

## Section C Investment and outputs plan

Scottish Water is to report, at a project level, historic and future planned investment and outputs in the period 2002-03 to 2017-18. This appendix contains three tables covering each of the investment programmes: Quality and Standards 2, Quality and Standards 3a and Quality and Standards 3b.

All expenditure in the tables should be expressed in 2007-08 prices, using COPI.

Projects will be classified in the following programme groupings:

- Capital maintenance
- Drinking water quality (including water resources)
- Environmental programme
- Customer Service
- Supply Demand

The schedule of cost drivers shown in Annex 1 of this guidance is divided into sections based on the above categories.

The financial expenditure and outputs/activity in this plan must be compatible with the relevant business plan tables, in particular Tables 2, 5 and 6. The totals should reconcile with the business plan tables before efficiency assumptions are applied. In all cases where the totals do not reconcile Scottish Water must explain the discrepancy.

Scottish Water should include all planned capital investment. In general, the table should itemise all discrete projects planned for the period. However, where appropriate, (see below) individual small projects can be aggregated together and the total cost and outputs included as one project. These aggregated projects or work programmes should be based, where possible, on geographically defined areas. Where work programmes are not yet planned, Scottish Water can link an estimate of the investment required in a geographically defined area to specific cost drivers.

The timescales provided in the table for meeting the major project milestones must be realistic, taking account of the overall programme delivery challenge, and also consistent with the overall delivery of Minister's objectives. Scottish Water's proposals for "early start" investment should be included for the relevant projects and these totals should be consistent with the information provided in Tables 5 & 6.

The information provided on the delivery of the remainder of Quality and Standards 2 and Quality and Standards 3a should be consistent with that provided in Scottish Water's quarterly Capital Investment Returns to the Commission.

### ***Maintaining service and serviceability***

We have noted Scottish Water's comments regarding the current state of development of the 2010-14 programme and the ongoing OMG work to finalise objectives for the period. We have therefore decided that the requirement set out in

our methodology document for Scottish Water to report, at a project level, minimum levels of progress consistent with delivery of the ministerial objectives should form part of the information requirements for the second draft business plan due in March 2009.

Capital maintenance expenditure will include estimated expenditure proportionally allocated to maintenance in quality-driven or other projects. All amounts of maintenance must be identified in quality projects.

Capital maintenance projects with a total project value of greater than £1m (2007-08 prices) must be individually specified within the investment and outputs programme. Capital maintenance projects of a lower value can be aggregated into programmes of work to meet the relevant service and serviceability objectives. These programmes of work should be discrete and clearly titled so their purpose is clear. Where possible, Scottish Water should provide further information in the commentary on the nature and outputs of these programmes of work.

### ***Drinking Water Quality, Environmental, Customer service and Supply/Demand programmes***

In these investment categories, Scottish Water may elect to aggregate smaller projects (below £100k) and include the total cost and outputs as one project. These aggregated projects should, where possible, be based on geographically defined areas. Scottish Water should provide further information in the commentary on the nature and outputs of these programmes of work.

The categorisation of the programme into “Essential” or “Desirable” should be based on the agreed allocation of Ministerial objectives resulting from the Quality and Standards 3 process. The categorisation of the “minor revisions” elements should be as agreed by the Outputs Monitoring Group. Where projects would comprise different solutions depending on whether the essential or desirable objectives were selected for the site then the categorisation “Essential + Desirable” should be used for the projects and only the solution achieving the desirable objectives should be included in the plan.

For the minor revisions to the ministerial objectives agreed by the Outputs Monitoring Group, Scottish Water should provide a commentary on the materiality of these changes and their potential impact in terms of the overall deliverability of the programme.

### ***Cost allocation***

All the schemes proposed by Scottish Water must be costed and reported separately. There will be non-quality driven projects, or aggregated work programmes, which include expenditure in more than one cost category. Scottish Water should proportionally allocate them between base/capital maintenance and the capital enhancement programme (customer service enhancement, drinking water, environmental improvement and supply demand). For capital enhancement schemes, Scottish Water must proportionately allocate to expenditure purpose categories as appropriate to give the full cost of the project.

