 1 compares modelled operating costs (including PFI costs) for 2003/04 with 2002/03 and with the 2001/02 combined modelled operating costs of the three former water authorities.

Table 2 compares the results for 2003/04 using both the WIC SR02 and the Ofwat 2003 Econometric Models.

It is worth highlighting that Ofwat has made revisions to the models and that the definition of explanatory variables will continue to change. In this context the reliability of the ongoing efficiency analysis using the SR02 explanatory variables is questionable.

#### **Impact of Activity Based Costing on Modelling Results**

In 2003 Scottish Water introduced activity based costing and activity based management software (ABM), Metify.

Scottish Water's ABM software, Metify, has been used to allocate costs within the E tables. This has resulted in an improvement in confidence grades for tables E1b and E2b.

As the ABM software allocates costs to activities and not to individual assets, some extrapolation was required in order to allocate costs to individual large works or banded small works and, in the case of wastewater, some further analysis was required to allocate costs to treatment stages.

With the introduction of ABM, the methodology for allocating costs has changed significantly from that used in 2002/03. As a result, a greater proportion of functional expenditure (excl. PFI) was allocated to Water in 2003/04 as demonstrated in the table below:-

	<b>2003/04</b>	<b>2003/04</b>	<b>2002/03</b>	<b>2002/03</b>
	<b>£m</b>	<b>%</b>	<b>£m</b>	<b>%</b>
E1.12 Water	101.269	55.8	105.935	50.9
E2.12 Wastewater (excl. PFI)	<u>80.303</u>	44.2	<u>102.104</u>	49.1
	<u>181.572</u>	100.0	<u>208.039</u>	100.0

This change in methodology makes it difficult to make meaningful year on year comparisons of costs at activity level. In order to facilitate comparison, we have applied the ABM cost allocations derived in 2003/04 to the 2002/03 E1 and E2 tables and used this as the basis for our detailed commentary.



**Table 1: Modelled Operating Costs 2001/02-2003/04 (WIC SR02 models) (including PFI costs)**

	2001/02			2002/03			2003/04			Movement In Residuals £m	
	Actual £m	Predicted £m	Residual £m	Actual £m	Predicted £m	Residual £m	Actual £m	Predicted £m	Residual £m	02/03-01/02	03/04-02/03
<b>Model</b>											
Water Resources & Treatment	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
Water Distribution											
Power	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
Business Activities	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
<b>Water sub-total</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xxxx</b>	<b>xxxx</b>	<b>xxxx</b>
Sewer Network	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
Large Treatment Works	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
Small Treatment Works	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
Sludge Treatment & Disposal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
Business Activities	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xxxx	xxxx	xxxx
<b>Sewerage sub-total</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xxxx</b>	<b>xxxx</b>	<b>xxxx</b>
<b>Total</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xx.xx</b>	<b>xxxx</b>	<b>xxxx</b>	<b>xxxx</b>

**Table 2: WIC SR02 & Ofwat 2003 Econometric Models**

	Scottish Water Actual £m	WIC SRO2 Econometric Models		Ofwat 2003 Econometric Models	
		Predicted £m	Residual £m	Predicted £m	Residual £m
Model					
Water Resources & Treatment	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Water Distribution					
Power	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Business Activities	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
<b>Water sub-total</b>	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sewer Network	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Large Treatment Works	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Small Treatment Works	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sludge Treatment & Disposal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Business Activities	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
<b>Sewerage sub-total</b>	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
<b>Total</b>	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

In the 2002-03 Unit Cost and Relative Efficiency Report, Ofwat introduced adjustments to the residuals of all companies to take account of errors in the data and in the statistical process. Ofwat adjusted the water residuals by 10% and the sewerage residuals by 20%.

Table 3 presents the Scottish Water efficiency position after adjustments have been made to residuals and deductions made for Special Factors<sup>1</sup> given in SR02.

**Table 3 WIC SR02 & Ofwat 2003 Econometric Models following adjustments**

	Scottish Water Actual £m	Ofwat 2003 Econometric Models		Adjusted Residuals £m
		Predicted £m	Residual £m	
Water Resources & Treatment	xx.xx	xx.xx	xx.xx	xx.xx
Water Distribution	xx.xx	xx.xx	xx.xx	xx.xx
Power	xx.xx	xx.xx	xx.xx	xx.xx
Business Activities	xx.xx	xx.xx	xx.xx	xx.xx
Water sub-total	xx.xx	xx.xx	xx.xx	xx.xx
	xx.xx	xx.xx	xx.xx	xx.xx
Sewer Network	xx.xx	xx.xx	xx.xx	xx.xx
Large Treatment Works	xx.xx	xx.xx	xx.xx	xx.xx
Small Treatment Works	xx.xx	xx.xx	xx.xx	xx.xx
Sludge Treatment & Disposal	xx.xx	xx.xx	xx.xx	xx.xx
Business Activities	xx.xx	xx.xx	xx.xx	xx.xx
Sewerage sub-total	xx.xx	xx.xx	xx.xx	xx.xx
<b>Total</b>	xx.xx	xx.xx	xx.xx	xx.xx
<b>Less Special Factors</b>	xx.xx	xx.xx	xx.xx	xx.xx
<b>Adjusted Actual &amp; Residual</b>	xx.xx	xx.xx	xx.xx	xx.xx

<sup>1</sup> No adjustment has been made for lateral sewers as these were included within the data set for modelled opex

## **Details of movements in modelled costs (using WIC SR02 Econometric Models)**

### **Water Models**

Actual costs fell from £xx.xx m in 2002/03 to £xx.xx m. Predicted costs increased from £xx.xx m to £xx.xx m. The net effect is a reduction in the residual of £xx.xx m.

### **Water Resources and Treatment**

Actual costs have fallen from £xx.xx m to £xx.xx m. This reduction is spread between falling employment costs, hired and contracted services, materials and consumables and other direct costs.

