

The Water Framework Directive
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Adam Dean, Divisional Director - Ewan Associates Ltd

1. Overview

It appears that no matter what water or environmental magazine you pick up, you can't escape from an article associated with the European Union's Water Framework Directive (WFD). However, when you consider some of the headlines associated with the WFD, it becomes clearer why the technical press are bombarding us with information.

DEFRA states that¹

The Water Framework Directive (WFD) is the most substantial piece of EC water legislation to date. It requires all inland and coastal waters to reach "good status" by 2015.

The Mersey Basin Campaign (one of the stakeholders on the River Ribble, River Basin Management Plan Pilot Study) referred to the WFD in one of his presentations² as:

"Red Hot and Revolutionary"

The Institution of Civil Engineers³ has referred to it as:

"The biggest thing since the Roman Aqueducts", but also reported that "89% of New Civil Engineer Readers, have no understanding of its implications".

Most data published since its introduction in December 2003 has been mainly at government level. This has led to a mix of opinion from a wide range of stakeholders (ministers, environmentalist, water companies and users etc). However, with legislation coming into effect in the UK at the end of 2003, all stakeholders, particularly those whose operations have an impact on water bodies or who work in the sector, will need to know what is expected and what threats and opportunities this huge piece of legislation will bring to your operating environment.

This paper attempts to cut through the red tape and give a basic overview of the WFD. Key elements include:

- What is the WFD?
- How will the WFD be implemented?
- River Basin Management Plans - An Overview.
- What's around the corner for the UK Water Industry?
- Further information sources for the WFD.

¹ DEFRA Website <http://www.defra.gov.uk/environment/water/wfd/index.htm>

² Mersey Basin Campaign, W Menzies [NCE WFD Business Opportunities and Threats Seminar June 2003]

³ New Civil Engineer 22 May 2003.

2. What is the WFD?

In the early days of the European Union water standards controlled by European law were first introduced for our rivers and lakes where we abstracted drinking water. In the 1980s the EU started to introduce legislation for fisheries, shellfish waters, bathing waters and ground waters. These were later modified in 1991 by the introduction of the ‘Urban Wastewater Treatment Directive’ (this provided for secondary ‘biological’ waste treatment, and even more stringent treatment where necessary). The ‘Nitrates Directive’, addressed water pollution by nitrates from agriculture. Other directives and directive modifications occurred in the 1990s. In November 1998 we saw the introduction of a new ‘Drinking Water Directive’, and in 1996 we saw the introduction of a new directive for ‘Integrated Pollution and Prevention Control (IPPC)’.

In the mid 1990s the Commission, which had been considering a need for a more global approach to water management, accepted requests from the EU Environment Committee and associated Ministers to start a consultation process to review and examine a global approach to water management. The EU had acknowledged that, though the ‘Drinking Water’ and ‘Urban Wastewater’ Directives had been considered a milestone for improving drinking water and receiving water quality, this approach did not address all the key stakeholders associated with the water environment. It was felt that a more integrated approach was required in order to manage our waters effectively.

The consultation process included representatives from member States, Regional and Local Authorities, Regulators, Water Companies, industry, agriculture and consumers.

The key conclusion of the consultation process was that existing water policies were fragmented and not ‘joined up’. All parties agreed on the need for a single piece of framework legislation to resolve these issues. In response to this the Commission presented a proposal for a Water Framework Directive (WFD). The existing directives the WFD replaced are listed in Appendix A.

In December 2000, the WFD (Directive 2000/60/EC) was introduced, establishing a framework for the protection of inland surface waters (rivers and lakes), transitional water (mostly estuaries), coastal waters and groundwater. The WFD requires all waters to achieve a ‘good status’ by 2015. The objectives of the WFD are:

- the prevention of further deterioration, protection and enhancement of the status of aquatic ecosystems and associated wetlands
- the promotion of sustainable water use
- the reduction of discharges and emissions
- the progressive reduction of pollution in ground water
- to contribute to mitigating the effects of floods and droughts.

