SECTION G

INVESTMENT PLAN
(Actuals and Forecasts)

Edition 6.1

ANNUAL RETURN 2007-08

EDITION CHANGES – SECTION G

Edition	Description of Change
6.0	**Table G1:** **New Columns added:** Col 0a, 0b, 0c **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**Table G2:** **New Columns added:** Col 0a, 0b, 0c **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**Table G3a:** **New Columns added:** Col 0a, 0b, 0c **Column titles updated:** Col 20, 30 & 40 **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**Table G3b:** **New Columns added:** Col 0a, 0b, 0c **Column titles updated:** Col 20, 30 & 40 **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**Table G4a:** **New Columns added:** Col 0a, 0b, 0c **General amendment to scope of timescale covered i.e. Post 09-10 information**

6.0	**<u>Table G4b:</u>** **New Columns added:** Col 0a, 0b, 0c **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**<u>Table G5 & Definitions G5:</u>** **New Column added:** Col 20a **Column Title Amended:** Col 17 **Column definitions updated:** Col 17; 20; 21
6.0	**<u>Table G6 & Definitions G6:</u>** **Column Title Amended:** Col 20; 24 **Column definitions updated:** Col 20; 24
6.0	**<u>Table G7:</u>** **Column Title Amended:** Block 2, Col 30b – for lines G7.10 – G7.17 **Column Block expanded** Block 2, Col 30 – for lines G7.10 – G7.17 **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**<u>Table G8:</u>** **Column Title Amended:** Col 20 **Column Block expanded** Block 3, Col 50 (new) – for lines G8.50 – G8.54 **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**<u>Table G9:</u>** **Column Title Amended:** Col 90

	Column expanded: Col 100 **General amendment to scope of timescale covered i.e. Post 09-10 information**
6.0	**Guidance:** **Amendment to text:** Under: "Investment Plan (Actuals & Forecasts); 'Guidance', paragraph 3 (pg 6)
6.1	**Table G8:** **Formulae updated:** Col 60, lines 1-25 **Table G8 (Comments):** **Confidence Grade rules re-introduced:** Col 60, Lines 2, 3, 11, 18, 19.
6.1	**Table G9 (and G9 Comments):** **Column Headings updated:** Cols 100a-e
6.1	**Guidance:** **Additional Guidance inserted:** Pg 10 – Measurement of Serviceability Indicators (Table G9)
6.2	**Table G9 :** **Column processing rules changed:** Col 100e: *from* calculated *to* brought forward

SECTION G

INVESTMENT PLAN (ACTUALS & FORECASTS)

Purpose

The objective of this Section G is to enable SW to present its capital expenditure programme showing the actual expenditure for the Report Year and updated forecasts for the future years.

All tables identify separately any capital investment towards the completion of the Q&S3a investment programme as well as investment for the completion of the Q&S2 outputs (overhang).

Definitions

The main definitions used throughout the investment planning and monitoring processes are set out below, under the headings of outputs, inputs, investment and asset categories.

Outputs

- **Quality of Output: Standard of Service** - a defined standard of service to customers or members of the public, assumed by SW, either as an obligation or by discretion. *e.g. we shall maintain water supplies at a pressure which will enable a storage tank at second floor level to fill.*
- **Output Quantity** - an output is a measure of performance to provide a defined standard of service to customers. *e.g. the number of properties below the reference level*
- **Reference Level** - a reference level is the target value of an output that needs to be achieved now or over time. *e.g. a surrogate pressure of 15m measured in the adjacent distribution main.*

Assets

- **Asset Category** - a group of assets providing a specific function within the water and wastewater service. *e.g. water treatment works, pumping stations*
- **Asset Type** - assets with similar characteristics and assumed asset life. *e.g. ICA assets, mechanical plant, civil works and building works*
- **Asset Workload** - workload is the extent of assets created to meet a defined increase in output, or to maintain an output. *e.g. mains replacement, new pipelines*
- **Activities** - investigations and studies carried out to support investment. *e.g. drainage area studies*

Investment

- **Investment Driver/Purpose** - an investment driver/purpose is a primary reason for investment, linking workload and output to achieve a defined standard of service.
- **Investment Quantity (£m)** – the expenditure incurred to maintain or enhance service to customers. It includes capital expenditure, and operating expenditure where a long-term benefit to customers is shown.

Guidance

The financial basis for any year is to be the same as that used for SW's published audited Annual Accounts; i.e. the gross value of work carried out in the period. Accordingly the total of the submitted investment data for each Report Year will equal the Asset Additions, including work in progress, in the Balance Sheet for that year.