Predicted costs for this model have increased by £xx.xx m to £xx.xx m as a result of an increased number of sources and the proportion of distribution input taken from river sources. Scottish Water has reported an additional 75 sources, following the disaggregation of sources, primarily in the South West area. A change in categorisation driven by the WIC of including burns with river abstractions has led to an increase in distribution input sourced from rivers from 14% to 20.4%. Distribution input remains virtually unchanged. The residual has fallen by £xx.xxm.

The Resources and Treatment Model is generated using the explanatory factors for English and Welsh companies. Scottish Water considers that the model under-estimates the costs incurred by Scottish Water in treating water from upland sources.

Scottish Water sources just 3% of distribution input from boreholes whereas half of the companies in England and Wales source over 50% of distribution input from boreholes. Ground water is inherently cheaper to treat than other sources (excluding power, which is dealt with in a separate model). The model does recognise the additional cost of treating water from river abstractions, however, all other sources are assumed to have similar treatment costs.

Scottish Water sources 77% of distribution input from lochs and impounding reservoirs. The econometric model estimates that the opex required to treat this water is equivalent to water sourced from boreholes. Scottish Water is currently preparing a special factor assessing the cost impact of treating upland reservoir water.

### **Water Distribution**

Actual costs have increased by £xx.xx m to £xx.xx m. General and support costs have increased by £xx.xx m (employment & other) which has partly been offset by reductions in hired and contracted services. Predicted costs are similar to 2002/03.

### **Power**

Predicted costs have increased by £xx.xx m to £xx.xx m following an exercise by Scottish Water to improve data quality. In 2004 Scottish Water undertook a data improvement exercise involving the identification of priority pumps and the confirmation of pumping head. Improved information was received for 16 priority pumps. Groundwater pumps were included in the data set and a consistent methodology was applied across the whole of

Scottish Water. The combined effect of these initiatives increased the reported pumping head from 35.9m to 50.6m.

Actual costs have increased slightly. The net effect is a reduction in the residual of £xx.xxm.

The model predicts total power costs of the water service, not just the power required to pump water. Scottish Water believes that this model operates to the detriment of companies with very low pumping heads (such as Scottish Water) as it does not make sufficient allowance for other water related power costs such as power/lighting used in water treatment.

In addition, the model does not incorporate the additional opex needed to cover the higher costs of power at small sites operating on more expensive tariffs.

### **Business Activities**

Predicted costs have remained similar to last year.

### **Sewerage Models**

Actual costs have fallen by £xx.xx m; from £xx.xxm in 2002/03, to £xx.xx m in 2003/04. Predicted costs, based on the SR02 econometric model, have marginally increased; from £xx.xx m to £xx.xx m. The net effect is a reduction in the residual of £xx.xx m, from £xx.xx m in 2002/03 to £xx.xx m in 2003/04.

### **Sewer Network**

Analysis using the Ofwat 2003 models (which reflects the latest performance in England & Wales) shows a predicted cost of £xx.xx m and a residual of £xx.xx m.

The SR02 results indicate that predicted costs have increased by £xx.xx m. Actual costs have reduced by £xx.xx m. Overall, Scottish Water is more efficient in sewer network operation in 2003/04 than in 2002/03, indicated by a reduction in the residual of £ xx.xx m

The total length of sewer has increased by 5520km to 44,854km- this includes a total length of 13,200km of lateral sewers. The latter is a new estimate, compared with last year's return, which reported an estimated figure of 10,000km, based on a theoretical lateral size. This is based on a sample of 105 properties, for which a survey of laterals has been carried out. This project is ongoing and will be completed by September 2004, by which time a total of 200 properties will have been inspected. In addition, the Promise to Resolution project is undertaking an exercise to report the costs associated with sewer laterals. This will enable Scottish Water to have a better understanding of the associated operating costs.

### **Wastewater Treatment Works**

#### **Large Works (Including PFI)**

Large Works actual operating expenditure has decreased by £ xx.xx m, from 2002-03. Overall, Scottish Water is more efficient in Large Sewage Treatment Works operation than

in 2002-03 (the residual has reduced by £ xx.xx m, using SR02 coefficients). This is due to cost reductions in the operation of Large Sewage Treatment Works.

The predicted opex has increased by £ xx.xx m (SR02 coefficients). The predicted opex has been affected by a reduction in the number of works with a tight consent and also to Auchengeich<sup>2</sup> and Linwood<sup>3</sup> not being included in the Large Works model this year.

### **Small works**

The actual cost has reduced from £ xx.xx m to £ xx.xx m in 2003/04; a reduction of £ xx.xx m. Predicted costs have risen by £ xx.xx m. The residual has reduced by £ xx.xx m, indicating the Scottish Water has become more efficient in the operation of small works.

### **Sludge Treatment and Disposal**

The actual costs have increased by £ xx.xx m since 2002-03. Predicted opex has reduced by £ xx.xx m.

If we observe the 2002-03 Ofwat model there is a reduction in predicted opex since last year due to the large reduction in the allowance for disposal to incineration from £ xx.xx to £ xx.xx per tonne. This is Scottish Water's main method of disposal (via Daldowie STW), therefore Scottish Water is significantly disadvantaged by this change.

Part of the movement in actual costs, (which is also reflected in the movement in loads) has been due to an operational decision to dispose of more sludge to Land Reclamation.

### **Business Activities**

Actual costs have decreased by £ xx.xx m. The residual has fallen by £ xx.xx m; from £ xx.xx m to £ xx.xx m. The predicted cost has increased, mainly as a result of an increase in the number of billed domestic properties due to the inclusion of properties, formerly exempt, including students, who are billed but not charged. Scottish Water incurs administrative costs associated with this process and the data has therefore been included within the econometric analysis.

### **Controllable Opex Performance 2003/04**

In 2003/04, Scottish Water's controllable operating expenditure was £ xx.xx m. This consisted of:

- core opex of £ xx.xx million, a reduction of £ xx.xx million
- old non core opex of £ xx.xx million, a reduction of £ xx.xx million
- new non core of £ xx.xx million, an increase of £ xx.xx million
- bad debt of £ xx.xx million on non core activities

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<sup>2</sup> Auchengeich is decommissioned

<sup>3</sup> Linwood was reported in 2002/03 as having a population equivalent of more than 25,000, but does not fall into this category in 2003/04. This is due to an improvement in the method used to determine population equivalent treated at each works.