Scottish Water should adopt an integrated approach when planning its investment programme. Where there are two drivers at the same site, Scottish Water should

cost one project to deliver the combined outputs and allocate the expenditure to the relevant cost-drivers. If it should prove necessary for Scottish Water to add additional projects, just comprising the net additional costs of additional cost drivers, Scottish Water should ensure that the full costs of delivery are included in the business plan and that there is no double counting for incremental increases, making it clear in any cases where one project is dependent on others.

Gross costs should be included prior to the application of any assumed efficiencies – consistent with Scottish Water's figures in the business plan tables. The costs for all expenditure purpose categories in the investment and outputs plan should reconcile with the gross costs in the final business plan tables.

Scottish Water must complete the information on project milestones for all schemes.

Scottish Water should specify the proportional allocation methodology it has adopted. Scottish Water should demonstrate that it has considered proportional allocation for all projects and identified all expenditure relating to both capital enhancement and other purpose categories, in particular maintenance and increased demand as a result of growth.

### ***Cost estimating – overall approach***

Where possible Scottish Water should use its actual out-turn costs as the basis for forecast capital expenditure. If actual out-turn costs are not available, for example if Scottish Water has no relevant previous experience or has concerns about cost data reliability, then Scottish Water's cost data should be supplemented by other sources. Where this proves necessary, Scottish Water must be able to demonstrate that it has taken measures to ensure the costs have been validated. In section C Scottish Water should

- describe its system for recording and updating actual (outturn) capital costs experienced through the delivery of the capital programme, in order to support robust capital costings in future investment periods
- explain the basis of all forecast capital expenditure
- set out the differences, if any, in its approach across the main components of the capital programme
- set out its method for inflating historic cost data
- set out its process for evaluating risks, uncertainties and opportunities for value improvements. Scottish Water should explain how it ensures the forecast expenditure represents the most likely cost (central estimate). Scottish Water shall include information about significant risks that have been included in the project estimate in its commentary
- explain how it has considered programme level synergies. Scottish Water shall make all adjustments relating to programme synergies in the appropriate expenditure category; details should be provided in the commentary for the relevant section of the business plan. The costs presented in the investment and outputs plan should be those before the application of synergies.

## **Reporter guidance**

The Reporter is required to assess the scope and efficiency of Scottish Water's investment proposals in each area of the programme. It is expected that this will be done both at a programme level, through an assessment of the major elements of the programme (e.g. Drinking water quality programme, UID programme, Sewer flooding etc.), and also at a project level through sample auditing of individual scheme solutions.

The Reporter is also required to comment on whether the delivery timescales provided in the table for meeting the major project milestones are realistic and consistent with the delivery of Minister's objectives. The Reporter should ensure the proposals for "early start" of some projects are consistent with information provided in Tables 5 & 6.

The Reporter should confirm that the information contained in the Investment and Outputs table is consistent with the programme output and expenditure overview information in Tables 2, 5 and 6.

For the Quality and Standards 2 and 3a "overhang", the Reporter should confirm that the information provided is consistent with Scottish Water's quarterly capital investment returns to the Commission.

The allocation of projects to drivers should be checked on a sample basis and the consistency of the overall outputs to be delivered with the Ministerial objectives for the relevant period should be established. The Reporter should seek confirmation from SEPA and DWQR that they are content that Scottish Water's proposed investment programme meets, and does not exceed, the Ministerial objectives.

The comments by the Reporter on the work included in the Investment and Outputs Plan should address both capital and operating cost impacts. On a sample basis, the Reporter should establish whether Scottish Water has, in establishing the solutions required to meet the objectives, placed any undue preference on either operating or capital investment solutions. Where any undue preference is established the Reporter should estimate the possible impact on Scottish Water's expenditure forecast.