The Tables also collect information on outputs, assets and other information at project level. This enables a clear linkage to be made between expenditure, outputs and assets created. Specific information requirements include

- Investment values in each year
- analysis by investment purpose/driver
- analysis by output measure
- the status of the project in the Programme, e.g. appraisal, design
- the design and procurement route selected
- estimated changes in operating costs
- estimated year of commission
- details of any capital contributions
- an analysis of the asset type of capital expenditure

The format of the Tables were changed for the 2006-07 Annual Return to take account of the overhang from Scottish Water's Quality and Standards II investment programme into the Quality and Standards IIIa period, including the different purpose and output codes in the two programmes. The project level tables and links to summary tables have been simplified to ensure easier completion of the required tables. The tables continue to allow application of variance analysis to derive changes in outputs, investment and assets.

Capital Expenditure is to be presented in six tables.

Table G1: Summary – Water Service
Table G2: Summary – Wastewater Service
Table G3a: Q&S 2 Delivery – Water Service
Table G3b: Q&S 2 Delivery – Wastewater Service
Table G4a: Q&S 3 Drivers – Water Service
Table G4b: Q&S 3 Drivers – Wastewater Service

Table G5: Project Analysis Q&S 2 - Actuals & Forecast - Water & Wastewater
Table G6: Project Analysis Q&S 3 - Actuals & Forecast - Water & Wastewater
Table G7: Q&S 2 Output Delivery
Table G8: Q&S 3 Ministerial Objectives and other outputs – Quality
Table G9: Q&S 3 Ministerial Objectives - Serviceability

Tables G1 to G4 are summary tables that require SW to input information consistent with the information presented in Tables G5 and G6.

G5 and G6 are input tables where SW is to provide actual and forecast investment details by individual project or groups of project.

The format of the Investment Plan (Actuals and Forecasts) is a series of spreadsheets where project information, including the analysis by investment driver, output measures and asset category, can be aggregated to provide a summary of all investment requirements by purpose. ***For consistency it is important to use only the analysis code structures for the appropriate Quality and Standards Programme.***

SW should remember that all Q&S II expenditure and other related data should **only** be recorded in the appropriate Q&S II table(s). Similarly, Q&S III expenditure and other related data, should only be input to the Q&S III tables.

Investment purposes

There are four principal investment purposes for Annual Return purposes.

- **Infrastructure Renewals**
- **Base Service**
- **Quality Enhancement**
- **Growth**

- ***Infrastructure Renewals:*** This comprises expenditure on infrastructure mains renewals. SW is also required to estimate the Kms length of mains planned to be renewed in each year in its commentary.

- ***Base Service Provision***: This comprises the expenditure necessary for the maintenance of defined service levels to customers including base operating expenditure, non-infrastructure asset renewal, but not infrastructure renewals. Investment on operational assets is included but separately identified.

- ***Quality Enhancement***: This includes the provision of new assets or the enhancement of existing assets to achieve improvements in performance in line with new or enhanced legal requirements as

agreed by the Quality Regulators and included within the Quality and Standards programme

- ***Growth*:** to meet demand for services from new and existing customers by providing new assets or increasing the capacity of existing assets. This would include 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.

NB: For projects where security is a resultant output, the most appropriate Output code should be selected from the above tables. The Commentary document should be used to provide further information on the affected projects and identify in each case which of the existing codes has been used to represent security.

The previously utilised Efficiency Output codes (Efw a: Efficiency Water & Efw b: Efficiency Sewerage) are no longer in use. As a result, SW should add detail to their commentary, to identify the projects where Spend to Save Capex funds are being used for. A list should be included within the Commentary showing each project's total expenditure, expenditure to date, assessed NPV, payback period and expected completion date.

Proportional allocation of expenditure

Capital expenditure needs to be related to the investment purposes, Infrastructure Renewals Base service provision, Quality Enhancement and Growth.

Expenditure for each project or area of expenditure needs to allocated to an investment purpose/driver, an output measure and to the assets created or replaced. Thus for each project there is one or more:

- Investment purpose/driver;
- Output measure; and
- Asset category.

Where a project meets several business objectives, outputs or asset types, it is necessary to proportion expenditure by applying clear rules. SW needs to develop its own methodologies for analysis of projects following the rules set out below:

(i) Expenditure for each project shall be allocated to the service area and investment and investment purpose category to at least the nearest 5% of project value;

(ii) Confidence grades on expenditure shall be limited to the reliability grade only, A to D. Accuracy grades are not required;

(iii) Because of the effect that a large individual scheme may have on the allocation of costs to a particular investment category, a materiality threshold of £100,000 has been set on project costs, above which expenditure must be proportionally allocated.