**Analysis of Controllable Operating Expenditure 2003/04**

	2003/4 (£m)	2002/3 (£m)
<b>Audited operating costs</b>	736.2	707.1
<b>Less depreciation</b>	-120	-106.3
<b>Less infrastructure depreciation</b>	-143	-140
<b>Less PFI contract costs</b>	-113	-105.4
	<b>360.6</b>	<b>355.4</b>
<b>Less exceptional costs</b>	-52.8	-24.6
<b>Scottish Water underlying opex including old and new non core</b>	<b>307.8</b>	<b>330.8</b>
<b>New trading activities</b>	7.2	1.7
<b>Controllable opex relative to SR02 baseline</b>	<b>300.6</b>	<b>329.1</b>

**Reconciliation of Modelled Opex to E tables 2003/04**

	Scottish Water 2003/04 (£m)	
<b>Audited Opex</b>	736.217	
<b>Less depreciation</b>	(119.591)	
<b>Less infrastructure depreciation</b>	(143.000)	
		473.626
<b>Modelled Opex Table E1</b>	145.131	
<b>Table E2</b>	153.767	
		<u>298.898</u>
<b>SEPA</b>	6.372	
<b>Local Authority Rates</b>	25.481	
<b>Third Party (non-core)</b>	20.343	
<b>Exceptionals</b>	52.824	
<b>PFI annual charge (less estimated annual direct operating cost)</b>	69.708	
		174.728
		<u>473.626</u>

**Audited Opex- Summary 2003/04**

<b>Audited Opex:</b>	<b>£m</b>
<b>Total operating costs core and old non-core</b>	300.6
<b>PFI</b>	113
<b>Depreciation</b>	119.6
<b>Infrastructure Depreciation</b>	143
<b>Spend to Save</b>	52.8
<b>New non-core opex</b>	7.2
	<b>736.2</b>

## 6.2 Capital efficiency (Cost Base) – Key points

Scottish Water's analysis of the cost base indicates that we are now within the comparator group of English and Welsh water and sewerage companies.

Building on efficiencies from previous years and in 2003/04, coupled with the negotiated SWS contract rates to deliver the Q&S II capital programme, Scottish Water forecasts that we will achieve that the capital efficiency targets set for this regulatory period

Scottish Water's cost base has been independently audited by 2 separate consultancies. Based on the 2002/03 Annual Return, the efficiency lag from the Ofwat benchmarks published in May 2003 was between 11 and 12.4%, the variability being in how the composition of the capital programme was linked to the various benchmark indicators.

The efficiency gains (in real terms) from last years June Return have been analysed for each category with the four Tables and are as follows:

(This equates to approximately 7% across the whole capital programme)

- **Water Infrastructure**

Mains Laying	4.5% efficiency
Mains Rehab	7.8% efficiency
Comms Pipes	20.9% efficiency
- **Sewerage Infrastructure**

Sewer Laying	4.6% efficiency
Sewer Rehab	11.9% efficiency
- **Water Non Infrastructure**

Treatment	2.2% efficiency
Storage	1.7% efficiency
- **Sewerage Non Infrastructure**

Storm Detention	2.6% efficiency
Pumping Stations	3.1% efficiency
Sewage Treatment	19.1% efficiency

## 7. Adequacy of Asset Stock

### Introduction

In 2003/04 Scottish Water commissioned WRc<sup>4</sup> to:

- assess the quantity and quality of SW's asset condition and performance data, including opportunities for the improvement of the asset register, data and data systems;
- present a robust and independent assessment of the condition and performance of Scottish Water's non-infrastructure (works) assets, which can be used to inform regulatory reporting; and
- provide Scottish Water with an independent view on whether data issues had a material impact on the efficacy of comparisons made between the asset stocks of Scottish Water and those of Water Service Providers (WSPs) in England and Wales (E&W).

Scottish Water's overview of its asset stock in 2003/04 is predicated on the output of WRc's work.

### Condition & Performance Grades

Scottish Water has seen improvement in the accuracy and a growing consistency in the numbers, lengths, condition & performance data associated with the primary asset groups of Water Treatment Works, Wastewater Treatment Works, Sewers and Mains.

Scottish Water's assets continue to have among the worst condition & performance gradings in the UK, however significant concern remains regarding the use of these metrics to determine asset adequacy and to draw regulatory comparisons.

Comparisons on asset adequacy may not take into account the omission of assets required to achieve current regulatory standards.

WRc have determined that different levels of granularity are used in E&W (Water and Sewerage Companies have informed WRc that different unit-level, process-level, and works-level grading methodologies are all used). Consequently, irrespective of any differences in grade definitions, variations in granularity applied throughout E&W mean that regulatory comparisons, if made, would be subject to high degrees of uncertainty.

The performance of an asset (such as a water treatment works) in service to the customer is generally a function of:

- The condition grade of its component elements
- The performance grade of its component elements
- The lack of or inclusion of key elements, required to meet regulatory standards
- The adequacy of operational practise

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<sup>4</sup> WRc Report Ref UC6510/UC6511 March 2004



## **Fitness for Purpose**

Scottish Water currently has amongst the poorest water quality in the UK. This is due to the significant inadequacy of existing WTW assets as many offer only the most basic form of treatment, often completely inadequate to meet current regulatory requirements.

In order to assess the overall state of assets Scottish Water has also taken into account the quantity of "missing" assets required to meet 'modern' regulatory standards.

**When the valuation of these "missing" assets is taken into account, analysis shows that 39% of Scotland's water treatment works assets are not fit for purpose.**

Scottish Water propose to invest £371m to create new assets and provide adequate levels of treatment to meet current standards within Q&SII. Scottish Water's undertakings to the Drinking Water Quality Regulator are listed in Appendix 1.

Assets in poor condition generally require greater operational input to produce compliant water. Where assets are missing or inadequate unit costs may be low in terms of chemicals and power but require greater manpower intervention to extract the maximum quality performance.