To achieve the objectives of the Directive, stakeholders will be required to:

- undertake River Basin Management Plans
- establish monitoring programmes that use biological as well as chemical parameters
- set ambitious objectives and clear deadlines, to achieve the environmental objectives of the Directive.

3. How will the WFD be implemented?

Who is responsible for implementing the Directive?

The official wording on the DEFRA website is that the implementation of the Directive is a devolved matter. However, the Secretary of State for Environment, Food and Rural Affairs has ultimate responsibility for implementation of the Directive. As part of DEFRA's Second Consultation Paper there was a recommendation that the Environment Agency should be appointed as the competent authority to oversee the implementation in England and Wales. The arrangements are different for Scotland and Northern Ireland. Information on the implementation strategies for these countries can be obtained from the respective websites (www.wales.gov.uk, www.scotland.gov.uk and www.doeni.gov.uk).

Who is responsible for making sure the Directive does what it sets out to do?

As mentioned above, the responsibility ultimately lies with the Secretary of State for DEFRA.

DEFRA have completed the work to give legal effect to the Directive from December 2003, and the Environment Agency have been given statutory duties to administer the rules of the Directive and ensure compliance by 2015.

What is the implementation timetable?

In the words of the EU, the implementation timetable is very ambitious. An outline of the implementation timetable⁴ aligned with OFWAT Periodic Reviews is provided in Figure 1. A more detailed schedule of the key dates is provided in Appendix B

⁴ Water Framework Directive, Dr Martin Griffiths [NCE WFD Business Opportunities and Threats Seminar June 2003]

