Comhshaol, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government

RIVER BASIN MANAGEMENT PLANNING

A Practical Guide for Public Authorities

June 2008

Department of the Environment, Heritage & Local Government

River Basin Management Planning

GUIDANCE

Custom House Quay, Dublin 1.
• Phone: 01-8882000 • Fax: 01-8882400 • E-mail: Kevin.Forde@environ.ie

June 2008

Table of Contents

Chapter 1

1. The Purpose of River Basin Planning

Delivering sustainable water management and protection for the future requires forward looking and effective harmonisation across many policy areas

The European Communities (Water Policy) Regulations (S.I No. 722 of 2003) transposed the European Water Framework Directive into National legislation in December 2003. The purpose of this Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which:

1) prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;

2) promotes sustainable water use based on a long-term protection of available water resources;

3) aims at enhanced protection and improvement of the aquatic environment, *inter alia*, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;

4) ensures the progressive reduction of pollution of groundwater and prevents its further pollution, and

5) contributes to mitigating the effects of floods and droughts

The purpose of this document is to provide guidance on the implementation of the European Communities (Water Policy) Regulations (S.I No. 722 of 2003). While the guidance is not binding the relevant public authorities should take full account of it.

This guidance has been developed in consultation with a range of public authorities with responsibility for protecting the water resource and performing their functions in a manner consistent with water protection.

1.1 Purpose of this guidance

The purpose of this document is to provide practical guidance on the river basin management planning process, including the preparation of river basin management plans. The guidance will serve to promote the co-ordinated implementation of the Directive across river basin districts.

The guidance sets out the required content of plans and describes in practical terms the legal obligations arising under the Directive, such as interpretation of the requirements relating to environmental objectives. It also explains the application of the exemption provisions of the Directive (i.e. the provisions allowing the phasing of objectives and 'less stringent environmental objectives' in some circumstances) and how these exemptions might properly be applied in real situations.

Guidance is provided in relation to protected areas *i.e.* designated drinking water protected areas, shellfish waters, bathing areas, nutrient sensitive areas and nature conservation sites and how the specific obligations in relation to these areas are to be addressed in practice within the overall river basin planning process.

Clarification is provided on the relationship between river basin management plans and other plans and programmes already in existence. These include water pollution reduction plans and programmes, for example, programmes under the Shellfish Waters Directive, Bathing Water Directive, Water Services Strategic Plans etc. Guidance is provided on how to integrate these in a coherent way with river basin management plans.

In addition clarification is provided on the application of Strategic Environmental Assessment (SEA) to river basin management plans and their programmes of measures.

1.2 Who is the guidance directed at?

The guidance is aimed at local authorities, regional authorities, the Environmental Protection Agency (EPA) and other public authorities directly involved in the river basin management planning process and who have a role to play in the delivery of the objectives of the Water Framework Directive. The steps that need to be taken by local authorities, the EPA and other public authorities to align the objectives of other plans and programmes with the stated objectives of river basin management plans are outlined. Such plans and programmes include; regional planning guidelines, county development plans (and their constituent Local Area Plans), water services strategic plans, other pollution reduction and/or control programmes (e.g. forestry

programmes, farm inspection programmes, review of Integrated Pollution Prevention Control licenses, etc.).

Chapter 2

2. The River Basin Management Planning Process – in Summary

Key elements of river basin planning are: i) the protection of all waters (rivers, lakes, coastal waters and groundwaters), ii) the ambitious aim of ensuring that all waters meet "good status" by 2015. iii) the requirement for cross border coordination, iv) the need to ensure the active participation of all stakeholders, in water management activities, v) the requirement for water pricing policies and ensuring that the polluter pays, and v) the need to balance the interests of the environment with those who depend on it.

The following is intended to provide a brief description of the river basin management planning process. Figure 1 illustrates the overall process of river basin management.

2.1 The process in brief

Ireland along with other Member States of the European Union is moving towards River Basin Management Planning in accordance with the requirements of the Water Framework Directive. The Directive aims to provide a new, strengthened system for the protection and improvement of water resources and water-dependent ecosystems. It aims to prevent deterioration in the existing status of waters, maintain "high status" where it exists, and ensure that all waters, with some limited exceptions, achieve at least "good status" by 2015.

The Irish authorities have successfully met all of the milestones of the Directive to-date. The Directive was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (SI 722 of 2003). River Basin Districts (RBDs) were identified to serve as the "administrative areas" for co-ordinated water management. Cross-border river basins covering the territory of Ireland and Northern Ireland were assigned to an "International RBD". Four hundred river basins on the island of Ireland have been grouped and assigned to a total of eight RBDs. One of these RBDs lies wholly in Northern Ireland, four lie wholly

in Ireland and three are International RBDs. In addition, local authorities and the EPA were identified as the principal competent authorities responsible for implementing the Directive in Ireland.

In 2004 an analysis of the characteristics of river basin districts was completed for each RBD in accordance with the requirements of Article 5 of the Directive. Water bodies were delineated for management purposes. These include some 757 groundwater, 4,468 river, 210 lake (above 50 hectares), 196 transitional and 113 coastal water bodies. An analysis of the impact of human activity on the status of water bodies was undertaken. This analysis provided an assessment of the likely condition of all water bodies (groundwater, rivers, lakes, transitional and coastal waters) and established a baseline for identifying future priority actions for subsequent stages in the river basin planning cycle.

The water bodies identified by the initial analysis ('characterisation') as being at risk included (by number): 5% of groundwater bodies, 29% of river water bodies, 18% of lake water bodies, 30% of transitional water bodies and 12% of coastal water bodies. In addition, water bodies identified as being probably at risk include: 56% of groundwater bodies, 35% of river water bodies, 20% of lake water bodies, 23% of transitional water bodies and 15% of coastal water bodies. Further characterisation is being undertaken on these water bodies to confirm the initial assessments.

A National monitoring programme was established by the EPA in 2006 and monitoring of groundwater and surface water commenced in 2007. Monitoring responsibilities were assigned by the EPA to several agencies, including the EPA itself, local authorities, the Marine Institute, regional fisheries boards, the Office of Public Works and the National Parks and Wildlife Service of the Department of the Environment, Heritage and Local Government.

The EPA will classify the status of all surface water bodies using new classification tools developed for Water Framework Directive purposes. The classification system for surface waters includes consideration of ecological status and chemical status. The process of assigning classification to surface water bodies is set out in more detail in Chapter 3. Briefly, ecological status quality elements include biology[1], the general conditions supporting biology[2] (WFD Annex VIII, substances 10-12) water quality standards for specific pollutants[3] (WFD Annex VIII, substances 1-9) and hydromorphological conditions supporting biology[4].

[1] Biology includes algae, plants, invertebrates and fish

[2] General conditions include natural physico-chemical conditions such as nutrient concentrations, temperature, oxygen and transparency listed in Annex VIII

[3] Specific pollutants include both synthetic substances (e.g. biocides and plant protection products) and non-synthetic substances (metals) listed in Annex VIII

[4] Hydromorphology includes hydrological regime and morphological conditions

Chemical status[5] will be determined on the basis of EU wide standards for priority substances as well as standards already established under other relevant EC Directives. These substances are listed in a European Commission Decision of 2001[6] (Decision No. 2455/2001/EC).

Groundwater status will also be classified by the EPA in accordance with new groundwater classification tools, which are being developed. Groundwater classification will include an assessment of 'chemical status' based on conductivity and the concentration of pollutants in groundwater and an assessment of 'quantitative status' based on the groundwater level regime (see Chapter 3 for more details).

Some uncertainty is to be expected when classifying waters for the first river basin management planning cycle. The classification tools are new in many instances and may require some refinement and validation before they can be used with full confidence. Data sets may also be incomplete for some quality elements. A weight of evidence approach may therefore have to be used when making decisions on the implementation of measures in these situations. This will involve consideration of available monitoring data and risk assessments.

An overview of significant water management issues was published for each RBD and IRBD in June 2007. The documents called "Water Matters" dealt with eight water management issues of National importance, including,

1. Waste water and industrial discharges,
2. Landfills, quarries, mines and contaminated lands
3. Agriculture
4. Waste water from unsewered properties
5. Forestry
6. Usage and discharge of dangerous substances
7. Physical modifications to surface waters
8. Abstractions

In addition, several local issues identified by stakeholders in each RBD were identified. For each of the most important water-related issues, the document sets out:

[5] Chemical standards include the 33 priority substances listed in Annex X and the standards established under Directives of the Dangerous Substances Directive (76/464/EEC).

[6] Decision No 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy and amending Directive (2000/60/EC)

- Background information showing the extent of each issue and the way that it can cause water problems
- A summary of existing controls and an assessment of their adequacy
- The proposed actions, the parties responsible for taking those actions and the users who would be affected.

This guidance document provides further elaboration on the actions that will be required of public authorities to meet the objectives of the WFD.

Firstly, there is an explicit requirement to ensure full compliance with existing directives (e.g. the Urban Waste Water Treatment Directive, the Nitrates Directive). There is also a clear legal requirement to comply with the environmental objectives of protected areas (e.g. drinking waters and protected habitats and species) by not later than 2015 unless an earlier date is specified in the relevant Community legislation under which the protected area was designated. Priority must be given to preventing deterioration in the existing status of waters, in particular "high status" and "good status" waters must be protected.

All waters should be assessed to determine their likely status by 2015 taking into account the expected pressures on the waters and the effectiveness of full compliance with existing directives in counteracting these pressures. Next, the effectiveness of new basic measures (e.g. abstraction and physical modification controls, discharge licence reviews, etc) in meeting the environmental objectives should be assessed. Finally, any anticipated gap in meeting the required objectives will need to be identified and addressed through appropriate supplementary measures directed at the pressures giving rise to failure.

All basic measures, including the requirements from the 11 Directives listed in Annex VIII of the WFD for the protection of water and the new basic measures required under Article 11(3), must be implemented in full. This is a critically important point! If these basic measures are implemented fully, consistently and effectively the objectives of the WFD will be well on their way to being achieved. Guidance is provided in Chapter 5 on implementing the basic measures in full.

There may be some circumstances where it is technically infeasible or disproportionately expensive to restore waterbodies of less than good status to 'good status' within the first, and possibly in some cases the second, river basin planning cycle. In these cases it may be necessary to apply exemptions, which may involve extending the deadlines or, in certain cases, applying less stringent environmental objectives. The circumstances in which exemptions of this type may be applied are described in more detail in Chapter 4.

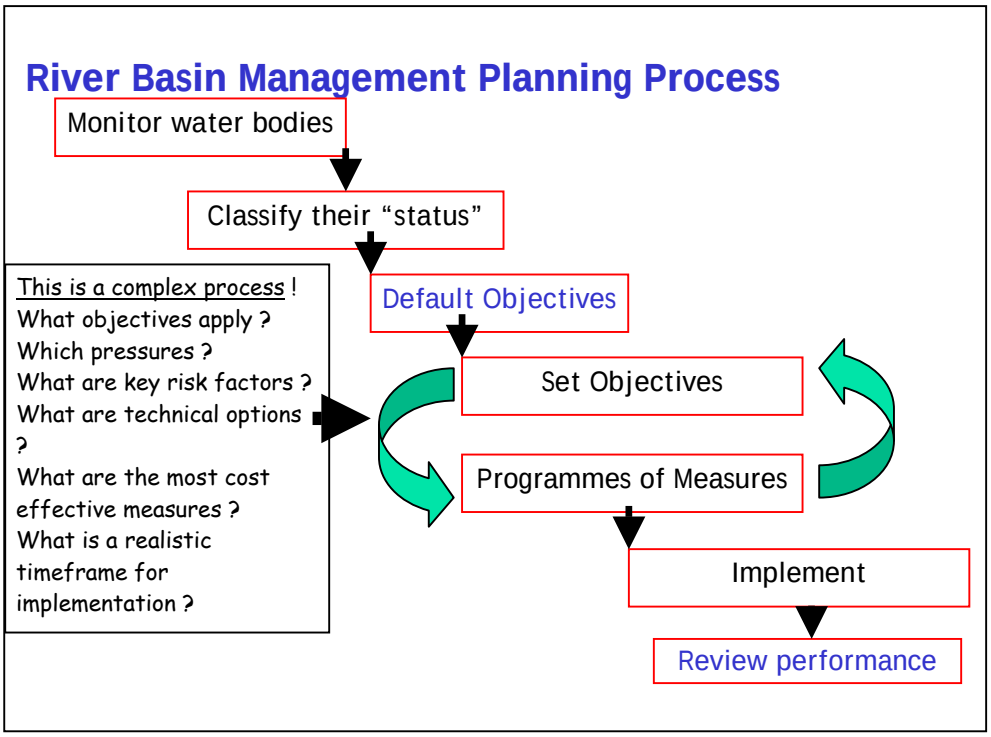


Figure 1: Steps in the river basin planning process

2.2 Who is responsible for the process ?

Local authorities have a critical role to play, not just in producing a River Basin Management Plan, but in securing the implementation of measures such as the provision of adequate waste water treatment, enforcing the Code of Good Agricultural Practice Regulations, reviewing and revising discharge licences under the Water Pollution Acts to take account of new environmental quality standards needed to support the environmental goals of the Directive.

Local Authorities may also need to improve the integration of planning policy and water policy within the provisions of the Planning and Development Act 2000.

The EPA has a critical role in the river basin management process. In the first instance the EPA will classify all waters (surface and groundwater) based on results from the national environmental water monitoring programme carried out by the EPA itself, local authorities, the Marine Institute, Fisheries Boards, the National Parks and Wildlife Service and the Office of Public Works. The classification of waters will drive the development of measures to meet the objectives required by the directive. The EPA has an important coordination role to ensure that

river basin management plans and programmes of measures prepared by local authorities are consistent with the requirements of the Water Framework Directive. The EPA is responsible for reporting on river basin management planning to the EU Commission. And furthermore, the EPA has the responsibility of ensuring that the regulation of discharges to water by activities licensed under the Environmental Protection Agency Act is consistent with the aims of the Directive and works towards the goals set out in the river basin management plans.

2.3 How are stakeholders, including the public, to be involved in the process ?

Local authorities have established River Basin District Advisory Councils for each river basin district to provide a forum for the involvement of interested parties and to facilitate dialogue between such parties and public authorities. River Basin District Advisory Councils are established by statute under the European Communities (Water Policy) Regulations (SI 722 of 2003). The advisory councils provide a formal mechanism to facilitate stakeholder involvement in the making of river basin management plans and establishing the programmes of measures.

The advisory councils are composed of key stakeholder groups, including; elected representatives from local authorities, business, environmental non-governmental organisations, recreational water users (e.g. angling and boating groups), citizen groups and educational groups. When preparing and adopting river basin management plans and their programmes of measures local authorities must take full account of the advice and recommendations of the council for the relevant river basin district.

Chapter

3

3. Classifying the status of waters and identifying the risks – the Starting Point

Classifying the status of waters tells us the extent to which waters (groundwater, rivers, lakes, transitional and coastal waters) are impacted by human activity. Risk assessment is critical to identifying the causes and the potential solutions. The challenge then is to take action to protect healthy waters and restore unhealthy waters.

3.1 What is the purpose of classification ?

Classification systems are used to assess the state of the aquatic environment at a point in time using the results of environmental monitoring. They show whether the water quality is in a satisfactory or unsatisfactory condition and where it may require improvement. Classification systems assist in the planning of measures for the improvement of the water environment and will also assist in assessing whether measures have been beneficial, and will help in the future to assess how our actions have benefited the environment. The EPA and local authorities have used classification systems such as the biological river water quality Q-system, the modified OECD lake classification system and environmental physico-chemical and chemical water quality standards for many years. These have been useful tools for measuring the quality of our rivers, lakes, marine waters and groundwater and for giving a snapshot of levels of pollution. Such tools also indicate trends in water quality over time as a result of pollution and in response to subsequent management measures. However, the Water Framework Directive now requires a more comprehensive assessment of the quality of the aquatic environment and the wide range of pressures acting on it.

In assessing water quality older classification systems used single biological indicators that were most sensitive to a specific pressure. The EPA must now look at the water environment as a whole, integrating ecological and chemical quality, quantity and physical habitat. New classification systems are being developed by the EPA, in collaboration with authorities in Northern Ireland and the UK, for rivers, lakes,

transitional (estuaries), coastal waters and groundwater. The health of the biological communities in surface waters, along with the hydromorphological, physico-chemical and chemical status will now be the main factor that describes the state of those waters. New biological classification systems have been developed by the EPA to assess surface water status in keeping with the ecological approach now required by the Water Framework Directive. New environmental quality standards have also been developed for the physico-chemical quality elements needed to support the biological quality elements.

Environmental quality standards and other criteria are also being developed for establishing groundwater chemical and quantitative status.

The EPA, local authorities and other licensing agencies need environmental quality standards, for example, to establish the concentration and amount of a substance that may be permitted to discharge to the water environment from a licensed activity without causing deterioration to the aquatic biological communities and therefore causing failure of the objectives of the Directive.

The classification of waters is central to the river basin management planning process. Waters classified as ‘high’ or ‘good’ must not be allowed deteriorate. Waters classified as less than ‘good’ must be restored to at least good status within a prescribed timeframe. The environmental targets or goals and the programmes of measures to be included in river basin management plans must therefore reflect these requirements.

3.2 How are surface waters to be classified ?

The EPA established a National water monitoring programme in October 2006. Monitoring of waters commenced in January 2007. The EPA will use the new surface water classification tools and the results of the monitoring programme to classify all surface waters.

The status of surface waters will be estimated through the assessment of:

1. ecological status or, in the case of artificial and heavily modified water bodies, ecological potential, and

2. chemical status

The ecological classification systems developed by the EPA will assign water bodies to one of the five ecological status classes: high; good; moderate; poor; or bad.