(iv) Where there is any material change in the scope of projects, greater than 5% of project value, the proportional allocation calculations shall be revisited;

(v) Proportional allocation shall also be applied to investment secondary purposes, for example specific quality or environmental drivers;

(vi) Proportional allocation shall also be required to distinguish the elements of a scheme which relates to enhancements (Quality, Growth) from those which relate to asset maintenance (Infrastructure Renewals, Base Service))

(vii) The analysis shall be carried out for and applied to the whole project. Where the project extends over more than one year, the proportional allocation shall be applied equally for each year;

(viii) Project costs relating to different purpose categories shall be proportioned across the purposes in relation to the relative capacities of each element of the project. A single physical measure should be identified that is appropriate to the purpose category, for example:

- rate of flow;
- equivalent population;
- hydraulic capacity; or
- any other appropriate physical measure.

(ix) An example of proportional allocation is detailed below

Example 1

An existing cast iron water main in a distribution system with a current capacity of 2.8 Ml/d needs to be replaced as it has for some time failed to meet condition and performance standards. The main is to be constructed with a capacity of 4.3 Ml/d to allow for future growth.

Purpose categorisation: Infrastructure Renewals and Growth.

$\frac{\text{Existing capacity} * 100}{\text{Proposed capacity}} = (2.8*100)/4.3 = 65\%$ *to Infrastructure Renewals*

$\frac{(\text{proposed} - \text{existing}) \text{ capacity} * 100}{\text{proposed capacity}} = (1.5*100)/4.3 = 35\%$ *to growth*

Example 2:

An overloaded sewage treatment works with a capacity of 100,000 population equivalent needs an estimated £1m expenditure to replace assets to meet current standards. New Quality obligations requires additional processes and rationalisation of the works, with a total estimated £5m project cost, which includes an additional capacity of 25,000 pe.

Purpose categorisation: Base Service, Quality and Growth.
Proportion to Base Service: £1m
Proportion to growth = $\frac{£5m * 25{,}000}{125{,}000} = £1m$
Proportion to quality *£5m – £1m – £1m = £3m*

Capitalisation of operating costs

All expenditure related to the replacement of existing assets and creation of new assets is to be included on the Investment Tables and capitalised. For example, the costs of project preparation including appraisal, outline and detailed design, planning approval preparatory work, legal and survey fees are to be included. Where preparatory work has been carried out for PPP contracts, costs for legal fees, land survey fees and engineering consulting fees are to be added to the Investment Plan as if they were to be capitalised if the project was being implemented directly by SW. The final accounting destination of the PPP related costs and fees should be noted in the Plan.

Inflation

Scottish Water should state in the commentary **any** inflation assumptions used in the construction of these tables.

Measurement of Serviceability Indicators (Table G9)

When completing table G9, Scottish Water should adopt the following measurement basis for each respective serviceability indicator:

Serviceability Indicator	Measurement Basis
G9.1: % of compliant zones for Iron	Calendar basis
G9.2: % of compliant zones for manganese	Calendar basis
G9.3: Number of microbiological failures at water treatment works	Rolling Total
G9.4: Number of properties on the low pressure register	Point in time
G9.5: Number of properties with unplanned interruptions > 12 hours	Rolling Total
G9.6: Number of bursts per 1,000km of mains	Rolling 12 month average at point in time
G9.7: Number of properties at risk of internal flooding	Point in time
G9.8: Number of properties internally flooded due to other causes	Rolling total
G9.9: Number of failing waste water treatment works	Point in time
G9.10: Number of unsatisfactory intermittent discharges	Point in time
G9.11: Number of pollution incidents	Rolling total

Guidance for the Reporter

Tables G5 and G6 are key tables in this section. They contain a project level definition of the investment programme. The Reporter should check the validity of the data in these two Tables for a wide range of project sizes and types.

The Reporter should compare the investment plan summaries with previous submissions to highlight any changes to actual and forecast expenditure. The Reporter should also check that significant fluctuations are explained within the relevant commentary, together with associated confidence grades.

Given that the objective of tables G1-G4b is to summarise the data captured in G5 and G6, the Reporter should check the consistency of reported totals across the Section. However, G1-G4b do not fully represent the breakdown in G5 and G6 and the extent of this disparity should be noted.