Opex should not be simply proportionally allocated to maintenance and quality. Only the additional costs compared to that reported for the last year of unmodified works should be considered for allocation to enhancements. In particular the reporter should:

- confirm whether Scottish Water can justify the inclusion of the investment proposals in its plan
- confirm whether Scottish Water has reviewed the options open to meet each new obligation and has chosen an efficient and cost-effective solution
- verify the basis of the cost estimates, and confirm whether the methodology is consistent with that used by Scottish Water in compiling the cost base information also included in the 1<sup>st</sup> draft business plan
- confirm whether the operating costs are only the net additional costs.

The Reporter should review and challenge Scottish Water's commentary on its overall approach to forecasting capital expenditure and specifically:

- set out its judgement, and the basis for that judgement, as to whether Scottish Water's approach to proportional allocation is line with requirements, paying particular attention to the allocation of projected expenditure between the different purpose categories:
  - base service
  - drinking water (including environmental improvements relating to water resources eg Water Framework Directive)
  - environmental programme
  - customer service enhancement programme
  - supply/demand.
- highlight any changes in Scottish Water rules or policy on proportionally allocating expenditure compared with those used for previous reports particularly
- verify the link between the forecast expenditure and actual cost data for completed schemes.
- set out its views about how representative the forecast expenditure is of the historic costs experienced by Scottish Water.
- verify that all expenditure has been reported in 2007-08 prices and has been inflated to 2007-08 in a consistent manner
- provide an appraisal of Scottish Water's process for evaluating risks, uncertainties and opportunities for value improvements. Where Scottish Water has provided information about specific risks the reporter shall comment on the robustness of the evidence set out by Scottish Water and provide its judgement about whether the forecast expenditure represents the most likely costs.

## ANNEX 1 – PROJECT DRIVER CODES

### Q & S 2

The drivers used for the small number of remaining Q&S 2 projects should be consistent with those used in the June 2007 Annual return and have not been repeated here.

### Q&S3a and Q&S3b

#### 1 – Drinking Water Quality Drivers

Driver Code	Summary of Requirements	Date of Compliance
DW1	Compliance with lead standard of 10mg/l set in EC Directive 98/83 on the quality of water intended for human consumption	2013
DW2	Compliance with trihalomethane standard of 100mg/l.	2008
DW3	<p>Compliance with all other standards contained in the Drinking Water Directive, including those below that may have been tightened under Directive 98/83/EC</p> <p><b>Arsenic:</b> tighter standard introduced which may result in local breaches</p> <p><b>Bromate:</b> tighter standard introduced which may result in local breaches</p> <p><b>Copper:</b> tighter standard introduced which may result in local breaches.</p> <p><b>pH:</b> tighter standard introduced which may result in local breaches</p> <p><b>Nitrate/Nitrite:</b> the introduction of chloramination to meet the THM standard is likely to result in exceedences of the standard for nitrate/nitrite</p>	2013
DW4 (&DW4A)	<p>Compliance with the Cryptosporidium (Scottish Water) Directions 2003 and any subsequent revisions including</p> <p>i) annual risk assessments for all water supplies for the presence of Cryptosporidium</p> <p>ii) installation of turbidity meters on all filters</p> <p>iii) continuous monitoring of specific water supplies for Cryptosporidium</p>	