Certain water uses, such as the generation of hydropower, navigation and flood defence, might result in substantial physical alteration to a water body. These alterations might be incompatible with the achievement of good status. Where appropriate, such waters can be defined under the Directive as heavily modified. Alternative objectives may be set for them that can be achieved without significantly affecting the specific use. Each such heavily modified water body will be assigned to one of the five classes of ecological potential: maximum; good; moderate; poor; or bad.

Waters are not permitted to deteriorate and must achieve at least good status (or good potential) by 2015 (except in the case of some limited exceptions allowed by the Directive). Surface waters with associated protected areas i.e. areas designated for the purpose of other EU Community legislation such as, for example, bathing water areas, must also meet the standards laid down in that legislation before the surface water body can be considered to be 'good status'.

There are four quality elements to be considered for each surface water body, in order to assess its ecological status (or ecological potential); these are as follows:

1. Biological quality elements (Table 1)

2. General physico-chemical conditions (Table 2)

3. Relevant specific synthetic and non-synthetic pollutants (Table 3)

4. Hydromorphological elements - dealing with water flows, physical characteristics (Table 4)

The determination of ecological status therefore includes not just the biological quality elements but also elements requiring certain chemical, physico-chemical and physical measurements. The Directive describes these elements as 'supporting elements to the biological elements.

The surface water classification systems at this stage are partial, consisting of the biological quality elements, which are as yet incomplete, the general physico-chemical quality elements, the relevant pollutants and the chemical quality elements. The full range of biological quality elements will be added to the list over time as these are validated and intercalibrated at EU level.

Chemical status classification is to be determined on the basis of EU wide standards for 33 priority and eight other substances (Table 5). The Directive establishing these standards is expected to be adopted in 2008.

Table 1. The biological quality elements for the assessment of ecological status/potential.

Element	**Parameters**	River	Lake	Transitional	Marine
Phytoplankton	*Composition, abundance and biomass*		Y	Y	Y
Macrophytes	*Composition and abundance of aquatic flora*	Y	Y	Y	Y
Invertebrates	*Composition and abundance of benthic fauna*	Y	Y	Y	Y
Fish	*Composition, abundance and age structure*	Y	Y	Y	

Table 2. Phase 1 General physico-chemical conditions/parameters for which water quality standards have been established or will be established supporting the biological elements

Condition	**Parameter**	**River**	**Lake**	**Transitional**	**Coastal**
Thermal	Temperature	✓	✓	✓	✓
Oxygen	Dissolved Oxygen	✓	✓	✓	✓
	Biochemical Oxygen Demand	✓		✓	
Salinity	Salinity	Phase 2*	Phase 2*		
Acid	pH	✓	✓		
Nutrient	Ammonium	✓	✓		
	Dissolved Inorganic Nitrogen	Phase 2*	Phase 2*		✓
	Molybdate Reactive Phosphorus	✓		✓	
	Total Phosphorus	Phase 2*	Phase 2*		
Transparency	Transparency		Phase 2*	Phase 2*	Phase 2*

*In the case of these parameters (salinity, Nitrogen, Total Phosphorus and water transparency), insufficient data were available to allow standards to be proposed. In these instances data collected during the course of the monitoring programme will be used to propose standards.

Table 3. Relevant specific synthetic and non-synthetic pollutants for which water quality standards have been established in Ireland to protect the biological elements

Substance		
Arsenic	Fluoride	Toluene
Chromium (III)	Glyphosate	Xylenes (Total)
Chromium (VI)		
Copper	Linuron	Zinc
Cyanide	Mancozeb	
Diazinon	Monochlorobenzene	
Dimethoate	Phenol	

Table 4. Hydromorphological elements for which standards are being established supporting the biological elements

Hydromorphological elements	River	Lake	Transitional	Coastal
Hydrological regime	-quantity and dynamics of water flow	-quantity and dynamics of water flow	N/A	N/A
	-connection to groundwater bodies	-level	N/A	N/A
		-connection to the groundwater body	N/A	N/A
		-residence time		
River continuity	Yes	N/A	N/A	N/A
Morphological conditions	-river depth and width variation	-lake depth variation	-depth variation	-depth variation
	-structure and substrate of the river bed	-quantity, structure and substrate of the lake bed	-quantity, structure and substrate of the bed	-structure and substrate of the coastal bed
	-structure of the riparian zone	-structure of the lake shore	-structure of the intertidal zone	-structure of the intertidal zone
Tidal regime	N/A	N/A	-freshwater flow	-direction of dominant currents
	N/A	N/A	-wave exposure	-wave exposure

Table 5. Priority pollutants for which water quality standards are proposed at EU level (draft Priority substances Directive) for the purpose of determining chemical status of surface waters

	Substance				
1	Alachlor	**18**	Hexachlorocylohexane* (Lindane)	**29**	Simazine
2	Anthracene*	**19**	Isoproturon	**30**	Tributyltin*
3	Atrazine	**20**	Lead and its compounds	**31**	Trichlorobenzene (all isomers)
4	Benzene	**21**	Mercury* and its compounds	**32**	Trichloromethane
5	Pentabromodiphenlyether*	**22**	Naphthalene	**33**	Trifluarin
6	Cadmium* and its compounds	**23**	Nickel and its compounds	**34**	DDT total**
7	C10-13-Chloralkanes*	**24**	Nonylphenols*	**35**	Aldrin**
8	Chlorfenvinphos	**25**	Octylphenols	**36**	Endrin**
9	Chlorpyrifos	**26**	Pentachloro-benzene*	**37**	Dieldrin**
10	1,2-Dichloroethane	**27**	Pentachlorophenol	**38**	Isodrin**
11	Dichloromethane	**28**	Polyaromatic Hydrocarbon* (PAH)	**39**	Carbontetrachloride**
12	Di (2-ethylhexyl) phthalate (DEHP)		(benzo-a-pyrene)	**40**	Tetrachloroethylene**
13	Diuron		(benzo-b-fluoranthene)	**41**	Trichloroethylene**
14	Endosulfan*		(benzo-k-fluoranthene)		
15	Fluoranthene		(benzo-k-fluoranthene)		
16	Hexachlorobenzene*		(benzo-g,h,i-perylene)		
17	Hexachlorobutadiene*		(indeno(1,2,3-cd)pyrene)		

* Priority hazardous substance

**This substance is not a priority substance but a List 1 substance under the Dangerous Substances Directive (76/464/EEC). The EQS proposed in the Priority Substances Directive is identical to that laid down in Directive 76/464/EEC to ensure an equivalent level of protection.

3.3 How is groundwater to be classified?

The EPA will be responsible for classifying all groundwater bodies. Groundwater bodies will be classified on the basis of two parameters:

1. Quantitative status (good or poor depending upon the groundwater level regime); and

2. Chemical status (good or poor depending upon the conductivity and concentrations of pollutants).

In assessing groundwater chemical status, the EPA may decide to use different thresholds for the same pollutant or for different parts of the same groundwater body depending on various factors e.g. the sensitivity of associated surface water systems and groundwater use such as drinking water abstractions.

Groundwater status will be assessed through a combination of monitoring data, conceptual models and pressure data (pressures impacting upon the groundwater body) to determine whether the groundwater body is in good or poor quantitative or chemical status. Threshold values can be established at National, River Basin District or water body level. EU-prescribed standards already exist for nitrates and pesticides. Where other threshold values are exceeded, an investigation is triggered to confirm whether the groundwater body is at good status. Various tests are under development to classify groundwater quantitative status and groundwater chemical status, respectively.

3.4 What are the risks to surface waters and groundwater?

Classification will determine whether a water body currently passes or fails the objectives of the Directive. It will also identify the quality elements that have failed e.g exceedance of a water quality standard. The parameters monitored can indicate likely causes of failure but other corroborating evidence is needed to identify the likely source/cause of the failure. Also, predicted failures in the future cannot be determined by classification alone unless a long time series of monitoring is available. To determine the likely causes of failures in status (present or future) the use of risk assessments is a critical decision support tool to identifying the pressure causing the status failure and predicting likely trends.

In simple terms risk assessment involves an assessment of the sources of pressure (e.g. activity generating pollutants such as a waste water discharge or spraying of pesticides), the pathways to waters (e.g. direct discharge to a river or indirect seepage through soil to groundwater) and sensitivity of the water receptor (e.g. the receiving river might be particularly sensitive because of low water flow and the presence of sensitive protected species). The combined consideration of all these risk factors and the results of classification will assist the EPA and local authorities to identify the most significant pressures causing a risk to a water body. This in turn will provide the authorities with a basis to focus measures in high risk areas. These measures might, for example, include the use of existing regulatory mechanisms (e.g. review and revision of Water Pollution Act and IPPC licences, more rigorous enforcement of good farming practice Regulations, etc.).

The assessment of risks associated with human activities was undertaken by local authorities for each river basin district under the guidance of the WFD National Technical Coordination Group in 2004, as part of the river basin characterisation process (Article 5, WFD). The assessments identified eight significant water management issues of National concern because of the widespread risk posed or potentially posed to surface and groundwater status. These were;

1. Waste water and industrial discharges,
2. Landfills, quarries, mines and contaminated lands
3. Agriculture
4. Waste water from unsewered properties
5. Forestry
6. Usage and discharge of dangerous substances
7. Physical modifications to surface waters
8. Abstractions

Existing regulatory controls are already available to the environmental authorities for managing these issues (e.g. planning and development controls, discharge authorisation systems, etc). The new Waste Water Authorisation Regulations will play an important role in improving the management and performance of urban waste water treatment plants. Further controls and measures will be established, where necessary, to further implement other requirements arising under Article 11(3) of the Directive.

The WFD National Technical Coordination Group is currently improving risk assessment methodologies for the issues identified above. These will assist local authorities and the EPA to focus existing regulatory

measures on waters judged to be at risk. The work being completed under the guidance of the WFD National Technical Coordination Group will also assist the local authorities in identifying additional supplementary measures where existing regulatory measures are judged not to be adequate to meet the objectives of the Directive.

Chapter 4

4. Establishing the Environmental Objectives for Waters – the improvements to be achieved

The default objectives are to protect all waters - rivers, lakes, coastal waters, and groundwater, with the aim of achieving at least good status by 2015. The objectives for protected areas must be met even where they are more stringent. In limited circumstances alternative objectives may be applied.

Establishing the status of water bodies is a technical process, which involves applying the classification systems to monitoring results. In situations where a protected area is associated with a water body additional assessment will be needed to establish that the particular requirements of the protected area are also satisfied. These requirements may, for example, include; compliance with the microbiological standards for bathing waters or other particular requirements for natural habitats or species in Natura 2000 sites.

The objectives for surface water bodies are to;

- prevent deterioration,
- protect high and good status waters where they exist,
- achieve the objectives of associated protected areas (where relevant) and
- restore waters of less than good status to at least good status by 2015.

In the case of groundwater the objectives are very similar but with the added requirements to ensure a balance between abstraction and

recharge of groundwater and to reverse any significant and sustained upward trend in the concentration of pollutants resulting from the impact of human activity.

Complying with the guidance contained within this document will contribute towards achieving these objectives. All waters must be prevented from deteriorating and the objectives of protected areas must be achieved. Where improvements are necessary the competent authorities must plan improvements through programmes of measures where they are confident that:

- An environmental quality standard supporting good status or a protected area objective is being failed, or
- Trend analysis indicates that deterioration of status will occur unless action is taken

4.1 What environmental objectives must be met by waters?

The default objectives that apply to waters are determined following the classification of waters. In general these objectives must be achieved by 2015.

In certain limited circumstances, it may be permitted to deviate from the objective of restoring water bodies to good status by 2015 by means of specified exemptions allowed by the Directive. Objectives, which are different from default objectives, are referred to in this guidance as alternative objectives. The objective setting process, in each case, should include consideration of whether any of these alternative objectives is (i) necessary and (ii) allowed by the Directive. Exemptions are not allowed where the objectives of an associated protected area may be compromised (see description of protected areas below). Guidance on the use of exemptions to establish alternative objectives is provided later in this chapter.

In relation to International RBDs local authorities should coordinate objective setting for shared water bodies with the Northern Ireland Environment Agency to ensure consistency of approach.

4.1.1 What are the Default Groundwater Objectives ?

Once the EPA classifies groundwater bodies local authorities will be required to set objectives in the river basin management plan for each water body on the basis of the classification assigned by EPA.

Local authorities must set objectives for each water body which support the environmental goals of protecting and/or restoring groundwater bodies to good quantitative and chemical status. The relevant public authorities must identify and implement the measures necessary to achieve these goals, including the requirement to reverse any significant upward trend in the concentration of pollutants. In some circumstances where groundwater flow impacts on a protected area specific measures may be needed for the purpose of meeting the protected area objectives.

4.1.2 What are the Default Surface Water Objectives ?

Once the EPA classifies surface water bodies local authorities will be required to set objectives in the river basin management plan for each water body on the basis of the classification assigned by the EPA.

The objectives for each surface water body must be to prevent deterioration, maintain high and good status waters, restore waters to at least good status by 2015 where necessary, and ensure that the requirements of associated protected areas are met.

4.1.3 What standards and objectives apply to Protected Areas?

Any standard and objective in respect of protected areas must be complied with by 2015, unless an earlier date is specified in the Community legislation under which the individual protected areas have been established. Where the EPA classifies a surface water body with protected area status under other legislation (e.g. bathing water) it will be classified as less than good if it fails to achieve the protected area objectives as well. This will be the case regardless of whether all other objectives are met. The protected areas, their objectives and obligations are set out in the following sections.

4.1.3.1 Standards and objectives for waters used for the abstraction of drinking water

In addition to meeting the general objectives established for surface waters, water services authorities must ensure that the water quality, following water treatment, meets the requirements of the Drinking Water Regulations (SI 278 of 2007)[7].

Under the European Communities (Water Policy) Regulations (SI 722 of 2003) the EPA is required to identify all bodies of water (groundwater and surface waters) used for the abstraction of water intended for human consumption and providing more than 10 m^3 a day as an average or serving more than 50 persons. They are also required to identify bodies of water intended for such future use. The EPA is required to include such waters on a register of protected areas.

There are currently 550 surface water abstractions and 2,000 groundwater abstractions where abstraction rates are above 10m^3/day. Water services authorities must monitor those bodies of water, which provide more than 100 m^3 a day as an average. All groundwater bodies in the country and all surface water bodies from which drinking waters are currently abstracted have been included in the register of protected areas. Water services authorities must ensure the necessary protection of all drinking water sources (both public and private) with the aim of avoiding deterioration in their quality. The aim is to reduce the level of purification treatment required in the production of drinking water.

Safeguard zones may be used to protect water sources. The delineation of these zones should be based on scientific principles. Additional protective measures may need to be implemented within these safeguard zones if there is evidence of deterioration in the quality of the water source.

4.1.3.2 Standards and objectives for areas designated for the protection of economically significant aquatic species (Shellfish waters)

The EC Shellfish Waters Directive (79/923/EEC) aims to protect or improve coastal and brackish shellfish waters in order to support shellfish life and growth, therefore contributing to the high quality of shellfish products directly edible by man. The Directive is designed to protect the aquatic habitat of bivalve and gastropod molluscs, including

[7] Note: These Regulations are expected to be updated in order to synchronise with the Water Services Act (2007).

oysters, mussels, cockles, scallops and clams. The Directive does not cover shellfish crustaceans such as crabs, crayfish and lobsters.

The Directive is implemented in Ireland by the European Communities (Quality of Shellfish Waters) Regulations 2006 (SI 268 of 2006).

Designated shellfish growing areas may need additional protection or improvement measures to meet the prescribed physico-chemical and microbiological water quality requirements that designated shellfish waters must either comply with ('mandatory' standards) or endeavour to meet ('guideline' values). Standards are prescribed in the Irish Regulations for pH, temperature, suspended solids, salinity, coloration, dissolved oxygen, petroleum hydrocarbons, organohalogenated substances, metals, faecal coliforms and substances affecting the taste of shellfish. Guideline values are also given for the same parameters.

4.1.3.3 Standards and objectives for areas designated as recreational and bathing waters

The 1976 Bathing Water Directive (76/160/EEC) was transposed into National law by the Quality of Bathing Water Regulations, 1992 (SI 155 of 1992). A new Directive on bathing water (Directive 2006/7/EC) came into force on 24 March 2006 and will repeal the existing 1976 Directive with effect from 31 December 2014. The Directive was transposed into National law by the Quality of Bathing Water Regulations, 2008 (SI 79 of 2008). The new Directive updates and simplifies the Community legislation on bathing water. The purpose of the Bathing Waters Directive is to preserve, protect and improve the quality of the bathing waters and therefore, to protect human health. It provides for (a) the monitoring and classification of bathing water quality; (b) the management of bathing water quality; and (c) the provision of information to the public on bathing water quality.

The 1976 Directive makes reference to 19 different parameters to be monitored. These parameters relate to microbiological pollutants, which are of significant importance to the health of bathers, and to several other substances and characteristics e.g. dissolved oxygen, ammonia, nitrogen, colour, transparency, the presence of mineral oil, tarry residues and floating materials such as wood, plastic articles, bottles. In any year, compliance with the relevant water quality standards for the year is assessed on the basis of the monitoring results for that year.

The new Bathing Water Directive (2006/7/EC) is focussed strongly on the protection of the health of bathers. While the 1976 Directive refers to the monitoring of 19 parameters, the revised Directive essentially reduces this list to just two microbiological indicators of faecal contamination. These parameters are *Escherichia coli* and Intestinal

Enterococci. This simplification reflects a disease risk based approach. The water quality standards set by the new Directive in relation to these two parameters represent a significant tightening of water quality standards relating to microbiological pollution based on the latest scientific research. Bathing waters are to be classified as “excellent”, “good”, “sufficient” or “poor” on the basis of results for four bathing seasons. There are different water quality standards for coastal and inland waters due to the differing bacterial die off rates between salt and fresh waters.