## **Use & Limitations of intercompany comparison**

WRc has highlighted that *"Any inter-company comparison based on condition and performance grade profiles would be highly uncertain, unless issues such as those relating to the granularity of analysis were resolved. It is not clear how this could be done."*

The definition of what constitutes a particular grade and the level at which it is applied in the asset hierarchy is open to interpretation by individual water companies.

For example, the percentage of Scottish Water's potable water mains in condition grades 4&5 increased by approx 7% simply due to the application of a standard grading system (West of Scotland Water's asset stock had been analysed previously using a different approach).

Similar comments can be made for Non Infrastructure assets, since materially different grading procedures were adopted in the three previous Authorities and by Water PLCs in England & Wales.

The fact that grade definitions can vary to such an extent between companies makes inter company comparison difficult.

WRc report that *"Comparisons of water company performance measures are a central tool of Regulation both north and south of the border. WRc are, however, not aware that Ofwat use condition and performance grade profiles for inter-company comparisons. Rather, these profiles are used to monitor changes in the asset stock for individual companies."*

**Scottish Water considers that the use of asset condition & performance data for inter company comparisons is inappropriate and requests that this approach is dropped from future reports.**

**Asset Valuation**

There have been changes in the valuations of most of our asset groups as a result of improved valuation methodologies and correction of previous errors. This has resulted in an overall reduction in the Scottish Water total EARC value from c£32bn to c£26.5bn.

Examples are shown below:

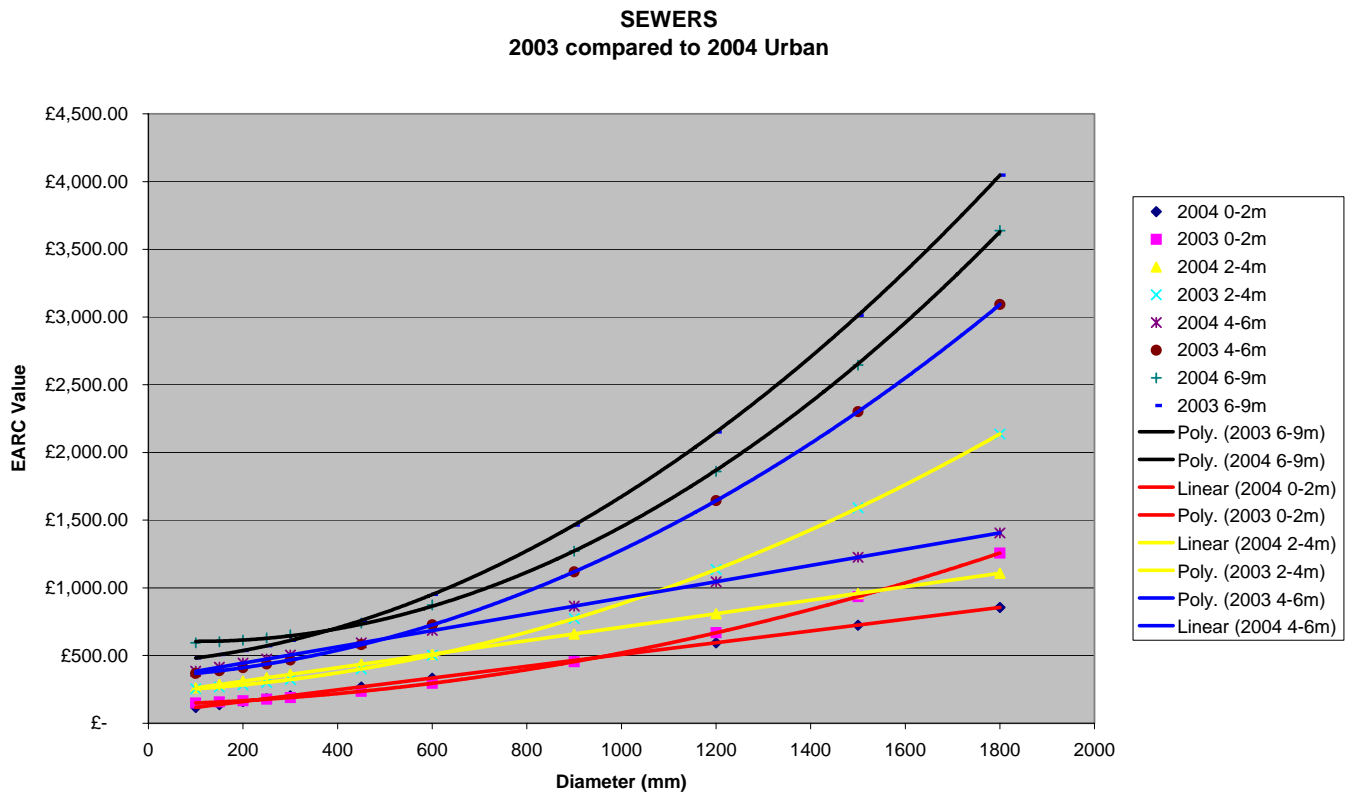
**Sewers**

Period:	2003	2004
EARC	£18,109m	£10,424m

In 2003 a single cost equation was prepared, which was converted into a series of cost curves for the differing sewer depths and differing rural/urban locations by the application of uplift factors.

In 2004 12 separate cost equations were developed, covering each of the 4 depths bands of (0 – 2 m, 2 – 4m, 4 – 6m & 6 – 9m) and 3 ground categories (grassland, rural/suburban & urban) in each of the depth band.