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<b>Driver Code</b>	<b>Summary of Requirements</b>	<b>Date of Compliance</b>
<b>DW5</b>	<p>The quality of water put into supply must not be downgraded by the condition of the water mains through which it is supplied. In particular, the condition of a water main must not result in exceedences of the iron and manganese standards set in Directive 98/83/EC</p> <p>Unplanned operational activity and maintenance work disrupt the flow in water mains and put water quality at risk</p> <p>SE policy is that there should be no deterioration in the infrastructure asset stock</p>	2013
<b>DW6</b>	The Abstraction Directive	
<b>DW7</b>	The Birds Directive/The Habitats Directive	
<b>DW8</b>	Security of Supply	
<b>DW9</b>	Additional physical security arrangements to protect drinking water quality in accordance with guidance issued by Security Services	
<b>DW10</b>	All public water supplies to meet standards set in Directive. Supplies to properties from raw water aqueducts and raw water mains are public supplies and must meet Directive standards.	
<b>DW11</b>	Investment necessary on SW assets to ensure SW compliance with Water Fittings Byelaws. (Note that this driver does not include the cost of ensuring third party Byelaw compliance)	
<b>DW12</b>	Article 11 of the EC Directive 98/83 provides for a review of the annexes to the Directive every 5 years. The first such review commenced during 2003. There are strong indications that the standards for THMs, disinfection by-products will tighten.	2013
<b>DW13</b>	Improvements in aesthetic quality of drinking water	
<b>DW14</b>	Extend provision of telemetry at water treatment works and service reservoirs	
<b>DW15</b>	Compliance with recommendations made as a result of investigations into drinking water quality incidents in Scotland	

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<b>Driver Code</b>	<b>Summary of Requirements</b>	<b>Date of Compliance</b>
<b>DW16</b>	Standards in the EC Directives are derived from World Health Organisation Guideline Values. The WHO is now promoting Water Safety Plans as a means of ensuring drinking water quality. Such plans are already in use in many countries. It is likely that Water Safety Plans will feature in any revision of the Directive	
<b>DW17</b>	The report into the Torry incident 1991 recommended that removal of all cross-connections between water mains and sewers. However, this recommendation was not fully implemented across Scotland and many unsatisfactory arrangements remain. The risk posed by cross-connections is significant and any such arrangements remaining must be removed.	
<b>DW18</b>	Extend public water distribution network at "unreasonable cost" to provide a water supply to these areas because the level of return is not considered economic in relation to the capital investment required.	
<b>DW19</b>	The Water (Scotland) Act 1980 requires that SW shall provide a wholesome supply of water sufficient for the domestic purposes of all owners and occupiers of premises within their limit of supply	
<b>DW20</b>	The Flood Estimation Handbook published by the Institute of Hydrology introduced a new method of calculating rainfall depth	
<b>DW21</b>	Duplication of critical mains to provide security of supply	
<b>DW22</b>	Provide treatment to address algae problems in raw water sources	
<b>WR1</b>	UKTAG guideline abstraction thresholds (All SW surface and groundwater abstractions).	
<b>WR2</b>	Will require a site-specific review of operational practice at all SW reservoirs to compare with agreed best practice. (All SW impoundments)	
<b>WR3</b>	Protect water quality in Drinking Water Protected Areas so as to avoid the need to increase the level of treatment needed to meet standards set in EC Directive 98/83. (All SW drinking water sources supplying more than 10m <sup>3</sup> /day or 50 people).	2013
<b>WR4</b>	Compliance with hydro-morphological standards in order to meet WFD ecological objective. (All obsolete engineering works associated with abandoned water supply operations).	

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<b>Driver Code</b>	<b>Summary of Requirements</b>	<b>Date of Compliance</b>
<b>WR5</b>	To demonstrate compliance with water quality licences. (All SW abstractions and impoundments).	

**2 – Environmental Drivers**

<b>Driver Code</b>	<b>UK Act/EC Directive</b>
<b>WQ01</b>	Water Environment and Water Services Act 2002 (Secondary legislation to replace Control of Pollution Act 1974, Section 34)
<b>WQ02</b>	Environment Act 1995, Section 34
<b>ON01</b>	Town and Country Planning (Scotland) Act 1997
<b>ON02</b>	Environment Protection Act 1990, Part III
<b>LA01</b>	Environmental Protection Act 1990, Part IIA (Contaminated Land)
<b>NH01</b>	Water Industry (Scotland) Act 2002, Section 54
<b>SD01</b>	Water Industry (Scotland) Act 2002, Section 51
<b>WA01</b>	Definition of Waste (Hazardous Waste Directive)
<b>EC01</b>	Urban Waste Water Treatment Directive (91/271/EEC)
<b>EC02</b>	Bathing Water Directive (76/160/EEC)
<b>EC03</b>	Shellfish Waters Directive (70/923/EEC)
<b>EC04</b>	Freshwater for Fish Directive (78/659/EEC)
<b>EC05</b>	Surface Water for Drinking Directive (75/440/EEC)
<b>EC06</b>	Sludge Use in Agriculture Directive (86/278/EEC)
<b>EC07</b>	Birds Directive (79/409/EEC)
<b>EC08</b>	Habitats Directive (92/43/EEC)
<b>EC09</b>	Dangerous Substances Directive (76/464/EEC)
<b>EC10</b>	Water Framework Directive (2000/60/EC)
<b>EC11</b>	Landfill Directive (99/31/EC)
<b>EC12</b>	Integrated Pollution Prevention & Control Directive (96/61/EC)
<b>EC13</b>	Waste Incineration Directive (2000/76/EC)