Member States are required to ensure that, by the end of the 2015 bathing season, all bathing waters are at least ‘sufficient’. They must take such realistic and proportionate measures as they consider appropriate with a view to increasing the number of bathing waters classified as ‘excellent’ or ‘good’.

Once monitoring under the new Directive is adequately established, monitoring of the parameters under Directive 76/160/EEC can cease.

4.1.3.4 Standards and objectives for nutrient sensitive areas

Nutrient sensitive areas include areas designated as vulnerable zones under the Nitrates Directive (91/676/EEC) and areas designated as sensitive areas under Urban Waste Water Treatment Directive (91/271/EEC).

4.1.3.4.1 NITRATES DIRECTIVE (91/676/EEC)

The Nitrates Directive concerns the protection of waters against pollution caused by nitrates from agricultural sources. It’s objective is to reduce water pollution from agricultural sources and to prevent further such pollution. The Nitrates Directive is implemented in Ireland by the European Communities (Good Agricultural Practice for the Protection of Waters) Regulations 2006 (SI 378 of 2006). The Regulations lay down rules for the management of farmyards and animal manures that must be complied with by all farmers. The Regulations also establish legally binding limits on the amounts of available nitrogen and phosphorus that may be applied to agricultural land. An overall limit of 170 kg N/ha is placed on the total organic load that may be applied to the farm holding, with provision to increase this amount subject to certain requirements on application to the Department of Agriculture, Fisheries and Food.

4.1.3.4.2 URBAN WASTE WATER TREATMENT DIRECTIVE (91/271/EEC)

The purpose of the Directive is to ensure that the environment is not adversely affected by the disposal of inadequately treated urban waste water.

The Directive requires the provision of collecting systems by not later than 31 December 2005 for urban waste water from all agglomerations where the population equivalent is greater than 2,000. Collection systems must be designed, constructed and maintained in accordance with best technical knowledge not entailing excessive costs. Secondary waste water treatment meeting prescribed emission standards is to be provided before discharge from these collecting systems, except where the discharge is to coastal waters and the population equivalent is less than 10,000.

More stringent emission limits than those prescribed in the Directive are to apply where necessary to ensure compliance with the requirements of other relevant directives.

'Appropriate treatment' must be applied to all urban waste water entering collecting systems before discharge. 'Appropriate treatment' means a level of treatment and/or disposal that allows the receiving waters to meet the relevant quality objectives.

The Directive requires Member States to identify 'sensitive areas'. These are areas, which are;

- Freshwater bodies, estuaries and coastal waters which are eutrophic or which may become eutrophic if protective action is not taken;
- Surface freshwaters intended for the abstraction of drinking water which contain or are likely to contain more than 50 mg/l of nitrates;
- Areas where further treatment is necessary to comply with other Council Directives such as the Directives on fish waters, on bathing waters, on shellfish waters, on the conservation of wild birds and natural habitats, etc.

Sensitive areas were to be first identified by 31 December 1993, and are to be reviewed every four years thereafter.

'More stringent' treatment is required for discharges from larger urban waste water treatment plants discharging into the catchments of sensitive areas. In these cases, discharges from agglomerations where the population equivalent exceeds 10,000 must additionally

comply with the emission limits or removal rates set down in the Directive for nutrients.

4.1.3.5 Areas designated for the protected habitats and species

The objective of the Habitats Directive (92/43/EEC) is to conserve natural habitats and wild fauna and flora in the EU. To realise this, the Directive requires that a network of special areas of conservation (SAC), composed of sites hosting listed rare, threatened and characteristic habitats or rare, endangered and endemic species, be established. In Ireland, most SACs have now been selected, but the designation of Special Protected Areas (SPAs) is ongoing. Once a site has been published as a proposed SAC or SPA, the Irish Habitats Regulations require that it be protected. The Habitats Regulations require the Minister for the Environment, Heritage and Local Government to undertake the appropriate steps to avoid deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated. Measures must be designed to maintain or restore these habitats and species of Community interest, at Favourable Conservation Status (FCS). Although no timescale was specified for implementing measures to protect or restore SACs, the fact that they are endangered or sensitive means that measures should be put in place as soon as the SAC is advertised.

The general objectives of the Water Framework Directive (2000/60/EC) are to prevent further deterioration and protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on water. For Natura 2000 sites containing protected water dependent habitats and species, the WFD requires that Member States achieve compliance with any standards and objectives by 2015 at the latest. All the Natura 2000 sites with water dependent habitats and species have been included in the WFD Register of Protected Areas (RPA). These include 45 water dependent habitats and 24 water dependent species (Tables 1 and 2).

The single most significant standard for Natura 2000 sites is the achievement of Favourable Conservation Status for the designated features of interest. This will generally be expressed in biological terms (e.g. size and stability of a protected species population or protected habitat) and it is appropriate that this biological outcome remains the final measurement against which WFD obligations are judged. Currently only 9% of habitats and 50% of species dependent on water are at favourable conservation status in Ireland.

For the purpose of returning water dependent Natura 2000 sites to Favourable Conservation Status it is widely acknowledged that environmental quality standards (e.g. physico-chemical or hydro-morphological conditions) should be established where practical. These standards should be sufficiently stringent to support Favourable Conservation Status. In this way measures can be focussed on achieving the environmental quality standards with the aim of achieving Favourable Conservation Status.

In Ireland where a water dependent Natura 2000 site has more stringent environmental quality standards prescribed separately in National legislation then any surface water body associated with it, shall be classified as being at less than good status if these more stringent objectives are not also met. To be classified as good status or better the water body must achieve both the relevant standards/objectives for the surface water body in question and the relevant protected area objectives and standards.

TABLE 1: WATER DEPENDENT HABITATS DIRECTIVE ANNEX I HABITATS

HD Habitat Code	Habitat Name	Surface Water Dependent	Ground-water Dependent	Marine Water Dependent
1110	Sandbanks which are slightly covered by sea water all the time			Yes
1130	Estuaries	Yes		Yes
1140	Mudflats and sandflats not covered by seawater at low tide			Yes
1150	Coastal lagoons	Yes	Yes	Yes
1160	Large shallow inlets and bays	Yes		Yes
1170	Reefs			Yes
1210	Annual vegetation of drift lines			Yes
1220	Perennial vegetation of stony banks			Yes
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts			
1310	*Salicornia* and other annuals colonizing mud and sand			Yes
1320	*Spartina* swards (Spartinion maritimae)			Yes
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)		Yes	Yes
1410	Mediterranean salt meadows (Juncetalia maritimi)		Yes	Yes
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)			Yes
2110	Embryonic shifting dunes			
2120	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)			
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)			
2140	Decalcified fixed dunes with *Empetrum nigrum*			
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)			
2170	Dunes with *Salix repens ssp. Argentea* (Salix arenariae)		Yes	
2190	Humid dune slacks		Yes	Yes
21A0	Machairs (* in Ireland)	Yes	Yes	
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	Yes	Yes	
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	Yes	Yes	
3140	Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	Yes	Yes	
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation	Yes	Yes	
3160	Natural dystrophic lakes and ponds	Yes	Yes	
3180	Turloughs	Yes	Yes	
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	Yes	Yes	
3270	Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	Yes	Yes	
4010	Northern Atlantic wet heaths with *Erica tetralix* (FLUSHES ONLY)		Yes	
6410	*Molinia* meadows on calcareous, peaty or clavey-silt-laden soils (Molinion caeruleae)	?	Yes	
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Yes	Yes	
7110	Active raised bogs (LAGG ONLY)	Yes	Yes	
7120	Degraded raised bogs still capable of natural regeneration (LAGG ONLY)	Yes	Yes	

TABLE 1 (CONTINUED)

HD Habitat Code	Habitat Name	Surface Water Dependent	Ground-water Dependent	Marine Water Dependent
7130	Blanket bog (*active only) (FLUSHES ONLY)		Yes	
7140	Transition mires and quaking bogs	Yes	Yes	
7150	Depressions on peat substrates of the Rhynchosporion	Yes	Yes	
7210	Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae		Yes	
7220	Petrifying springs with tufa formation (Cratoneurion)		Yes	
7230	Alkaline fens		Yes	
8310	Caves not open to the public		Yes	
8330	Submerged or partly submerged sea caves			Yes
91D0	Bog woodland		Yes	
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)	Yes	Yes	

TABLE 2: WATER DEPENDENT HABITATS DIRECTIVE ANNEX II SPECIES

HD Species Code	Species name	Common name	Surface Water Dependent	Ground-water Dependent	Marine Water Dependent
1013	*Vertigo geyeri*	whorl snail		Yes	
1014	*Vertigo angustior*	whorl snail		Yes	
1016	*Vertigo* moulinsiana	whorl snail	Yes	Yes	
1024	*Geomalacus maculosus*	Kerry slug			
1029	*Margaritifera margaritifera*	freshwater pearl mussel	Yes		
1065	*Euphydryas aurinia*	marsh fritillary			
1092	*Austropotamobius pallipes*	white-clawed crayfish	Yes	Yes	
1095	*Petromyzon marinus*	sea lamprey	Yes		Yes
1096	*Lampetra planeri*	brook lamprey	Yes		
1099	*Lampetra fluviatilis*	river lamprey	Yes		
1102	*Alosa alosa*	allis shad	Yes		Yes
1103	*Alosa fallax*	twaite shad	Yes		Yes
1106	*Salmo salar*	Atlantic salmon	Yes		Yes
1349	*Tursiops truncatus*	bottle-nosed dolphin			Yes
1351	*Phocoena phocoena*	harbour porpoise			Yes
1355	*Lutra lutra*	otter	Yes		Yes
1364	*Halichoerus grypus*	grey seal			Yes
1365	*Phoca vitulina*	common seal			Yes
1393	*Drepanocladus vernicosus*	shining sickle moss		Yes	
1395	*Petalophyllum ralfsii*	petalwort		Yes	
1421	*Trichomanes speciosum*	Killarney fern	Yes		
1528	*Saxifraga hirculus*	yellow marsh saxifrage		Yes	
1833	*Najas flexilis*	slender naiad	Yes		
1990	*Margaritifera durrovensis*	Nore pearl mussel	Yes		

4.2 Are there circumstances where alternative environmental objectives apply?

The default objectives for water bodies are to, prevent deterioration, maintain high and good status where they exist, achieve the objectives of protected areas where they are more stringent and improve waters, where necessary, to at least good status by 2015. Where achieving the default objectives by 2015 requires restoration measures there may be certain circumstances where it is technically infeasible or disproportionately expensive within this timeframe. The Directive allows for environmental, social, economic and natural factors to be considered when setting objectives by way of specified exemptions (Article 4) in certain prescribed circumstances. The use of exemptions should only be considered on a case-by-case basis. Under no circumstances are exemptions permitted in relation to protected area objectives. Only exemptions specified in the protected area legislation itself are permitted.

The alternative objectives are the only considerations which may be used to justify a course of action which will not lead to meeting the default objectives (for example, aiming to achieve good status by 2015). Each of the alternative objectives has a number of conditions which limits the situations in which it may be applied. The types of alternative objectives provided for by the Directive, include:

- extended deadline;
- a less stringent objective;
- different objectives for heavily modified or artificial water bodies; or
- different objectives where there are new modifications and new sustainable development activities.

Because of the potential complexities of the objective setting process it is important that the local authorities ensure that the decision making process is transparent and the criteria for decision making are accepted, as far as possible, by all stakeholders.

In all cases where an exemption is applied, the most cost-effective combination of measures that are feasible and not disproportionately expensive should still be taken to reach the best status possible.

Where exemptions have been applied and alternative objectives set they must not permanently exclude or compromise the achievement of the WFD objectives in other bodies of water within the same river basin district. The alternative objectives must also be consistent with the

implementation of other Community environmental legislation. Steps must be taken to ensure that the application of exemptions does not compromise the objectives of existing Community legislation.

Where a water body will not achieve good status by 2015 the local authorities must report this in the River Basin Management Plan along with the reasons and the alternative objective proposed.

4.2.1 What objectives apply to a surface water body that is Heavily Modified or is an Artificial Water?

A body of surface water may be designated as heavily modified when it is substantially changed in character as a result of physical alterations by human activity (e.g. a river impounded to form a reservoir). A body of surface water may be designated as an Artificial Water Body (AWB) when it has been created by human activity (e.g. dry-cut canal).

The co-ordinating local authority for a river basin district may identify a body of surface water as artificial or heavily modified, when:

1. the changes to the hydromorphological characteristics of that body which would be necessary for achieving good ecological status would have significant adverse effects on: (i) the wider environment; (ii) navigation, including port facilities, or recreation; (iii) activities for the purposes of which water is stored, such as drinking-water supply, power generation or irrigation; (iv) water regulation, flood protection, land drainage, or (v) other equally important sustainable human development activities, and,

2. the beneficial objectives served by the artificial or modified characteristics of the water body cannot, for reasons of technical feasibility or disproportionate costs, reasonably be achieved by other means, which are a significantly better environmental option.

The reasons for identifying a water body as artificial or heavily modified must be reported in the river basin management plans. European technical guidance has been published on the identification and designation of Heavily Modified Water Bodies (HMWB) and AWB [8]. During the river basin characterisation process 37 candidate HMWBs and 37 candidate AWBs were proposed.

[8] Common Implementation Strategy For The Water Framework Directive (2000/60/EC). Guidance Document No 4. Identification and Designation of Heavily Modified and Artificial Water Bodies. Produced by Working Group 2.2 - HMWB

The environmental objective for artificial and heavily modified bodies of water, is good ecological potential and good surface water chemical status

4.2.2 What if the objectives cannot be met by 2015 or 2021?

If it is judged that even after the full and effective implementation of basic measures a water body is still likely to fail good ecological status/potential and good chemical status by 2015 then a decision will have to be made whether it is technically feasible and not disproportionately expensive to make the necessary improvements through additional supplementary measures in time to achieve good status by 2015 or as soon after 2015 as natural conditions permit. If it is either technically infeasible or disproportionately expensive to make the necessary improvements through additional supplementary measures in time then extended deadlines may be applied up to a maximum of two additional planning cycles (*i.e.* until 2027).

Where an exemption for an extended deadline is applied, a summary of the measures envisaged as necessary to achieve good status by the extended deadline and the expected timetable for their implementation must be set out in the River Basin Management Plan.

4.2.3 What if the objectives cannot be met even by 2027?

It may be the case that a water body is so affected by human activity or the natural conditions are such that it is technically infeasible or disproportionately expensive to achieve good ecological status/potential and good chemical status in the water body by 2027. If this is so, it would be appropriate to apply the objective of less stringent environmental objective provided it can be demonstrated that the environmental and socio-economic needs served by the human activity causing failure cannot be achieved by other means, which are a significantly better environmental option not entailing disproportionate cost.

Notwithstanding the above, there is still a requirement to ensure that the highest ecological and chemical status possible is achieved for surface waters where technically feasible and the cost is not disproportionate. In relation to groundwater local authorities must ensure the least possible changes to good groundwater status.

No further deterioration in the status of the affected body of water is permitted.

In principle, a less stringent objective should represent the condition expected in the water body once all measures that are technically feasible and not disproportionately expensive have been taken. In some cases it may be technically infeasible or disproportionately expensive to make any improvements in the status of a water body within the period covered by the relevant river basin management plan or update. In such cases, local authorities must nevertheless prevent further deterioration of status.

Where a less stringent environmental objective has been applied to a body of water, the objectives, and the reasons for it must be set out in the River Basin Management Plan. The application of a less stringent environmental objective must be reviewed in each subsequent planning cycle.

4.2.4 What if objectives cannot be met because of new physical modifications or sustainable human developments?

Certain developments being considered by Planning Authorities may involve modifications to the physical characteristics of a surface water body or alterations in groundwater levels and flows in groundwater bodies. Environmental Impact Assessments (EIA) undertaken as part of the planning consent process will need to take account of the risks that such modifications will pose to achieving surface water and groundwater objectives. Modifications to the physical characteristics of surface water bodies means modification to their hydro-morphological characteristics (e.g. width, depth and flow patterns). These impacts may result directly from the modification or may result in changes to the quality of water brought about by the modification or alteration. For example, the hydro-morphological characteristics of impoundment created for hydropower and water supply can dictate the oxygen and temperature conditions resulting in a deterioration of ecological status in the impounded water and in the downstream river. These conditions may be different from those in a natural water body.

Exemptions in relation to new physical modifications or sustainable human developments only permit deterioration from high to good status but no lower. As the stringent conditions described below must be met by prospective projects the application of this type of exemption is likely to be very restricted in practice.

Failure to meet these objectives, as a result of new physical modifications or sustainable human developments can only be permitted as long as the following stringent conditions are met:

1. all practicable steps are taken to mitigate the adverse impact on the status of the body of water. Practicable steps are mitigation measures which are technically feasible; do not lead to disproportionate costs; and are compatible with the new modification or sustainable human development activity.

2. the reasons for those modifications or alterations are specifically set out and explained in the river basin management plan and the objectives are reviewed every six years;

3. the reasons for those modifications or alterations caused by the development are of overriding public interest and/or the benefits to the environment and to society of achieving the default objectives are outweighed by the benefits to human health, to the maintenance of human safety or to sustainable development of the new modifications or alterations. Overriding public interest refers to situations where the plans or projects envisaged prove to be indispensable within the framework of: actions or policies aiming to protect fundamental value for citizen's lives (health, safety, environment); fundamental policies for the State and the society; carrying out activities of an economic or social nature, fulfilling specific obligations of public services.