As of the June 04 submission, the investment plans contained in the Annual Return should align with other submissions, such as the quarterly Capital Investment Returns (CIRs) and 'WIC18' list of *Quality and Standards II* projects, and table K56 from Annual Return 2005-06. The Reporter should compare the section with these other submissions and highlight unexplained differences.

The Reporter should check the output codes assigned to each project such that all map sensibly. The Reporter should also assess the use and breadth of the basket of output codes to establish whether there is scope for further improvement in output definition.

Additionally, the Reporter should ensure a full audit trail exists between the Table K56 from the Annual Return 2005-06 and related Q&SIII tables in this Return. The Reporter should ensure that the projects and outputs listed relate to the Quality and Standards III programme and that outputs associated with the delivery of Quality and Standards II (including the overhang) are not included in the same tables. The Reporter should also ensure that capital grants, contributions and the infrastructure charge are properly reported.

The Reporter should check the consistency between tables G5 and G6 and Scottish Water's assessment of its progress (tables G7, G8 and G9) towards the delivery of the ministerial outputs and highlight any inconsistencies. For the June Return 2007-08, the Reporter should check in particular the reporting of the number of pollution incidents (to ensure this is consistent with the newly agreed definition) and the number of properties internally flooded (where there have been data issues in the past).

Appendix A: Q & S 2 CODES

PURPOSE CODES

WIR1 =Infrastructure Renewals, water base
WIR2 =Infrastructure Renewals, water backlog
SIR1 =Infrastructure Renewals, wastewater base
SIR2 =Infrastructure Renewals, wastewater backlog

WM1 = Base Service Provision water infrastructure assets
WM2 = Base Service Provision water non-infrastructure assets
WM3 = Base Service water support service assets

SM1 = Base Service Provision wastewater infrastructure assets
SM2 = Base Service Provision wastewater non-infrastructure assets
SM3 = Base Service wastewater support service assets

(NB: Please note that Purpose codes WM3 and SM3 can also be used as Output Codes. The Commentary document should include in tabular form the projects where this has been applied.)

WB1 = Backlog water infrastructure assets
WB2 = Backlog water non-infrastructure assets

SB1 = Backlog wastewater infrastructure assets
SB2 = Backlog wastewater non-infrastructure assets

WG1 = Growth water
WG2 = New Development water
WG3 = First Time water supply

SG1 = Growth wastewater
SG2 = New Development wastewater
SG3 = First time sewerage

As highlighted in D3 Definitions, care must be taken when entering Support Services data (the 600 series of Asset Replacement or Refurbishment/New and Enhanced Assets codes) in tables G5 and G6.

SW should apportion Support Services expenditure between Water and Wastewater, in terms of their purpose codes. The only codes that should be used for this are:

WM3 (Base Service Water Support Service Assets)
SM3 (Base Service Wastewater Support Service Assets)

OUTPUT CODES

Infrastructure Renewals, Base Service and Backlog: Investment Purposes and related Output Measures

Secondary Investment Purpose	Output Measure	Output Unit	Output Measure Code
Water quality	Weighted water quality index	Number	Wa1
Water Availability	Properties below reference level	Number	Wa2
Pressure	Properties below the reference level	Number	Wa3
Interruptions to supply	Rolling average properties below the reference level	Number	Wa4
Sewage Flooding	Properties below the reference level	Number	Ww1
Water Service Infrastructure Assets	The percentage of assets in condition grade 4 and 5	%	Wa5
Wastewater Service Infrastructure Assets	The percentage of assets in condition grade 4 and 5	%	Ww2

Water Service Non-Infrastructure Assets	The percentage of assets in performance grade 4 and 5	%	Wa6
Wastewater Service Non-Infrastructure Assets	The percentage of assets in performance grade 4 and 5	%	Ww3
Enquiries	*Expenditure that has enhanced customer levels of service*	The Commentary should be used to explain further the nature of this expenditure and the customer service benefits it has brought.	Cs1

Complaints	*Expenditure that has enhanced customer levels of service*	The Commentary should be used to explain further the nature of this expenditure and the customer service benefits it has brought.	Cs2