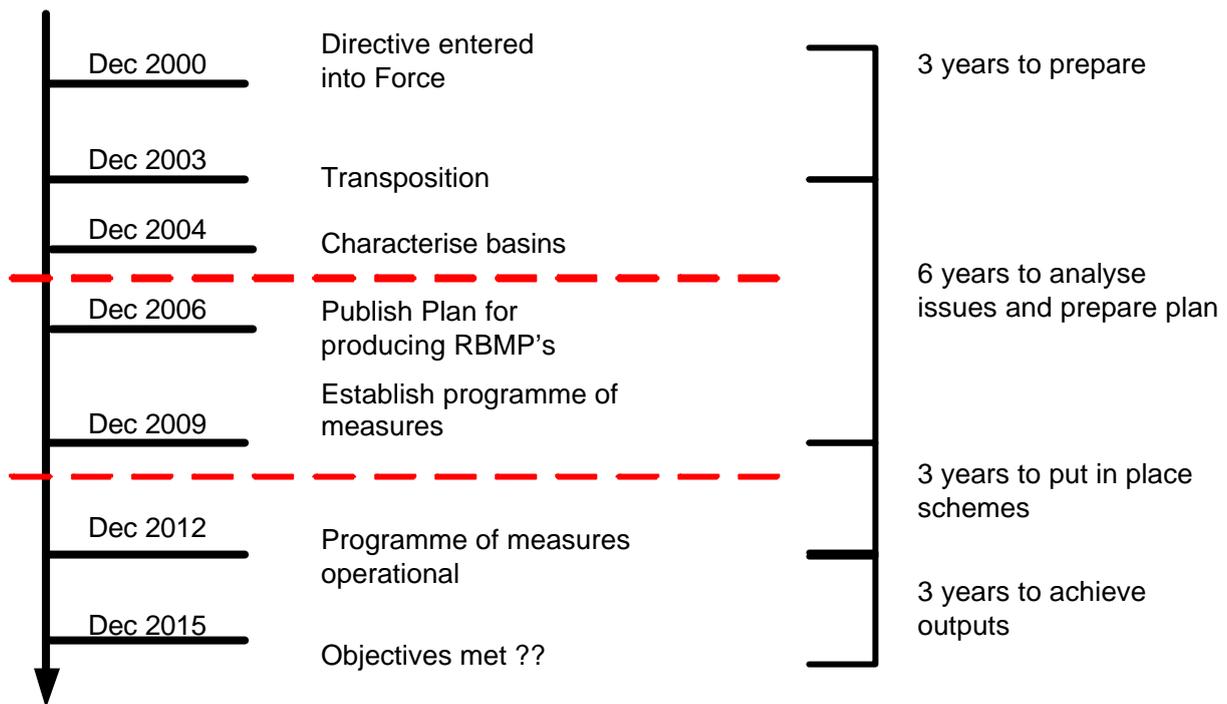


Figure 1: Water Framework Directive Timetable for implementation aligned with OFWAT's Periodic Reviews

The implementation of the WFD is likely to raise a number of technical challenges for the Member States, the Commission, the Candidate Countries and other stakeholders. In addition, many of the European river basins are international, crossing administrative and territorial borders and therefore a common understanding and approach is crucial to the successful and effective implementation of the Directive.

In order to address the challenges in a co-operative and co-ordinated way, the European Commission has set up a Common Implementation Strategy (CIS). This will help develop a common understanding of the issues, pool effort and expertise and help deliver effective implementation across Europe in accordance with the timetable.

4. River Basin Management Plans - An Overview

To facilitate the implementation of the WFD Member States will need to produce River Basin Management Plans (RMBP) for all river basin districts within their country. The plan will set out how the leading authority will manage the basin in order to achieve, at least 'good water' status for all waters (inland and coastal) within the river basin.

The plans will have to be prepared with various levels of input from all the key stakeholders. The appropriate ministries will issue statutory guidance on preparation of the plans, as well as have explicit power to approve, modify or reject them.

The plans will also have to take into account the economic cost of water.

This section of the paper explores:

- River Basin Districts
- River Basin Management Plans
- River Basin Management Plans Pilot Studies
- What is meant by ‘Good Water’ Status

River Basin Districts (RBD)

All Member States must allocate all water sources to River Basin Districts (RBD). The Competent Authority will have been identified by 2003 (i.e. Environment Agency for England and Wales), and will be responsible for ensuring that the requirements of the Directive are met.

To do this the Competent Authority must produce for the European Commission by 2009 a River Basin Management Plan (RMBP) for each RBD.

A RBD has been classified as the area of land from which all surface waters (streams, rivers etc) and ground waters flow into the sea at a single river mouth or estuary. The RBD will include coastal waters up to one nautical mile beyond the baseline from which the inland waters are measured.

At the last count 129 RBDs have been proposed⁵ for Europe. However, this is likely to change as Italy has not yet published its RBD, Sweden apparently could have anything between 4 and 12 RBDs.

The Directive will require that RBDs which cross national boundaries (like the River Danube which flows through Germany, Austria, Hungary, Serbia and Romania into the Black Sea) must be assigned to an International RBD (IRBD), and the associated Member States involved must ensure the coordination of measures for its implementation. This may be fine in principal, but how effective will this be for IBRDs like the River Neisse, which flows through Germany, Poland and Czech Republic? As Poland and the Czech Republic are only to gain entry into the EU next year, they are likely to have water quality issues years behind Germany, which will have been implementing EU legislation for the past 25 years.

England and Wales are likely to have 10 RBDs. This is based on the data provided in DEFRA’s Second Consultation Paper on the WFD. The RBDs are shown in Figure 2.