4. the beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option. Alternative solutions could involve alternative locations, different scales or designs of development, or alternative processes. Alternatives should be assessed in the early stages of development against a clear view of the beneficial objectives provided by the modification. The application of EIA to development projects can help planning authorities to assess the different possible alternatives.

Alternative objectives related to new physical modifications or sustainable human development can only be considered on a project-by-project basis. However when plans and programmes are being developed they should be forward looking and consider the impact of future projects resulting from them: Before such plans and programmes are adopted they should consider; alternatives that would not result in significant adverse impacts on the water environment; practicable steps

that may be taken to mitigate the adverse impact on the body of water; the reasons for the modification, and whether they are of overriding public interest or benefit to the environment, human health, human safety or sustainable development. As a result of these considerations adjustments to plans and programmes may be needed (See Chapter 7 in relation to Strategic Environmental Assessment).

4.2.5 What if objectives cannot be met in an International River Basin District because of cross border activities?

It has already been stated that local authorities must coordinate the setting of objectives with the Northern Ireland Environment Agency for shared waters to ensure consistency of approach. Consequently, where the authorities consider exemptions to be necessary in shared water bodies, these should be consulted upon with the Northern Ireland Environment Agency. Exemptions can be applied in cases where local authorities cannot resolve the reasons for not achieving the environmental objectives because they lie outside the National jurisdiction. In these cases, the Northern Ireland Environment Agency may provide enough information for justification of the application of exemptions for downstream catchments in the Republic of Ireland. Equally the local authorities may provide the necessary information to the Northern Ireland Environment Agency where the Agency intends to apply an exemption because of impacting activities upstream in the Republic of Ireland.

4.3 Reasons for extended deadlines or less stringent objectives

As set out above, extended deadlines or less stringent objectives may apply in exceptional circumstances relating to technical infeasibility or disproportionate expense (where the cost of meeting the default objectives is significantly greater than the total value of the resulting benefits). Both reasons for applying exemptions are explained below.

4.3.1 What is meant by technically infeasible?

In principle, only issues of a technical nature should be taken into account in applying a technical feasibility test and not cost issues. Although cost savings may be associated with extending the deadline

for achieving good status, such savings are not relevant in deciding whether making the improvements by the deadline would be technically infeasible.

Technical infeasibility is justified if:

- No technical solution is available to deliver the default objectives;
- It takes longer to fix the problem than there is time available (i.e. beyond 2015, 2021 or 2027);
- The nature of the solution requires a staged implementation to be more effective;
- There is no information on the cause of the problem; hence a solution cannot be identified.

In practice, the greater the effort expended in trying to overcome practical issues of a technical nature, the greater the likelihood that technically feasible ways of making the improvements will be found. This means that consideration of the costs and benefits will need to be considered alongside technical feasibility. Where the benefits resulting from an improvement would be substantial, a much higher degree of effort to find a technically feasible option is likely to be appropriate than where the benefits of an improvement are expected to be low. For example, where the development of new technical solutions would benefit protected area objectives such as Natura 2000 sites the benefits may be considered substantial.

4.3.2 What is meant by disproportionately expensive?

Deciding whether achievement of good status would be disproportionately expensive is ultimately a judgment informed by economic analysis. The economic analysis should consist of an analysis of the costs and benefits of measures to achieve good status, and also an assessment of the distributional impacts of these measures in line with European guidance[9].

[9] COMMON IMPLEMENTATION STRATEGY FOR THE WATER FRAMEWORK DIRECTIVE (2000/60/EC). Guidance Document No . Economics and the Environment – The Implementation Challenge of the Water Framework Directive. Produced by Working Group 2.6 - WATECO

A wide range of social, economic and environmental costs and benefits may be associated with the achievement of good status and therefore may need to be considered. These include costs and benefits for environmental factors such as biodiversity, landscape, climate change; and social factors such as recreation or replacement of certain activities. Local authorities may use qualitative, quantitative or monetised information on costs and benefits, or any combination of these types of information, to help make the necessary judgements.

Given the uncertainty around estimates of costs and benefits:

- Disproportionality should not begin at the point where measured costs simply exceed quantifiable benefits;
- The assessment of costs and benefits will have to include qualitative costs and benefits as well as quantitative;
- The margin by which costs exceed benefits should be appreciable and have a high level of confidence;
- In the context of disproportionality the local authority may also want to take into consideration the ability to pay of those affected by the measures.

The way in which information is used for the disproportionality assessment should be clear and transparent. The margins by which costs have to exceed benefits to call something disproportionate will depend on the level of uncertainty of the disproportionality assessment. It might also depend on the type of exemption (extension of deadline or lower objectives). The Water Services National Training Group has commissioned, on behalf of the Department of Environment, Heritage and Local Government, the development of guidance and training for local authorities, in the use of economics in objective setting. This technical guidance and training will be rolled out in late 2008.

4.4 What if there is a temporary deterioration in the status of a water body?

In some cases temporary deterioration in the status of a body of water may occur during the planning cycle due to events which are the result of circumstances of natural cause or *force majeure* and which "could not reasonably have been foreseen". In these cases the local authorities may cite temporary deterioration, as the reason why an objective set in a

river basin management plan has not been met. This justification must be provided in the following update of the river basin management plan.

Chapter

5

5. Implementing measures to achieve objectives

Objectives can only be met by implementing management measures fully and effectively.

River Basin Management Plans must include a set of management measures aimed at achieving the default objectives by 2015, unless alternative objectives (as described in Chapter 4) are proposed in the river basin management plan. Article 11 of the Directive sets out the type of measures that must be included in the plan. These are basic measures and, where necessary, supplementary measures.

Examples of 'basic measures' include the Nitrates Directive (91/676/EEC), the Habitats Directive (92/43/EEC), the Urban Waste Water Treatment Directive (91/271/EEC) and the Integrated Pollution Prevention Control Directive (96/61/EC). These measures have been implemented by way of National Regulation under various Statutory Instruments. They are legally binding across the State and must be complied with in full.

Other 'basic measures' required under Article 11(3) of the Water Framework Directive must also be addressed e.g. 'controls over the abstraction of fresh surface water and groundwater' (Article 11(3)(e)).

There will be certain cases where full application of the 'basic measures' will not be enough to achieve the default objective of 'good status' by 2015. In such cases, additional supplementary measures will need to be identified and considered. These 'supplementary measures' are likely in most cases to be identified and implemented at local level i.e. at the river basin or water body level. The combination of supplementary measures chosen by local authorities should be the most cost-effective combination of supplementary measures identified.

The following is an example of how measures provided for in the Directive might be implemented in practice -

A river water body is badly degraded due to nutrient enrichment from a number of different sources: (i) urban waste water (ii) industrial waste water and (iii) intensive agriculture. The minimum obligation under the Directive is that the measures set out in the Urban Waste Water Treatment Regulations, the measures established in National Regulations that apply to industrial discharges e.g. under the Water

Pollution or the Environmental Protection Agency Acts and the measures established by the Good Agricultural Practice for the Protection of Waters Regulations are fully implemented within the river basin. If it is the view that these measures alone will not be enough to restore the river water body to 'good status' by 2015, then additional measures will have to be identified and considered. These might include, for example, setting more stringent emission controls than is required by the above mentioned legislation for point source discharges, or require (e.g. by way of local bye-law) stricter controls on agricultural activities within the catchment. Other measures that could be considered might include the re-creation and restoration of wetland areas, educational projects, etc. It is likely that the final approach adopted will consist of a combination of some, if not all of these supplementary measures; the final combination chosen will most likely be the most cost-effective combination of technically feasible measures identified.

The combination of supplementary measures identified for a water body must first be checked to determine whether the measures are technically feasible and that they are likely to deliver the required objectives within the required timeframe (by 2015). The measures should also be checked to determine whether they are disproportionately expensive within the timeframe proposed. If it is technically infeasible or disproportionately expensive to achieve the objectives within the timeframe for the first planning cycle (by 2015) then an exemption may be considered, in the form of an extension of time beyond the first river basin planning cycle.

5.1 What measures are required by the Directive ?

The programmes of measures for the purpose of achieving the established objectives, include;

5.1.1 Basic Measures

The basic measures include measures required to implement existing Community legislation for the protection of water, which are;

5.1.1.1 The Bathing Water Directive (2006/7/EC);

The purpose of the 1976 Bathing Waters Directive is to preserve, protect and improve the quality of the bathing waters and therefore, to protect human health. The Directive set binding standards for bathing waters

throughout the European Union and was transposed into Irish legislation through the 1992 quality of bathing waters Regulations (SI 155 of 1992). A new bathing water directive (2006/7/EC) was adopted in 2006 laying down provisions for more sophisticated monitoring and classification of bathing water. It also provides for extensive public information and participation in line with the Åarhus Convention as well as for comprehensive and modern management measures. The classification of water quality at a bathing site will be determined on the basis of a three-year trend instead of a single year's result as at present. This means that the classification will be less susceptible to bad weather or one-off incidents. Where water quality is consistently good over a three-year period the frequency of sampling may be reduced. Directive 76/160/EEC will be repealed and replaced by end of 2014 at latest. Details of objectives and obligations under Directive are provided in Chapters 4 and 6.

5.1.1.2 The Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC) ;

Community legislation concerning nature conservation comprises two Directives: the "Birds" Directive and the "Habitats" Directive, which are concerned with the protection of natural habitats, fauna and flora and the creation of a European network of protected sites. The network includes water dependent species and habitats. The conservation aims of both directives are generally the same. Together, the Special Areas of Conservation designated by the Member States make up the European network of protected sites, Natura 2000. All the Special Protection Areas created under the "Birds" Directive form part of this network. The European Union (Natural Habitats) Regulations, SI 94 of 1997 (which have been amended twice by SI 233 of 1998 & SI 378 of 2005) transpose the requirements of both directives. The objectives and obligations of these directives, as they relate to water dependent species and habitats are provided in chapters 4 and 6.

5.1.1.3 The Drinking Water Directive (98/83/EC);

The Directive has been transposed into National legislation through the Drinking Water Regulations (SI 278 of 2007). The Regulations concern the quality of water intended for human consumption. The objective is to protect the health of the consumer and to make sure the water is wholesome and clean. **Note:** the Regulations are expected to be updated to synchronise with the Water Services Act (2007).

In addition the Water Framework Directive (Article 7) requires measures to be taken to protect drinking water sources. Further details are provided in Chapter 4 and 6.

5.1.1.4 The Major Accidents (Seveso) Directive (96/82/EC);

This directive concerns the control of major hazards involving dangerous substances and was transposed into National legislation through the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations (SI 74 of 2006). Further details are provided in Chapter 6.

5.1.1.5 The Environmental Impact Assessment Directive (85/337/EEC);

The Directive ensures that environmental consequences of projects are identified and assessed before authorisation is given. Environmental Impact Assessment (EIA) is a procedure for; the systematic examination of the likely significant effects on the environment of a proposed development; ensuring that adequate consideration is given to any such effects; and avoiding, reducing or offsetting any significant adverse effects. The public can give its opinion and all results are taken into account in the authorisation procedure for the project. The public is informed of the decision afterwards.

The law governing the planning system, including EIA requirements, is set out in the Planning and Development Acts 2000 – 2006 and the Planning and Development Regulations 2001 - 2007 and EIA Regulations 1999 - 2006. Further details of the role of EIA in the river basin planning process are provided in Chapter 6.

5.1.1.6 The Sewage Sludge Directive (86/278/EEC);

The Sewage Sludge Directive 86/278/EEC seeks to encourage the use of sewage sludge in agriculture and to regulate its use in such a way as to prevent harmful effects on soil, vegetation, animals and man. To this end, it prohibits the use of untreated sludge on agricultural land unless it is injected or incorporated into the soil. The Directive also requires that sludge should be used in such a way that account is taken of the nutrient requirements of crops and that the quality of the soil and of the surface and groundwater is not impaired.

The Directive has been transposed into National legislation through the Waste Management (Use of Sewage Sludge in Agriculture) Regulations 1998 and 2001 (SI 148 of 1998 and SI 267 of 2001). The Regulations prescribe standards and practices to be followed by local authorities for the use of sewage sludge in agriculture. A Code of Practice and guidelines on the use of biosolids in agriculture were published in 1999 aimed at local authorities and waste water treatment plant operators and farmers. Further details regarding how sludge management plans need to take full account of river basin management plans are provided in Chapter 6.

5.1.1.7 The Urban Waste Water Treatment Directive (91/271/EEC);

The Urban Waste Water Treatment Regulations 2001 (SI 254 of 2001) deal with the collection, treatment and discharge of urban waste water and the treatment and discharge of waste water from certain industrial sectors. These regulations revoke and generally re-enact, in consolidated form, the Environmental Protection Agency Act 1992 (Urban Waste Water Treatment Regulations, 1994, as amended).

The Regulations:

- give effect to provisions of Council Directive 91/271/EEC of 21 May 1991, as amended, concerning urban waste water treatment, and Directive 2000/60/EC of 23 October 2000 - the Water Framework Directive."

- prescribe requirements in relation to the provision of collection systems and treatment standards and other requirements for urban waste water treatment plants, generally and in sensitive areas

- provide for monitoring procedures in relation to treatment plants and make provision for pre-treatment requirements in relation to industrial waste water entering collection systems and urban waste water treatment plants.

The details of objectives and obligations arising under the Regulations are provided in Chapters 4 and 6.

5.1.1.8 The Plant Protection Products Directive (91/414/EEC);

The Plant Protection Products Directive (91/414/EEC) concerns the authorisation of plant protection product for use or placing on the

market. Before an active substance can be authorised it must conform to rigid controls specified in accordance with EU legislation. That legislation is designed to ensure that no harmful effects arise for human and animal health and that there is no unacceptable impact on the environment. 'The Authorisations Directive' has been implemented in National legislation through S.I No. 320 of 1981 as amended, SI 83 of 2003 and SI 624 of 2001. The Pesticides Control Service of the Department of Agriculture, Fisheries and Food, is responsible for operating the authorisation system.

The main elements of the Directive are as follows:

- To harmonise the overall arrangements for authorisation of plant protection products within the European Union. This is achieved by harmonising the process for considering the safety of active substances at a European Community level by establishing agreed criteria for considering the safety of those products. Product authorisation remains the responsibility of individual Member States

- To provide for the establishment of a positive list of active substances (Annex I), that have been shown to be without unacceptable risk to people or the environment

- Active substances are added to Annex I of the Directive as existing active substances are reviewed (under the European Commission (EC) Review Programme) and new ones authorised.

- Member States can only authorise the marketing and use of plant protection products after an active substance is listed in Annex I, except where transitional arrangements apply.

Only plant protection products which can be used safely are authorised for marketing and use within the EU. The conditions of authorisation are selected to minimise risks for consumers, workers and the environment. The use of a plant protection product in a manner other than specified on its approved label is illegal.

The main emphasis of the existing EU pesticide regulatory framework has been the authorisation of plant protection products for the placing of these products on the market. In order to strengthen the overall policy framework for the use and management of pesticides, the EU Commission brought forward a strategy for the sustainable use of

pesticides in 2002[10], which has a stronger emphasis on the use-phase of pesticides.

The draft proposal for a "sustainable use of pesticides" Directive was published in 2006[11]. If adopted by the European Council and Parliament, the Directive will require Member States to establish pollution reduction programmes addressing pesticides within the framework of the River Basin Management Plans. Types of measures currently proposed in the draft directive include the use of mandatory buffer strips or the use of particular technical equipment to reduce spray drift. Member States may be required to reduce or ban the use of pesticides within safeguard zones identified in order to protect drinking water sources as required by Article 7(3) of Directive 2000/60/EC (Water Framework Directive). The draft proposal also currently provides for significantly reduced or zero pesticide use in protected areas designated under other directives such as Natura 2000 sites.

5.1.1.9 The Nitrates Directive (91/676/EEC);

The Nitrates Directive concerns the protection of waters against pollution caused by nitrates (and also phosphorus) from agricultural sources. Its objective is to reduce water pollution caused or induced by nitrates from agricultural sources and to prevent further such pollution. The directive has been implemented in National legislation through the European Communities (good agricultural practice for protection of waters) Regulations (SI 378 of 2006). Details of the objectives and obligations arising out of the Regulations are provided in Chapters 4 and 6.

5.1.1.10 The Integrated Pollution Prevention Control Directive (96/61/EC).

The objective of the IPPC Directive is to minimise pollution from various industrial sources throughout the European Union. The directive has been implemented in National legislation through the Environmental Protection Agency Acts of 1992 and 2003 and the associated licensing Regulations. Operators of industrial installations covered by Annex I of the IPPC Directive are required to obtain an authorisation (environmental permit) from the EPA.

---

[10] Decision 1600/2002/EC laying down the Sixth Community Environment Action Programme; OJ L 242, 10.9.2002

[11] COM(2006) 373 final. 2006/0132 (COD). Proposal for a Directive of the European Parliament and of the Council establishing a framework for Community action to achieve a sustainable use of pesticides.

The IPPC Directive is based on several principles, namely (1) an integrated approach, (2) best available techniques, (3) flexibility and (4) public participation. The integrated approach means that permits must take into account the whole environmental performance of the plant, covering e.g. emissions to air, water and land, generation of waste, use of raw materials, energy efficiency, noise, prevention of accidents, and restoration of the site upon closure. The purpose of the Directive is to ensure a high level of protection of the environment taken as a whole. The permit conditions, including emission limit values (ELVs), must be based on Best Available Techniques (BAT), as defined in the IPPC Directive. The establishment of environmental objectives in river basin management plans will require IPPC permits to take full account of these objectives. This is described further in Chapter 6.

5.1.2 Other basic measures;

The Water Framework Directive also requires the implementation of additional new basic measures, which are briefly described below.