Water Quality Investment Purposes and Output Measures

Secondary Investment Purpose	**Output Measure**	**Output Unit**	**Output Measure Code**
Drinking Water Directive – Lead	Volume of water delivered to customers subject to Undertakings	Ml/d	DW1
Drinking Water Directive – Trihalomethanes	Volume of water delivered to customers subject to Undertakings	Ml/d	DW2
Drinking Water Directive Other Parameters (to be	Volume of water delivered to customers subject to Undertakings	Ml/d	DW3

specified)			
The Cryptosporidium Directions 2000 & 2003	Volume of water delivered to customers subject to Undertakings	Ml/d	DW4
Water Mains Rehabilitation	Number of water supply zones subject to improvement works	Number	DW5
The Abstraction Directive	Volume of water delivered to customers subject to studies or programme of work	Ml/d	DW6
The Birds Directive, the Habitats Directive	Volume of water delivered to customers subject to studies or programme of work	Ml/d	DW7

Wastewater Quality Investment Purposes and Output Measures

Secondary Investment Purpose	**Output Measure**	**Output Unit**	**Output Measure Code**
Control of Pollution Act 1974 S34	Population equivalent subject to improvement works	Number	WQ1/1&2
Improvements to poor or seriously polluted waters	Population equivalent subject to improvement works	Number	WQ2/1,2&3

Protection of Risk	Population equivalent subject to improvement works	Number	WQ3/1,2 & 3
Urban Wastewater Treatment Directive. Inland Waters CSOs (intermittent discharge)	Number of unsatisfactory CSOs	Number	EC1/1
Urban Wastewater Treatment Directive. Inland Waters Sewage Treatment (continuous discharge)	Number of works and population equivalent subject to improvement works	Number	EC1/2
Urban Wastewater Treatment Directive. Coastal Waters CSOs (intermittent discharge)	Number of unsatisfactory CSOs	Number	EC1/3
Urban Wastewater Treatment Directive. Coastal Waters Sewage Treatment (continuous discharge)	Number of works and population equivalent subject to improvement works	Number	EC1/4

Urban Wastewater Treatment Directive. Estuarial Waters CSOs (intermittent discharge)	Number of unsatisfactory CSOs	Number	EC1/5
Urban Wastewater Treatment Directive. Estuarial Waters Sewage Treatment (continuous discharge)	Number of works and population equivalent subject to improvement works	Number	EC1/6
Bathing Waters Treatment Directive. CSOs (intermittent discharge)	Number of unsatisfactory CSOs	Number	EC2/1
Bathing Waters Directive. Sewage Treatment (continuous discharge)	Number of works and population equivalent subject to improvement works	Number	EC2/2
Shellfish Waters Directive. CSOs (intermittent discharge)	Number of unsatisfactory CSOs	Number	EC3/1
Shellfish Waters Directive.	Number of works and population equivalent subject to	Number	EC3/2

Sewage Treatment (continuous discharge)	improvement works		
Freshwater Fish Directive. CSOs (intermittent discharge)	Number of unsatisfactory CSOs	Number	EC4/1
Freshwater Fish Directive. Sewage Treatment (continuous discharge)	Number of works and population equivalent subject to improvement works	Number	EC4/2
Sludge (Use in Agriculture) Directive	% of population equivalent subject to improvement works	Percent	EC6
Habitats Directive	Volume of water delivered to customers subject to studies or programme of work	Ml/d	EC8
Dangerous Substances Directive	Number of works subject to improvement works	Number	EC9

(i) see table A5.1
(ii) table A5.2

Growth Investment Purposes and Output Measures

Secondary Investment Purpose	Output Measure	Output Unit	Output Measure Code
Growth	Increase in system capacity to meet growth from new and existing customers	Ml/d	Wa11/ Ww11
New development	Number of new housing connections to water or sewerage	Number	Wa12/ Ww12
First time water or sewerage	Number of connections to existing housing for water or sewerage service	Number	Wa13/ Ww13

NB: For projects where security is a resultant Output, the most appropriate Output code should be selected from the above tables. The Commentary document should be used to provide further information on the affected projects and identify in each case which of the existing codes has been used to represent security.

The previously utilised Efficiency Output codes (Efw a: Efficiency Water & Efw b: Efficiency Sewerage) and are no longer in use. As a result, SW should add detail to their commentary, to identify the projects where Spend to Save Capex funds are being used. A list should be included within the Commentary showing each project's total expenditure, expenditure to date, assessed NPV, payback period and expected completion date.

APPENDIX B: Q&S3

PROJECT DRIVER CODES

1 - Capital Maintenance Drivers

Driver Code		Summary of Requirements
WSI	Water Service Infrastructure	Maintain serviceability to customers of the asset.
WSNI	Water Service Non-Infrastructure	Maintain serviceability to customers of the asset.
WWI	Wastewater Service Infrastructure	Maintain serviceability to customers of the asset.
WWNI	Wastewater Service Non-Infrastructure	Maintain serviceability to customers of the asset.