⁵ Project 2.9 Best Practices in River Basin Management Planning [Common Implementation Strategy August 02]

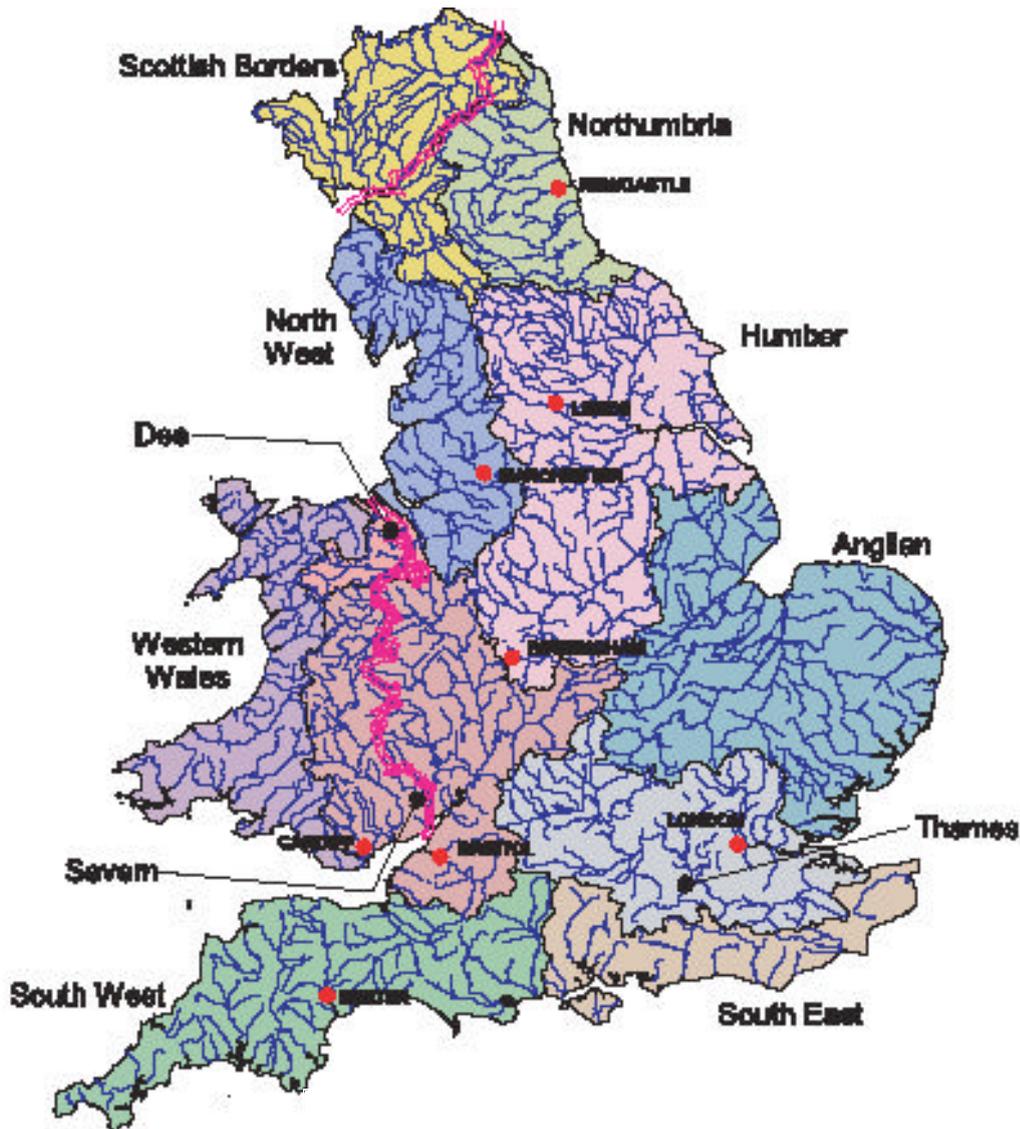


Figure 2 Proposed England and Wales River Basin Districts

River Basin Management Plans

The WFD recognizes that the best model for a single system of water management is by river basin⁶, in that the natural geographical and hydrological boundary of the river basin should be used to manage the water body, as opposed to the administrative or political boundary.

As discussed above, each Competent Authority must produce a River Basin Management Plan (RBMP) for each RBD by 2009. To achieve this the Directive requires the Member States to encourage the active involvement of all key stakeholders. A series of consultation documents are required in the preparation of the plan, these include:

- Timetable and work programme by 2006
- Interim overview of the significant water management issues by 2007
- Draft copies of the RBMP by 2008.