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<b>Driver Code</b>	<b>UK Act/EC Directive</b>
<b>EC14</b>	National Emissions Ceiling Directive (2001/81/EC)
<b>EC15</b>	Strategic Environmental Assessment Directive (2001/42/EC)
<b>pEC16</b>	Revised Bathing Water Directive (proposed)
<b>pEC17</b>	EU Marine Strategy (proposed COM/2002/539)
<b>pEC18</b>	Sludge Directive (proposed) & EC Soils Strategy
<b>pEC20</b>	Environmental Liability Directive (proposed)
<b>IN01</b>	OSPAR Convention 1992
<b>XF01</b>	Climate Change (Cross-functional)
<b>XF02</b>	Flooding (Cross-functional)

**3 – Customer Service Drivers**

<b>Driver Code</b>	<b>Driver Description</b>
<b>CS1</b>	Pressure. Removal of properties from the register of properties at risk from poor pressure.
<b>CS2</b>	Odour Management. Compliance with odour management standards.
<b>CS4</b>	Business Metering. Compliance with business metering standards
<b>CS5</b>	Household Metering. Compliance with household metering standards
<b>CS6</b>	Emergency Planning. Provision of improved emergency planning standards.
<b>CS7</b>	Business Billing. Provision of improved business billing facilities.
<b>CS8</b>	Household Billing. Provision of improved household billing services.
<b>CS9</b>	Customer Experience. Provision of improved customer service facilities.
<b>CS11</b>	Sewer Flooding. Removal of properties from at risk register.
<b>CS12</b>	Unplanned Interruptions. Reduction in the number of properties at risk of experiencing unplanned interruptions
<b>CS13</b>	Introduction of competition. Scottish Water's approach to dealing with a competitive market.

#### ***4 – Supply Demand***

Supply Demand expenditure includes all projects required to meet demand for services from new and existing customers by providing new assets or increasing the capacity of existing assets. This includes providing new distribution and sewerage assets to new customers, the provision of first time water or wastewater services to existing housing, and the provision of new assets to meet the increased use of water by existing customers.

WG1 or SG1 =Growth water/wastewater

WG2 or SG2 =New development water/wastewater (Reasonable Cost Contributions)

WG3 or SG3 =First time water supply/wastewater

**Annex 2**

WICS project status codes:

WICS Code	Definition	Scottish Water Capex Status
S0	Investment need recognised, but no specific project yet identified	
S1	Inception: project has been identified but no detailed appraisal has been completed	Capex 1 approval
S2	Appraisal: initial detailed appraisal has been completed	Capex 2 approval
S3	Project appraised and under development before construction	Capex 3 approval
S4	Project abandoned	
S6	Tender awarded	
S8	Works under construction	
S10	Beneficial use achieved	Acceptance
S12	Regulatory 'sign off' of output obtained	
S13	Works and expenditure complete – project financially closed	Capex 5 approval

It should be noted that all projects contained in the Output Monitoring Group's 'Technical Expression' will require regulatory sign off (Stage S12). It should also be noted that it is assumed that the final stage for all projects is S13. For outputs delivered through operational solutions, the equivalent status code should be estimated.