2 – 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 **(DW3 – DW3K)**	Compliance with all other standards contained in the Drinking Water Directive, including those below that may have been tightened under Directive 98/83/EC **Arsenic:** tighter standard introduced which may result in local breaches **Bromate**: tighter standard introduced which may result in local breaches **Copper:** tighter standard introduced which may result in local breaches. **pH:** tighter standard introduced which may result in local breaches **Nitrate/Nitrite:** the introduction of chloranimation to meet the THM standard is likely to result in exceedences of the standard for nitrate/nitrite **NB** In Table K1 for lines K1.7 to K1.7i, SW should specify in its Commentary the DW3 sub-driver that has been allocated to this line, and a description of its purpose & output. Codes provided by SW have been allocated to the following lines e.g. Line K1.7 (no allocation) Line K1.7a will represent DW3A Colour Line K1.7b will represent DW3B Coliforms Line K1.7c will represent DW3C Manganese Line K1.7d will represent DW3D Bromate Line K1.7e will represent DW3E (no allocation)	2013

	Line K1.7f will represent DW3F Iron Line K1.7g will represent DW3G Aluminium Line K1.7h will represent DW3H Pesticides and/or Taste + Odour Line K1.7i will represent DW3I (no allocation) Line K1.7j will represent DW3J (Turbidity) Line K1.7K will represent DW3K (Final pH)	
DW4 (&DW4A)	Compliance with the Cryptosporidium (Scottish Water) Directions 2003 and any subsequent revisions including i) annual risk assessments for all water supplies for the presence of Cryptosporidium ii) installation of turbidity meters on all filters iii) continuous monitoring of specific water supplies for Cryptosporidium NB – Line K1.8 should be used to record DW4 (Cryptosporidium) information. Line K1.8a should be used to record DW4A (Cryptosporidium Washwater Recovery) Information (following advice from SW)	
DW5	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 an manganese standards set in Directive 98/83/EC Unplanned operational activity and maintenance work disrupt the flow in water mains and put water quality at risk SE policy is that there should be no deterioration in the infrastructure asset stock	2013
DW6	The Abstraction Directive	
DW7	The Birds Directive/The Habitats Directive	
DW8	Security of Supply	

DW9	Additional physical security arrangements to protect drinking water quality in accordance with guidance issued by Security Services	
DW10	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.	
DW11	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)	
DW12	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
DW13	Improvements in aesthetic quality of drinking water	
DW14	Extend provision of telemetry at water treatment works and service reservoirs	
DW15	Compliance with recommendations made as a result of investigations into drinking water quality incidents in Scotland	
DW16	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	

DW17	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.	
DW18	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.	
DW19	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	
DW20	The Flood Estimation Handbook published by the Institute of Hydrology introduced a new method of calculating rainfall depth	
DW21	Duplication of critical mains to provide security of supply	
DW22	Provide treatment to address algae problems in raw water sources	
WR1	UKTAG guideline abstraction thresholds (All SW surface and groundwater abstractions).	
WR2	Will require a site-specific review of operational practice at all SW reservoirs to compare with agreed best practice. (All SW impoundments)	

WR3	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 $10m^3$/day or 50 people).	2013
WR4	Compliance with hydro-morphological standards in order to meet WFD ecological objective. (All obsolete engineering works associated with abandoned water supply operations).	
WR5	To demonstrate compliance with water quality licences. (All SW abstractions and impoundments).	

3 – Environmental Drivers

Driver Code	UK Act/EC Directive
WQ01	Water Environment and Water Services Act 2002 (Secondary legislation to replace Control of Pollution Act 1974, Section 34)
WQ02	Environment Act 1995, Section 34
ON01	Town and Country Planning (Scotland) Act 1997
ON02	Environment Protection Act 1990, Part III
LA01	Environmental Protection Act 1990, Part IIA (Contaminated Land)
NH01	Water Industry (Scotland) Act 2002, Section 54
SD01	Water Industry (Scotland) Act 2002, Section 51
WA01	Definition of Waste (Hazardous Waste Directive)
EC01	Urban Waste Water Treatment Directive (91/271/EEC)
EC02	Bathing Water Directive (76/160/EEC)
EC03	Shellfish Waters Directive (70/923/EEC)
EC04	Freshwater for Fish Directive (78/659/EEC)

