



# Standards Programme

## Topic G. Water – collection systems

### 1. Details of objectives.

Topic	Water – Collection systems	Sub-topics	Impounding reservoirs, River intakes, Bankside storage, Boreholes and wells, Catchment Management, Flow compensation, Abstraction licensing, Wastewater re-use, Water efficiency effects, Asset design, Asset management
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The topic can be divided into the following key stages:

Evaluation of yield required from system	Demand forecasting, Demand management possibilities, Water efficiency measurement and forecasting, Headroom needs, Drought planning needs, Flow compensation requirements, Environmental and recreational considerations
Agree and obtain license for abstraction from system	EC Water Framework Directive, EC Groundwater Directive, EC Strategic Environment Assessment Directive, Timescale, Time Limited Licenses, Abstraction limitations, Groundwater recharge, Catchment Management Strategies (CAMS), Wastewater re-use possibilities, Nitrate Vulnerable Zones (NVZ), Public relations and attitude, Environment Agency considerations
Design system	Reservoirs Act 1975 requirements, Reservoirs Panel Engineers, Eurocodes Hydraulic design, Civil/Structural Engineering design, M&E design
Construct asset	Civil Engineering work, M&E work, Yield testing, Commissioning
Manage, monitor and maintain asset	Reservoirs Act 1975 requirements, Reservoirs Panel Supervising Engineers, Flow measurement and recording, Water level measurement and recording, Cumulative abstraction recording, Preventative maintenance, Repairs and

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	replacements
Dispose of asset	De-commissioning, Re-use of asset for a different purpose, Safety considerations, Environmental considerations

Current UK practice

Evaluation of yield required from system

- Demand measurement.
- Housing forecasts
- Demand forecasting.
- Catchment management options
- Statutory Drought Plans.
- Headroom calculation.
- Pollution risk assessment
- Environmental impact assessment
- Water Footprinting

Agree and obtain license for abstraction from system

- Long-term (up to 20 year) planning horizon for impounding reservoirs requiring early approaches to regulators.
- Involvement of customers and environmental groups in planning process.
- Proactive involvement in preparation of CAMS.
- CAMS preparation on six-year cycle.
- Current CAMS cycle ends 2008.
- Reduction in number of CAMS from 129 to 101 by 2014.
- EC Strategic Environment Assessment Directive does not apply to CAMS
- License trading.
- Involvement of customer and environment protection groups.
- Public inquiry.
- Ministerial Decision.

Design system

- Catchment modelling.
- Reservoirs Act 1975 requirements for impounding reservoirs.
- Use of Reservoirs Panel Engineer.
- Use of Consultant Engineers.
- Use of Eurocodes for structural design.
- Hydraulic design.
- Design criteria - Civil Engineering Specification for the Water Industry (CESWI) for:
  - Ancillary structures for impounding reservoirs e.g. spillways, access roads.
  - River intake structures and buildings.
  - Borehole and well headworks.
- Design criteria and product specification for M&E plant - Water Industry Mechanical and Electrical Specifications (WIMES) for:
  - Borehole and well pumps and control gear.
  - River intake pumps and control gear.

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- Screening for intakes.
- BS and CEN standards for ancillary products e.g. flow meters, building components.

#### Construct asset

- Use of Reservoirs Panel Engineer.
- CESWI - construction performance requirements.
- WIMES - installation requirements.
- BS and CEN standards for flow measurement.
- Partnering with customer, wildlife and environmental protection groups during the construction period.

#### Manage, monitor and maintain asset

- Management system based on CAMS.
- Environment Agency involvement.
- Environment Agency manages some systems.
- Statutory Drought Plans.

#### Dispose of asset

- Wildlife protection.
- Recreational uses e.g. Sailing, fishing.
- Removal of plant.
- Demolition or re-use of structures.
- Environment Agency involvement.

#### Current issues and pressures

- Environment Agency CAMS process for assessing river flows.
- Completion of first round of CAMS by 2008.
- Statutory Drought Plans.
- EC Water Framework Directive.
- EC Groundwater Directive.
- Abstraction licensing changes.
- Time limited licenses.
- Climate change.
- Demand management including the effects of metering.
- House of Lords Inquiry into Water Management.
- Preparing for Price Review 09.
- Water industry pay substantial sums for EA to collect data – need to identify better standard methods of measurement and standards for data transfer and hydrometry.
- Security around reservoirs
- Intercompany transfers of water
- Risk assessment of reservoirs – being lead by British Dam Society
- Need for contingency plans for reservoir bank failure
- Need for leakage detection at reservoir embankments

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#### Long-term objectives

Objective G.1: To ensure the availability of the necessary future water resources to provide anticipated water supply demand.

Encourage the acceptance of the “twin track” approach to water resource provision by:

- Providing input to Government inquiries into water resources provision
- Promoting the “twin track” approach on the Water UK website.
- Organising or attending workshops with industry partners and other stakeholders to promote the need for long term planning for storage reservoir provision.
- Supporting the development and use of British, European and International standards for water footprinting.

Objective G.2: To continue pro-active input to Catchment Management Strategies from water suppliers.