A comparison of the cost curves used in 2003 and 2004 is shown below:



The 2004 approach is considered much more accurate and has highlighted a significant improvement in comparison with 2003. This has been reviewed with the Reporter prior to the annual return being submitted

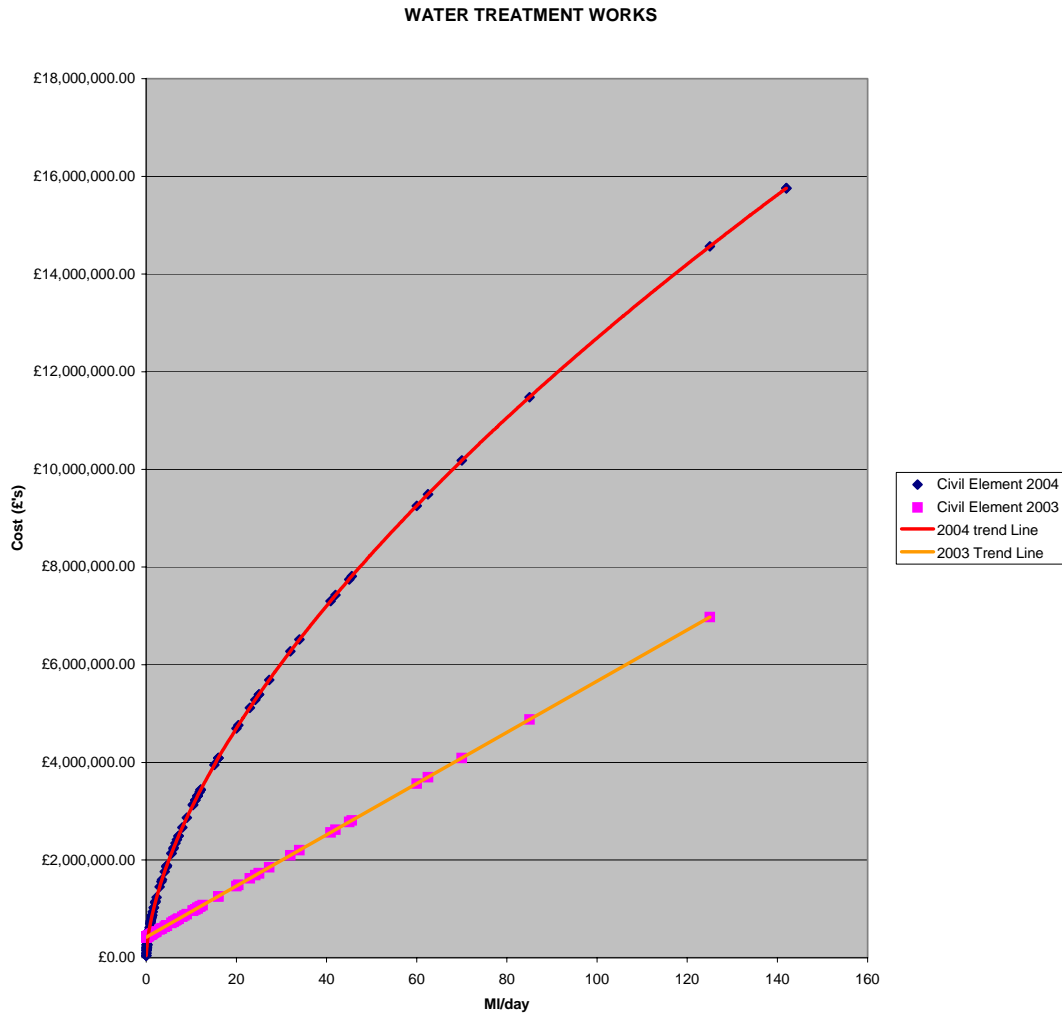
**Water Treatment Works**

Period:	2003	2004
EARC	£890m	£1,667m

A high level cost equation has been produced for each type of water treatment works (WIC Grades 1 – 8). The graph is descriptor (MI/d) against cost. The data points have been obtained by building up cost estimates for existing “live” water treatment works using the sub assets and SW’s cost equations to develop a total “site” cost. This cost along with the corresponding MI/d for the “site” (asset), in addition to all the other data points calculated were then given to an independent statistician to produce robust cost equations for each of the WIC Grades. These cost equations were then used to price the full asset inventory at asset level with the costs allocated to the sub assets by a pre determined weighted basis. (Power curves were generated for each WIC Grade and for both Civils and M&E).

The previous years valuation of the EARC’s was based around an assumed level of number of sub assets required for each treatment category based on a simplified understanding of the processes required to comply with the WIC definitions. The cost equations were then converted from their normal descriptor (m<sup>3</sup>, kW etc) to match the descriptor for Table H, ie MI/d. Several assumptions were made to allow these conversions to take place. (Linear curves were developed for last year for each WIC Grade and for both Civils and M&E). Appendix 1

As this year's methodology is based around real assets and sub assets with estimates built up from the sub assets tank size, power rating for pumps etc, to produce a series of data points for each WIC Grade, the EARC values for water treatment works should be accepted as being more robust than the value produced by the previous year’s approach.



**Asset Information Improvement Strategy**

Scottish Water is continuing to commit significant resource into improving asset information. The two main strands of the strategy are 'Asset Data Improvement' along with the 'IT Rationalisation'. These initiatives contain various projects focussing on data improvement process delivery and system development as detailed in [Appendix xx](#)

**Capital Maintenance & Q&SIII**

Scottish Water is intending to move to a common framework approach to define capital maintenance as has been agreed through the Quality and Standards III work package 2.

## 8. Competition

Following the Scottish Executive's consultation on the Water Service (Scotland) Bill, Scottish Water is preparing for the likely introduction of competition into the retail market post 2006.

To take the proposals of the draft Bill forward, Scottish Water has established a project team specifically to define the boundaries and interfaces of the future wholesale business with the competitive retail business. This will include the systems, procedures and wholesale tariffs necessary to operate with competitive retailers and Scottish Water retail.

Key activities within the project include:

- The design of a simple set of commercial rules and data exchanges that will be required for customer transfer processes
- Identification of systems required for the core wholesale business to interface with competitive retailers (e.g. billing, metering, data collection)
- Identification of the changes necessary to the current retail business to enable it to continue to serve Scottish Water customers
- Establishment of wholesale tariffs to be offered to retailers

This work is necessary to allow Scottish Water to prepare for the likely opening of the retail market from 1 April 2006.

Scottish Water is working with two independent consultants with experience in the electricity and gas markets to assess the costs of introducing retail competition into the Scottish Water market. This data will be made available to WIC and the Scottish Executive once the work is completed.