EC05	Surface Water for Drinking Directive (75/440/EEC)
EC06	Sludge Use in Agriculture Directive (86/278/EEC)
EC07	Birds Directive (79/409/EEC)
EC08	Habitats Directive (92/43/EEC)
EC09	Dangerous Substances Directive (76/464/EEC)
EC10	Water Framework Directive (2000/60/EC)
EC11	Landfill Directive (99/31/EC)
EC12	Integrated Pollution Prevention& Control Directive (96/61/EC)
EC13	Waste Incineration Directive (2000/76/EC)
EC14	National Emissions Ceiling Directive (2001/81/EC)
EC15	Strategic Environmental Assessment Directive (2001/42/EC)
pEC16	Revised Bathing Water Directive (proposed)
pEC17	EU Marine Strategy (proposed COM/2002/539)
pEC18	Sludge Directive (proposed) & EC Soils Strategy
pEC20	Environmental Liability Directive (proposed)
IN01	OSPAR Convention 1992
XF01	Climate Change (Cross-functional)
XF02	Flooding (Cross-functional)

4 – Customer Service Drivers

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

5 – Growth

To meet demand for services from new and existing customers by providing new assets or increasing the capacity of existing assets. This would include 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

Growth Investment Purposes and Output Measures

Secondary Investment Purpose	Output Measure	Output Unit	Output Measure Code
Growth	Increase in system capacity to meet growth from new and existing customers i.e. Population equivalent freed up by investment	PE	WG1/SG1
New development/Reasonable Cost contributions	Number of new housing connections to water or sewerage	number	WG2/SG2
First time water or sewerage	Number of connections to existing housing for water or sewerage service (making capacity available, allowing people to connect if they wish to do so)	number	WG3/SG3

NB Support Service Expenditure for water and sewerage service operational assets

SW should note that where it requires to detail the above expenditure for ***support services***, including for example vehicles, plant, offices and customer service asset, (i.e. where investment is generally needed to operate assets and maintain customer services) it should allocate the most appropriate Driver code(s) from the above tables to represent support services. Furthermore, The Commentary document should be used to provide further information on the affected projects and identify in each case which of the existing codes has been used to represent support services.

OUTPUT MEASURES & UNITS

1 - Capital Maintenance Outputs

Driver Code	Description of Output	Output Unit
WSI	Length of Infrastructure relined/replaced	Km
WSNI	Throughput of works subject to maintenance	Ml/day
WWI	Length of infrastructure relined/replaced	Km
WWNI	Population equivalent of works subject to maintenance work	Number
SS	Gross MEAV of assets subject to maintenance work	£

2 – Drinking Water Quality Outputs

Driver Code	Definition of Output	Output Unit
DW1	Volume of Water delivered to customers made compliant with the required standard	Megalitres/day
DW2	Volume of Water delivered to customers made compliant with the required standard	Megalitres/day

DW3 (DW3 – DW3K)	Volume of Water delivered to customers made compliant with the required standard **NB** In Table K1 for lines K1.7 to K1.7i, SW should specify in its Commentary the DW3 sub-driver that has been allocated to this line, and a description of its purpose & output. Codes provided by SW have been allocated to the following lines e.g. Line K1.7 (no allocation) Line K1.7a will represent DW3A Colour Line K1.7b will represent DW3B Coliforms Line K1.7c will represent DW3C Manganese Line K1.7d will represent DW3D Bromate Line K1.7e will represent DW3E (no allocation) Line K1.7f will represent DW3F Iron Line K1.7g will represent DW3G Aluminium Line K1.7h will represent DW3H Pesticides and/or Taste + Odour Line K1.7i will represent DW3I (no allocation) Line K1.7j will represent DW3J (Turbidity) Line K1.7K will represent DW3K (Final pH)	Megalitres/day
DW4 (&DW4A)	Volume of Water delivered to customers made compliant with the required standard NB – Line K1.8 should be used to record DW4 (Cryptosporidium) information. Line K1.8a should be used to record DW4A (Cryptosporidium Washwater Recovery) Information (following advice from SW)	Megalitres/day
DW5	Volume of Water delivered to customers made compliant with the required standard	Megalitres/day
DW6	Number of sites made compliant with standard	Number
DW7	Number of sites made compliant with standard	Number

DW8	Number of sites made compliant with standard	Number
DW9	Number of sites made compliant with standard	Number
DW10	Volume of Water delivered to customers made compliant with the required standard	Megalitres/day
DW11	Number of sites made compliant with standard	Number
DW12	Volume of Water delivered to customers made compliant with the required standard	Megalitres/day
DW13	Volume of Water delivered to customers made compliant with the required standard	Megalitres/day
DW14	Number of sites made compliant with standard	Number
DW15	Number of sites made compliant with standard	Number
DW16	Number of sites made compliant with standard	Number
DW17	Number of sites made compliant with standard	Number