Provide a consistent approach to water supplier input by:

- Encouraging the development of a common measurement strategy across EA Regions.
- Providing communication channels between water suppliers.
- Supporting the development and use of British and European standards for measurement of the performance of CAMS.

Objective G.3: To engage relevant parties in identifying and executing responsibilities under the EC Water Framework Directive.

Stimulate and discuss with Defra, CLG and the EA the ways to apply sensible, cost effective regulation of the provisions of the Directive by:

- Promoting dialogue with and through other partners and stakeholders.
- Using the Water UK website to encourage meaningful public discussion on the alternatives and their cost.

Objective G.4: To raise public awareness regarding the viability of wastewater re-use.

Provide information regarding domestic use of recycled wastewater and gradually extend this information to encompass the use of wastewater in bulk. The difference between the present system of using WWTW discharges indirectly and the possibility of re-using the wastewater directly will need careful handling. Input from the Building Regulations Advisory Committee (BRAC) could assist in the domestic re-use area.

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2. Project plan to deliver each long-term objective:

Review need for standards in this area e.g. standard methods of measurement. Review with all topic and policy advisers.

Objective/ Project	Potential collaborators	Topic/Policy Adviser(s)	Project Activity	Specific Activity in 2010/11
Objective G.1: To ensure the availability of the necessary future water resources to provide anticipated water supply demand				
G.1.1 Providing input to Government inquiries into water resources provision.	Waterwise CIWEM	Mike Pocock Bruce Horton	No anticipated standards activity.	No anticipated standards activity.
G.1.2 Promoting the “twin track” approach on the Water UK website.	Waterwise, EA, Defra, CLG	Mike Pocock Bruce Horton	No anticipated standards activity.	No anticipated standards activity.
G.1.3 Organising or attending workshops with industry partners and other stakeholders to promote the need for long term planning for storage reservoir provision.	CIWEM	Mike Pocock Bruce Horton	No anticipated standards activity.	No anticipated standards activity.
G.1.4 Supporting the development and use of British, European and International standards for water footprinting.	Waterwise, EA, Defra, CLG	Mike Pocock Bruce Horton	Attending BSI SES/1/5/1 – Environmental Management – Water Footprinting	Monitor ISO development of a Water Footprinting Standard.

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Objective/ Project	Potential collaborators	Topic/Policy Adviser(s)	Project Activity	Specific Activity in 2010/11
Objective G.2: To continue pro-active input to Catchment Management Strategies from water suppliers				
G.2.1 Encouraging the development of a common measurement strategy across EA Regions.	BSI EA Bristol HQ.	Mike Pocock Bruce Horton	No anticipated standards activity.	No anticipated standards activity.
G.2.2 Providing communication channels between water suppliers.		Mike Pocock Bruce Horton	No anticipated standards activity.	No anticipated standards activity.
G.2.3 Supporting the development and use of British and European standards for measurement of the performance of CAMS by input to BSI CPI/113 – Hydrometry and relevant sub-committees	BSI ISO	Mike Pocock Bruce Horton	Attending BSI CPI/113, CPI/113/5 – Measuring instruments and equipment and CPI/113/8 – Wells and boreholes. Attending ISO TC113/SC8 – Ground Water. Attending BSI CPI/113/01 - Velocity area methods, CPI/113/02 - Notches, Weirs and Flumes	Determine need for continued attendance at BSI CPI/113, CPI/113/05 and CPI/113/08 and ISO TC113/SC8 with Representative Rod Wilkinson
Objective G.3: To engage relevant parties in identifying and executing responsibilities under the EC Water Framework Directive.				
G.3.1 Promoting dialogue with and through other partners and stakeholders.	Defra, CLG, EA	Mike Pocock Bruce Horton Gaëtane Suzenet	No anticipated standards activity.	No anticipated standards activity.

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Objective/ Project	Potential collaborators	Topic/Policy Adviser(s)	Project Activity	Specific Activity in 2010/11
G.3.2 Using the Water UK website to encourage meaningful public discussion on the alternatives and their cost.		Mike Pocock Bruce Horton Gaëtane Suzenet	No anticipated standards activity.	No anticipated standards activity.
Objective G.4: To raise public awareness regarding the viability of re-cycled wastewater re-use				
G.4.1 Provide information regarding domestic use of recycled wastewater.	Defra, CLG, EA, CIWEM	Mike Pocock Bruce Horton Steve Ntifo Jeanne Gorlay	No anticipated standards activity.	Water UK website page to determine reaction. No anticipated standards activity.
G.4.2 Explain the difference between the present system of using WWTW discharges indirectly and the possibility of re-using the wastewater directly (will need careful handling).	Defra, CLG, EA, CIWEM	Mike Pocock Bruce Horton Steve Ntifo Jeanne Gorlay	No anticipated standards activity.	No anticipated standards activity.
G.4.3 Maintain a link with the Buildings Regulations Advisory Committee on recycled wastewater re-use.	BRAC CLG	Bruce Horton	No anticipated standards activity.	Communication of activity in BRAC into Water UK Standards Programme.