## 9. Data Quality

To improve the quality of data used by Scottish Water and reported in this annual return, a number of initiatives were put in place or continued during 2003/04.

The Business Critical Data (BCD) project led to the creation of a key set of data for Scottish Water's decision making. This had been used successfully for the 2002/03 return and has allowed data providers to focus on areas for improvement during 2003/04. This included data quality awareness campaigns, improving continuity for key data providers and ensuring robustness of Scottish Water's Key Performance Indicators

Also, the development of Technical Approaches for all data items in this return and the improved governance within Scottish Water for regulatory submissions, have both contributed to the data quality improvements across Scottish Water.

A summary of Business Critical Data items linked to the Annual return and the movement in confidence grades is listed in the table below.

<b>Business Critical Data Items</b>	<b>CG 01/02</b>	<b>CG 02/03</b>	<b>CG 03/04</b>
Number of written complaints (Billing and non-billing)	B2	B2	B2
Number of enquiries (Billing and non-billing)	B2	B2	B2
Number of GSS payments	B2	A1	A1
% Written complaints with replies in 10 days (Billing & non-billing)	B2	B2	B2
% Telephone calls answered within 30 seconds (CCC and Billing)	B2	A1	A1
% Telephone calls abandoned (CCC and Billing)	A2	A1	A1
Number of properties affected by internal sewer flooding	B4	B3	B3
Number of properties affected by unplanned interruptions > 12 hours excluding trunk mains	B4	B3	B3
WQ1000			
% Bacteriological compliance for all regulatory samples			
Number of undertakings and relaxations in place	A3	B2	B2
Investment Programme quality outputs met			
Profit before interest and tax	B2	A1	A1
Revenue	B2	A1	A1
Base Opex	B2	A1	A1
Capex	A1	A1	A1
Cashflow inflow (outflow)	B2	A1	A1
Household Customers – Collection Performance			
Overdue Debtor days – Business Customers	B2	B2	A1
Number of employees (FTEs at year end)	B3	B2	A1
Operating costs by asset			
Average pumping head – water	C4	C4	C4
Average pumping head – waste water	D4	D4	C6
Treatment input to distribution	B4	B4	B4
Waste water loads/volumes	B3	B2	B2-B3
Sludge loads/method of disposal	B3	B3	B3

Leakage	C5	C4	B3
Raw water input from sources	B4	B4	B4
Properties with low pressure	C5	C4	C4
Properties at risk of flooding	M	B4	B4
Numbers of assets by type	C4-B4	C3-B3	C4-B2
Length of mains	B2	B2	B2
Length of sewers	B3	B3	B3
Area of sewerage districts	B2	A1	A1
Restrictions to supply (Hosepipe bans)	B2	A1	A1
Population (Summer)	C5	B3	B2
Non-domestic demand	B2	B2	B2

Linked to this is the further development of a *Corporate Data Warehouse* that will be the single source for key data within Scottish Water, with data quality controls in place. The Corporate Data Model has developed further and is now being used at a high level to assess IT links, data gaps, data owners and system interdependencies.

As part of the development of a *Work & Asset Management System (WAMS)* for Scottish Water, a new single asset inventory was completed at the end of March 2003, consolidating data from the legacy authorities' systems. This was used for the 2002/03 return and has been updated during 2003/04 to become more robust, as part of the overall development of WAMS for implementation in April 2004.

The *Asset Data Improvement Project*, as part of the Asset Information Improvement Strategy described in section 9, is also addressing data completeness and accuracy shortfalls from the predecessor authorities. This is programmed up to March 2006.

As a result of the above initiatives, the data in this year's return is more robust than the 2002/03 submission.

## Appendices

### Appendix 1 List of Water Undertakings

707	GLEN OGIL WTW
713	MALLAIG WTW
714	SOUTH MAINLAND WS - LERWICK TO SUMBURGH LINK MAIN
715	ABOYNE (TANARSIDE) WTW
716	TERPERSIE (ALFORD) WTW
717	GALLOWHILL (BANFF) WTW
718	BUCKIE WTW
723	ACHARACLE WTW
725	ALLIGIN WTW
726	ALTNAHARRA WTW
727	ARDGOUR WTW
728	ARDVOURLIE WTW
729	AULTBEA WTW
730	BADCAUL WTW
731	BADENTINAN WTW
732	SPEY SCHEME (BADENTINAN) WTW
733	BALLACHULISH WTW
734	BEASDALE WTW
735	BERNERAY WTW
736	CLERKLYHILL - BURGHEAD WTW
737	CARBOST WTW
738	CLIASMOL WTW
740	DALCHREICHART WTW
741	DALWHINNIE WTW
742	DIABEG WTW
744	DORES WTW
745	STROLLAMUS WTW
746	ISLEORNSAY WTW
747	RAASAY WTW
748	SCOURIE WTW
750	KYLESKU WTW
751	DRUMBEG WTW
752	DRUMFEARN WTW
753	LAGGAN BRIDGE WTW
754	NEDD WTW (CHLORINATOR)
756	FOREHILL WTW
757	INVERCANNIE WTW
758	MANNOFIELD WTW
759	TURRIFF WTW
760	CRAIGHEAD (HUNTLY) WTW
761	BLAIRNAMARROW U.V. (TOMINTOUL)
762	GLENDYE WTW
763	DRIMNIN WTW
764	ELGOL WTW
765	FORT AUGUSTUS WTW
766	GLENDALE WTW
767	GLENFINNAN WTW
768	GLENLATTERACH WTW