5.1.2.1 Practical steps and measures taken to apply the principle of recovery of costs for water use and measures to promote efficient and sustainable water use

The Water Framework Directive requires Member States to devise and adopt a cost recovery system to ensure that water pricing policies act as incentives towards efficient water usage so as to "contribute to the environmental objectives of the directive" and to recover "an adequate contribution" of the costs of water services from the main user groups, including industry, agriculture and households. The "polluter pays principle" must be applied. Article 9 of the Water Framework Directive provides the overall framework within which water-pricing policy is to be determined and implemented by 2010. The directive furthermore requires measures to promote efficient and sustainable water use.

The Government's National Water Pricing Policy adopted in 1998 requires the charging of non-domestic customers for water and waste water services to recover the full costs of providing such services to these customers. This is in line with EU policy on the application of the "polluter pays principle" and Article 9 of the EU Water Framework Directive. The installation of meters on the supply of non-domestic customers will facilitate the equitable, transparent and efficient implementation of water pricing policy. Metering of all non-domestic uses is due to be completed in 2008. Capital, operational and maintenance costs in relation to the domestic sector are met from public

funds. This is permitted for a "given water activity" under Article 9(4) of the Directive where it is "within established practice" and "where this does not compromise the purposes and the achievement of the objectives of the Directive."

5.1.2.2 Measures taken to protect drinking water sources

The Water Framework Directive requires drinking water resources to be protected. Article 7 requires the identification of all groundwater and surface water bodies that are used, or may be used in the future, as a source of drinking water for 50 persons or more, or where the rate of abstraction is more than $10m^3$ per day. Deterioration in the quality of these water bodies must be avoided so that less treatment is required to render the water suitable for drinking. The treated water must also meet the standards in the Drinking Water Directive (98/83/EC). Article 7 of the Water Framework Directive indicates that "safeguard zones" may be used by Member States where there is an identified need to protect individual drinking water sources.

The most recent drinking water report by the EPA[12] emphasised the need to adopt a water safety plan approach to ensuring drinking water is safe and secure. The EPA recommended that; "local authorities should adopt the World Health Organisation recommended water safety plan approach to the management of drinking water supplies. The three components of a water safety plan, which should be adopted, are; risk assessment, effective operational monitoring and effective management. The adoption of this approach will ensure the safety and security of water supplies from catchment to consumer."

Article 7(3) of the Water Framework Directive provides for safeguard zones to be established by the water services authorities within bodies of water where considered necessary. Section 32(3)(o) of the Water Services Act (2007) enables the Minister to make Regulations on source protection if considered necessary.

5.1.2.3 Controls on abstraction and impoundment with an impact on the status of water

Abstraction legislation is set out in the Water Supplies Act 1942, which governs the abstraction, by local authorities of water from various water sources. The Planning and Development Acts 2000-2006 and

[12] The Provision and Quality of Drinking Water in Ireland - A Report for the Years 2006-2007. EPA 2008.

associated Regulations set out further provisions regarding water abstraction including establishing a role for An Bórd Pleanála; provisions regarding planning permissions for abstraction; associated consent procedures and public notice/consultation requirements; and relevant environmental impact assessments and associated thresholds.

The Water Framework Directive requires controls over the abstraction of fresh surface water and groundwater, and impoundment of fresh surface water, including a register or registers of water abstractions and a requirement of prior authorisation for abstraction and impoundment. These controls must be periodically reviewed and, where necessary, updated. Member States can exempt abstractions or impoundments, which have no significant impact on water status from these controls.

Detailed technical studies are under way, led by local authorities to establish the amount of water currently abstracted, with predictions for the year 2015. Technical methods are being developed to estimate minimum water resource requirements to protect the ecological status of surface water bodies. This work will assist in setting appropriate and sustainable abstraction rates which will support the objectives established for water bodies in river basin management plans.

5.1.2.4 Controls on point source and diffuse source discharges with an impact on the status of water

The Water Framework Directive requires prior regulation for point source discharges liable to cause pollution. Controls may include prohibition on the entry of pollutants into water, prior authorisation, or registration based on general binding rules and laying down emission controls for the pollutants. There is adequate National regulatory legislation already in place to deal with point source discharges. The EPA under the Integrated Pollution Prevention and Control (IPPC) Regulations regulates major industrial activities. Under the Water Pollution Acts, local authorities license all other small-scale industrial and commercial premises that discharge to waters and sewers. More recently the Waste Water Discharge (Authorisation) Regulations 2007 (SI 684 of 2007) were made providing for the authorisation by the EPA of discharges from local authority waste water treatment works and collection systems that are released to all types of receiving waters. In the case of discharges from smaller sewage systems, certificates will apply instead of licences. Details regarding how these controls should be integrated into the river basin planning process are provided in Chapter 6.

For diffuse sources of pollution such as agricultural activities and unsewered properties, the Directive requires measures to prevent or control the input of pollutants. Controls may take the form of a requirement for prior regulation, such as a prohibition on the entry of pollutants into water, prior authorisation or registration based on general binding rules.

The European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006 (SI 378 of 2006) provide statutory support for good agricultural practice to protect waters against pollution from agricultural sources and give further effect to several EU Directives including the Nitrates Directive, dangerous substances in water, waste management, protection of groundwater, public participation in policy development and water policy (the Water Framework Directive).

In relation to unsewered properties section 70(2) of the Water Services Act 2007 places a duty of care on owners of premises to ensure that treatment systems for waste water are kept so as not to cause a risk to human health or the environment.

5.1.2.5 Authorisations of direct discharges to groundwater

Measures to protect groundwater are required by the Water Framework Directive. Article 11(3)(j) prohibits the direct discharge of pollutants into groundwater, but it permits prior authorisation of a number of specific activities related to the reinjection of waters that have been extracted for particular purposes such as dewatering for mining or construction, exploration for oils and injection for storage of gas. Such discharges are only allowed if the groundwater is unsuitable for any other use. However, the injection of small quantities of substances for characterisation, protection or remediation of groundwater bodies is permitted. Construction or civil engineering works which come into contact with, and could potentially influence the water table require authorisation and general binding rules.

The Waste Water Discharge (Authorisation) Regulations 2007 (SI 684 of 2007) prohibit the discharge by water services authorities of certain dangerous substances to groundwater, and provide for controls by the EPA, by way of a licensing system, in relation to discharges of other such substances by water services authorities. This provision replaces the Protection of Groundwater Regulations (SI 41 of 1999).

5.1.2.6 Measures to deal with priority substances

Measures are required by the Directive to eliminate pollution of surface waters by 33 priority substances and 8 other pollutants (Table 5, Chapter 3). Measures must aim to progressively reduce pollution from priority substances and cease or phase out emissions, discharges and losses of priority hazardous substances. Further details on pollution reduction programmes are provided in Chapter 6.

5.1.2.7 Controls on physical modifications to surface waters with an impact on the status of water

The Water Framework Directive requires that the physical conditions of surface water bodies are consistent with the achievement of the required ecological status or good ecological potential for bodies of water designated as artificial or heavily modified. Controls for this purpose may take the form of a requirement for prior authorisation and/or registration based on general binding rules.

Planning and development processes and marine licensing systems currently provide a general level of control over physical modifications at the approval stage.

5.1.2.8 Controls on other activities with an impact on the status of water

The Water Framework Directive also requires measures to be put in place to deal with any other significant adverse impacts on the status of water identified by risk assessment in the characterisation report (under Article 5 and Annex II). Controls for this purpose may take the form of a requirement for prior authorisation or registration based on general binding rules where such a requirement is not otherwise provided for under Community legislation.

Invasive aquatic alien species are non-native plants or animals that successfully establish themselves in aquatic and fringing habitats and damage the natural flora and fauna. There is growing evidence that they pose a major threat to the natural diversity of native plants and animals: for example by preying on them, out-competing for habitat or food, altering habitat or introducing pathogens or parasites. The EPA has identified eight aquatic species of main concern in Ireland.

The Department of Environment, Heritage and Local Government is currently considering the introduction of Regulations under Section 52(6)(a) of the Wildlife Act, 1976, for the purpose of “prohibiting the possession or introduction of any species of wild bird, wild animal or wild

flora or any part, product or derivative of such wild bird, wild animal or wild flora which may be detrimental to native species".

5.1.2.9 Measures taken to prevent or reduce the impact of accidental pollution incidents

The Water Framework Directive requires measures to prevent significant losses of pollutants from technical installations (e.g. industrial sites), and to prevent and/or to reduce the impact of accidental pollution incidents, for example, as a result of floods, including through systems to detect or give warning of such events including, in the case of accidents which could not reasonably have been foreseen, all appropriate measures to reduce the risk to aquatic ecosystems.

The Seveso II Directive (96/82/EC and 2003/105/EC) was implemented through the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations (SI 74 of 2006). The Regulations relate to the control of major hazards involving dangerous substances. The Regulations apply to individual establishments that present a major hazard by virtue of the presence of specified quantities of dangerous substances (Further details in Chapter 6).

The “Framework for Major Emergency Management” was published by the Office of Emergency Planning (an agency of the Department of Defence) in 2006. The Framework sets out the arrangements, by which the principal response agencies; the local authorities (including Fire Services and Civil Defence), An Garda Siochána and the Health Service Executive, will work together in the management of large-scale incidents.

Major emergencies include, among other things, severe weather, flooding, chemical spills, transport accidents (air, sea, rail, road), accidents at sea and major pollution incidents at sea.

The Framework is designed primarily to provide for the protection, support and welfare of the public in times of emergency. Effective arrangements to ensure public safety in times of emergency also have the benefit of helping to safeguard the environment, the economy, infrastructure and property.

The Major Emergency Plan should identify sites arising from the European Union (Control of Major Accident Hazard) Regulations, i.e. the ‘Seveso Regulations’, where specific plans/arrangements exist for responding to emergencies. The Major Emergency Plan should set out the generic arrangements governing the response to such sites/events and should contain reference to the specific plans for the site.

The lead agency in relation to many of these incidents will be the local authorities by default.

5.1.2.10 How can basic measures be implemented most effectively ?

The relevant competent authorities responsible for implementing the basic measures required under existing EU directives must ensure that they are implemented to full effect, maximising their contribution to achieving the objectives established in the river basin management plans. Those objectives are; prevention of deterioration, maintenance of high and good status where they exist, achievement of the objectives of protected areas where they are more stringent and restoration of waters of less than good status to at least good status by 2015. This will require the competent authorities to assess and, where appropriate, revise their implementing plans and programmes as set out in Chapter 6.

All assessments of plans and programmes, should take into account the risk assessments undertaken within each river basin district, the results of monitoring and the status assigned to individual water bodies by the EPA. Plans and programmes to be assessed include, county and local area development plans, pollution reduction plans and programmes such as water services strategic plans, the nitrates action plan and discharge licencing programmes. In practical terms review of plans and programmes may involve, for instance; prioritising investment in waste water infrastructure for discharges to those water bodies at risk of failing their objectives due to urban waste water. With regard to agricultural source pollution, programmes should prioritise enforcement activities, in particular compliance checks under the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006 (SI 378 of 2006), in those catchments or areas, where agricultural activities are identified as posing a significant risk to waters. Programmes should take into account the need to protect high and good status waters, and measures should be included in the programme for this purpose.

The local authorities should assess the likely combined impact of all basic measures in relation to achievement of the objectives established in the river basin management plan, identifying those water bodies where the environmental targets are likely to be achieved or not achieved as the case may be. It can be expected that provided all basic measures are implemented fully and effectively the level of non-compliance with the objectives established in the plan will be considerably reduced as illustrated diagrammatically in Figure 2.

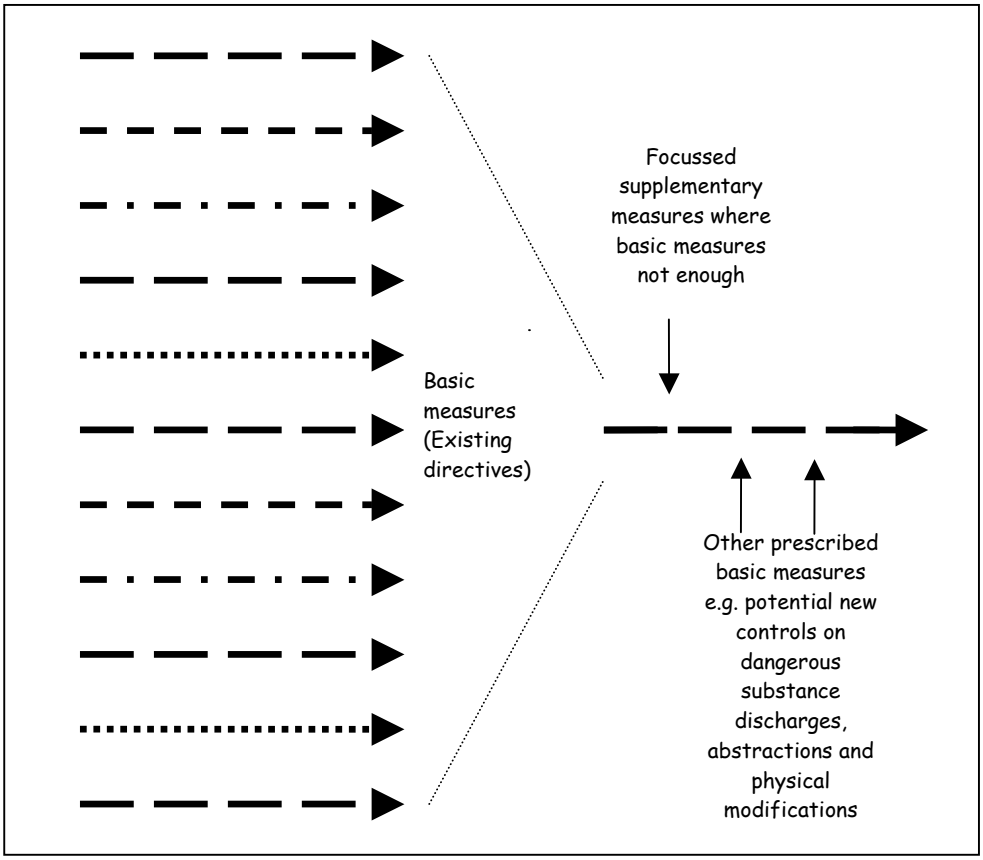


Figure 2: The diagram indicates conceptually how the implementation of the existing 11 Directives (Annex VI of the WFD) can be expected to fill many of the gaps in meeting the WFD objectives. Introduction of additional basic measures will further close the gaps. Finally, focussed supplementary measures can be expected to close the remaining gaps to fully meet all required WFD objectives.

5.1.3 Supplementary Measures

In addition to the above basic measures, the Water Framework Directive requires the implementation of supplementary measures where these are necessary to achieve the objectives of the directive.

The Directive is not prescriptive on the type of supplementary measures that are to be used. Examples are provided in the directive, such as; administrative arrangements, economic or fiscal instruments, negotiated environmental agreements, emission controls, codes of good practice, re-creation and restoration of wetlands and rehabilitation projects.

5.1.3.1 How are supplementary measures to be identified?

The Directive requires the implementation of additional (or supplementary) measures (e.g. fiscal instrument, rehabilitation projects, etc.) in situations where the "basic" measures are deemed not to be adequate to meet the objectives established for a water body. It is envisaged that the requirement for such supplementary measures should be limited. Through evaluation of the monitoring results and risk assessments undertaken for a water body it should be possible to identify the likely cause or causes of failure in each case and also the most appropriate additional measures that may need to be implemented. For example, a number of streams in a river basin might have adequate water quality but the biology might fail good status because of physical damage due to arterial drainage or erosion alone. In the case of damage being due to arterial drainage it may be a case of instigating a more sensitive arterial drainage maintenance programme or consideration might be given to establishing a physical rehabilitation programme involving the reintroduction of channel diversity by constructing rock deflectors, weirs, etc. In the case of damage due to erosion consideration might be given to a restoration programme involving bank protection (using timber or rock) and fencing to exclude livestock and allow vegetation to stabilise banks with the aim of restoring waters to good status.

The identification of supplementary measures should be, transparent, proportionate and pragmatic. The most cost-effective combination of supplementary measures to achieve this goal should be identified in each case.

Chapter

6

6. Integrating Plans and Programmes – the need to coordinate related policy areas

While the competent authorities responsible for the river basin planning process are local authorities and the EPA there are general duties assigned to all public authorities under the Water Policy Regulations (SI 722 of 2003). Each public authority must exercise its functions in a manner, which is consistent with and contributes to achieving the objectives of river basin management plans. Within the context of their functions, they must take such actions as necessary, to secure compliance with the provisions of any river basin management plan made, and any established programme of measures. They must also consult, co-operate and liaise with other public authorities and with the competent authorities in Northern Ireland (where appropriate) to ensure co-ordination of measures needed to meet objectives. They must also provide such information appropriate to their functions as may be reasonably required by local authorities and the EPA.

There are many different types of plans and programmes prepared by various public authorities which are relevant to water protection, for example, water services strategic plans which will come into effect in due course when the relevant provisions of the Water Services Act are brought into force and pollution reduction plans and programmes required under the Shellfish Waters Directive and the Bathing Water Directive. These plans and programmes need to be integrated in a coherent way with river basin management plans to ensure that the objectives, or environmental goals, of the river basin management plans are met.

The relationship between river basin management plans and other relevant plans and programmes is a two way process. Other public bodies should be able to influence the river basin planning process, and river basin planning should also influence their plans and strategies. There are a number of mechanisms for ensuring that plans and programmes are integrated. These include; guidance issued by the Minister for the Environment, Heritage & Local Government in relation to implementation of river basin management plans; through representation on National and RBD level liaison groups; through formal consultations on river basin planning documents issued by the local

authorities and the EPA and through local authorities and EPA input into other public bodies' plans and programmes.