⁶ www.europa.eu.int/comm/environment/water/water-framework/overview.html

The plan should provide a detailed account of how the objectives set for the river basin (ecological status, quantitative status, chemical status and protected area objectives) are to be reached within the specified timescale.

The plan will also include economic analysis of water use within the RBD, which will allow the cost of water to be assessed.

River Basin Management Plans Pilot Studies

In order to test the robustness of the RBMP guidance documentation and to ensure consistency, coherence and harmonisation of implementing RBMPs across the EU, a series of pilot river basin studies are being undertaken.

The pilot studies began in 2003 and should be completed in 2004. Feedback from the studies will be used to improve guidance and produce a manual for the practical implementation of the WFD. The pilot studies are being coordinated by the CIS Work Programme.

There are a total of 15 river basin pilots happening across Europe. The UK is participating in these pilots through the River Ribble Pilot Study, located in the North West RBD. The pilot will work closely with regional and local stakeholders and includes representatives from business, industry, wildlife, environmental and farming organisations. The project is managed by the Environment Agency.

What is meant by ‘Good Water’ Status?

One of the principal environmental objectives of the WFD (Article 4) is to “ensure the achievement and maintenance of ‘good water’ status for all community waters by 2015”.

In all the documentation, periodicals and technical papers the terminology ‘good water’ status appears everywhere. But very little information is available on what it actually means from a regulatory perspective (i.e. when does a river fail). For example, under the Bathing Water Directive, we can interpret the legislation as 3 spills per year for some coastal water conditions, and as a result engineers can design to this. But what design parameters will we be using to achieve ‘good water’ status?

What we do know is that for rivers a “good surface water status” will be achieved by a body of water when both its ecological and chemical status is at least “good” (This is explained further in Annex 5 of the Directive). It is likely that in order to assess the classification of the water body, Member States will have to carry out sufficient monitoring to make an assessment of the ecological and chemical status.

However, the size of the monitoring programme will, in the UK, be dependant upon how our current classification system compares to that of the WFD. The Environment Agency currently sets River Water Quality Objectives for rivers in terms of chemical parameters ranging from RE1 (River Ecosystem) which is very good quality (suitable for all fish species) to RE5, poor quality (likely to limit fish populations).

Research for this paper has not identified a direct link between the two classifications. Depending upon the classification the cost consequence to upgrading river to a ‘good status’

could be huge. For example, if a ‘good water’ status were classified as equivalent to RE2 as oppose to RE3, then to meet this standard 13,250km⁷ of river could require upgrading.

4. What’s around the corner for the UK Water Industry?

There are many uncertainties in what lies ahead for the UK Water Industry. This is hardly surprising when you consider that the cost of implementation of the WFD has been estimated between £1.9 to £9.0 bn⁸. Preliminary analysis indicates that possibly 40% of the investment will have to come from the water companies in direct infrastructure and management spending. The likely breakdown of this spending is given below.

	£ bn	£ bn
Sewerage	0.90	4.20
Industry	0.30	1.20
Agriculture	0.60	2.90
River habitat improvement	0.09	0.44
Low flow alleviation		> 0.24

Table 1 – Estimated spending for the WFD by Sector

The figures above show that the Directive aims at a holistic approach to water quality. It tackles the issues of diffuse pollution, a common element of agricultural practices resulting in high levels of nitrates and phosphate associated with fertiliser runoff.

OFWAT have asked water companies to include in the AMP4 submissions an outline of what they need to do to meet the WFD. But how can water companies plan when there is uncertainty surrounding the classification of ‘good water’ status? Surely they cannot do this until the RBMPs have been come operational in 2012, and this data is available. This however may then only give water companies three years to implement and invest in a programme of works to achieve ‘good water’ status.