DW18	Population equivalent benefiting from work	Population Equivalent
DW19	Population equivalent benefiting from work	Population Equivalent
DW20	Number of sites made compliant with standard	Number
DW21	Km of critical mains duplicated	Km
DW22	Number of sites made compliant with standard	Number
WR1	Number of sites made compliant with standard	Number
WR2	Number of sites made compliant with standard	Number
WR3	Number of sites made compliant with standard	Number
WR4	Number of sites made compliant with standard	Number
WR5	Number of sites made compliant with standard	Number

3 – Environmental Outputs

Driver Code	Definition of Output	Output Unit
WQ01	Population equivalent benefiting from work	Population Equivalent
WQ02	Population equivalent benefiting from work	Population Equivalent
ON01	Number of sites made compliant with standard	Number
ON02	Number of sites made compliant with standard	Number
LA01	Number of sites made compliant with standard	Number
NH01	Number of sites made compliant with standard	Number
SD01	Number of sites made compliant with standard	Number
WA01	Number of sites made compliant with standard	Number
EC01	Population equivalent benefiting from work	Population Equivalent
EC02	Population equivalent benefiting from work	Population Equivalent
EC03	Population equivalent benefiting from work	Population Equivalent
EC04	Population equivalent benefiting from work	Population Equivalent
EC05	Number of sites made compliant with standard	Number
EC06	Population equivalent benefiting from work	Population Equivalent
EC07	Population equivalent benefiting from work	Population Equivalent

EC08	Population equivalent benefiting from work	Population Equivalent
EC09	Number of sites made compliant with standard	Number
EC10	Population equivalent benefiting from work	Population Equivalent
EC11	Population equivalent benefiting from work	Population Equivalent
EC12	Number of sites made compliant with standard	Number
EC13	Population equivalent benefiting from work	Population Equivalent
EC14	Population equivalent benefiting from work	Population Equivalent
EC15	Number of sites made compliant with standard	Number
pEC16	Population equivalent benefiting from work	Population Equivalent
pEC17	Population equivalent benefiting from work	Population Equivalent
pEC18	Population equivalent benefiting from work	Population Equivalent
pEC20	Number of sites made compliant with standard	Number
IN01	Number of sites made compliant with standard	Number
XF01	Number of sites made compliant with standard	Number
XF02	Number of sites made compliant with standard	Number

4 – Customer Service Outputs

Driver Code	Definition of Output	Output Unit
CS1	Removal of properties from the register of properties at risk from poor pressure.	Number of properties
CS2	Number of WWTW made compliant with odour management standards.	Number of works
CS4	Number of meters made compliant with business metering standards	Number of meters
CS5	Number of meters made compliant with household metering standards	Number of meters
CS6	Customers subject to improved emergency planning standards.	Number of customers
CS7	Businesses subject to improved billing facilities	Number of businesses
CS8	Households subject to improved billing services.	Number of households
CS9	Customers subject to improved customer service facilities.	Number of Customers
CS11	Sewer Flooding. Removal of properties from at risk register.	Number of properties
CS12	Unplanned Interruptions. Reduction in the number of properties at risk of experiencing unplanned interruptions	Number of Properties
CS13	Introduction of competition. In its commentary document, Scottish Water should ascribe the benefits from the investment in relation to the delivery of the competitive retail market.	-

5 – Growth

To meet demand for services from new and existing customers by providing new assets or increasing the capacity of existing assets. This would include 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)
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Growth Investment Purposes and Output Measures

Secondary Investment Purpose	Output Measure	Output Unit	Output Measure Code
Growth	Increase in system capacity to meet growth from new and existing customers i.e. Population equivalent freed up by investment	PE	WG1/SG1
New development/Reasonable Cost contributions	Number of new housing connections to water or sewerage	number	WG2/SG2
First time water or sewerage	Number of connections to existing housing for water or sewerage service (making capacity available, allowing people to connect if they wish to do so)	number	WG3/SG3

NB Support Service Expenditure for water and sewerage service operational assets

SW should note that where it requires to detail the above expenditure for ***support services***, including for example vehicles, plant, offices and customer service asset, (i.e. where investment is generally needed to operate assets and maintain customer services) it should allocate the most appropriate Output code(s) from the above tables to represent support services. Furthermore, The Commentary document should be used to provide further information on the affected projects and identify in each case which of the existing codes has been used to represent support services.