Plans and strategies have various planning cycles, most of which will not be synchronised with the river basin planning timetable. Similarly, the separate plans and strategies operate to a variety of geographical boundaries, most of which will not fit with the river basin district boundaries. Consequently, integration will be a gradual process - with each of the separate plans and programmes taking account of the WFD as it is reviewed.

6.1 The relationship of other plans and programmes with river basin management plans

The most relevant plans and programmes which need to be integrated with river basin management plans are described below as well as how they need to be integrated with river basin management plans. They include;

1) Regional Planning Guidelines, County Development Plans and related Local Area Plans

2) Conservation measures for Natura 2000 sites - Integrating into appropriate plans and the establishment of sub-basin conservation management plans where necessary

3) Water Services Strategic Plans (including Rural Water Plans)

4) Pollution reduction plans and programmes;

    a. Nitrates Action Plan

    b. Integrated Pollution Prevention Control licensing review programmes

    c. Local authority programmes for the review of discharge authorisations

    d. Groundwater pollution reduction programmes

    e. Shellfish waters pollution reduction programmes

    f. Bathing waters management plans,

5) Sludge management plans,

6) Major accident emergency plans

7) Forest management plans

6.1.1 Land use and spatial planning

Changes in land use can have positive and adverse impacts on the ecological and chemical quality and the physical characteristics of water bodies, and hence on the achievement of water objectives. To ensure that impacts, on water quality, from development are positive, spatial planning and river basin planning processes need to be properly integrated ensuring sustainable development.

The river basin planning process should inform the spatial planning processes of the potential risks posed by various potential forms and patterns of development to the achievement of the water objectives set out by river basin management plans. In turn, these potential risks to water quality objectives must be considered by planning authorities, through the SEA process, when preparing their statutory development plans. Strategic Environmental Assessment (SEA) is required under the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI 436 of 2004) in the case of;

- Regional Planning Guidelines,
- Development Plans, variations of Development Plans and Local Area Plans likely to give rise to significant environmental effects
- Planning Schemes in respect of a Strategic Development Zone (SDZ)

The 2004 Regulations give effect to the SEA Directive in the land-use planning sector. SEA is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to adopt the plan or programme. The assessment must take into account the impact that the development plan will have on the environmental protection objectives established for waters in the area covered by the plan.

It will also be necessary for planning authorities to consider potential risks to water objectives during the detailed stages of development management when development plans are implemented. The Environmental Impact Assessment (EIA) procedure will need to explicitly consider the likely effects of proposed development on the

environmental objectives established for waters in river basin management plans.

The physical planning system plays a crucial and central role in supporting objectives concerning the protection of our highest quality aquatic systems. It also has a role in preventing further deterioration where human activities pose a risk by managing and channelling the development process and ensuring that the outcomes of the development process are sustainable. The national water monitoring programme led by the EPA and the risk assessments agreed by the WFD National Technical Coordination Group will assist planning authorities in this regard by highlighting sensitive areas where the achievement of water quality objectives is under pressure. The planning system can make major contributions to water objectives by ensuring that the forms of development posing risks to water quality are avoided in the first place and also by including appropriate planning conditions in planning permissions for new development.

At the strategic level, the National Spatial Strategy (NSS) 2002-2020 is the national strategic planning framework for achieving a better balance of social, economic and physical development, between the regions in Ireland. The strategy makes clear that development needs to be effectively managed and channelled to appropriate locations in order to bring about both more balanced regional development,and development that is sustainable in economic, social and environmental dimensions. The National Development Plan (NDP) 2007-2013 has been developed around the framework of the NSS objectives especially in terms of the capital investment programs currently being implemented. River basin planning is a new and key policy input into the ongoing implementation of the NSS at regional and local levels. Effective integration between river basin planning and the implementation and ongoing refinement of spatial planning policy at national, regional and local levels is crucial in ensuring that subsequent development is compatible with water policy.

With regard to the regional tier of spatial planning, Regional Authorities have prepared Regional Planning Guidelines (RPGs) in 2004 for their functional areas and for the purpose of implementing the NSS at regional level. The RPGs, which incorporate a socio-economic development strategy, constitute a 20-year strategic planning framework for the development of each region and for inter-regional cooperation on strategic planning and infrastructure. Formal review of the RPG's will begin in 2009 and this review process will need to take into account the need for water supply and waste water facilities and environmental protection.

At the city and county level, local authority development plans will need to both influence and be influenced by River Basin Management Plans. Development plans will be an important source of information within

RMBP's on future pressures that may pose risks to water objectives, if no action is taken. In certain restricted circumstances future development may be of overriding public interest (see chapter 4) and local authorities may need to consider the option of applying alternative water objectives, which are provided to allow for the continuation of sustainable human development activities (e.g. ports facilities, water storage and flood defence).

Development plans are also a key implementation mechanism for the NSS and RPG's and as highlighted in the Ministers Planning Guidelines on Development Plans, plans must be rooted in these national and regional spatial policy frameworks.

Each Development Plan must include objectives for, among other matters:

- Provision of infrastructure, including water supplies and waste water services
- Conservation and protection of the environment;
- Location of new establishments that present a major accident hazard due to the presence of significant quantities of dangerous substances, modifications to such existing establishments, and development in the vicinity of such establishments. This is an obligation under the Major Accidents Directive (96/82/EC).

Therefore, the current legislative framework clearly requires planning authorities to properly address the issue of environmental and water quality protection and enhancement within the planning code. In the preparation of development plans, planning authorities should therefore ensure that relevant objectives of any water quality management plans be included in the plan.

Local Area Plans (LAP) must be prepared for towns and any area with a population greater than 2,000. A LAP may be prepared for any area the planning authority considers suitable. A LAP must be consistent with the objectives of the development plan. The County Development Plan establishes the strategic context in which the various Local Area Plans are prepared (Figure 3 illustrates how river basin planning objectives are to be taken into account at the various planning levels).

The first draft RBMPs will be published for public consultation by December 2008 and must be adopted by local authorities by October 2009 and reviewed every six years thereafter. All RPGs must be reviewed by 2010 and reviewed every six years thereafter. All

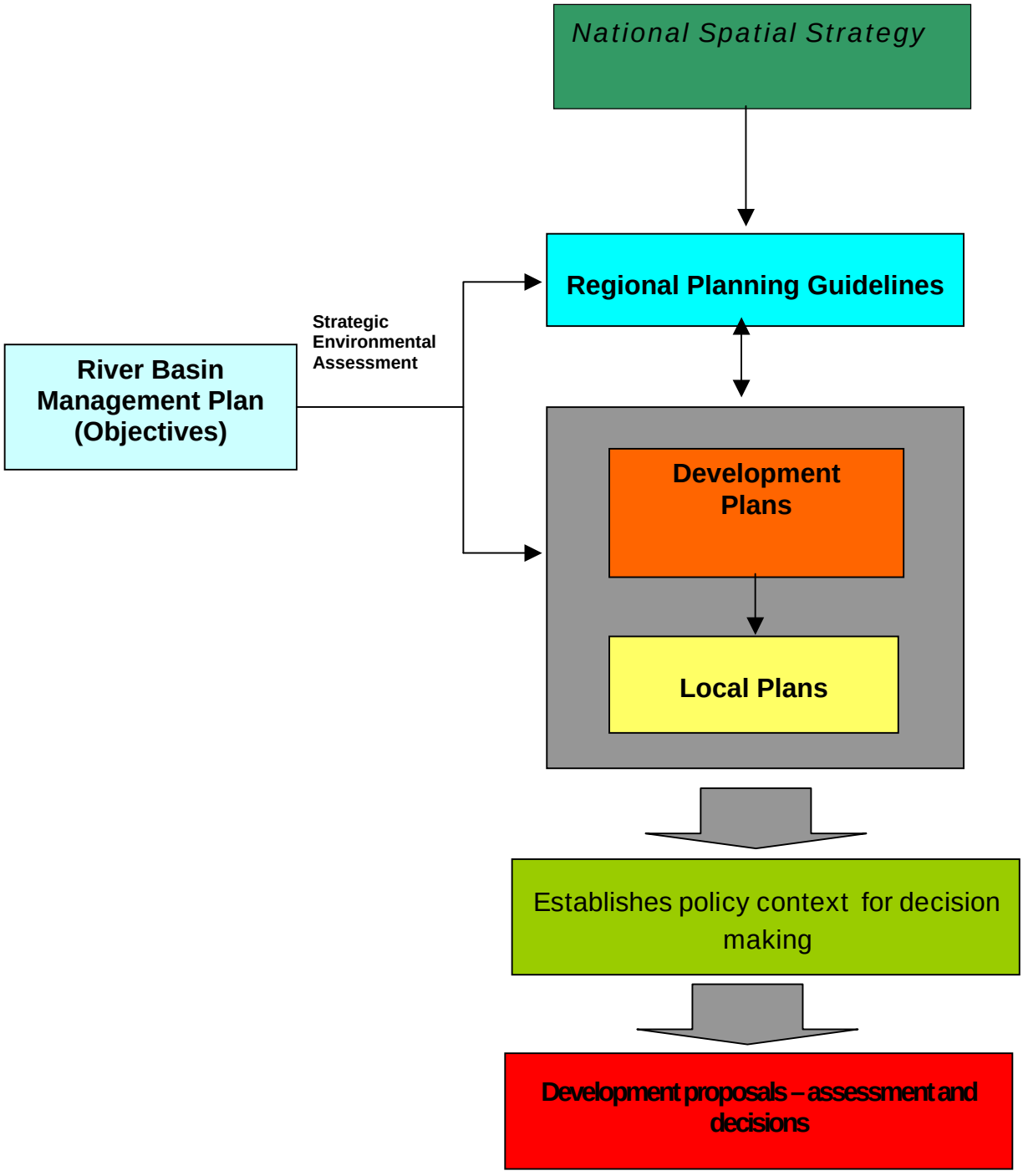
Development Plans and Local Area Plans must take full account of RPGs and must be reviewed and every six years.

The Planning and Development (Strategic Infrastructure) Act 2006 provides for applications for planning permission for certain developments of strategic importance to be made directly to An Bord Pleanála thus by-passing the local planning authority. Qualifying infrastructure includes certain classes of (1) Energy Infrastructure, (2) Transport Infrastructure and (3) Environmental Infrastructure. Examples include power generation, oil refining, air/rail/port transport infrastructure, incineration, landfill, water supply and waste water treatment.

In making a planning decision the Board must take full account of such matters as the policies and objectives of the local development plan(s), Ministerial planning guidelines, regional planning guidelines, the National Spatial Strategy, the policies and objectives of the Government and the national interest. Therefore, while the planning consent process is expedited for such strategic infrastructure all applications must nevertheless take full account of all relevant environmental policy and legislation, including river basin plan objectives.

Further specific guidance on integrating physical planning and river basin planning will be issued in due course.

Figure 3: How river basin planning objectives are to be taken into account at the various planning levels



6.1.2 Conservation measures for Natura 2000 sites - Integrating into appropriate plans and the establishment of sub-basin conservation management plans where necessary

The Habitats Directive was transposed into Irish law through Regulations in 1997, 1998 and 2005. The Regulations give the Minister for the Environment, Heritage and Local Government powers to regulate notifiable actions (potentially damaging activities) within designated sites and to injunct damaging activities both within and outside designated sites. The Minister also has powers to control activities that can cause damage to species listed on Annex IV of the Directive, e.g. through a process of derogation licensing. These Regulations also devolve powers to other Ministers and agencies, requiring them to incorporate the protection of Natura 2000 sites into their plans and programmes (e.g. development plans). Where an operation or activity is subject to consent or approval by a Minister of the Government and the activity is likely to have a significant impact on a Natura 2000 site, the relevant Minister must ensure that an appropriate assessment is carried out. The Minister for the Environment, Heritage and Local Government may enter into a management agreement with any owner, lessee or occupier of land forming part of a Natura 2000 or land adjacent to such a site for the management, conservation, restoration or protection of the site or of any part of it, e.g. Farm Plans approved by the Minister. The Minister must establish the appropriate conservation measures in respect of designated Natura 2000 including, if necessary, management plans, either specifically designed for the sites or integrated into other appropriate plans.

The geographical extent of water-dependent Natura 2000 sites in Ireland is generally confined to the area occupied by the designated habitat or species, whereas many of the human activities potentially impacting activities are upstream in the catchment areas. However, Article 10 of the Habitats Directive is clear about the obligation to ensure that land-use planning and development policies must also take account of activities outside the Natura 2000 sites where those activities may affect the integrity of the Natura 2000 network. In terms of River Basin Management Planning this is interpreted as meaning that all land-use planning and development activities, even outside the site but within the upstream catchment area of a water dependent Natura 2000 site, must be managed in a way consistent with the conservation objectives for the site. Guidance is provided elsewhere in this chapter regarding how other relevant plans and programmes (e.g. the nitrates action plan, water services strategic plans, county development plans) should take the protection of water dependent Natura 2000 sites into account.

When deciding whether a site specific conservation management plan is appropriate for the purpose of achieving the conservation objectives of a particular site the following questions may be considered by the Minister for the Environment, Heritage and Local Government:

1. Why is the conservation plan considered necessary in addition to the existing planning and development controls in place ?

2. What are the main threats to the site ?

3. What precise objectives are to be achieved ?

4. What is the timeframe for achieving the objectives ?

5. What management measures are to be implemented and what are the cost of the measures ?

6. What public authorities are responsible for implementing the measures ?

6.1.3 Water services strategic planning

Public water and sewerage services are provided by county and city councils (water services authorities). Water services in many rural areas are provided by the private Group Water Scheme sector, while many rural domestic dwellings are supplied by private wells and discharge their waste water to septic tanks.

The Minister for the Environment, Heritage and Local Government is responsible for developing and implementing Government policy in this area, planning and supervising investment programmes for the provision of water services, and (subject to ongoing supervision of the EPA in relation to water supplies) generally supervising and monitoring performance by water service authorities of their functions.

Water services provision is divided into two main elements: Water Services Investment Programme (WSIP) administered by the Department of the Environment, Heritage and Local Government, and Rural Water Programme (RWP) funded by the Department but devolved to local authorities."

The Exchequer meets the full capital costs of providing services to domestic customers. The non-domestic sector must pay for services provided to them.

The strategic objectives of the WSIP are;

- Ensuring good quality drinking water is available to all consumers of public and group water supplies in compliance with National and EU drinking water standards.

- Ensuring the provision of the remaining infrastructure needed to provide appropriate treatment for all urban waste water entering collecting systems before discharge in compliance with the requirements of the EU Urban Waste Water Treatment Directive.

- Ensuring the provision of adequate water and sewerage services in the gateways and hubs listed in the National Spatial Strategy and in other locations where services need to be enhanced.

- Promoting water conservation through the rehabilitation of existing water networks.

- Ensuring water services contribute toward the achievement of water objectives in the context of the EU Water Framework Directive

- Increasing the availability of serviced sites to support residential development under the Serviced Land Initiative.

The main objective of the Rural Water Programme is to ensure good quality water supplies to consumers in rural areas by supporting the group water scheme sector, and the provision of small-scale public water and sewerage infrastructure by water services authorities.

The Water Services Act 2007 introduces strategic planning for water services authorities in relation to water services provision, strengthening the administrative arrangements for planning the delivery of water services at National and local level. Water Services Strategic Plans (WSSPs) prepared by water services authorities in accordance with Section 36 of the Water Services Act 2007 must take full account of the proper planning and sustainable development of their functional areas and in particular must take full account of the provisions of, among other matters -

- relevant development plans, regional or spatial planning guidelines

- a river basin management plan or a programme of measures under the EU Water Framework Directive for the area to be covered by the water services strategic plan, or for any other area that could affect that plan,

The objectives of WSSPs are; to protect human health and the environment, to facilitate the provision of sufficient water services for domestic and non-domestic requirements in the area to which the plan relates, and to support proper planning and sustainable development, including sustainable use of water resources. Plans must specify measures or arrangements to be taken to achieve these objectives. The Water Services National Training Group is currently preparing guidance and training on the preparation of water services strategic plans. Guidance is expected to be finalised by late 2008.

Water services planning and river basin planning will be parallel processes and both need to influence each other to ensure that development is sustainable.

River basin management plans will drive priorities in the WSSPs to a large extent by establishing environmental objectives at water body level, including those for protected areas and by assessing the risk posed by urban waste water discharges. In the case of urban waste water discharges the environmental objectives established by water services authorities will provide a technical basis for establishing the Emission Limit Values (ELVs) to be determined by the EPA and the "appropriate waste water treatment" necessary to meet receiving water quality objectives. Appropriate Treatment' is defined under the UWWT Directive as "treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant water quality objectives and the relevant provisions of this and other Community Directives". Under the new Waste Water Discharge (Authorisation) Regulations 2007 (SI 684 of 2007) the EPA will have to take into full account the impact of such discharges when deciding on an application for a discharge authorisation from a water service authority. Where necessary the EPA may require authorities to demonstrate that the necessary work required to meet the discharge emission limits set by the EPA has been given the appropriate prioritisation for funding in the authority's WSSP.

Water services strategic plans will also influence river basin management plans. WSSPs will be an important source of information for local authorities on future pressures on water resources resulting from planned additional water services for domestic and non-domestic requirements in an area, if no action is taken. The local authorities should take account of future water services strategic plans and their likely impacts on the water environment when drafting RBMPs. In certain restricted circumstances future development may be of overriding public interest (see chapter 4) and local authorities may need to consider the option of applying alternative water objectives, which are provided to allow for the continuation of sustainable human development activities.

With regard to integrating river basin management plan objectives with water services strategic plans, the Water Services Act 2007 will facilitate alignment of both processes in due course as required. The first draft RBMPs will be published for consultation by December 2008 and must be adopted by local authorities by October 2009 and reviewed every 6 years thereafter. Preparation of water services strategic plans is also likely to commence during 2009. The WSSPs must be reviewed at least once in every period of 6 years from the date the plan is made, or at such lesser intervals as the Minister may direct. It is critical that water services authorities, responsible for WSSPs and the relevant local authorities responsible for RBMPs are fully engaged in the preparation of each.