To achieve a harmonised approach, the periodic review process should be aligned with the WFD timetable

Based on DEFRA’s cost analysis to date, it has been estimated that cost of fees associated with RBMPs, Monitoring and Assessments, will be in excess of £125M. Opportunities for consultants are likely to be initially in data acquisition, management and application.

As part of DEFRA’s First Consultation Paper on the implementation of the WFD, WaterVoice, in their letter of the 6 June 2001, stated “We recognise that the Directive has to be implemented but on the basis of current information it is questionable whether the expenditure that will fall on water companies and in turn on customers in higher bills will deliver good value for money”

This view might be challenged however, because if you consider that the capital investment is set to increase by 20% over the current AMP programme for the water and sewerage

⁷ The WFD: why is there so much uncertainty, L Chalmers [Industrial Environmental Management Sept 02]

⁸ WRC Report for DEFRA in 1999

companies (equivalent to an increase of approximately £5bn), and that this has been equated to the equivalent of an increase in the average water bill of £15 per year, then surely the WFD offers good value for money in the way it will manage water holistically. This should lead to long-term environmental protection and result in a sustainable benefiting environment benefiting us all economically through wider recreational use of water and a healthy environment.

5. Further information sources for the WFD

The following sources of information are recommended for keeping up to date with the WFD at both a UK and European level.

<http://www.defra.gov.uk/environment/water/>

DEFRA homepage for water issues. DEFRA have a section devoted to the WFD.

You can also download from here all of DEFRA's consultation papers and a copy of DEFRA's publication 'Directing the Flow'. This policy document seeks to define the Government's strategic vision for the direction of water policy and its place among broader Government objectives in England like the WFD.

Links to Environment Agency and Ofwat where applicable.

<http://europa.eu.int/comm/environment/water/index.html>

European Unions homepage for water relates issues. This gives a good overview of the directive from a European perspective and its relationship to other water directives.

You can also download copies of the Water Framework Directive Newsletter from this Site.

Appendix A

Existing Water Directives and their relationship to the Water Framework Directive

The WFD will provide a European Standard, allowing the implementation of localised standards, whilst ensuring that minimum standards are met. Some of the existing individual directives (ie Bathing Water Directive) will provide the specific legislative tools that will be used in achieving the overall aims of the WFD. Those Directives which will be replaced, and those which will continue, are listed below.

A. Directives that will remain under the framework of the WFD

- Bathing Water Directive (76/160/EEC)
- Nitrate Directive (91/767/EEC)
- Integrated Pollution and Prevention and Control Directive (IPPC) (96/61/EC)
- Habitat Directive (92/43/EEC)
- Drinking Water Directive (80/778/EEC)
- Urban Wastewater Directive

B. Directives which will be replaced by the WFD

- Dangerous Substances Directive (76/464/EEC)
- Groundwater Directive (80/68/EEC)
- Surface Water Directive (75/440/EEC)
- Fresh Fish Water Directive (78/659/EEC)
- Shell Fish Water Directive (79/923/EEC)

Appendix B

The Water Framework Directive sets out clear deadlines for each of the requirements which adds up to an ambitious programme. The key milestones are:

Year	Issue	WFD Directive Reference
2000	Directive entered into force	Art. 25
2003	Transposition in national legislation	Art. 23
	Identification of River Basin Districts and Authorities	Art. 3
2004	Characterisation of river basin: pressures, impacts and economic analysis	Art. 5
2006	Establishment of monitoring network	Art. 8
	Start public consultation (at the latest)	Art. 14
2008	Present draft river basin management plan	Art. 13
2009	Finalise river basin management plan including programme of measures	Art. 13 & 11
2010	Introduce pricing policies	Art. 9
2012	Make operational programmes of measures	Art. 11
2015	Meet environmental objectives	Art. 4
2021	First management cycle ends	Art. 4 & 13
2027	Second management cycle ends, final deadline for meeting objectives	Art. 4 & 13