769	GLENUIG WTW
771	INCHLAGGAN WTW
772	INVERGARRY WTW
773	LAID WTW
774	SAVALBEG (LAIRG) WTW.
775	LOHCARRON WTW
776	LOCHEND WTW
777	LOCHINVER WTW
778	CLUNAS (NAIRN) WTW
779	NORTH ERRADALE WTW
780	OYKEL BRIDGE WTW
781	SALEN WTW
782	SANNA WTW
783	STOER WTW
784	STRATHCARRON WTW
785	TARSKAVAIG WTW
786	TORRIDON WTW
787	TRISLAIG WTW
788	WATERNISH WTW
789	WATERSTEIN WTW
790	GLENACHULISH (DUROR) WTW
791	GAIRLOCH WTW
792	GLENCOE WTW
793	KILCHOAN WTW
794	KINLOCHLEVEN WTW
795	LOCHALINE WTW
796	STORR FOREST (PORTREE) WTW
797	BLACKPARK (SPEY VALLEY) WTW
798	ULLAPOOL WTW
799	OSDALE / DUNVEGAN WTW
800	INVERMORISTON WTW
801	KINLOCHEWE WTW
802	SHIELDAIG WTW
803	ROUSAY WTW
804	STRONSAY WTW
805	NORTH RONALDSAY WTW
806	SOUTH HOY WTW
807	EELA WATER WTW N
808	FETLAR WTW
810	MID YELL IMPROVEMENTS
811	SOUTH YELL WTW
813	FOULA WTW
815	PAPA STOUR WTW
816	GOVIG WTW
817	GRAVIR WTW
818	HABOST WTW
819	HUSHINISH WTW
820	LEMREWAY WTW
821	MAARUIG WTW
822	MEAVAIG WTW
823	NORTH UIST REGIONAL - WTW
824	RHENIGADALE WTW

825	STORNOWAY WTW
826	ERISKAY WTW
828	TARBERT WTW
830	LOCH LEE (WHITEHILLOCKS) WTW REFURBISHMENT PH 3
831	WHITEHILLOCKS
852	MAINLAND AUGMENTATION - KIRBISTER WTW - MODS STAGE 1
1165	DISTRIBUTION - LEAD REPLACEMENT 25 MG/L STANDARD
1172	CHRACHAIG RIVER (PORTREE) WTW
1179	DUNVEGAN UPPER
1184	FORT WILLIAM WTW
1185	STORNOWAY (LEAD TREATMENT) WTW
1186	WTW PILOT SCHEME
1187	INVERNESS - WTW & RESERVOIR
1190	STRONTIAN WATER SUPPLY
1193	BRAEMAR WTW
1195	SKERRIES IMPROVEMENTS
1280	AMLAIRD BLACKESK KETTLETON AND DAER - PHOSPHATE DOSING FACILITIES
1283	GLENGAP TW & PENWHIN
1284	HELENSBURGH TW - UPGRADING
1286	LOCH KATRINE WATER SUPPLY SCHEME
1287	TAYNUILT TW - UPGRADING
1288	TIGHNABRUAICH TW - IMPROVEMENTS
3250	CAMPHILL W.T.W.
3253	SOUTH MOORHOUSE NEW W.T.W.
3314	AFTON W.T.W.
3315	ARDRISHAIG W.T.W.
3316	ASHGROVE W.T.W.
3323	CAMPHILL TW IMPROVEMENTS
3328	CRAIGNURE (NEW) W.T.W.
3330	KAIM NEW W.T.W.
3331	KILMELFORD W.T.W.
3334	MUIRDYKES NEW W.T.W.
3336	OVERTON NEW W.T.W.
3384	KILLYLOUR W.T.W.
3386	LOCH ECK W.T.W.
3387	BRADAN W.T.W.
3388	BLACK ESK W.T.W.
3389	GLASSFORD W.T.W.
3393	CAMPBELTOWN W.T.W.
3395	TULLICH W.T.W.
3397	TARBERT W.T.W.
3398	MOFFAT BOREHOLE / CHAPELHILL W.T.W.
3400	PICKETLAW NEW W.T.W.
3429	CASTLEHILL W.T.W.
3430	DHU LOCH W.T.W. (NEW & OLD)
3432	KILBERRY W.T.W.
3434	FINLAS W.T.W. (NEW)
3473	COST OF OPTIMISATION MODIFICATIONS TO PLUMBO DOSING 20 NO.
3482	LOCHINVAR NEW W.T.W.
3492	DAER W.T.W.
3521	LAIDE WTW
3522	MELLON UDRIGLE WTW

3523	SCONSER WTW
3526	EARLISH (UIG) WTW
3528	SHAPINSAY WTW
3529	WESTRAY WTW
3531	NESS WTW
3533	TOLSTA WTW
3565	BONAR BRIDGE C.H.
3566	KINGUSSIE WTW
3576	BENBECULA WTW
3586	LOCHRANZA MEMBRANE PLANT
3725	CONCRETE REPAIRS
4176	GLENCONVINTH WTW & CWT
4177	SOUTH MAINS INC SERVICE RESERVOIRS & IMPROVEMENTS TO EXISTING SR'S
4178	ASSYNT WTW & CWT
4179	NEWMORE WTW UPGRADE
4181	NEW WTW AT CALDER HOY TO SERVE CAITHNESS, DOUNREAY & NORTH SUTHERLAND
4214	ALNWICKHILL WTW INCIDENT IMPROVEMENTS
4230	STRATHYRE WTW
4283	GLENELG WTW
4284	BIRSE WTW
4285	AIRD OF SLEAT WTW
4290	RATAGAN/SALLACHY/LETTERFEARN WATER SUPPLY
4293	APPLECROSS WTW
4375	SNAP - WATER
4385	SANDAY WTW
4408	TEANGUE WTW
4411	KILLIECRANKIE WTW
4416	FAIR ISLE IMPROVEMENTS
4418	PERTH (GOWANS TERRACE) WTW
5074	LEAD REDUCTION IN ZONES SERVING LESS THAN 400 PROPERTIES
5471	UNST TREATMENT IMPROVEMENTS
5472	CULLIVOE IMPROVEMENTS
5483	BALLATER WTW
5484	ACHMORE WTW
5485	ACHNASHEEN WTW
5488	ARNISDALE WTW
5492	BRAES WTW
5502	RHYNIE (WINDYFIELD) WTW
5505	KINLOCHBERVIE WTW
5545	KILLIECRANKIE WTW LEAD TREATMENT
5806	ORTHOPHOSPHORIC DOSING PLANTS - PHASE II
5907	INVERCANNIE MEMBRANE
6846	ORTHOPHOSPATE ACID DOSING - FIFE BOREHOLES
7293	KINLOCHEWE WTW & DISTRIBUTION
7294	LERWICK WTW (SANDY LOCH)
7316	INVERNESS WTW
7322	MAINLAND AUGMENTATION
7402	KENMORE AND KINLOCHRANNOCH WTW LEAD TREATMENT
7403	MORAY FIRTH LEAD TREATMENT
7404	BLACKPARK AND KINLOCHLEVEN LEAD TREATMENT
7639	FIFE SR REFURBISHMENT - ACCELERATED PROGRAMME 02/03
7892	GLASGOW DISTRIBUTION VULNERABILITY (KATRINE)