Further specific guidance on preparing water services strategic plans will be issued in due course by the Minister and will include more detailed guidance on integrating river basin management planning considerations.

6.1.4 Pollution reduction plans and programmes

The following section provides clarification on how a number of core water pollution reduction plans and programmes are to be integrated in a coherent way with river basin management plans. These include the Nitrates National action programme, discharge authorisation programmes under the Environmental Protection Agency and Water Pollution Acts, as well as pollution reduction programmes required for groundwater, shellfish waters and bathing waters. A number of other authorisation systems will also require alignment with river basin management plans. These include authorisations under the Waste Management Act, Fisheries Acts, Foreshore Acts, Petroleum and Minerals Development Acts and Dumping at Sea Acts.

6.1.4.1 National action programme under the Nitrates Directive

This programme has been prepared in accordance with Article 5 of the Nitrates Directive (91/676/EEC) for the purpose of further implementation of the Directive in Ireland. The programme has been prepared jointly by the Department of the Environment, Heritage and Local Government (DEHLG) and the Department of Agriculture, Fisheries and Food, following consultation over an extended period with interested parties. The action programme applies to the whole National territory.

The Government chose not to identify specific vulnerable zones, and instead established and applied an action programme throughout the National territory. This approach was considered to be the best option in the interests of both environmental protection and relevant stakeholders. The adoption of the whole territory approach was supported by the necessity to give further effect to a number of other EU Directives i.e. the Water Framework Directive, the Framework Waste Directive and the Dangerous Substances Directive. Therefore, full and effective implementation of the action programme will contribute significantly to the reduction of pollution from agricultural sources generally.

The primary aims of the nitrates action plan are to reduce water pollution caused or induced by nitrates and phosphates from agricultural sources and to prevent further pollution of this type. In addition, a specific objective is to increase the efficiency of Nitrogen use in agriculture using 2006 as a base year.

This National Action Programme which commenced on 1 January 2006 is being implemented on a phased basis. It will operate for a period of 4 years. The implementation of this first action plan is being monitored on an ongoing basis by reference to water quality and to agricultural practices, including through studies of agricultural mini-catchments. It will be reviewed after a period of 3 years of operation and, where appropriate, adjustments will be introduced in the context of the second 4-year action programme starting in 2010.

Compliance with the requirements of this action programme and the relevant Regulations is a matter primarily for individual farmers. Local authorities have primary responsibility for enforcing the requirements of the Regulations. The Department of Agriculture, Fisheries and Food has the key role of carrying out on-farm compliance checks for the purpose of cross-compliance, and administering the derogation on the 170 kg organic Nitrogen limit granted to Ireland. The action plan includes rules relating to; periods when the land application of certain types of fertiliser is prohibited, the capacity and integrity of storage vessels for livestock manure, limitations on the land application of fertilisers consistent with good agricultural practice, limits to ensure that for each holding the amount of livestock manure applied to land each year and other matters set out in the code of good agricultural practice.

A key requirement of the Regulations is the monitoring and evaluation of the National Action Programme. This consists of;

- collection of accurate baseline data,
- implementation of the Action Programme measures,
- collection of data over the monitoring period, and

- evaluation of the effectiveness of change in indicators of farm management practices and water quality, by comparison of baseline data, targets levels and limits with collected data after implementation.

Local Authorities and the EPA continue to have the lead role for enforcement of legislation on water quality and environmental protection generally. The EPA will periodically, and at intervals of not more than two years, prepare and publish reports on progress made in implementing this programme and will include in these reports such recommendations and guidance as it considers appropriate.

With regard to the integration of the National Action Programme with the river basin planning process the action programme is a key basic measure within the WFD programme of measures. Local authorities must initiate the necessary farm inspection programmes. These inspections are to be co-ordinated with inspections carried out by other public authorities such as the Department of Agriculture, Fisheries and Food.

Water quality monitoring for the purposes of the National Action Programme has been integrated into the National water monitoring programme established under the WFD and is carried out by local authorities and the EPA. In addition, local authorities need to instigate systematic pollution investigation and farm inspections at catchment level to assess the level of compliance with the Regulations.

6.1.4.2 Integrated Pollution Prevention Control licensing programme

The 'IPPC Directive' (96/61/EC) has been transposed into Irish legislation through the EPA Acts 1992 and 2003 and the associated licensing Regulations. The system of licensing is administered by the EPA. The system imposes a requirement for certain large-scale industrial and agricultural activities with a high pollution potential to have a permit, which can only be issued if certain environmental conditions are met. The companies themselves bear responsibility for preventing and reducing any pollution they may cause.

IPPC licences aim to prevent or reduce emissions to air, water and land, reduce waste and use energy/resources efficiently. An IPPC licence is a single integrated licence, which covers all emissions from the facility and its environmental management. All related operations that the licence holder carries out in connection with the activity are controlled by this single licence.

In order to receive a permit an industrial or agricultural installation must comply with certain basic obligations. In particular, it must:

- use all appropriate pollution-prevention measures, namely the best available techniques (which produce the least waste, use less hazardous substances, enable the recovery and recycling of substances generated, etc.);
- prevent all large-scale pollution;
- prevent, recycle or dispose of waste in the least polluting way possible;
- ensure accident prevention and damage limitation;
- return sites to their original state when the activity is over.

In addition, the decision by the EPA to issue a permit must contain a number of specific requirements, in particular, including:

- emission limit values for polluting substances;
- any soil, water and air protection measures required;
- waste management measures;
- measures to be taken in exceptional circumstances (leaks, malfunctions, temporary or permanent stoppages, etc.);
- minimisation of long-distance or transboundary pollution;
- release monitoring;
- all other appropriate measures.

The IPPC system makes provisions for the review and update of permit conditions where necessary. Existing IPPC licences will need to be reviewed and amended, where necessary, to ensure consistency with the environmental objectives established for the Water Framework Directive.

6.1.4.3 Local authority programmes for the review of discharge licenses

Trade or industrial discharges to waters not covered by the IPPC licensing system require a licence from the relevant local authority under Section 4 of the Local Government (Water Pollution) Act 1977. Similarly, discharges of trade effluent or other matter (other than domestic sewage or storm water) to a public sewer, must be licenced by the relevant local authority under Section 16 of the Local Government (Water Pollution) Act 1977. The trade effluent licensing provisions of the 1977 Act have been consolidated into the Water Services Act 2007, and will be brought into force in due course when the necessary Commencement Order is made. The provisions are essentially replicates however, and a seamless transition is envisaged.

A local authority may grant a licence subject to such conditions, as it considers appropriate, including conditions, which lay down the emission limits for pollutants discharged. In considering whether or not to grant a licence, and the conditions to be attached, a local authority must take full account of the environmental objectives contained in any relevant water quality management plan, or water quality standards made by the Minister. Local authorities will therefore need to review existing discharge licences to ensure consistency with the environmental objectives established by the Directive and the environmental goals set out in river basin management plans.

6.1.4.4 Groundwater pollution reduction programmes

The new Groundwater Directive (2006/118/EC) came into force in January 2007. Regulations have yet to be brought forward for groundwater in order to implement the objectives for groundwater established under Article 4(1)(b) and Article 17 of Directive 2000/60/EC, including measures required under Directive 2006/118/EC on the protection of groundwater against pollution and deterioration.

Measures under Directive 2006/118/EEC, include assessing groundwater chemical status, procedures for identifying significant and sustained upward trends in groundwater pollution and measures to prevent or limit inputs of pollutants into groundwater. These measures must be transposed into Irish law by not later than 16 January 2009.

6.1.4.5 Pollution reduction programmes for areas designated for the protection of economically significant aquatic species (Shellfish waters)

The Shellfish Water Directive is implemented in Ireland by the European Communities (Quality of Shellfish Waters) Regulations 2006 (SI 268 of 2006). The Regulations require all public authorities to perform their functions in a manner that promotes compliance with the requirements of the Shellfish Waters Directive where the performance of those functions may affect the quality of designated shellfish growing waters. The Regulations lay down water quality standards for designated shellfish growing waters. Article 6 of the Regulations require the establishment of a programme of action in respect of each area of shellfish waters with the view to providing those waters comply with the requirements of the Directive and Regulations.

6.1.4.6 Management plans for areas designated as recreational and bathing waters

The 1976 Bathing Water Directive (76/160/EEC) is currently transposed into Irish law by the Quality of Bathing Water Regulations, 1992 (SI 155 of 1992). The quality of bathing waters has been monitored at "designated bathing areas" since the 1970s in accordance with the Directive, which lays down mandatory quality standards, with which Member States must comply, as well as more stringent "guide values". These are regarded as standards to which Member States should aspire. The Directive applies to bathing areas in the natural environment e.g. beaches, lakes and rivers. It does not apply to swimming pools and certain other bathing facilities. Currently there are 131 designated bathing water areas in Ireland. 122 are seawaters and nine are freshwater. Under the 1992 Regulations, bathing areas are designated by the Minister for the Environment, Heritage and Local Government on the recommendation of the local authorities. The 1992 regulations set more stringent mandatory limits for some parameters than is required by the 1976 Directive.

A new Directive concerning the management of bathing water quality (Directive 2006/7/EC) came into force on 24 March 2006. This Directive provides for the repeal of the existing 1976 Directive with effect from 31 December 2014. The new Directive is focussed strongly on the protection of the health of bathers. While the 1976 Directive refers to the monitoring of 19 parameters, the revised Directive essentially reduces this list to just two microbiological indicators of faecal contamination. These parameters are *Escherichia coli* and Intestinal *Enterococci.* The monitoring results for these parameters will be used to classify bathing water quality. This simplification reflects a disease risk based approach. The water quality standards set by the new Directive in relation to these

two parameters represent a significant tightening of water quality standards relating to microbiological pollution based on the latest scientific research. The new Directive establishes the following equivalence for ease of transition between the new and old Directives: 'the parameters faecal *coliforms* and faecal *streptococci* shall be deemed to be equivalent, respectively, to the parameters *Escherichia coli* and intestinal *enterococci*'.

The new Directive places stronger emphasis on the overall management of bathing waters, requiring the preparation of bathing water profiles and assessments of the causes of pollution that might affect bathing waters and impair bathers' health. Included in the profile will be a description of the bathing water and other waters in the catchment, identification and assessment of causes of pollution, identification of monitoring points and of risk of short-term pollution, identification of management measures to be taken, and assessment of potential for proliferation of cyanobacteria, macroalgae and phytoplankton.

Provision is made for water quality sample results to be disregarded (or "discounted") from the assessment period. This discounting can be applied in the case of short-term pollution, which has a clearly identifiable cause, is not normally expected to affect water quality for more than 72 hours and for which procedures have been established to predict and deal with the pollution incident, including a warning to bathers.

The new Directive also requires the increased provision of public information, and requires that public participation in implementation be encouraged.

The new Directive was transposed into Irish Law by the Bathing Water Quality Regulations (SI 79 of 2008). The main provisions of these Regulations are as follows –

Bathing season and bathing waters

- bathing season to run from 1 June to 15 September (previously 31 August)
- the identification of bathing waters by local authorities by 24 March 2011 and subsequently each year by 24 March
- the establishment of a bathing water profile by local authorities by 24 March 2011 for each bathing water and subsequent updating as necessary

Monitoring of bathing waters

- the establishment of a monitoring calendar by local authorities for each bathing water by 24 March 2011 and subsequently each year by 24 March
- monitoring of bathing waters by local authorities to commence by 2011 bathing season in relation to microbiological parameters E. coli and Intestinal enterococci
- the monitoring point to be located where most bathers are expected or where the greatest risk of pollution is expected
- suspension of monitoring in abnormal situations
- water samples to be analysed by local authorities and results sent to EPA by 15 October each year

Water quality

- water quality to be assessed and classified by EPA by 31 December each year on basis of data for four preceding bathing seasons and a report to be sent to EU Commission:
- waters to be classified as “excellent”, “good”, “sufficient” or “poor”: the first classification to be done on or before 15 September
- bathing waters must achieve “sufficient” or better status by 2015
- local authorities must take measures to increase the number of bathing waters classified as “good” or “excellent”
- local authorities must take management measures in relation to “poor” waters
- local authorities must issue permanent advice against bathing in case of waters which cannot achieve “sufficient” status

Public participation and information

- public participation to be encouraged in implementation

- information for the public to be provided near bathing waters and on website by local authorities (and/or by EPA)

Miscellaneous

- EPA may issue advice, recommendations and directions
- Minister may issue general policy directions
- private operators of bathing waters may be required to take measures, or to contribute towards public expenditure, in respect of bathing waters
- local authorities and private operators of bathing waters will be guilty of offences for contravening Regulations: prosecutions may be taken by local authority or EPA
- any person may apply to court for an order directing compliance with Regulations
- public authorities must co-operate in relation to transboundary waters
- provision of life-saving equipment etc does not amount to promotion of bathing
- revocation of the 1992 Regulations with effect from 31 December 2014

Transitional measures

- existing “designated bathing areas” will be regarded as “identified bathing waters” pending the identification of bathing waters by 2011
- existing (fortnightly) monitoring calendar to continue in place pending the establishment of new monitoring calendars
- existing monitoring arrangements (parameters etc) to continue until new arrangements are established.

In addition to specific management measures, which will be taken in relation to a bathing water in accordance with the new Directive, bathing

water quality will also be improved through the implementation of the Water Framework Directive (2000/60/EC) and other water-related Directives.

The Water Framework Directive generally requires that at least "good status" be achieved for all waters by 2015. For this purpose, Member States must put a river basin management plan in place for each River Basin District by the end of 2009, including specific environmental objectives and a programme of measures to achieve those objectives. This integrated approach upstream will contribute to the improved quality of downstream bathing waters. Implementation of the new Bathing Water Directive will also be strongly supported by implementation of –

- the Urban Waste Water Treatment Directive (91/271/EEC) which relates to the provision facilities for the collection and treatment of urban waste water, and

- the Nitrates Directive (91/676/EEC) which relates to the protection of waters against pollution from agricultural sources.

6.1.5 Sludge management plans

The waste management (Use of Sewage Sludge in Agriculture) Regulations 1998 (SI 148 of 1998) and Amendment Regulations 2001 (SI 267 of 2001) prescribe standards and practices for the use of sewage sludge in agriculture. All local authorities now have individual sludge management plans in place. The sludge management plans address the management and control of waste water sludge in a progressive and environmentally sustainable way and advise on the most appropriate means of managing sewage sludge arising within each county or city. The plans consider sludge quality and quantities, availability of suitable land for re-use, all re-use options, storage and transportation.

The treatment of sewage sludge and its subsequent use in agriculture should be in line with this Department's Code of Good Practice for the Use of Biosolids in Agriculture, which reflects European best practice. This Code has been developed to ensure that the use of biosolids in agriculture will:

- Be compatible with good agricultural practice

- Not pose a risk to human, animal or plant health

- Maintain the integrity of the soil ecosystem

- Avoid water pollution
- Avoid air pollution
- Minimise public inconvenience

Local authorities must maintain a register of all sludge/biosolids movement and use and require advance notification of proposed land banks to be used for biosolids spreading. Any person using biosolids in agriculture is required to do so only in accordance with an approved nutrient management plan.

The surface and groundwater protection measures of sludge management plans may need to be supplemented in the future to take full account of water quality objectives established in river basin management plans.

6.1.6 Major accident emergency plans

The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations (SI 74 of 2006) give effect to Council Directives 96/82/EC and 2003/105/EC, hence implementing the Seveso II Directive on the control of major hazards involving dangerous substances. The Regulations apply to establishments that present a major hazard by virtue of the presence of specified quantities of dangerous substances, subject to some exemptions. A 'major accident' is defined in the Regulations as an occurrence such as a major emission, fire or explosion resulting from uncontrolled developments in the course of the operation of any establishment, leading to a serious danger either to human health or to the environment, whether immediate or delayed, inside or outside the establishment, and involving one or more dangerous substances.

A "dangerous substance" means a substance, mixture or preparation specified in the Regulations or a substance generally considered to fulfil any of the categories laid down which includes those dangerous to the environment, specifically the aquatic environment.

The Health and Safety Authority is the central competent authority for the purposes of implementing the Regulations and is obliged to carry out certain duties that are detailed in the Regulations. These include the organisation of a system of inspections or other measures of control appropriate to the type of establishment involved and the examination of Safety Reports and their updates.

Emergency plans must be prepared for qualifying establishments with the objectives of:

- containing and controlling incidents so as to minimise the effects, and to limit damage to persons, the environment and property
- implementing the measures necessary to protect persons and the environment from the effects of major accidents
- communicating the necessary information to the public and to the services or authorities concerned in the area
- providing for the restoration and clean-up of the environment following a major accident

It is the duty of the operator of a qualifying establishment to prepare an internal emergency plan. Various public authorities, including local authorities, are designated as a local competent authority for the purposes of the Regulations. It is the duty of local competent authorities, on being notified of the presence of a qualifying establishment within its functional area, to prepare an external emergency plan. Emergency plans prepared by operators and local competent authorities must be reviewed and, where necessary, revised and updated, and tested as often as the circumstances require, but, in any event, at intervals not exceeding 3 years.

In the case of new developments the Planning & Development Act (2000) requires that adequate controls be in place on developments at qualifying establishments and in their vicinity.