7926	LOCHINVAR WATER TREATMENT WORKS
8042	FORT WILLIAM WTWS & RESEVOIRS
8060	ULLAPOOL (LEAD ADDITIONAL)
8061	CRYPTO MONITORING
8317	UNALLOCATED SERVICE RESEVOIR SR QUALITY
8451	Ullapool Lead Undertaking
9160	ALNWICKHILL WTW CHLORAMINATION
2000770	BACKIES (GOLSPIE/BRORA) WTW WATER

## Appendix 2 Asset Information Improvement Strategy

### Work completed to date includes:

#### Data Improvements - completed

- Site survey of 330 treatment works and pumping station sites, facilitating Q&S 3 investment plan production and Annual Return accuracy improvement.
- A representative sample audit to confirm that approximately 13,200km of lateral sewers are under SW management.
- An independent external audit of the condition and performance of asset stock and related extrapolation models.
- Desk top and survey assessments of 1,000 pumping stations for maintenance plan production.
- Power, efficiency and pumping head surveys and assessments on 20% of Scottish Water's pumping station assets, accounting for 80% of total power used for pumping.
- Creation of a single standard asset hierarchy/structure and coding system allowing improved asset costing.
- Investigation into and confirmation of over 2,800 Water Operational Areas, Drainage Operational Areas and Water Supply Zones, for hydraulic hierarchy establishment and GIS polygon creation across Scotland. This work has enabled improved operational cost capture, future development of infrastructure asset whole life costs and operational leakage management through integration of work management, GIS and Finance systems.
- Re-classification of all water mains and sewers in terms of grassland, urban or rural to improve accuracy of Annual Return and investment plan costings.

#### Systems Improvements - completed

- Delivery of the new Work and Asset Management System 6 months ahead of programme enabling integration with the new Scottish Water Finance system for April 2004 with accompanying business processes for much improved cost and work management data capture.
- Delivery of the new Geographical Information System, providing the first ever consolidated view of infrastructure inventory data across Scotland. This includes a new QVP "Query, View, Print" application providing live access from any office to a much wider group of users than before, via Scottish Water's Intranet and containing a new set of GIS Emergency Planning, spatial height and analysis tools.
- Delivery of the new wide area network based Integrated Network Management System (INMS) to the Fife and Glasgow areas with enhanced (Perform Spatial Plus) functionality for better data integration and analysis, integrated to the single Laboratory Information Management, Customer Promise, Work Management and GIS systems.
- Delivery of a new mobile working system for automated data return on flooding events, which, from June 04, will collect mass data enabling analysis of flooding cause as opposed to simple occurrence.
- Development of 25 key "smaller" strategic information master databases, consolidated down from a review of 300 disparate legacy information sources, including a flooding register, consents database, asset planning database and sewerage area planning database. With a further 5 in the planning stage, including the low pressure and interruptions to supply registers.

### Business Process Improvements - completed

- Establishment of an Asset Information Help Line, Mailbox and Intranet Page, which have received over 200 contacts in their first three months of operation, 25% of which have led to data improvement and the others to better dissemination of information and increased use of corporate, as opposed to local, information sources.
- Development of a high level Corporate Data Model and more detailed level Asset Business Process maps to enable identification of key data needs and interdependencies.
- Development of an Asset Business Critical Data (ABCD) approach to prioritisation and consolidation of information collected and improved.
- Delivery of preliminary information management processes and Data Management Plans to ensure sustainability of transformation achievements and maximisation of resultant information decision based opportunities.
- Further work programmed for the Q&S II period up to March 2006 includes:

### Data Improvement – ongoing to March 06

- Desktop data improvement on AC Mains.
- Further improvements on lateral sewers and pumping head data.
- Historic assessment of sewer flooding causal information.
- Desktop and survey assessments for data improvement on outfalls impacting Bathing Waters.
- Flow, pressure and PCC surveys to validate leakage modelling, and to provide a better understanding of customer supply pipe losses.
- Confirmation of metered customer demands on the network, allocated to DMAs for leakage management.
- Further surveys of non-infrastructure sites, to a detailed E&M component level, done on a priority basis for efficient maintenance planning.
- Desktop Asset Inventory data cleansing to E&M level.
- Collation of data improvements from previous initiatives including; Operation and Maintenance Best Practice, trunk main surveys, and drainage area studies.
- Health & Safety Surveys.

### System Improvements – ongoing to March 06

- Completion of Scotland wide Q&S II INMS roll out to provide 60% (by population) coverage.
- Delivery of GIS Phase 2 enhanced functionality for emergency planning improvement and enhanced geographical information management.
- Delivery of key smaller corporate databases, such as low pressure register, interruptions to supply and development constraints causal information registers, water balance model and CCTV data storage.
- Delivery of Scottish Water wide standard asset reports and information based performance monitoring and decision making environment for Asset Planning, Operation and Investment purposes. This will be delivered through the new data warehouse *Business Intelligence* initiative.

### Process Improvement – ongoing to March 06

- Formalised production and roll out of remaining data return processes.
- Focussed culture change and communication initiatives to accompany process roll out to all asset management and related business activity staff.
- Finalisation of detailed system, data and process delivery plan for Q&SIII implementation.

The above activities all share a common focus defined by the Strategic Business Objective to deliver effective and sustainable asset information systems and processes for March 2006 (as summarised in the following diagram).

Asset Information initiatives focus towards Strategic Objective to deliver effective and sustainable asset information systems and processes