6.1.7 Forest management plans

The Forest Service, of the Department of Agriculture, Fisheries and Food, is the National forest authority in Ireland. The role of the Forest Service is to ensure that forestry develops in a way, which maximises its contribution to National economic and social well-being on a sustainable basis that is compatible with the protection of the environment. It also ensures that Irish forestry practice conforms to the principles of Sustainable Forest Management (SFM) agreed at the 1998 Lisbon Conference. The Government's Strategic Plan for the development of forestry, as set out in Growing for the Future (1996), is based on the principles of SFM. This Strategic Plan sets out provisions to ensure the implementation of SFM in Irish forests, which is achieved by adherence to the National Forestry Standard, a Code of Best Forest Practice - Ireland, a suite of seven environmental guidelines including water quality, biodiversity and inspections undertaken by the Forest Service.

Ownership of forests in Ireland is divided into two broad catagories;

- Public forestry is managed by Coillte, a State owned company which owns 55% of the total forests,
- Privately owned forests are managed by their owners or their agents. These make up the balance of the woodlands and are generally less than 20 yrs old but do include the older privately owned estates.

Currently most privately owned plantations do not have management plans as they are relatively young, with most planted since 1990, and average about eight hectares in size. It is envisaged that they will have management plans once the inventory of private woodlands is complete.

Coillte owned woodlands generally have a greater age and size distribution and are subject to forest management plans, which are reviewed every five years. These plans detail the main forest activities proposed for the area over the duration of the plan and include proposals for road making, timber harvesting, restocking, landscape design and biodiversity issues. The overall objective being to assist the forest manager to manage the forest in a manner that is inclusive of the social, environmental and economic demands. These plans are currently being revised.

The main legislation governing forestry is the 1946 Forestry Act. This empowers the Minister to regulate forestry and also to promote forestry by way of financial incentives e.g. grants and premiums. There are various schemes currently in place e.g. Afforestation, Forest Environmental Protection Scheme, Road Making, Native Woodland, Neighbourwood and Woodland Improvement.

All of these schemes are subject to terms and conditions including those in the following ,

- Code of Best Forest Practice
- Forestry and Archaeology Guidelines
- Forest Biodiversity Guidelines
- Forestry and Landscape Guidelines
- Forest Harvesting and Environmental Guidelines
- Forest Protection Guidelines

- Forestry and Aerial Fertilisation Guidelines
- Forestry and Water Quality Guidelines

The Forest Service may also attach additional conditions to the approval of licences on sensitive sites. Non-compliance with the relevant conditions of these documents results in the non-payment of financial incentives. There are other species specific documents currently being prepared. Additional guidelines are currently being drafted by the Forest Service.

The environmental objectives to be established for all water bodies in River Basin Management Plans are currently being considered and this process may necessitate the revision of some of the codes of practice set by the Forest Service, particularly in the more sensitive catchments.

Forest practices employed during the 1960's and 1970's, prior to the publication of current guidance, have been shown, in some instances, to have had some negative impacts on water quality. For example over time it has become clear that large-scale forestation on deep peatland habitat results in adverse impacts on water catchments, fisheries and Natura 2000 areas. Consequently the management of these sites in the future will demand a more sensitive approach.

These more sensitive measures may include less of an emphasis on the production of commercial timber and a greater emphasis on the non-wood benefits of forestry, including the protection and restoration of water quality. As well as careful operational practices the measures may include wider buffer zones, change of species, no fertiliser application, reduced stocking rates and no drainage or ground preparation, as well as bog restoration in some instances where this is shown to be justified and achievable. Deforestation is also an option under the Act but requires very careful consideration.

The decision whether or not to grant afforestation approval in these areas must take cognisance of their sensitivity and the necessity to be in accordance with Sustainable Forest Management.

Chapter

7

7. Carrying out a Strategic Environmental Assessment (SEA) on river basin management plans and programmes of measures

River Basin Management Plans and their Programmes of Measures require a Strategic Environmental Assessment.

Strategic Environmental Assessment (SEA) is a process for evaluating, at the earliest appropriate stage, the environmental quality and consequences of Policy, Plan or Programme initiatives by statutory bodies. The purpose is to ensure that the environmental consequences of plans and programmes are assessed both during their preparation and prior to adoption. The SEA process also gives the public and other interested parties an opportunity to comment on the environmental impacts of the proposed plan or programme and be kept informed during the decision making process.

The European Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment (the SEA Directive), was transposed into National legislation in the Republic of Ireland by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI 435 of 2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI 436 of 2004).

An environmental assessment must be carried out for all plans and programmes:

- which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and county planning or land use and which set the framework for future development consent for projects listed in Annexes I or II of the Environmental Impact Assessment (EIA) Directive (85/337/EEC); or

- which, in view of the likely effect on protected sites, have been determined to require an assessment pursuant to Article 6 or 7 of the Habitats Directive (92/43/EEC).

Other key criteria for deciding whether a plan or programme should undergo strategic environmental assessment are outlined below:

1. If they are plans and programmes that are subject to preparation and/or adoption by an authority at National, regional or local level.

2. If they are required by legislative, regulatory or administrative provisions.

3. If they are likely to have significant environmental effects

Screening of River Basin Management Plans (RBMPs) and Programmes of Measures (POMs) concluded that both should be made subject to strategic environmental assessment as they meet the key SEA Directive criteria above as follows:

1. RBMPs are to be produced by an 'authority'.

2. RBMPs are required by legislative provision.

3. RBMPs are plans for the purposes of water management and therefore considered likely to have significant effects on the environment, particularly positive effects, since that is their intention.

4. RBMPs are likely to set the framework for future development consents of projects *via* the setting of environmental objectives and the establishment of programmes of measures that are contained within the river basin management plan. In other words they will influence the scale, nature and location of subsequent projects or activities, which may impact on waters.

A research project commissioned by the EPA under the ERTDI programme (WAPPA project, published in June 2007) further supported the conclusion that SEA should be applied to river basin management plans and programmes of measures.

It should also be noted that while RBMPs and POMs will result in positive environmental impacts on water, the SEA does not differentiate between plans and programmes causing positive or negative impacts on

the environment. The scope of SEA encompasses more than water and includes issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors (annex I of 2001/42/EC).

7.1 What is involved in carrying out a Strategic Environmental Assessment of river basin management plans and programmes of measures?

The statutory river basin management plan-making process already incorporates public consultation, however, SEA will serve to bring broader environmental issues into sharper focus during the consultative process when considering alternative strategies for achieving the objectives of the river basin management plans and programmes of measures. It is critical that the SEA is integrated into the statutory time-tables for the preparation/review of plans.

The SEA process is comprised of the following steps:

1. Screening: Decision on whether or not an SEA of a Plan/Programme is required;

2. Scoping: Consultation with the defined statutory bodies on the scope and level of detail to be considered in the assessment;

3. Environmental Assessment: An assessment of the likely significant impacts on the environment as a result of the Plan or Programme. The environmental assessment should include the necessary information for the “appropriate assessment” under the habitats directive as the plan and programme will inevitably affect designated water dependent areas for the protection of habitats and species;

4. An Environmental Report. The report should include a separate and distinct sub-section addressing the “appropriate assessment” under the habitats directive;

5. Consultation on the draft Plan/Programme and associated Environmental Report;

6. Evaluation of the submissions and observations made on the draft Plan/Programme and Environmental Report; and

7. Issuance of an SEA Statement (identifying how environmental considerations and consultation have been integrated into the Final Plan/Programme).

The strategic environmental assessment process should comply fully with the requirements of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI 435 of 2004) and guidance[13] produced by the Department of Environment, Heritage and Local Government in 2004. Furthermore, the EPA will soon publish a SEA process checklist[14] following consultation to assist competent authorities in completing assessments of plans and programmes.

The following table illustrates how local authorities should integrate SEA into the process of making the river basin management plans and establishing the programmes of measures.

STAGE	TIMING	RIVER BASIN MANAGEMENT PLANS AND PROGRAMMES OF MEASURES	SEA
Pre-review and initial public consultation	June -December 2007	Publication of significant water management issues report "Water matters"	Scoping of the Environmental Report, in consultation with environmental authorities
Preparation of Documentation	January –December 2008	Preparation of draft plan	Preparation of Environmental Report
Integrated public consultation	January - June 2009	Public display of draft plan and programme of measures	Public display of Environmental Report
Completion of process	June – December 2009	Consideration of submissions and adoption of plan	Consideration of submissions and publication of SEA statement
Post-plan	Plan comes into effect by 22 December 2009. Established programme of measures become operational by 22 December 2012	Implementation of plan and programme of measures. Monitoring programme assesses impact of measures. Both plans and programmes must be reviewed and updated by 2015	Monitoring of significant environmental effects

[13] Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment. Guidelines for Regional Authorities and Planning Authorities (November 2004)

[14] Strategic Environmental Assessment (SEA). SEA Process Checklist. Consultation Draft - 18th January 2008.

Chapter 8

8. Making the River Basin Management Plan

The Water Framework Directive is prescriptive with regard to the content of the River Basin Management Plan. A summary of the plans must be reported to the EU Commission by March 2010.

8.1 How a river basin management plan and the associated programmes of measures are to be made

The relevant local authorities must act jointly to make a river basin management plan and to establish a programme of measures for each river basin district. They must facilitate public participation by the publication of draft river basin management plans and programmes of measures by 22 December 2008, at the latest. The local authorities must, following consultation with the relevant public authorities, river basin district advisory councils and such other persons as the local authorities consider appropriate, establish environmental objectives, establish a programme of measures in order to achieve those objectives and make a river basin management plan by 16 October 2009. The making and updating of a river basin management plan and programme of measures is a reserved function. Where the relevant local authorities in relation to a river basin district have not jointly made a river basin management plan by 16 October 2009, the making of such a plan in relation to that district shall cease to be a reserved function. In such circumstances the making of the plan becomes an executive function to be carried out by the managers of the relevant authorities by 30 October 2009.

Once made the plan and programme of measures must be published and a copy sent to the relevant public authorities accompanied by a notice indicating that comments in relation to the plan may be sent to the Minister within one month of the date of publication of the plan and programme.

The relevant local authorities must endeavour to produce a single river basin management plan in relation to the whole district in co-ordination with the competent authorities in Northern Ireland. Where production of

a single plan is not possible, the relevant local authorities must produce a plan in relation to that part of the international river basin district lying within the State. In October 2007 the North South Ministerial Council agreed that implementation of the EU Water Framework Directive for the three International cross-border River Basin Districts falling within the scope of the Directive should proceed on the basis of single management plans for each IRBD.

River basin management plans must include the information set out in the Directive and may be supplemented by the production of such additional detailed programmes and management plans for sub-basin, sector, issue or water type to deal with particular aspects of water management as the relevant local authorities consider appropriate.

In making, reviewing or updating a river basin management plan the relevant local authorities must consult with the relevant public authorities and such other persons as the relevant local authorities consider appropriate and comply with the requirements for public information and consultation.

The EPA must give a report to the Minister in relation to the plan and programme of measures within one month of the publication of the plan and programme indicating the amendments (if any), which the EPA considers, ought to be made to the plan. The Minister may, following consideration of a report sent by the EPA and after consultation with such (if any) Minister of the Government, competent authority in Northern Ireland or other person as he considers appropriate, amend a river basin management plan and programme of measures by notice issued on or before 11 December 2009 to the co-ordinating authority. Where a plan is amended by the Minister the co-ordinating authority must send a copy of the notice to the relevant public authorities and publish it.

A river basin management plan and programme of measures will come into effect on 22 December 2009. Established programme of measures must become operational by 22 December 2012. The EPA must send a copy of all river basin management plans and their updates to the European Commission and to the competent authorities in Northern Ireland within three months of the plan or update of the plan coming into effect. Reporting to the Commission will be done electronically through the Water Information System for Europe (WISE) as agreed by all Member States. In Irelands case the river basin management plans must be communicated electronically by the relevant local authorities to the EPA. The EPA will report each river basin management plan to the European Commission *via* WISE (Water Information System for Europe).

The relevant local authorities must review and, if necessary, update their river basin management plan, by 16 October 2015 and every six years thereafter, with modifications applied as appropriate.

8.2 What information is to be reported in the plan ?

Local authorities are obliged to prepare a river basin management plan containing the details as set out in Annex VII of the directive as a minimum. The first plan must contain the following details;

Table 1: Minimum requirements of a River Basin Management Plan	
1	A general description of the characteristics of the river basin district.
2	A summary of significant pressures and impact of human activity on the status of surface water and groundwater.
3	Identification and mapping of protected areas.
4	A map of the monitoring networks established and a presentation in map form of the results of the monitoring programmes.
5	A list of the environmental objectives for surface waters, groundwater and protected areas, including where exemptions have been applied.
6	A summary of the economic analysis of water use
7	A summary of the programme or programmes of measures for the purpose of achieving the established objectives, including; o Measures required to implement existing Community legislation for the protection of water; o Details of practical steps and measures taken to apply the principle of recovery of the costs of water use o Measures taken to protect drinking water sources o Summary of controls on abstraction, impoundment, point source discharges and other activities with an impact on the status of water o Authorisations of direct discharges to groundwater o Summary of measures to deal with priority substances o Summary of measures taken to prevent or reduce the impact of accidental pollution incidents o Details of additional supplementary measures adopted and judged to be necessary for the purpose of achieving the environmental objectives set. o Measures taken to prevent increased pollution of marine waters
8	A register of any more detailed programmes and management plans for the river basin district dealing with particular sub-basins, sectors, issues or water types, together with a summary of their contents.

9	A summary of the public information and consultation measures taken, their results and the changes to the Plan made as a consequence.
10	A list of competent authorities responsible for the implementation of the directive in the river basin district.
11	The contact points and procedures for obtaining specified background documentation and information to be made available for public information and consultation, details of the control measures and monitoring data

For subsequent updates of the river basin management plan and all subsequent updates the following must also be included:

1. a summary of any changes to the plan itself;

2. an assessment of the progress made towards the achievement of the environmental objectives, including a map showing summary monitoring results and an explanation for any environmental objectives which have not been reached;

3. a summary of, and an explanation for, any measures which had been planned but were not undertaken;

4. a summary of any additional interim measures adopted since the plan was published.

8.3 What should the River Basin Management Plan consist of ?

Currently, local authorities, through river basin management projects, and the EPA under the guidance of the WFD National Technical Coordination Group are collaborating with the Northern Ireland Environment Agency in developing common templates for plans to ensure consistency between plans and compliance with reporting obligations to the European Commission. This work is also being coordinated, as far as possible, with authorities from Scotland, England and Wales.

8.4 Future water related reporting including river basin planning and other water directives

All EU member states have agreed to move towards full electronic reporting for water related directives, not just the Water Framework Directive over the next few years according to an agreed timetable. Moreover, all such reporting will be integrated into the Water Information System for Europe (WISE). River basin planning is currently being used to pilot the system and has been highly successful to-date culminating in a major public launch in March 2007. The directives in the process of integration include; Bathing waters, Nitrates, Groundwater, Flood risk management, Priority substances and the Marine strategy.

The EPA and local authorities with support from the Local Government Computer Services Board are preparing for the major shift in reporting from the current situation (mixture of paper based and computer based reporting streams) to a fully integrated and seamless electronic system. Central to this strategy is the development of the Environmental Data Exchange Network (EDEN). The aim of EDEN is to eliminate the difficulties encountered in the sharing and reporting of environmental data sourced from a wide range of environmental datasets, applications, and IT systems in place within the many organisations involved in work related to the Water Framework Directive.

The EDEN system aims to apply internet technology to facilitate the exchange of data between environmental agencies and specifically the exchange of monitoring data arising from the WFD monitoring programme. A system based on standardised Internet languages allows individual agencies to use an internal storage system of their own choice whilst also supporting easier exchange of environmental data. In time it is intended that EDEN will be a fully distributed data-sharing network allowing all stakeholders to easily share environmental data.

The data collected will continue to be used in National level reporting such as State of Environment reporting, Water Indicator Reports, Water Quality in Ireland reports etc, and will also form the basis for onward reporting of data to European and international institutions such as the European Environment Agency, European Commission, Eurostat and the Organisation for Economic Cooperation and Development (OECD), etc.

The collection and management of data is also being harmonised at a European level through WISE (Water Information System for Europe). This initiative aims to collect and report the data collected to meet the requirements of all water related directives such as the Water

Framework Directive, Urban Waste Water Directive, Bathing Water Directive, Drinking Water Directive etc.

Glossary

AWB – Artificial Water Body

BAT – Best Available Techniques

DEHLG - Department of the Environment, Heritage and Local Government

EC – European Commission

EDEN - Environmental Data Exchange Network

EIA – Environmental Impact Assessment

ELV - Emission Limit Value

EPA – Environmental Protection Agency

EQS – Environmental Quality Standard

EU – European Union

ERTDI – Environmental Research, Technological Development and Innovation programme

FCS – Favourable Conservation Status

HMWB – Heavily Modified Water Body

IPPC – Integrated Pollution Prevention Control

IRBD – International River Basin District

LAP - Local Area Plans

NDP - National Development Plan

NSS - National Spatial Strategy

OECD - Organisation for Economic Cooperation and Development

POM – Programme of Measures

RBD – River Basin District

RBMP – River Basin Management Plan

RPA - Register of Protected Areas

RPG - Regional Planning Guidelines

RWP - Rural Water Programme

SAC – Special Area of Conservation

SEA – Strategic Environmental Assessment

SFM - Sustainable Forest Management

SPA – Special Protected Area

WFD – Water Framework Directive

WISE - Water Information System for Europe

WSIP – Water Services Investment Programme

WSSP – Water Services Strategic Plan

Further reading / websites

http://www.erbd.ie/

http://www.serbd.com/

http://www.swrbd.ie/

http://www.shannonrbd.com/

http://www.westernrbd.ie/

http://www.nwirbd.com/

http://www.nbirbd.com/

http://www.wfdireland.ie

http://www.environ.ie/

http://www.epa.ie/

http://water.europa.eu/